EMOTIONAL REGULATION, ADULT ATTACHMENT AND SPLITTING
COGNITIONS

A thesis presented to the faculty of the Graduate School of
Western Carolina University in partial fulfillment of the
requirements for the degree of Master of Arts in Psychology.

By

Kimberly Son Nyo Matsui Keating

Director: Dr. Bruce B. Henderson
Department of Psychology

Committee Members: Dr. L. Alvin Malesky, Jr., Department of Psychology
Dr. Winford Gordon, Department of Psychology

November 2011

ACKNOWLEDGEMENTS

TABLE OF CONTENTS

LIST OF TABLES

ABSTRACT

EMOTIONAL REGULATION, ADULT ATTACHMENT & SPLITTING

COGNITIONS

Kimberly S. N. M. Keating

Western Carolina University (November 2011)

Director: Dr. Bruce Henderson

This thesis chose to explore Borderline Personality disorder from a dimensional perspective. Adult attachment, emotional dysregulation, and splitting cognitions are identified as key variables on the Borderline Personality dimension. Therefore, the purpose of this study was to examine the relationship between splitting, adult attachment style, and emotional dysregulation. The hypotheses are that people with a high level of splitting cognitions will have a higher likelihood of anxious attachment and a higher level of emotional dysregulation. While people with avoidant attachment will have a lower level of splitting cognitions with regard to self and family but higher levels of splitting pertaining to others. It is also hypothesized that avoidantly attached people will have lower levels of emotional dysregulation on the factors of an inability to engage in goal directed behavior and difficulty controlling impulsive behavior but higher levels on factors of limited availability to emotional regulation strategies, lack of emotional awareness, lack of emotional clarity, and non-acceptance of negative emotions.

This study asked 100 female undergraduates to answer three questionnaires examining their use of splitting cognitions, adult attachment style, and ability to regulate negative emotional states.

As hypothesized, results show that anxious attachment in adult females has a significant positive correlation with splitting cognitions of self, family, and others. Anxious attachment has a significant positive correlation with all factors of emotional dysregulation.

The relationship between avoidant attachment and splitting cognition of others was found to be significant in the negative direction with splitting cognitions of others. The study results also show that the relationship between avoidant attachment was significantly negatively correlated with the lack of emotional awareness. Avoidant attachment and inability to engage in goal directed behavior was also significant in the positive direction.

We successfully predicted that splitting cognitions of the self significantly correlated with all factors of the emotional dysregulation scale. Although subjects who engaged in self splitting significantly engaged in all emotional dysregulation factors, these subjects were more likely to have difficulties with the non-acceptance of negative emotions, access to emotional regulation coping strategies and identifying specific emotions. Splitting cognitions of the family and of others was found to be significant in the positive direction in all factors of emotional dysregulation except in the factor of the inability to engage in goal directed behaviors. These findings provide evidence for the dimensionality of key characteristics of Borderline Personality Disorder in a nonclinical population.

INTRODUCTION

I begin by presenting an overview of two conflicting views of how to best represent personality disorders, specifically Borderline Personality Disorder: the categorical perspective and the dimensional perspective. I will then connect Borderline Personality Disorder to both emotional dysregulation and attachment style, highlighting these as key elements in the dimensionalization of the personality disorder. Then I will review the literature on the major variables in the study: attachment, emotional regulation and the defense mechanism of splitting. The defense mechanism of splitting, also known as black and white thinking, is shown as a primary cognitive feature of those high in the Borderline Personality dimension. In an overview of emotional regulation, I explain different modeled theories of how emotion is created. Separate positions expressed include how our thinking processes alter emotions and how emotion may be largely unconscious, separate from thinking. Finally, the fundamentals of attachment theory are covered. This includes how our first relationships, experienced as babies, mold our perceptions and responses to all future relationships, how adult relationships mimic the attachment style formed as children, and how the way we regulate our emotions may differ depending on our attachment style.

History of Dimensional Perspective of Personality Disorders

A categorical view of mental illness focuses on having clear boundaries between normal and abnormal psychological functioning (Rounsaville, Alarcon, Andrews, Jackson, Kendell, & Kendler, 2002). The Diagnostic and Statistical Manual of Mental Disorders is organized categorically to aid the clinician in the diagnosis of a disorder

based on the existence of specific symptomology and pathology which will in turn lead to an explanation of symptoms and a specific treatment. The listed criteria for diagnosis primarily focus on the external behavioral features of the disorder (Frances, First, & Pincus, 1995; Kendell, 1975). However, in the last five years questions have increased in peer reviewed journals debating the usefulness of viewing mental illness through a categorical perspective (Lowe & Widiger, 2008). Some psychologists favor viewing mental illness through a dimensional perspective. A more dimensionalized perspective would incorporate empirically established research on personality traits into the assessment of psychological disorders. Personality disorders in particular have been pinpointed as good starting points for dimensionality due to the robustness of experimental evidence pointing toward the stable nature of personality constructs such as the "Big-5 (Lowe & Widiger, 2008)." Incorporating dimensionality to the assessment of personality disorders means to assess the degree that individuals conform to the extremity of specific personality traits normally associated with the disorder.

Dimensionalization suggests that mental illness represents extreme versions of characteristics that exist in a lesser form on dimensions apparent in all individuals. This helps to de-stigmatize mental illness by acknowledging that each individual exists on a mental health continuum. Pathology is then viewed as being on the extreme ends of the continuum. The approach of quantifying personality through the use of personality factors is a way to use dimensional continuums. These factors are referred to as 'dimensional' because an individual is placed on a continuum ranging from having low to high levels on each factor. There are many different personality models that use different names to describe personality dimensions. However, these different personality

dimensions often use different terms to represent generally the same factor. For example, neuroticism/ negative affectivity/ emotional dysregulation can be grouped together to represent the same dimension. Similarly, other personality model terms are grouped together to represent the same dimensions: extraversion/positive emotionality, dissocial/antagonistic behavior, and constraint/compulsivity/conscientiousness (Trull, 2005; Verheul, 2005; Widiger & Simonsen, 2005).

In order to dimensionalize personality disorders, researchers have proposed varying methods. One popular method being considered for integration into the DSM-V, identifies major dimensions underlying personality pathology by using factor analysis to compare which traits are the most relevant to major symptoms and descriptions of a personality disorder. Livesley, et al. (1998) and Clark, et al. (1996) have identified four higher order factors of personality disorder features that appear to account for the wide variety of traits and symptoms associated with personality disorders: emotional dysregulation, antagonistic behavior, inhibitions, and compulsivity. Also under consideration in the upcoming development of the DSM-V is the viewing of personality disorders along an internalizing and externalizing continuum (Watson & Clark, 2006). Integration of the Big 5, five-factor model of personality, with categorical classification has also been noted as a possible start in a dimensional classification of personality disorders (Widiger, 2002).

While the current categorical approach allows for quicker diagnostic identification, dimensionalizing allows for individual differences in the disorder, where progress made by clients on each key element is tracked incrementally, acknowledging that psychological and emotional progress is made slowly and gradually. Advantages

include greater assessment flexibility, and branching out into other established areas of personality and developmental research. Examples include higher order factorial levels, including the use of individual personality traits, attachment theory; or the use of cognitive defenses in the assessment process. This approach would allow psychologists to attack the theorized core global causes of external symptoms.

Many of the categorical disorder criteria items used in the DSM-IV are external symptoms of internal psychological processes. Each external symptom of Borderline pathology can be viewed in a dimensional perspective by identifying the source of the manifestation or the underlying personality factor or internal psychological process influencing symptom manifestation. A starting point toward this is defining the Borderline dimension using the primary elements of affective lability (emotional dysregulation), impulsivity, cognitive dysregulation, insecure attachment, and self-harm.

The following is a condensed version of what the DSM-IV-TR (American Psychiatric Association, 2001) describes as the underlying psychological construct of "Borderlineness" (p.706):

> The essential feature of Borderline Personality Disorder is 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. Individuals with Borderline Personality
> Disorder make frantic efforts to avoid real or imagined abandonment, have
> a pattern of unstable and intense relationships, poses an identity
> disturbance characterized by markedly and persistently unstable self-
> image or sense of self, display impulsivity in at least two areas that are

potentially self-damaging, display affective instability that is due to a

marked reactivity of mood, often disrupted by periods of anger, panic, or

despair and that are rarely relieved by periods of well-being or

satisfaction, and that reflect the individual's extreme reactivity troubled by

chronic feelings of emptiness. Individuals with Borderline Personality

Disorder frequently express inappropriate, intense anger or have difficulty

controlling their anger, and may display extreme transient paranoid

ideation or dissociative symptoms may occur.

Current Criteria for DSM Diagnosis

The DSM-IV requires people with Borderline Personality Disorder to meet five of

nine categorical criteria to be diagnosed (American Psychiatric Association, 2001). These

criteria are (p.710):

  1. Frantic efforts to avoid real or imagined abandonment. Note: Do not

include suicidal or self-mutilating behavior covered in Criterion 5.

  2. A pattern of unstable and intense interpersonal relationships

characterized by alternating between extremes of idealization and

devaluation.

  3. Identity disturbance: markedly and persistently unstable self-image or

sense of self.

  4. Impulsivity in at least two areas that is potentially self-damaging (e.g.,

spending, sex, substance abuse, reckless driving, binge eating). Note: Do

not include suicidal or self-mutilating behavior covered in Criterion 5.

5. Recurrent suicidal behavior, gestures, or threats, or self-mutilating

behavior.

6. Affective instability due to a marked reactivity of mood (e.g., intense

episodic dysphoria, irritability, or anxiety usually lasting a few hours and

only rarely more than a few days).

7. Chronic feelings of emptiness.

8. Inappropriate, intense anger or difficulty controlling anger (e.g.,

frequent displays of temper, constant anger, recurrent physical fights).

9. Transient, stress-related paranoid ideation or severe dissociative

symptoms.

Prevalence of Borderline Personality Disorder

Borderline Personality Disorder (BPD) is one of the most resource taxing

personality disorders. Resource utilization not only includes medical care in the form of

emergency room inpatient and outpatient services but also include job productivity losses

and drug rehabilitation services. The disorder is most prevalent in females, with

approximately 75% of individuals with the disorder being female (Gunderson, 2001).

Approximately 8% of those receiving outpatient care and 15% of all receiving inpatient

care meet BPD categorical criteria. Of all outpatients diagnosed with a personality

disorder, 27% have BPD. Of all inpatients with a personality disorder, 51% are diagnosed

as having Borderline Personality Disorder (Corbitt & Widiger, 1995). Of those with

BPD, 10% will attempt suicide, which is 50% higher than the general population

(American Psychiatric Association, 2001). These statistics are based on categorical

diagnosis criteria as currently ascribed to by the DSM-IV.

Presently, we do not know where individuals with Borderline Personality Disorder would be placed on a dimensional continuum, nor do we know where the dimensional lines are to be drawn differentiating between inpatient and outpatient qualifications for the disorder. More research is needed to solidify the dimensional boundaries that may relate to a Borderline diagnosis.

Summary of Proposed Study

Previously, I identified the primary elements of affective lability (emotional dysregulation), impulsivity, cognitive dysregulation, insecure attachment, and self-harm as the main underlying psychological characteristics of the Borderline dimension. Of these underlying factors, three are highlighted in the current study due to their representation as deep internal psychological processes: emotional dysregulation, cognitive dysregulation in the form of the cognitive defense mechanism of splitting, and insecure attachment. This is an effort to explore how these three key elements of the Borderline dimension interconnect.

REVIEW OF LITERATURE

Dimensions of Borderline Personality

Borderline Dimension and Emotional Regulation. People on the Borderline dimension are known for their emotional regulation problems. These problems have been described as a hypervigilance to emotion, oversensitivity to emotion and extreme, quick shifts in mood. Chronic feelings of emptiness, intense anger, loneliness, and affective instability are key elements of the disorder. Often, emotional responses are out of proportion and there is a failure to return to an emotional baseline. Borderline patients report experiencing more negative emotion and more fluctuation in emotion. An example of this kind of emotional fluctuation and sensitivity to slight expression is illustrated in Sonia's case below.

Case Study: Sonia, age 21, is a bright college student living at home with her mother. She is seeking therapy because of her inability to concentrate on her schoolwork due to intense feelings of anger and sadness aimed at differing situations and subjects. Sonia reports that she often gets "off-track" while attempting her schoolwork because she suddenly goes from "feeling fine" to "feeling bad at random things." When asked for examples, she reports intense anger at "the way her mother looked at her at the breakfast table". This emotional response occurred despite her mother not verbally expressing frustration and Sonia herself, does not know the reason for the perceived negativity. Another distraction is "hating herself" because her boyfriend doesn't love her. When asked what the evidence is for her conclusion, she states that he "looked" aloof and irritated while walking her to school and gave her a quick kiss goodbye. Sonia reports

that he says that he loves her all the time and often gives her gifts and takes her on

outings but she still has negative thoughts and feelings about the true nature of the

relationship that interrupts her throughout the day.

Linehan (1993), in her biosocial theory of the Borderline dimension, has suggested that a problem with self regulation, especially the regulation of emotions, is the primary handicap in people with Borderline Personality Disorder. These individuals may already have a biological disposition to act emotionally. The genetic disposition, plus an invalidating environment, people and situations that make a person believe that his or her emotions and feelings are somehow wrong, evil or untrue, results in people with Borderline Personality Disorder having a tendency to self-invalidate. Self-invalidation is a personal tendency to take on the characteristics of an invalidating environment by rejecting the truthfulness of one's own emotional experience and feelings. Instead, the self-invalidating individual looks to other people in the environment for clues telling them how they should be feeling. Often, this leads to secondary emotions of guilt, shame, and anger targeting the primary emotion. The statement, "I am an idiot for feeling that way," is an example of negative secondary emotion resulting from invalidation of primary feeling. Negative emotional experiences and fluctuation lead to poor coping skills in the form of maladaptive behaviors used to regulate these emotions such as self-harm, promiscuity, and disordered eating. Linehan supports therapeutic validation and the teaching of self-validation to combat the emotional upheaval. Through therapeutic modeling of non-judgmental acceptance of feelings felt by the client and oneself, the individual learns how to accept both positive and negative emotions as true and acceptable emotional experiences.

Those high on the Borderline dimension show an increased sensitivity to emotion. Patients with Borderline Personality Disorder, when asked to recognize emotions in facial expressions, were faster at the task than normal controls (Lynch, Rosenthal, Kosson, Cheavens, Lejuez, & Blair, 2006) indicating that small exposures to fluctuating emotions may have a more profound impact on an individual with Borderline Personality Disorder. Emotions, particularly negative emotions, may be recognized earlier due to a traumatic stress-like sensitivity to emotion.

Individuals with Borderline Personality Disorder show a heightened sensitivity and reactivity to stressors. Levine, Marziali, and Hood (1997) asked subjects with Borderline Personality Disorder to imagine situations that would produce an emotional reaction. Subjects with Borderline Personality Disorder produced significantly lower levels of emotional awareness and more intense responses to negative emotions than normal controls. They had more difficulty coping with emotions of varying strength and were less accurate at recognizing facial expressions (Levine et al., 1997).

Both the strength and frequency of mood changes are higher than average among individuals with Borderline Personality Disorder. Affective instability relative to other forms of mood disorder exhibits a statistically significant variance. Participants in a study by Trull et al. (2008) reported their current moods six times a day via electronic diary. Subjects with Borderline Personality Disorder were found to have significantly more changes over time in both positive and negative moods than subjects with depressive disorder. They also had significantly larger changes on successive scores for hostility, fear, and sadness, and were more likely to report mood changes sequentially (Trull et al., 2008).

In an investigation of the emotional sequencing of subjects with Borderline Personality Disorder by Reisch, Ebner-Priemer, Tschacher, Bohus and Linehan, (2008) 50 patients with Borderline Personality Disorder and 50 controls used mobile hand-held computers to keep track of their present emotional states. They were asked which of seven basic emotions were present at a given moment. Researchers then analyzed the activation, persistence, switching and down-regulation of the emotions that subjects reported. Results showed that patients with Borderline Personality Disorder were in states of anxiety and sadness for significantly longer duration and more often than healthy controls. Patients with Borderline Personality Disorder also switched from anxiety to sadness, and back frequently. They predominantly switched to anger after perceiving anxiety in others, and felt significantly less positive emotions than healthy controls (Reisch et al., 2008).

Similarly, some psychological researchers theorize that emotional dysregulation is largely a result of learned experiences from social interaction. Others think that emotional dysregulation is primarily a result of individual personality differences, where the individual has a disposition towards negative emotions and neuroticism, which colors interpersonal experience and expression (Morse, Pilkonis, Yaggi, Broyden, Stepp, Reed, & Feske, 2009).

There is a robust correlation between key factors of the Borderline dimension and emotional dysregulation. In a study by Glenn and Klonsky (2009) using undergraduate students, Borderline factors were assessed along with individual answers to a measure of emotional regulation, the Difficulties in Emotion Regulation Scales (DERS). They found the strongest associations between emotional dysregulation and Borderline factors were

for the Impulse and Strategies subscales of the DERS, a measure that incorporates six subscales of emotional dysregulation: non-acceptance of emotion responses (non-acceptance), difficulties engaging in goal directed behavior (goals), impulse control problems (impulse), lack of emotional awareness (awareness), limited availability to emotional regulation strategies (strategies), and lack of emotional clarity (clarity). Borderline elements were also significantly associated with depression, negative affect, and anxiety. The relationship is also marginally significant when controlling for depression and anxiety.

Furthermore, the relationship between emotional dysregulation, attachment style, and social functioning was further investigated using a clinical sample of 128 psychiatric patients (Morse et al., 2009). When controlling for non-Borderline Personality dimensions and other Axis I symptoms, they found that anger, preoccupied attachment, and domain disorganization, a measure of inconsistencies in social functioning in work, romantic relationships, friendships and other social interactions, all correlated with the Borderline dimension (Morse et al., 2009). Negative temperament, preoccupied attachment (anxious attachment), and domain disorganization were significant predictor variables of the Borderline dimension. Thus, having a negative temperament, anxious attachment, and domain disorganization may significantly increase the likelihood of an individual already having, or in the future developing, a high placement on the Borderline continuum. In an effort to contribute to the creation of possible subgroups of people with Borderline Personality Disorder, they found that high anger and high domain disorganization may contribute to the creation of a large subgroup of Borderline traits in

the sample, while low anger and preoccupied attachment contributed to another smaller

subgroup of people with Borderline Personality Disorder (Morse et al., 2009).

Borderline Dimension and Adult Attachment Style. Among the criteria in the

DSM (American Psychiatric Association, 2001) for those high on the Borderline

dimension is "fear of abandonment" and "intense unstable relationships." This points to

insecure attachment styles as a prominent feature of people with Borderline Personality

Disorder. One of the features of insecure attachment, especially anxious attachment, is

attachment system hyperactivation leading to displays of emotional amplification

(Kobak, Cole, Ferenz-Gillies, Fleming, & Gamble, 1993). A review of the literature on

the relationship between the Borderline dimension and insecure attachment shows that

the relationship is consistent regardless of the measurement used to assess attachment

(Agrawal, Gunderson, Holmes, & Lyons-Ruth, 2004). Anxious or fearful attachment

(preoccupied) is the most commonly reported with both interview (Barone, 2003; Levy,

2005; Stovall-McClough & Cloitre, 2003) and self-report measures of attachment among

people with Borderline Personality Disorder (Levy, Meehan, Weber, Reynoso, &

Clarkin, 2005). While anxious attachment has been linked to people with Borderline

Personality Disorder other characteristics, like the cognitive distortion of splitting, are

also strongly associated.

Splitting

"Splitting" is the term coined to describe the tendency to view things and

individuals as either "all bad" or "all good" (Linehan, 1993). Those that have these views

tend to often change their views of the object they see as "bad," oscillating between

"good" and "bad." The use of splitting as a defense mechanism is sometimes seen in

cases of child abuse. The "abuse dichotomy," refers to the child abuse victim's tendency to attribute responsibility in "black and white" terms (Briere, 1989).

Viewed from a psychoanalytic perspective, splitting in an adult individual results from "conflict between intense negative and positive emotions (Linehan, 14)." Use of splitting in a person with Borderline Personality Disorder extends beyond blame for abuse toward seeing all of life and reality in dichotomous "black and white" terms. Those high on the Borderline dimension cannot see how two opposing views can be simultaneously true. For example, "I want to live" and "I want to die" cannot exist and be true at the same moment within a person with Borderline Personality Disorder. Cognitions are rigid, thus, according to Linehan (1993), change and thoughts of change are emotionally painful to subjects.

In 1967, Kernberg was the first to relate defense mechanisms among the fundamental features of those high on the Borderline dimension (Kernberg, 1967). He lists five defense mechanisms: devaluation, omnipotence, primitive idealization, and projective identification. Further work on gender differences in the use of defense mechanisms showed that both females and males with Borderline Personality Disorder scored higher on maladaptive action scales and image distorting scales than other types of axis II dimensional disorders. However, female patients with Borderline Personality Disorder have significantly lower scores on the use of adaptive defense scales compared to other axis II subjects, while male patients with Borderline Personality Disorder do not show a significant lower score on use of adaptive defense scales compared to axis II comparisons (Bond, Paris, & Zweig-Frank, 1994; Paris, Zweig-Frank, Bond, & Guzder, 1996). This points towards a gender difference in the manifestation of cognitive

disturbances characteristic of Borderline Personality Disorder. Males already represent a significant minority among patients with Borderline Personality Disorder. Higher use of adaptive defenses in men with the disorder may represent healthier cognitive coping in men versus women. This widens the gender divide in the realm of maladaptive cognitions and may help explain why males are less representative among those with Borderline Personality Disorder.

The defense mechanism literature shows that splitting, as an image distorting mechanism, significantly correlates with Borderline scores of affective instability. Seeing the world in extremes activates emotional swings by preventing the consideration of mediating factors. For example, I refer to our previous case of Sonia.

Case Study: Sonia only sees the world in extremes. When she sees her mother's "angry face," she emotionally swings to intense anger aimed at her mother. This happens because she doesn't consider the option that her mother contains both good and bad elements within her. Mother automatically becomes "bad" because in Sonia's mind the other option is that her mother is "good," making Sonia, the perceived object of her mother's moody face, the "bad" person. Similarly, her mother's moody face cannot exist as just a mild moodiness unrelated to Sonia herself. There is no consideration of any mediating factors such as "Mom is not a morning person and hasn't had her coffee yet." Or "Mom is sick today." "Mom must be having another fight with dad." To Sonia, her mother's face becomes directionally aimed at Sonia herself and expresses the extreme emotion of anger or hate.

When considering her perception of her boyfriend's "irritation and aloofness," Sonia comes to the conclusion that it must be her fault her boyfriend does not love her. In

her mind, individuals exist in black and white terms, so her boyfriend as her knight in shining armor and object of her affections is encompassing all that is "good." "Good" and "irritation and aloofness" cannot coexist in the same vessel. So, she takes on the role of the "bad" person and the cause of his irritation because the other option is that he is no longer the "good" person that takes care of her but the "bad" person. Not only is Sonia the cause of the manifestation of "bad," irritation and aloofness, in him but she assumes that because she is now "bad," that he must hate her whole-heartedly. To her, her boyfriend who is "good" cannot love a "bad" Sonia. Sonia, our fictional client with Borderline Personality Disorder, is an example of how affective instability and splitting is related to each other.

Using 140 patients with axis II diagnosis, 41 of whom met Borderline categorical criteria, Koenigsberg, Harvey, Mitropoulou, New, Goodman, Silverman, et al., (2001) examined individual differences between affective instability, impulsive aggression and 20 different defense mechanisms, assessed with the Defense Style Questionnaire (DSQ). Affective instability is significantly correlated with the undoing, acting out, passive aggression, projection, schizoid fantasy, and splitting defense mechanisms (Koenisgberg et al., 2001).

Furthermore, the defense mechanism of splitting is further differentiated as primarily a Borderline defense by Perry and Cooper (1986). They studied the relationship between defense mechanisms and the Axis II personality dimension of anti-social narcissists and people with Borderline Personality Disorder by semi-structured interviews. They found a significant correlation between BPD dimensional scores of psychopathology and using "action defenses" when acting out, hypochondriasis, and

passive aggression. Perry and Cooper (1986) also found a significant correlation between the use of "image distorting or borderline defenses" of projective identification and splitting. There is a significant negative correlation between those high in the borderline dimension and the use of the primarily narcissistic defense mechanisms of devaluation, omnipotence, and primitive idealization. The differences in defense tools helps to differentiate between people with Borderline Personality Disorder and other personality dimensions.

Furthering this difference is a more current study on the use of defense mechanisms by people with Borderline Personality Disorder which reinforces the use of projective identification and splitting as "image distorting" defenses used by those high on the Borderline dimension when compared to other Axis II dimension patients. Patients scoring higher on the Borderline dimension also have significantly higher scores than axis II comparisons on "immature defenses": acting out, emotional hypochondriasis, passive aggression, and projection. However, people with Borderline personality tend to not use other categorical image distorting defenses, such as devaluation, omnipotence and primitive idealization. (Zanarini, Weingeroff & Frankenburg, 2009). This evidence further supports the use of specific defense mechanisms on a dimensional continuum in order to assess the degree of severity amongst those with Borderline Personality.

Emotional Regulation; Dual-models of how cognition impacts emotional regulation.
Various models of emotion contribute to our understanding of how cognitive processes regulate emotion. These multilevel models include literature on the schematic processes and a "propositional" system (Philipot, Baeyens, Douillie, & Francart, 2004). One way to view the impacts of cognition on emotion is through the use of a schematic system of

memory where the emotions elicited are largely unconscious and automatic. A schema is a mental representation of information tied to a set of emotional experiences. Leventhal (1984) proposed that schemas are viewed as individual record keeping of emotional classical conditioning. In this conditioning, a schema is formed when experiences and human perceptions are connected to bodily responses and emotion. An example of a schema is when babies associate aspects of mother to the fulfillment of hunger needs, triggering an emotional and physiological response in the baby. The schematic representation of the tie between the situation and the baby's response may also include the sound of mother's voice, her scent and her touch.

Psychologists have used the schematic system of emotional regulation to help explain how emotional responses are automatic and largely unconscious in nature. A schema can activate physiological and psychological responses. Bodily responses can also activate emotional responses. Matsumoto (1987) in his research on facial physiology found that copying facial expressions can elicit the feelings associated with the facial expression.

Another way to view how cognition impacts emotion is through a "propositional" system, or how knowledge about emotion affects emotional regulation (Philipot et al., 2004). Declarative, conceptual knowledge about emotion is used. This type of knowledge is what individuals can learn through the use of logic (Philipot et al., 2004). Individuals can identify their emotional states, verbally communicate emotional states, and consciously choose to cope and solve negative emotional states (Philipot et al., 2004). Through the "propositional" model, individuals are seen as cognitively capable of

voluntarily and consciously focusing their insight and attention to influence their emotional state.

Psychologists who look at how schematic processes and "propositional" processes interact from an evolutionary prospective theorize that emotional memories may elicit strong emotions (via schemas), which may cause an emotional overriding of cognitive systems (propositional systems). Akin to other dual-models between schematic systems and factual/cognitive based systems (propositional), Conway and Pleydell-Pearce (2000), proposed that protection against over-arousal (emotionally) would cause humans to separate memories into two categories: emotional knowledge and factual/event-based knowledge. According to Conway and Pleydell-Pearce (2000), factual knowledge can override emotional knowledge when factual knowledge provides a buffer against emotional over-arousal. However, the Zajonc automatic affect model disagrees with the idea that emotional responses get filtered through factual knowledge. Instead the Zajonc automatic affect model argues that emotion is often generated without and before cognition.

Zajonc (1980) proposes that some affect is automatically generated without the need for cognitive processes. He argues that in certain circumstances emotional reactions are elicited without cognitive evaluation, eliciting a non-cortical affect. This is similar to the schematic model where the schema acts as a map based on previous experience and emotions, which results in an individual having emotional reactions without thinking. People with emotional disorders are especially vulnerable to generating automatic emotional reactions due to an attention bias toward overgeneralization. Overgeneralization may therefore favor the kind of automatically generated emotions

proposed in Zajonc's automatic affect model and schematic models over the cognitive propositional processes that use thought to temper emotion. Anxious attachment and avoidant attachment are overgeneralizations of how people are inherently untrustworthy in maintaining and forming valuable relationships. That is why we call them "insecure" schematic models of attachment. Schematic activation leaves insecurely attached individuals vulnerable to a non-cortical affective response analogous to relevant anxious or avoidant schema.

Adult Attachment

Development from childhood attachment. Adult attachment theory came from Bowlby's conceptualization of childhood attachment. His initial theory did not limit itself to children who suffered from a deficit in maternal interaction but expanded to the effects childhood trauma would have on the broader community and society. Parents pass on attachment insecurity to their children and when those children grow up, if the insecurity is not addressed, they in turn pass on attachment issues. This connection, or the "intergenerational transmission" of insecurity is the theoretical beginning of adult attachment theory (De Wolff & van Ijzendorn, 1997).

To Bowlby, the context of interpersonal relationships encountered early in childhood produced internal working models or beliefs, goals, and strategies used as a framework to help define the identity of the self and of others. The framework is a filter through which the individual defines social interaction and new experiences. Healthy internal working models lead to accurate beliefs about the self, others, and events; which in turn leads to a thorough understanding of the world, a confidence in one's ability to confront challenges in life, stable life goals and effective coping strategies used to

accomplish these goals. Conversely, an underdeveloped internal working model does not provide a strong sense of coherence, resulting in unrealistic beliefs, ineffective coping strategies, and unmeaningful goals in life. In turn, an ineffective internal working model may result in a self defeating attitude fueled by inaccurate perceptions about the self, others and the world; poor motivation and depression may result from the creation of goals that are not valued; and stress and anxiety is fueled by an inability to cope effectively with everyday life.

An effective internal working model is forged in a consistent, reinforcing, family environment beginning in infancy when natural vulnerability elicits nurturance and attention from parents. The way parents respond to the child's natural needs and demands play a large role in internal working model formation. Consistent, sensitive, responsive parents that also encourage the need for exploration while maintaining consistent protective boundaries, and respect for parental needs and boundaries are thought to encourage the development of a "secure base" of operation and are more likely to produce effective internal working models (Bowlby, 1969).

Bowlby understood that the construction of the internal working model, though most active in early life, continues to remain active throughout the entire lifespan. Individuals continue to engage in thoughts and behaviors involved in the pursuit of attachment figures in order to attain internal soothing. Bowlby stated that self-soothing results primarily from the internalizing of previous positive attachment relationships. Healthy autonomous adults do not rid themselves of the need to seek positive attachment but will continue to search for meaningful relationships, especially during emotionally difficult periods like times of grief, loss, or need (Mikulincer & Shaver, 2004).

Psychologists constructed the categories of adult attachment from Ainsworth's childhood attachment categories. In 1967, in order to understand the differences between infants' reactions to separation from their mothers she used the categories of secure, avoidant, and anxious to differentiate between infant behaviors. In the Strange Situation mothers were asked to leave their infants in a space full of toys. After a few minutes they returned. Observers carefully coded the infant's behavior to the separation from mother and the return. In this situation, securely attached infants exhibited distress when separated from their mothers but quickly recovered and explored their environments. Upon reunion with their mothers, these infants were happy, joyful, and sought to be held. They then resumed their interest in toys provided in the environment. Avoidant infants upon separation from their mothers tended not to be upset. Upon reunion, they preferred the company of toys and did not actively seek the attention of their mothers. Anxiously attached infants were very upset upon separation. They did not easily shift their attention toward the exploration of the environment, remaining deeply upset. Upon reunion anxious infants would oscillate between proximity seeking and ambivalence. They would seek cuddling one moment and then become upset and push away their mothers in the next moment. This is why descriptions of anxious attachment sometimes contain other terms like ambivalence or resistant (Ainsworth, Blehar, Waters, & Wall, 1978).

Beginning in the 1980s, developmental, clinical, personality, and social psychologists began to enthusiastically test new constructs of attachment style. Among the first new measures of adult and adolescent attachment is the Adult Attachment Interview (AAI). The AAI asks adults open-ended questions about their relationship with parents during childhood (George, Kaplan, & Main, 1985). The AAI uses three categories

akin to Ainsworth's infant attachment categories: secure, dismissing, or preoccupied with attachment. Securely attached adults tend to refer to their parents as available and responsive to needs. Often the memories that these adults describe are easily understood and convincing. The dismissing category in the AAI is parallel to the avoidant category in Ainsworth's infant categories. The dismissing adult does not appear to value the parent-child relationship and cannot remember many events of emotional interaction. Preoccupied adults, parallel to Ainsworth's anxious category, recall more negative events with parents. They are often caught up with negative emotions such as anger and anxiety when speaking about their parents. They are also very sensitive to these memories and find it hard to speak about these experiences (George et al., 1985; Main & Goldwyn, 1988). The AAI took attachment theory from behavioral observation (Strange Situation) to interactive verbal dialogs between doctor and patient.

Another important step in the transition from childhood attachment measures to adult attachment measures is the development of a self-report measure by Hazan and Shaver in 1987. They attempted to study adult attachment from the perspective of romantic relationships by having individuals report on their feelings and behaviors in romantic relationships. Three descriptions are provided of feelings and behaviors that capture the categories of secure, avoidant, and anxious adults. Participants were asked to choose a description that they felt was most like them. From then on, researchers pursued the refinement of the self-report measure of adult attachment. However, Ainsworth's primary categories remain the categorical base. The anxious and avoidant categories of attachment remain the two primary categories of dysfunctional attachment with anxious attachment representing a use of hyperactivating behaviors (need for partner closeness

and availability) and avoidant attachment representing a deactivation in behavior (tendency to withdraw and distance themselves) when confronted with attachment insecurity. Though there has also been a push by researchers for a dimensional view of attachment, most established research favors the categorical construct (Mikulincer & Shaver, 2007). Therefore, in this study we will use the pre-established self-survey style categorical constructs of adult attachment to assess subjects. We favor Bowlby's internal working model theory that attachment systems continue to operate throughout the lifespan, playing an important role in individual differences to how adults respond emotionally and behaviorally in interpersonal situations.

   Relationship of Adult Attachment to Emotional Regulation. By referring to the "attachment system" we reference an individual's tendency to utilize the emotions and behaviors associated with the person's attachment. Internal sources of threat can activate the attachment system. Internal sources of threat include memories, thoughts and feelings that the individual has identified as being threatening. The individual's subjective identification of threats make thoughts related to attachment more accessible. This preconscious spark leads to conscious thoughts of attachment seeking and proximity, thereby activating the individual's previously engrained emotional and behavioral tendencies depending on the attachment style. For example, an anxiously attached individual when confronted with threats to a relationship is most likely to utilize hyperactivated behaviors and feelings. This includes clinging behaviors and the extreme pursuit of love, closeness and reassurance of the sustainability and strength of the relationship. Avoidant individuals when confronted with a threat to a relationship are

more likely to utilize deactivated behaviors and feelings. This includes the need to be independent and distance themselves emotionally from a loved one.

Attachment can be activated preconsciously, thereby automatically leading behavior toward relationship seeking or relationship avoidance (Bargh, 1990). Research supporting thought activation and subliminal thought activation include Greenberg, Pyszczynski, and Solomon's (1997) studies on mortality salience and terror management theory, focusing on human beings natural implicit emotional reactions to reminders of the inevitability of death. Greenberg, Pyszcynski, and Solomon (1997) found that subjects are automatically led to behaviors affirming the correctness of their cultural values when threatened by the inevitability of death. Attachments to cultural values are activated preconsciously because it allows people to feel more secure and increases self-esteem. Similarly, Mikulincer, Florian, and Hirschberger (2003) found that reminders of the inevitability of death also preconsciously activate the seeking of love relationships. These studies exemplify how merely thinking of the word "death" produces subliminal activation of attachment related schemas.

The literature supports the connection between adult attachment style and emotional regulation. For the most part securely attached individuals constitute the norm for both emotional regulation and expression; and avoidant and anxious attachment lead to opposite extremes in emotional dysfunction. The avoidantly attached individual utilizing deactivating strategies tends to block emotions, thereby not experiencing them or expressing them. The anxiously attached individual, through hyperactivating emotional strategies, has a tendency to not be able to control the overabundance of

negative painful thoughts and emotions, leading to an overabundance of emotional expression.

The activation of thoughts and memories of people and situations that have helped to create a secure attachment style by providing care, love, and protection, helps people deal more effectively with threats. When exposed to subliminal threats, securely attached individuals tend to react with a higher likelihood of coming up with words associated with security and relief, while anxiously attached individuals have more ready access to words relating to rejection and separation (Mikulincer et al., 2000; Mikulincer, Gillath, & Shaver, 2002). Avoidantly attached individuals do not have readily accessible thoughts about worries and rejection unless primes are utilized to inflict a threatening cognitive load, making the threat more mentally accessible and harder to suppress (Mikulincer et al., 2002). When a threat prime is used subliminally (the word "separation"), securely attached individuals are the fastest at recalling names of attachment figures while avoidant individuals are slower, indicating an internal thought process (Mikulincer et al., 2002). Main and Weston, (1982) hypothesizes that this preconscious non-selection performed by avoidant individuals is most likely due to use of punishment by early attachment figures in response to needs of security and support.

There is support for the increased likelihood of emotional dysregulation in anxiously attached individuals in facial expression research. Facial expressions are a means by which we as human beings relate our internal emotional experiences to the outside world. When the emotions expressed through facial expressions do not match the emotions that are actually experienced internally, researchers can question if the person is experiencing a deficit in emotional clarity and awareness. When recalling childhood

experiences, Roisman, et al. (2004) measured the valence of emotional content in the relating of childhood experiences and corresponding facial expressions. They found that secure individuals match facial expression with emotional valence more congruently than anxiously attached individuals. Anxiously attached individuals tend to have more discrepancies between emotions conveyed by facial expression and the emotional content of childhood memories, often conveying sad or angry emotions when discussing positive or neutral events. This reflects a potential likelihood of emotional dysregulation when speaking about emotional events in the anxiously attached, specifically in the areas of emotional clarity and emotional awareness.

Mood related research points toward differences between secure, anxious and avoidant people. Pereg and Mikulincer (2004) induced negative mood and found that anxiously attached individuals have less control over the spread of negative emotional memories, while avoidant individuals tend not to have access to negative emotional memories nor negative emotions. Their studies used booklets made of both positive and negative headlines. Participants were asked to recall as many headlines as possible. Securely attached individuals related more positive headlines than insecurely attached individuals. In another of their studies, a negative interpersonal relationship situation was provided and participants were asked to come up with causes for the relationship problem. Insecurely attached individuals were more likely to point to global and stable causes for the negative relationship.

The author recognizes the established research on the connection between differing attachment styles and the corresponding unique displays of behavior and emotional response associated with each attachment style. Adult attachment styles may

impact adult interpersonal relationships through the use of automatically generated emotional responses.

Currently research on the Borderline Personality Disorder has linked the disorder to anxious attachment and has theorized the use of splitting defenses and significant deficits in emotional regulation. However, the relationship between these variables has rarely been studied together. There were few results located for published studies researching the combined variables of adult attachment, splitting cognitions, and emotion regulation. One such study is Lopez (2001).

Lopez (2001) in a sample of 247 college students found that attachment anxiety, self-concealment, and low differentiation of boundaries between self and others predicted high splitting cognitions of self. While splitting of others was best predicted by attachment anxiety, low emotional reactivity, and high needs for social approval (Lopez, 2001). Other published papers on linking the variables used in this study have a therapy orientation and do not emphasize empirical measures. An example of this is de Zulueta and Mark (2000), an article written to explain group and individual therapy outcomes for patients with Borderline Personality Disorder. The article emphasized the use of attachment theory and to contain splitting and regulation emotions during therapy (de Zulueta & Mark, 2000).

STATEMENT OF PURPOSE

Research indicated that attachment, emotional regulation, and splitting are problems that characterize individuals with Borderline Personality Disorder. A dimensionalized view of Borderline Personality would suggest that these underlying dimensions would be related in a particular way, even within the normal range of functioning. High levels of emotional dysregulation should be related to aspects of both anxious attachment and splitting. Degrees of anxious attachment should be related to degrees of emotional dysregulation and splitting.

In general, this thesis offers a theoretical hypothesis for the dimensionalization of Borderline Personality Disorder in the normal populace. The literature review identified splitting cognitions as highly associated with those scoring high in borderline symptomology (Zanarini, Weingeroff & Frankenburg, 2009). Splitting was also identified as highly correlated with affective instability, an aspect of emotional dysregulation defined by rapid switching of mood and emotional states (Koenisgberg, Harvey, Mitropoulou, New, Goodman, Silverman et al., 2001). These attributes found in people with Borderline Personality Disorder should also be transferable to a normal population when adopting a dimensionalized perspective. Therefore, I hypothesized that splitting cognitions of the self, family, and others would be positively correlated with all aspects of emotional dysregulation in our sample of assumedly normal participants.

Anxious attachment was more prevalent in those individuals scoring high on Borderline Personality Disorder symptoms (Levy, 2005). Therefore, in a dimensionalized view, anxious attachment should be highly correlated with other variables that are highly

utilized in this disordered population. Research on adult attachment suggested that individuals categorized as anxiously attached had an increased accessibility to schemas related to rejection, abandonment and separation, hyperactivating emotions and affection seeking behaviors (Mikulincer et al., 2002). Those who scored high on Borderline Personality Disorder symptoms were also more likely to use defense mechanisms associated with image distortion, projective identification and splitting (Perry & Cooper, 1986). Therefore on a Borderline dimension, I hypothesized that anxious attachment in normal subjects was positively correlated with splitting cognitions of the self, family, and others. I further hypothesized that anxious attachment in the general population was positively correlated with the following aspects of emotional dysregulation: non-acceptance of negative emotional states, an inability to engage in goal directed behavior, difficulty controlling impulsive behavior, a limited availability to emotional regulation strategies, a lack of emotional awareness and a lack of emotional clarity.

If anxious attachment was high on a Borderline dimension, avoidant attachment was low. Avoidantly attached individuals were more likely to deactivate emotions when confronted with interpersonal conflict. They reacted with the suppression of emotion, independence and isolation from relationships (Mikulincer et al., 2002). Those avoidantly attached had more difficulty recalling names of attachment figures (Mikulincer et al., 2002). I attributed this slow recall to the inaccessibility of highly emotional material associated with close interpersonal relationships in avoidantly attached individuals. Those classified as avoidantly attached were more likely to experience low valence emotion associated with a significant attachment figure. These characteristics of avoidant attachment differ from what was normally characteristic of a

person high on the Borderline dimension. Therefore, I hypothesized that avoidantly attached individuals would be on the low end of the Borderline dimension in the use of splitting cognitions. In other words avoidantly attached individuals would be more likely than anxiously attached individuals to disengage from the use of splitting cognitions because the defense mechanism of splitting may require the use of extreme valence emotions that avoidantly attached individuals shy away from. I hypothesized that avoidant attachment was negatively correlated with splitting cognitions of the self and family but positively correlated with the use of splitting cognitions of others.

However, the literature review also provides evidence for a correlation between avoidant attachment and lack of expressiveness (Collins, Cooper, Albino, & Allard, 2002). Suppression of emotion was also a characteristic of avoidant attachment. Therefore, I hypothesized that avoidant attachment was positively correlated with emotional dysregulation factors associated with the non-acceptance of negative emotion; a lack of emotional awareness; a lack of emotional clarity; and limited availability to emotional regulation strategies. I further hypothesized that avoidant attachment was negatively correlated with emotional dysregulation factors associated with an inability to engage in goal directed behavior and difficulty controlling impulsive behavior since the avoidantly attached adult was more likely to restrain and deactivate than engage in impulsivity.

In summary, I hypothesized that among the attachment subgroups, anxious attachment was positively correlated with splitting of self, family and others, while avoidant attachment was negatively correlated with splitting of the self and family, but positively correlated with splitting of others. Among the factors of emotional

dysregulation, I hypothesized that anxious attachment was positively correlated with all aspects of emotional dysregulation. I hypothesized that avoidant attachment was negatively correlated with an inability to engage in goal directed behavior and difficulty controlling impulsive behavior, but positively correlated with the limited availability to emotional regulation strategies, lack of emotional awareness, lack of emotional clarity, and non-acceptance of negative emotions. With regard to splitting cognitions, I hypothesized that the use of splitting cognitions was positively correlated with emotional dysregulation.

METHOD

Participants

  Borderline Personality Disorder primarily presents in females. A demonstration of

the underlying dimensionality of Borderlineness would most likely be demonstrated in

females. Therefore, subjects consisted of 100 female undergraduate students from

Western Carolina University. All participants were 18 years of age or older. When

broken down into subtypes, I can reasonably assume that about 2-3% of the sample

population would score high on the Borderline dimension. Predicting that high splitting

index scores, low emotional regulation scores, and insecure attachment would also

average about 2-3% while the majority of subjects would fall in the normal range.

Measures

  Splitting Index. The defense mechanism of splitting was measured by a self-report

questionnaire called the Splitting Index (SI) (Gould, Prentice, & Ainslie, 1996). The

Splitting Index (SI) consisted of 24 items. There were eight items in each of three

subscale categories: spitting of the self image, splitting of the family image, and splitting

of others' images. Based on a sample of 841 undergraduate students, the SI index was

subjected to factor analysis in 6 pilot studies and 2 main studies. Based on these findings

the SI had a high internal consistency with a reliability analysis yielding an alpha of .92.

Each category was significantly correlated with each other at a significance level of less

than .001. Categories were also independent of one another with: "self" and "family"

correlated at .29; "self" and "others" correlated at .48; and "family" and "others"

correlated at .42. Findings also showed that the alpha coefficient levels for each category

are high: "self," alpha level is equal to .89; "family," alpha equals .85; "others," alpha

equals .84 (Gould, Prentice, & Ainslie, 1996).

In assessing construct validity, when compared to measures of Borderline

Personality Disorder, the SI had reliably high positive correlations, alpha level set at .001,

with the Borderline Syndrome Index, Schizotypal-Borderline scale and one measure of

narcissism, the Narcissistic Personality MMPI scale. In assessing convergent validity,

there was also significant correlations with self –image stability, self-esteem, depression,

and negative affectivity (Gould, Prentice, & Ainslie, 1996).

Experiences in Close Relationships-Revised. The construct of Adult Attachment

was also measured by self-report questionnaire (Fraley, Waller, & Brennan, 2000). The

Experiences in Close Relationships-Revised (ECR-R) was a 36 item questionnaire used

to measure adult romantic relationships. The ECR-R had 2 subscale categories, consisting

of 18 items each: anxiety and avoidance. According to Fraley, Waller and Brennan

(2000), the Experiences in Close Relationships Revised (ECR-R) had good internal

consistency, with a Cronbach alpha coefficient reported of .94 for the anxious attachment

subscale and .95 for the avoidant attachment subscale. The questions are based on a 7

point Likert scale with 1 representing disagree strongly and 7 representing agree strongly.

The ECR-R when compared to the Adult Attachment Questionnaire (AAQ) had

items that represented a broader range of the traits of anxious and avoidant attachment

more accurately (Fraley, Waller, & Brennan, 2000). In other words, while previous

measures of romantic attachment had multiple items measuring the same aspect of a trait,

the ECR-R had items that measure different aspects of the same trait. The ECR-R when

compared to previous measures of attachment had more stability when measuring

romantic attachment with regard to anxiety and avoidance (Davila & Sargent, 2003).

According to Sibley and Liu (2004), reliability and replicability of anxiety and avoidance

in romantic relationships scored in the "low .90s during a 6-week period."

Difficulties in Emotion Regulation Scale. Subject ability to emotionally regulate

were measured by the self-report questionnaire, the Difficulties in Emotion Regulation

Scale (DERS; Gratz & Roemer, 2004). The DERS was a 36 item measure of individual

levels of emotional dysregulation. The measure consisted of six subscales: non-

acceptance of negative emotions, inability to engage in goal directed behaviors when

experiencing negative emotions, difficulties controlling impulsive behaviors when having

negative emotions, limited availability to emotion regulation strategies, lack of emotional

awareness, and lack of emotional clarity. The DERS had high internal consistency at

alpha equals .93, and good test-retest reliability over a time range of 4 to 8 weeks .88 at a

significance level of less than .01 (Gratz & Roemer, 2004).

The DERS was reliable and valid as a measure of emotion dysregulation. In a

study with 428 subjects, ages 13-17, the DERS had internally constant subscales, with

alphas ranging from .76 to .89. According to Gratz and Roemer (2004), the Difficulties in

Emotional Regulation Scale had good internal consistency, with a Cronbach alpha

coefficient reported of .85 for the non-acceptance of negative emotions subscale; .89 for

the inability to engage in goal directed behavior subscale; .86 for difficulty controlling

impulsive behavior subscale; .88 for limited availability of emotional regulation

strategies subscale; .80 for the lack of emotional awareness subscale; .84 for the lack of

emotional clarity subscale. Construct validity had high correlations with emotion

dysregulation problems of depression, anxiety, suicidal ideation, eating disorders, alcohol

use, and drug use. The adolescent subscales correlated at low to medium levels of .04 -

.68. (Weinberg & Klonsky, 2009).

Procedure

All subjects were instructed to read and sign consents to experiment. They were

asked to take three paper and pencil questionnaires: the Splitting Index, Difficulties in

Emotional Regulation Scale, and Experiences in Close Relationships-Revised. Upon

completion of the questionnaires, subjects were provided with debriefing sheets with the

researchers contact information and a summary of the purpose of the study. The entire

data collection procedure had a duration of roughly twenty to thirty minutes depending

on individual differences in questionnaire completion time.

RESULTS

Reliability of Instruments

Cronbach alphas were obtained for each of the scales and subscales used in the

study.

Table 1: Subscale Cronbach Alpha

Subscales	Established Alpha*	Current Study Alpha
Anxious attachment	.94	.94
Avoidant attachment	.95	.95
Splitting of Self	.89	.87
Splitting of Family	.85	.89
Splitting of Others	.84	.90
Non-acceptance of Negative Emotions	.85	.87
Inability to Engage in Goal Directed Behavior	.89	.89
Difficulty Controlling Impulsive Behavior	.86	.80
Limited Access to Emotional Regulation Strategies	.88	.87
Lack of Emotional Awareness	.80	.74
Lack of Emotional Clarity	.84	.81

*see Method for references

Overall, the current studies alphas were similar to previously established

estimates. This indicated proper usage of the scales in the current study.

Descriptive Data

Descriptive statistics were reported to describe the characteristics of the study

sample and assess for any violations of assumptions.

The subscales of anxious and avoidant attachment contained 18 items each on a

Likert scale from 1 to 7. Possible scores on these scales ranged from 18 to 126 with a

mean of 54. Results from the study indicated that the avoidant attachment subscale has a smaller standard deviation compared to the anxious attachment subscale. The avoidant attachment subscale higher mean value indicated a negative skew to the right of the scale and a study population higher in avoidant attachment than scale norms. While, scores in anxious attachment indicated that the study population is comparable to the norming population.

The subscales of splitting of self, family, and others, contained 8 items on a Likert scale from 1 to 5. Possible scores on this scale ranged from 8 to 40 with a mean of 16. Results from the study indicated that all splitting subscales are within normal ranges with splitting of self slightly higher and splitting of family slightly lower than the norming mean.

Two subscales in the ECR-R contained 5 items with a range from 5 to 25; one subscale with 8 items and a range of 8 to 40; and three subscales with 6 items and a range from 6 to 30. All subscales were within normal ranges with the exception of the Difficulty Controlling Impulsive behavior subscale whose low minimum was due to an unanswered item in the scale by a participant.

Table 2: Descriptive Data

Subscales	Mean	Standard Deviation	Minimum	Maximum
Anxious Attachment	55.69	22.72	20	126
Avoidant Attachment	79.04	10.62	47	99
Splitting of Self	21.63	7.32	8	36
Splitting of Family	14.59	7.00	8	32
Splitting of Others	16.41	6.66	8	39

Non-acceptance of Negative Emotions	13.95	5.62	6	27
Inability to Engage in Goal Directed Behavior	15.50	5.28	5	25
Difficulty Controlling Impulsive Behavior	10.22	4.05	5	27
Limited Availability to Emotional Regulation Strategies	16.39	6.45	8	37
Lack of Emotional Awareness	13.44	4.01	6	26
Lack of Emotional Clarity	10.67	3.61	5	23

Correlations

In my hypotheses, anxious attachment was predicted to be positively correlated to splitting cognitions of self, family, and others; and also positively correlated to emotional dysregulation through non-acceptance of negative emotions, inability to engage in goal directed behavior, difficulty controlling impulsive behavior, limited availability to emotional regulation strategies, lack of emotional awareness and lack of emotional clarity. While avoidant attachment was predicted to be positively correlated to splitting cognitions of others but negatively correlated to splitting cognitions of the self and family. Avoidant attachment was predicted to be positively correlated to factors of emotional dysregulation associated with the non-acceptance of negative emotion; a lack of emotional awareness; a lack of emotional clarity; and limited availability to emotional

regulation strategies. However, avoidant attachment was hypothesized to be negatively

correlated with emotional dysregulation factors associated with an inability to engage in

goal directed behavior and difficulty controlling impulsive behavior. Also, Splitting

cognitions on self, family, and others was predicted to be positively correlated with

emotional dysregulation on non-acceptance of negative emotions, inability to engage in

goal directed behavior, difficulty controlling impulsive behavior, limited availability to

emotional regulation strategies, lack of emotional awareness and lack of emotional

clarity. These correlations indicated a dimension of Borderlineness in a nonclinical

female sample.

The study results on the relationship between attachment and splitting cognitions

appear on Table 3. Results for the relationship between attachment and emotional

dysregulation can be seen on Table 4. The results for the relationship between splitting

and emotional dysregulation are on Table 5.

**. Indicates that the correlation is significant at the 0.01 level (1-tailed).

*. Indicates that the correlation is significant at the 0.05 level (1-tailed).

Table 3: Correlation of Attachment and Splitting

	Splitting of Self	Splitting of Family	Splitting of Others
Anxious Attachment	.636**	.332**	.490**
Avoidant Attachment	-.112	-.106	-.178*

Table 4: Correlation of Attachment and Emotional Dysregulation

	Non-Acceptance of Negative	Inability to Engage in Goal	Difficulty Controlling Impulsive Behavior	Limited Access to Emotional Regulation	Lack of Emotional Awareness	Lack of Emotional Clarity

	Emotions	Directed Behavior		Strategies		
Anxious Attachment	.517**	.282**	.465**	.600**	.387**	.364**
Avoidant Attachment	-.149	.170*	.091	.045	-.259**	-.013

Table 5: Correlation of Splitting and Emotional Dysregulation

	Non-Acceptance of Negative Emotions	Inability to Engage in Goal Directed Behavior	Difficulty Controlling Impulsive Behavior	Limited Access to Emotional Regulation Strategies	Lack of Emotional Awareness	Lack of Emotional Clarity
Splitting of Self	.605**	.262**	.425**	.641**	.496**	.665**
Splitting of Family	.220*	.155	.290**	.374**	.202*	.281**
Splitting of Others	.387**	.112	.358**	.337**	.477**	.441**

As predicted, anxious attachment correlated significantly to splitting cognitions of self, splitting cognitions of family, and splitting cognitions of others. The predicted relationship between anxious attachment and all factors of emotional dysregulation was obtained at highly significant levels.

The relationship between avoidant attachment and splitting cognition of others was found to be significant in the negative direction with splitting cognitions of others. The study results also show that the relationship between avoidant attachment significantly negatively correlated with the lack of emotional awareness. Avoidant attachment and inability to engage in goal directed behavior was also significant in the positive direction.

I successfully predicted that splitting cognitions of the self significantly correlated with all factors of the emotional dysregulation scale. Although subjects who engaged in

self splitting significantly engaged in all emotional dysregulation factors, these subjects

were more likely to have difficulties with the non-acceptance of negative emotions,

access to emotional regulation coping strategies and identifying specific emotions.

Splitting cognitions of the family and of others was found to be significant in the positive

direction in all factors of emotional dysregulation except in the factor of the inability to

engage in goal directed behaviors.

DISCUSSION

In this study, I expected "Borderlineness" to manifest itself as a dimension of individual differences in a normal sample. Akin to characteristics shown as highly associated with the categorically diagnosed disorder; high splitting cognitions, high emotional dysregulation, and anxious attachment; I expected these variables studied in the normal population to be similarly correlated. Individual differences in a single variable should correspond to similar adjustment in the other variables up and down the Borderline dimension.

Results of this study support the use of dimensionality to explain Borderline characteristics as a normal element of individual differences in the population. In a normal population, as the use of splitting cognitions rose so did an inability to effectively regulate one's emotions. Strength of anxious attachment similarly is correlated to a rise in the use of splitting cognitions and emotional dysregulation. These results are consistent with past findings.

My hypothesis on avoidant attachment's positive relationship to splitting cognitions of others was not supported. Instead, results indicated the opposite, that avoidantly attached subjects tended to not engage in splitting cognitions of others. Overall, avoidantly attached participants did not report engaging in black and white thinking and are significantly more cohesive in their thoughts about other people. This research reveals a contrast in the engagement of defensive cognitions between avoidant and anxiously attached subjects. Those anxiously attached seemed to engage in cognitive splitting defenses significantly more than the avoidantly attached who tended not to engage in splitting cognitions, especially when contemplating about other people.

However, the hypothesis on dimensionality focuses on anxious attachment rather than avoidant attachment due to the lack of strong research evidence in avoidance relative to Borderline Personality Disorder.

This study included three variables; adult attachment, splitting cognitions, and emotional dysregulation as pertinent to a dimensional view of Borderline Personality Disorder. While we have not assessed for Borderline Personality Disorder in this study, we have found a significant tie between anxious attachment, splitting cognitions, and emotional dysregulation.

Study limitations included the use of a relatively homogenous sample of undergraduate students enrolled in introductory psychology courses. In spite of that correlations were obtained in the face of a relatively homogenous sample, indicating relatively strong support for dimensionality. This study did not include demographic information that would have assessed for data like developmental of health delays, parental divorce, family make-up, recent romantic relationships, social economic status, etc. that may have provided some insight to the outcome of the study. Furthermore, experimenter error led to an item in the DERS being unadministered to a third of the participants. The missing item values for each subject was determined through mean calculation of the remaining five items in the factor. This study was further limited through the use of self-report questionnaires. This method of probing for information is self-selecting and subjective, it does not have a strong grounding in how the participants actually behave and appear to other people in a real world environment.

My hope is that in the future researchers see the benefit of dimensionalization, especially with regards to personality disorders. Not only is future research needed to

isolate the most characteristic variables of personality disorders but these variables should be measurable on a set of cotinua so as to represent the population on a potential normal curve. The use of continuous scales of measurement versus categorical representations is important because it allows for placement of each individual along this normal curve and stresses the point that dimensional definitions of mental illness are based on the extremity of normal characteristics and not on a presence or absence mentality.

This study would have been significantly enhanced had we assessed for Borderline Personality Disorder via the DSM-IV criteria along with our current measures. The expectation would be that those meeting the categorical diagnosis criteria would place highly on splitting, emotional dysregulation, and anxious attachment compared to undiagnosed subjects. A replication of this study with inclusion of diagnosis screening would empirically test whether people with Borderline Personality Disorder exist on the extremes of the characteristic variables of splitting, emotional dysregulation, and anxious attachment. This replication may further establish the worth of the use of dimensionalization in personality disorder diagnosis.

Furthermore the inclusion and identification of other characteristic factors of disorders is needed. For example, Lopez (2001) advanced the dimensionalization of this disorder through his inclusion of factors like the need for social approval and the perception of self-other boundaries. So called, "boundaries" is another term flung around to describe people with Borderline Personality Disorder. I believe that it is an important characteristic that needs to be further researched. Entirely a social construct dependent on the whims of cliques and subcultures the term is poorly defined. Deficits in

"boundaries" needs to be operationally defined and researched in relation to attachment orientation, emotional dysregulation, and splitting cognitions.

REFERENCES

Agrawal, H. R., Gunderson, J. G., Holmes, B. M., & Lyons-Ruth, K. (2004). Attachment studies with Borderline patients: A review. *Harvard Review of Psychiatry, 12*, 94-104.

Ainsworth, M. D. S., Blehar, M. C., Waters, E., & Wall, S. (1978). *Patterns of attachment: Assessed in the strange situation and at home.* Hillsdale, NJ: Erlbaum.

American Psychiatric Association. (2001). *Diagnostic and statistical manual of mental disorders* (4th ed., rev.). Washington, DC: Author.

Bargh, J. A. (1990). Auto-motives: Preconscious determinants of social interaction. In E. T. Higgins & R. M. Sorrentino (Eds.), *Handbook of motivation and cognition: Foundations of social behavior* (Vol. 2, pp. 93-130). New York: Guilford Press.

Barone, L. (2003). Developmental protective and risk factors in Borderline Personality Disorder: A view from developmental psychopathology. *Development and Psychopathology, 17*, 927-957.

Bond, M., Paris, J., & Zweig-Frank, H. (1994). Defense styles and borderline personality disorder. *Journal of Personality Disorders, 8,* 28-31.

Bowlby, J. (1969). *Attachment and loss: Vol. 1. attachment.* New York: Basic Books.

Briere, J. (1989) *Therapy for adults molested as children.* New York. Springer.

Clark, L. A., Livesley, W. J., Schroeder, M. L., & Irish, S. (1996). The structure of maladaptive personality traits: convergent validity between two systems. *Psychological Assessment, 8*, 294-303.

Collins, N., Cooper, L. M., Albino, A., & Allard, L. (2002). Psychosocial vulnerability

from adolescence to adulthood: A prospective study of attachment style differences in relationship functioning and partner choice. *Journal of Personality, 70,* 965-1008.

Conway M. A., & Pleydell-Pearch, C. W. (2000). The construction of autobiographical memories in the self-memory system. *Psychological Review, 107*, 261-288.

Corbitt, E. M., & Widiger, T. A. (1995). Sex differences among the personality disorders: An exploration of the data. *Clinical Psychology*, *2(3)*, 225-238.

Davila, J., & Sargent, E. (2003). The meaning of life (events) predicts changes in attachment security. *Personality and Social Psychology Bulletin, 29,* 1385-1395.

de Wolff, M.S., & van IJzendoorn, M.H. (1997). Sensitivity and attachment: A meta-analysis on parental antecedents of infant attachment. *Child Development 68*, 571–591.

de Zulueta, F. & Mark, P. (2000). Attachment and contained splitting: a combined approach of group and individual therapy to the treatment of patients suffering from Borderline Personality Disorder. *Group Analysis, 33,* 486-500.

Fraley, R. C., Waller, N. G., & Brennan, K. A. (2000). An item response theory analysis of self-report measures of adult attachment. *Journal of Personality and Social Psychology, 78*, 350-365.

Frances, A. J., First, M. B., & Pincus, H. A. (1995). *DSM-IV guidebook*. Washington, D.C.: American Psychiatric Press.

George, C., Kaplan, N., & Main, M. (1985). *The Adult attachment interview. Protocol.* Department of Psychology, University of California, Berkley.

Glenn, C. R., & Klonsky E. D. (2009). Emotion dysregulation as a core feature of

Borderline Personality Disorder. *Journal of Personality Disorders, 23(1),* 20-28.

Gould, J. R., Prentice, N. M., & Ainslie R. C. (1996). The Splitting Index: Construction of a scale measuring the defense mechanism of splitting. *Journal of Personality Assessment, 66,* 414-430.

Gratz, K. L., & Roemer, L. (2004). Multidimensional assessment of emotion regulation and dysregulation: Development, factor structure, and initial validation of the Difficulties in Emotion Regulation Scale. *Journal of Psychopathology and Behavioral Assessment, 36*, 41-54.

Greenberg, J., Pyszczynski, T., & Solomon, S. (1997). Terror management theory of self-esteem and cultural worldviews: Empirical assessments and conceptual refinements. In M. P. Zanna (Ed.), *Advances in experimental social psychology* (vol. 29, pp. 61-141). San Diego: Academic Press.

Gunderson, J. G. (2001). *Borderline Personality Disorder: A clinical guide*. Washington, D.C.: American Psychiatric Press.

Hazan, C., & Shaver, P. R. (1987). Romantic love conceptualized as an attachment process. *Journal of Personality and Social Psychology, 52*, 511-524.

Kendell, R. E. (1975). *The role of diagnosis in psychiatry*. London: Blackwell Scientific.

Kernberg, O. (1967). Borderline personality organization. *Journal of the American Psychoanalytic Association, 15,* 641-684.

Kobak, R., Cole, H., Ferenz-Gillies, R., Fleming, W., & Gamble, W. (1993). Attachment and emotion regulation during mother-teen problem-solving: A control theory analysis. *Child Development, 64*, 231-245.

Koenigsberg, H. W., Harvey, P. D., Mitropoulou, V., New, A. S., Goodman, M., Silverman, J., et al. (2001). Are the interpersonal and identity disturbances in the Borderline Personality Disorder criteria linked to the traits of affective instability and impulsivity? *Journal of Personality Disorders, 15*, 358-370.

Levine, D., Marziali, E., & Hood, J. (1997). Emotion processing in Borderline Personality Disorders. *Journal of Nervous and Mental Disease*, *185*, 240-246.

Leventhal, H. (1984). A perceptual-motor theory of emotion. In L. Berkowitz (Ed.), *Advances in Experimental Social Psychology* (vol. 17, pp. 117-182). New York: Academic.

Levy, K. N. (2005). The implications of attachment theory and research for understanding Borderline Personality Disorder. *Development and Psychopathology, 17*, 959-986.

Levy, K. N., Meehan, K. B., Weber, M., Reynoso, J., & Clarkin, J. F. (2005). Attachment and Borderline Personality Disorder: Implications for psychotherapy. *Psychopathology, 38*, 64-74.

Linehan, M. M. (1993). *Cognitive-behavioral treatment of Borderline Personality Disorder.* New York: Guilford.

Livesley, W. J., Jang, K. L., & Vernon, P. A. (1998). Phenotypic and genetic structure of traits delineating personality disorder. *Archives of General Psychiatry, 55*, 941-948.

Lopez, F. G. (2001). Adult attachment orientations, self-other boundary regulation, and splitting tendencies in a college sample. *Journal of Counseling Psychology, 48,* 440-446.

Lowe, J. R. & Widiger, T. A. (2008). Personality Disorders. In J. E. Maddux & B. A. Winstead (Eds.), *Psychopathology: foundations for a contemporary understanding* (pp. 223-249). New York: Routledge.

Lynch, T. R., Rosenthal, M. Z., Kosson, D.S., Cheavens, J. S., Lejuez, C. W., & Blair, R. J. (2006). Heightened sensitivity to facial expressions of emotion in Borderline Personality Disorder. *Emotion, 6*, 647-655.

Main, M., & Goldwyn, R. (1988). *Adult attachment scoring and classification system.* University of California, Berkley.

Main, M., & Weston, D. R. (1982). Avoidance of the attachment figure in infancy: Descriptions and interpretations. In C. Parkes & J. Stevenson-Hinde (Eds.), *The place of attachment in human behavior* (pp. 31-59). New York: Basic Books.

Matsumoto, D. (1987). The role of facial responses in the experience of emotion: More methodological problems and a meta-analysis. *Journal of Personality and Social Psychology, 52*, 769-774.

Mikulincer, M., Birnbaum, G., Woddis, D., & Nachmias, O. (2000). Stress and accessibility of proximity-related thoughts: Exploring the normative and intraindividual components of attachment theory. *Journal of Personality and Social Psychology, 78(3),* 509-523.

Mikulincer, M., Florian, V., & Hirschberger, G. (2003). The existential function of close relationships: Introducing death into the science of love. *Personality and Social Psychology Review, 7*, 20-40.

Mikulincer, M., Gillath, O., & Shaver, P. R. (2002). Activation of the attachment system in adulthood: Threat-related primes increase the accessibility of mental

representations of attachment figures. *Journal of Personality and Social Psychology, 83*, 881-895.

Mikulincer, M., & Shaver, P. R. (2004). Security based self-representations in adulthood: Contents and processes. In W. S. Rholes & J. A. Simpson (Eds.), *Adult attachment: Theory, research, and clinical implications* (pp. 159-195). New York: Guilford Press.

Mikulincer, M., & Shaver, P.R. (2007) *Attachment in adulthood*. New York: Guilford Press.

Morse, J.Q., Pilkonis, P.A., Yaggi, K., Broyden, N., Stepp, S., Reed, L. I., & Feske, U. (2009). Anger, preoccupied attachment, and domain disorganization in Borderline Personality Disorder. *Journal of Personality Disorders, 23(3*), 240-257.

Paris, J., Zweig-frank, H., Bond, M., & Guzder, J. (1996). Defense styles, hostility, and psychological risk factors in male patients with personality disorders. *Journal of Nervous and Mental Disease, 184*, 153-158.

Pereg, D., & Mikulincer, M. (2004). Attachment style and the regulation of negative affect: Exploring individual differences in mood congruency effects on memory and judgement. *Personality and Social Psychology Bulletin, 30*, 67-80.

Perry, J. C., & Cooper, S. H. (1986). A preliminary report on defenses and conflicts associated with Borderline Personality Disorder. *Journal of the American Psychoanalytic Association, 34,* 863-893.

Philipot, P., Baeyens, C., Douilliez, C., & Francart, B. (2004). Cognitive regulation of

emotion: Application to clinical disorders. In P. Philippot & R.S. Feldman (Eds.), *The regulation of emotion* (pp. 71-97). New Jersey: Lawrence Erlbaum Publishers.

Reisch, T., Ebner-Priemer, U. W., Tschacher, W., Bohus, M., & Linehan, M. M. (2008). Sequences of emotions in patients with Borderline Personality Disorder. *Acta Psychiatrica Scandinavia*, *118*, 42-48.

Roisman, G. I., Tsai, J. L., & Chang, K. H. S. (2004). The emotional integration of childhood experience: Physiological, facial expressions, and self-reported emotional response during the Adult Attachment Interview. *Developmental Psychology, 40,* 776-789.

Rounsaville, B.J., Alarcon, R.D., Andrews, G., Jackson, J.S., Kendell, R.E., Kendler, K.S. et al. (2002). Toward DSM-V: Basic nomenclature issues. In D.J. Kupfer, M.B. First, & D. A. Regier (Eds.), *A research agenda for DSM-V* (pp. 1-30). Washington, D.C.: American Psychiatric Press.

Sibley, C. G., & Liu, J. H. (2004). Short-term temporal stability and factor structure of the Revised Experiences in Close Relationships (ECR-R) measure of adult attachment. *Personality and Individual Differences, 36*, 969-975.

Stovall-McClough, K. C. & Cloitre, M. (2003). Reorganization of unresolved childhood traumatic memories following exposure therapy. *Annals of the New York Academy of Sciences, 1008*, 297-299.

Trull, T. J. (2005).Dimensional models of personality disorder: coverage and cutoffs. *Journal of Personality Disorders; 19(3)*, 262-282.

Trull, J. T, Solhan, M. B., Tragesser, S. L., Jahng, S., Wood, P. K., Piasecki, T. M., & Watson, D (2008). Affective instability measuring a core feature of Borderline Personality Disorder with ecological momentary assessment. *Journal of Abnormal Psychology, 117*, 647-661.

Watson, D., & Clark, L.A. (2006). Clinical diagnosis at the crossroads. *Clinical Psychology*, *13,* 210-215.

Weinberg A. ,& Klonsky. (2009) Measurement of emotional dysregulation in adolescents. *Psychological Assessments, 21(4),* 616-621.

Widiger, T. A. (2002). Values, politics, and science in the construction of the DSM. In J. Sadler (Ed.), *Descriptions and prescriptions: Values, mental disorders, and the DS*M (pp.25-42). Baltimore, MD: Johns Hopkins University Press.

Widiger, T. A., & Simonsen E. (2005). Alternative dimensional models of personality disorder: finding a common ground. *Journal of Personality Disorders, 19,* 110-130.

Verheul, R. (2005). Clinical utility for dimensional models for personality pathology. *Journal of Personality Disorders, 19*, 283-302.

Zajonc, R. B. (1980). Feeling and thinking: Preferences need no inferences. *American Psychologist, 35,* 151-175.

Zanarini, M. C., Weingeroff, J. L., & Frankenburg, F. R. (2009). Defense mechanisms associated with Borderline Personality Disorder. *Journal of Personality Disorders, 23 (2*), 113-121.