

**The impact of borderline personality traits on commitment
in romantic relationships: An application of the investment
model**

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ABSTRACT

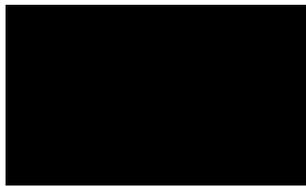
Borderline personality disorder is characterised by marked impairment in affective, cognitive, behavioural and interpersonal functioning. Recognising the growing need to understand personality pathology on a continuum, the present dissertation sought to examine the impact of borderline personality traits on romantic relationship commitment in a general population, with consideration of attachment styles. In particular, the study utilised the well-established investment model framework to achieve this aim. A total of 178 participants currently involved in romantic relationships were recruited from the community. Participants were asked to complete an online survey that collected data on borderline personality traits, attachment styles and overall commitment level to their relationship. Regression models were used to explore the association between attachment styles and borderline personality, and hierarchical moderated regression models were then built to investigate whether borderline personality traits moderated the established relationships between the investment model predictors: relationship satisfaction, perceived quality of alternatives and investment size; and overall commitment. The results found that both preoccupied and fearful attachment were positively associated with borderline personality traits. Further, of the three investment model predictors, the relationship between perceived quality of alternatives and commitment was moderated by borderline personality. Closer examination revealed that the specific traits of impulsivity and relationship difficulties were both moderators of this investment model relationship. Taken together, the results suggest that individuals with borderline personality are likely to hold a negative view of self, and may struggle

to remain committed to their romantic relationships, being particularly sensitive to noticing or acting on potential alternatives. These findings extend on the theoretical underpinnings of romantic relationship challenges for people with borderline personality, and offer insights into relevant thought and behavioural patterns to explore during individual or couple-based therapeutic interventions where borderline personality traits are present.

STUDENT DECLARATION

I, Sara Liu, declare that the Doctor of Psychology (Clinical Psychology) thesis entitled 'The impact of borderline personality traits on commitment in romantic relationships: An application of the investment model' is no more than 40,000 words in length including quotes and exclusive of tables, figures, appendices, bibliography, references and footnotes. This thesis contains no material that has been submitted previously, in whole or in part, for the award of any other academic degree of diploma. Except where otherwise indicated, this thesis is my own work.

Signature:



Date: 16.01.2017

Clinical Psychology

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1.0 INTRODUCTION

1.1 OVERVIEW

It is well established that people with borderline personality disorder (BPD) are more likely to experience significant impairment in their interpersonal relationship functioning than those in the general population (APA, 2013; Gunderson, 2011; Linehan, 1993). Characterised by persistent instability, their relationships are generally less successful and likely to involve frequent conflict (De Montigny-Malenfant et al., 2013). As human beings, interpersonal relationships are fundamental to physical, psychological and emotional well-being (Reis, Collins, & Berscheid, 2000). The desire to establish close bonds and meaningful connections with others is what distinguishes humans from other species (Baumeister & Leary, 1995). Such valued interactions form an individuals' social environment, enabling them to connect, be supported and thrive during their existence. Of those relationships humans seek to establish, romantic affiliations are considered unique and central to one's life. Typically characterised by valued outcomes such as love, intimacy and support, romantic relationships offer individuals both a physical and emotional connectedness that over time affords meaning to their lives (Berscheid & Regan, 2005; Berscheid & Reis, 1998; Kelley et al., 1983). However, for those exhibiting elevated levels of borderline personality traits, achieving well-functioning and stable romantic relationships can be challenging.

Research suggests that individuals with higher levels of borderline personality traits have a tendency to be involved with a greater number of romantic partners

relative to the general population (Bouchard, Sabourin, Lussier, & Villeneuve, 2009b; Cheavens, Lazarus, & Herr, 2014). This is likely indicative of lower commitment levels and as such, commitment problems may in part explain the challenges associated with maintaining successful relationships. Commitment is a concept commonly examined in close relationships and believed to be fundamental to the overall success of romantic affiliations (Landis et al., 2014; Rhoades, Stanley, & Markman, 2010). Commitment functions to promote relationship maintenance behaviours in couples, that in turn enable partnerships to persevere (Tran & Simpson, 2009). Considerable research in this area has led to the development of Rusbult's (1980, 1983) investment model of commitment (often simply referred to as the investment model); a robust and reliable theoretical framework capturing the underlying constructs of commitment that lead to relationship stability. Thus far, the investment model has been successfully utilised to investigate commitment across a range of relationship types including romantic affiliations, friendships and collegial relationships (Le & Agnew, 2003). In other research, generalisability of the investment model has also been demonstrated with gender and ethnicity amongst well-functioning, general population samples (Rusbult, Johnson, & Morrow, 1986; Sanderson & Kurdek, 1993). To date however, there has been little research on the applicability of the investment model for those individuals' experiencing personality pathology (Campbell & Foster, 2002; Foster, 2008). This gap in knowledge affords the opportunity to utilise the investment model framework in examining commitment processes amongst individuals with elevated levels of borderline personality traits, who still seek to establish well-functioning romantic relationships in their lives.

In examining romantic relationships, consideration of attachment styles is also important, as they have the potential to significantly impact the way in which people relate and bond to one another (Pascuzzo, Cyr, & Moss, 2013; Schindler, Fagundes, & Murdock, 2010; Simpson & Rholes, 2010). Formed initially from early childhood interactions, and later developed into adult attachment styles; these representational mental models encompass an individual's perceptions of self, in combination with their views about others and the world (Bartholomew & Horowitz, 1991). This has significant implications for romantic affiliations, particularly the motivations that drive how individuals relate, behave and react within their relationships (Simpson & Rholes, 2010). For people experiencing personality pathology, such as those with elevated levels of borderline personality traits, problematic attachment styles are likely to have been formed (Scott et al., 2013; Scott, Levy, & Pincus, 2009). This in turn impacts on their ability to maintain well-functioning romantic relationships that persist over time. Given that it is likely that commitment processes in romantic relationships are influenced by how an individual perceives the self and others in the external world, attachment styles are likely to be another piece to the puzzle in understanding how borderline personality and commitment may operate within romantic relationship functioning.

1.2 THE PRESENT STUDY

The present dissertation is an exploratory study, which aims to investigate the association between attachment style, borderline personality and romantic commitment in a general population. The study commences with an examination of

the relationship between adult attachment and borderline personality. Adult attachment styles are conceptualised by the Bartholomew and Horowitz's (1991) four category model which proposes that attachment styles are a combination of one's perception of self, and others. Formed during early childhood and consolidated later in adolescence and adulthood (Ainsworth, Blehar, Waters, & Wall, 1978; Bowlby, 1969), these affectional bonds have significant implications for romantic relationship functioning. In particular, attachment processes underlie how individuals experience romantic love (Hazan & Shaver, 1987) and this is likely to impact on their relationship commitment. Therefore, understanding the adult attachment styles that are most strongly associated with borderline personality will provide insight into thought and behavioural mechanisms that may contribute to impairing commitment. This will add to the existing literature surrounding attachment and borderline personality in the context of romantic relationship functioning, highlighting views these individuals may hold about themselves and others.

The second component of the study explores how borderline personality traits may impact on commitment processes, utilising the well-established and robust investment model (Rusbult, 1980, 1983). In particular, a moderation model will be explored to examine whether borderline personality is a significant moderator of the investment model associations. This approach replicates a previous study conducted by Foster (2008), which found narcissism to be a significant moderator of the investment model. Whilst Foster's (2008) study was one of the first to explore how personality factors may influence commitment processes proposed by the investment model, it demonstrated the need to further understand whether other personality

symptoms may operate in the same context. Given that it is well-understood that people with borderline personality have difficulties in maintaining relationships (APA, 2013), and that commitment is key to relationship perseverance (Etcheverry & Le, 2005; Le & Agnew, 2003), it follows that these findings will provide some ideas as to whether commitment processes may operate differently in people with borderline personality. In doing so, this research will extend current knowledge of what contributes to unstable interpersonal functioning for people with elevated borderline personality traits, providing a better understanding of the specific commitment mechanisms at play.

Taken together, this exploratory research will have numerous theoretical and practical implications. Firstly, it is believed that a better theoretical understanding of attachment and commitment processes that operate in borderline personality will be established. This will also add to the existing investment model literature examining the influence of personality factors on commitment processes. Thirdly, it is also anticipated that findings from this research will have clinical implications and inform therapeutic strategies to address maladaptive relationship functioning in people who experience elevated borderline personality traits. Below, the aims and objectives of the study are summarised.

1.3 AIMS AND OBJECTIVES

The overarching aim of the current research is to explore the impact of elevated borderline personality traits on commitment levels in romantic relationships,

with consideration of attachment styles. Further, the specific objectives of the study are to:

- (1) Investigate the association between attachment and borderline personality;
- (2) Apply the investment model framework to better understand how borderline personality traits impact on the three predictors of commitment: relationship satisfaction, perceived quality of alternatives and investment size; and
- (3) Provide a theoretical account of how attachment, borderline personality traits and commitment may interact to influence overall romantic relationship functioning.

Findings from this research will extend existing knowledge on why individuals with elevated borderline personality traits experience romantic relationship dysfunction. It will also add to the literature on the well-established investment model and seek to highlight how commitment processes operate in those with higher levels of borderline personality traits in a community population.

1.4 HYPOTHESES

Based on previous research, it is hypothesised that insecure attachment will be positively associated with elevated borderline personality traits, and, in contrast, that secure attachment will demonstrate a negative association. More specifically, it is expected that preoccupied and fearful attachment styles will be more markedly associated with elevated borderline personality traits relative to dismissing attachment style. Further, the study will explore the utility of the investment model framework in

the context of how certain personality factors may influence relationship functioning. In particular, the study examines borderline personality as a moderator of the well-established relationships between the three predictors of overall commitment: relationship satisfaction, perceived quality of alternatives and investment size. Given the literature has highlighted that individuals with borderline personality are likely to have less successful relationships and a higher number of relationship partners, it is expected that the established relationships in the investment model will differ for those with elevated levels of borderline personality traits. The nature of these differences will be explored.

1.5 SCOPE

It is important to note that this study conceptualises personality pathology as existing on a continuum rather than categorically. Given personality disorder traits present on a spectrum, and are evident in all individuals at varying degrees (APA, 2013; Haslam, Holland, & Kuppens, 2012), the study recruited a community sample rather than a clinical sample to address the research aims. Of particular interest is whether individuals with elevated levels of borderline personality traits experience similar relationship problems to those displayed by people with a BPD diagnosis as reported in the literature. As a result, research findings will be applicable to the general, and potentially subclinical population; however, possible limitations to applying the findings to a clinical BPD population will be highlighted in the discussion.

For ease of interpretation, specific terminology is used in this dissertation to describe varying levels of borderline personality characteristics: *borderline personality traits* refer to the presence of borderline personality characteristics that do not meet the threshold for a BPD diagnosis, *borderline personality disorder (BPD)* refer to a clinical level of borderline personality characteristics that meet DSM defined diagnostic criteria, and finally, *borderline personality* will encompass borderline personality characteristics across the full spectrum, from individuals with *borderline personality traits* to individuals exhibiting *BPD*.

To provide an overview of the theoretical conceptualisation of the present study, following this section is a synthesis of existing literature examining the main themes central to the dissertation. The literature review commences with a brief description of personality and general personality disorders to set the context for how personality pathology can impact on interpersonal functioning and, more broadly, overall health and wellbeing. Following this, an in-depth review on the current understanding of borderline personality is included. In particular, borderline personality is well known for associated problems with maintaining well-functioning interpersonal relationships. The reviewed literature will highlight the specific affective, behavioural and cognitive symptoms that contribute to problems in relationship functioning, particularly within romantic affiliations. Another potential factor influencing problematic relationship outcomes is adult attachment styles, and for those with borderline personality, it is well established that insecure attachment is prominent. Therefore, the literature review will continue with a discussion surrounding borderline personality and attachment, particularly in the context of how

it may contribute to difficulties in romantic relationship functioning. Lastly, the review will provide an overview of the relationship commitment literature, first highlighting why it is a significant process underlying successful relationships, and second, describing the well-established investment model often used to study commitment. In doing so, postulations based on established literature as to how commitment processes may operate in individuals with borderline personality will be highlighted. Subsequent sections including the Method, Results and Discussion will respectively report on how this key research question was explored, findings identified, and the implications for theory and clinical practice.

2.0 LITERATURE REVIEW

2.1 PERSONALITY PATHOLOGY

The term ‘personality’ has different meanings, depending on the context in which it is used. Traditionally, personality was used to refer to *personhood*, which encompassed those capacities such as consciousness and rational thought that reflect shared humanity (Haslam, 2007; Williams, 1976). Over time, however, the definition of personality has evolved from being those characteristics that humans share, toward qualities or aspects that distinguish individuals from one another (Haslam, 2007). Put simply, personality represents the usual ways a person thinks and behaves, that make each individual unique. Personality psychology refers to the scientific study of the whole or intact person (Pervin, Cervone, & John, 2005), and enables scientists to investigate not only how personality is formed, but also the processes that underlie what happens when *personality traits* become *personality disorders*. This occurs when a person’s pattern of thinking and behaving becomes extreme, inflexible and maladaptive, resulting in challenging interpersonal relationships and, consequently, significant distress to self and others (APA, 2013). As such, personality disorders can significantly reduce overall health and wellbeing at the individual level (Cramer, Torgersen, & Kringlen, 2006), whilst also increase economic burden at the societal level (Soeteman, Hakkaart-van Roijen, Verheul, & Busschbach, 2008a), making it an important area of research to advance.

To give a contextual background for the present dissertation, *Section 2.1* defines and provides a general overview of personality pathology through discussing:

1) personality pathology development and presentation; 2) the prevalence and impact at the individual and societal level; and 3) the way in which the present research will approach conceptualising and investigating personality, and more specifically, borderline personality. Whilst it is acknowledged that personality psychology is a large area of research, with a number of different approaches and theories to understanding how pathology develops (Haslam, 2007; Pervin et al., 2005), an in-depth review of these theories is outside the scope of the current literature review. Instead, this section will focus on describing the outcomes associated with maladaptive personality presentation, identifying the general factors associated with reduced overall health and quality of life, in preparation for a more detailed and specific discussion in the next section on *borderline personality*, the central theme of this dissertation.

2.1.1 Development and Presentation

Personality characteristics are formed during early childhood and adolescence, and such patterns of thinking and behaving become consolidated later in adulthood (Haslam, 2007). The ability to understand how personality develops in both positive and negative ways assists research and practice when it comes to addressing maladaptive personality functioning. There is general consensus that aetiology commences during the initial stages of development from a combination of two main risk factors: genetic predisposition and environmental experiences (Shiner, 2009). Whilst the exact proportion of *nature* versus *nurture* varies across specific personality theories, there are some basic elements that are broadly understood to influence the

development of personality disorders; the clinical term used to describe maladaptive personality functioning at its extreme (APA, 2013).

In terms of genetic influences, evidence from twin and sibling studies suggest that all ten personality disorders defined in the DSM involve a degree of heritability (Reichborn-Kjennerud, 2010). This is consistent with trait and biological approaches proposing that the expression of genes determines a range of general traits that contribute to an individual's personality (Haslam, 2007). According to this approach, the over- or under-expression of genes is responsible for the development of maladaptive personality symptoms. For example, Reichborn-Kjennerud (2010) conducted a review of genetic epidemiological studies examining the contribution of traits to the development of personality pathology. This review identified three common genetic factors across existing studies including 1) a broad vulnerability to personality disorder pathology or negative emotionality, 2) high impulsivity / low agreeableness, and 3) introversion (Reichborn-Kjennerud, 2010). It is important to note, however, when interpreting outcomes from such studies, that it is not the simple presence or absence but rather the level of each trait that influences maladaptive functioning. Thus, for example, not all individuals who are introverted will necessarily have personality disorders, but people with very high levels of introversion may experience significant discomfort in social settings, impacting on their ability to develop and engage in meaningful relationships, which can be symptomatic of personality disorders.

Whilst traits are a significant predisposing factor, they cannot fully capture the developmental pathways leading to personality disorders in adulthood. Rather, traits

are likely to interact with an individual's environment, and it is this very complex interaction between the two that underlies the explanation of personality-related problems. During personality formation, an individual also begins developing an understanding of self, others and the world around them. This understanding is largely influenced by their relationships with primary caregivers during infancy and childhood (Bowlby, 1969), in addition to peers later in adolescence (Levy, Johnson, Clouthier, Scala, & Temes, 2015). Through these relationship experiences, *attachment styles* are formed, where individuals develop a pattern of thinking and behaving that reflects their perception of self, and expectations of others around them. Research into environmental risk factors have identified that attachment difficulties (Levy et al., 2015), along with aversive early childhood experiences characterised by invalidating or abusive caregiving events (Cohen et al., 2014), can increase one's vulnerability to developing personality pathology later in life. Again, it is important to note that a direct causal relationship has not been established between childhood trauma and the development of personality pathology; however, the strong association observed in the research literature suggests that both insecure attachment styles and trauma are likely to play a key role in the pathway to developing personality disorders (Cohen et al., 2014; Levy et al., 2015). These predisposing factors will be explored in more detail for borderline personality specifically in the next section.

Having outlined the main general risk factors likely to influence the developmental pathways of personality pathology, it is also important to describe what this pathology looks like. As mentioned above, clinically, maladaptive personality pathology at its extreme can be conceptualised as 'personality disorder'.

By definition, this term describes a pattern of inner experiences and behaviour that deviates markedly from the expectations of the individual's culture, and manifests in affective, cognitive, behavioural and interpersonal functioning (APA, 2013). Often, symptoms have an onset during adolescence or early adulthood, with the pervasive pattern of maladaptive functioning remaining persistent over time (APA, 2013).

Earlier editions of the Diagnostic and Statistical Manuals of Mental Disorders (DSM) (APA, 1994, 2000) which are used to clinically classify mental disorders, traditionally grouped personality disorders into three clusters. Cluster A is characterised by odd and eccentric behaviours, and includes paranoid, schizoid and schizotypal personality disorders. Cluster B is marked by dramatic, emotional or erratic behaviours, and includes antisocial, borderline, histrionic and narcissistic personality disorders. Lastly, Cluster C involves anxious or fearful behaviours, and comprises avoidant, dependent and obsessive-compulsive personality disorders. It is important to note that the cluster categories were developed to organise personality disorders with similar features, but are not based on specific theory or empirical investigation (Trull & Durrett, 2005). In fact, research examining the symptoms underlying different personality disorders suggests significant overlap across the different diagnostic categories indicating that using such a classification system may be to some extent arbitrary (Trull & Durrett, 2005). More recently, the most updated edition of the manual, DSM-5 (APA, 2013), has proposed a continuous approach to understanding personality pathology. Whilst the cluster definition remains, alongside the categorical criteria required to meet each personality disorder diagnosis, DSM-5 also highlights a movement towards personality pathology being understood as existing on a continuum (APA, 2013).

Although the concept of a spectrum-based or continuous approach is not novel (Trull & Durrett, 2005), the recognition of this within a diagnostic framework is a considerable shift. In fact, this shift has implications not only for diagnosis and treatment, but also community acceptance and understanding of personality pathology more broadly.

Research conducted on symptoms for those deemed to have personality disorders centres on significant distress or impairment to the individual, particularly within their social domain (Hill et al., 2008). Individuals that meet the criteria for a personality disorder often have a distinct and inflexible interpersonal style that makes successful interpersonal relationships particularly challenging (Haslam, 2007). Further, the fact that personality is intrinsic to one's sense of self may mean that most individuals displaying maladaptive personality styles often do not recognise there is a problem; rather, there can be confusion regarding the mismatch between their own sense of self and others' expectations of them (Haslam, 2007). The strong interpersonal nature of personality disorders is further supported by a study conducted by Pilkonis and Meyer (2000). This study examined the different domains impacted by DSM-IV defined personality disorders. The study identified that the majority of diagnostic criteria were essentially social in nature, with 45% reflecting interpersonal behaviour, 23% relating to cognition, 20% to affect, and the remaining 12% attributed to other categories of behaviour. Although other domains of functioning are impacted by personality disorders (e.g., occupational functioning), social dysfunction is without a doubt the most pervasive consequence associated with personality-related problems.

Given that human beings are largely social in nature, it follows that such interpersonal difficulties have significant implications for overall health and wellbeing.

2.1.2 Prevalence and Impact

The ability to detect accurate prevalence rates for personality disorders amongst community samples is challenging but essential for estimating the need for resources and support. There are, however, a limited number of such studies having been published. In a meta-analysis conducted by Paris (2010), five epidemiological studies were evaluated to examine existing prevalence rates for personality disorders. These included a British study (Coid, Yang, Tyrer, Roberts, & Ullrich, 2006), three American studies (Grant et al., 2004; Lenzenweger, Lane, Loranger, & Kessler, 2007; Samuels et al., 2002) as well as a Norwegian study (Torgersen, Kringlen, & Cramer, 2001). Data from these evaluations found that the overall rates of personality disorders amongst the community ranged from 4.4% in Britain (Coid et al., 2006) to 14.8% in the United States (Grant et al., 2004). The wide variation is likely a result of the challenges associated with identifying or diagnosing personality disorders effectively (Paris, 2010). More specifically, Paris (2010) proposed three main issues that may, at present, lead to errors in estimating prevalence rates: problematic definitions of personality disorders used by DSM categories, difficulties in distinguishing between traits or symptoms relative to their clinical forms, and methods of assessment. Further, it is possible that cultural factors also play a role in the differences observed across the studies.

More specifically in Australia, the most recently published data on general personality disorder prevalence rates were found in a study conducted by Jackson and Burgess (2000) using data from the Australian National Survey of Mental Health and Wellbeing (data collected from May to August, 1997). Findings indicated that in terms of lifetime prevalence, approximately 6.55% of the adult population will experience one or more clinically diagnosable personality disorders (Jackson & Burgess, 2000). This suggests the rate at which individuals will experience maladaptive personality tendencies, where a clinical diagnosis is not met, is likely to be greater than this number. The study also identified particular factors that appear to be significantly related to the development of personality disorders. In particular, being younger, male and not married were factors that appeared to increase the likelihood of having a personality disorder (Jackson & Burgess, 2000). Also, comorbidity was found to commonly occur with other clinical disorders, particularly anxiety, affective and substance-use disorders (Jackson & Burgess, 2000). A link between physical disability and personality disorders was further identified (Jackson & Burgess, 2000). Whilst this national study appears to be the most recent scientific publication available in Australia, the data were collected almost two decades ago. Therefore, it is important to recognise that such prevalence rates are likely to have changed, and may no longer be representative of the current population in Australia.

Whilst more recent prevalence estimates would be beneficial in gaining a better understanding of the burden of disease attributable to personality disorders, there is general consensus that a negative relationship exists between maladaptive personality symptoms and quality of life (Cramer et al., 2006; Narud & Dahl, 2002;

Soeteman, Verheul, & Busschbach, 2008b). Quality of life can, in part, be understood as the absence of impairment or dysfunction across a series of life domains (Cramer et al., 2006). However, it is also dependent on the individual's subjective emotional and cognitive experience of their physical, mental and social health (Narud & Dahl, 2002). Put simply, quality of life is largely defined by subjective wellbeing. In an attempt to examine the impact of personality disorders on burden of disease, Soeteman and colleagues (2008b) conducted a study comparing quality of life between those with personality disorders and individuals experiencing impairment from other physical conditions. The study found that the quality of life experienced by individuals with personality disorder(s) was comparable to others who suffered from rheumatic disease, lung cancer, or Parkinson's disease (Soeteman et al., 2008b). Although the medical conditions identified entail a range of physical ailments that do not generalise to those with diagnosed personality pathology, the findings do highlight how significantly personality disorders can impair an individual's quality of life. Further, it can be inferred that clinical thresholds do not need to be reached for health and wellbeing to be impacted. It is likely that even non-clinical or subclinical levels of personality pathology can reduce an individual's subjective wellbeing, highlighting the importance of understanding personality on a continuum.

2.1.3 Personality on a Continuum

Traditionally, personality pathology has been understood from a categorical perspective (APA, 1994), as described above. However, given that it is agreed that most personality disorders reflect an exaggerated variation or extreme form of

personality (Haslam, 2007), there has been increasing criticism directed towards taking a categorical approach in researching personality disorders. A dimensional or continuous approach to characterising maladaptive personality functioning allows for the appreciation of the considerable variation amongst individuals with the same DSM defined personality disorder, along with those who do not meet the threshold for a diagnosis but may nonetheless demonstrate some degree of such personality traits. Whilst the categorical approach is perhaps necessary in a clinical setting to ascertain treatment needs, personality disorder syndromes are too complex and multifaceted to be accurately understood by utilising DSM criteria alone (Westen, Shedler, & Bradley, 2006). It is for these very reasons that there has been an observable shift amongst the clinical community to conceptualise personality functioning on a spectrum. This is particularly evident in the fifth and most recent version of the DSM (APA, 2013) which emphasised the need to consider personality pathology symptoms on a continuum. There is also speculation regarding abolishing the specific personality disorder categories due to considerable overlap in diagnostic criteria across each category (APA, 2013). Whilst diagnostic approaches to conceptualising personality disorders remain to be investigated and refined, it is clear from existing research (Haslam et al., 2012) that a dimensional approach to conducting personality disorder research is appropriate. For this reason, the present research utilises a community sample to investigate borderline personality, recognising the potential for even mild levels of borderline personality tendencies to impact an individual's overall wellbeing, and in particular, their interpersonal relationships.

2.2 BORDERLINE PERSONALITY

Borderline personality is characterised by persistent emotional, cognitive, and behavioural problems, often pervasive throughout all life domains, but particularly evident in interpersonal functioning. Those who experience borderline pathology can be emotionally sensitive and vulnerable, act impulsively, engage in risk-taking behaviours, possess distorted cognitive thinking patterns, all of which contribute to chaotic relationships throughout their lives (APA, 2013). At times, in the absence of psychotic symptoms, borderline personality can be disguised by seemingly competent social skills; however, a closer examination often reveals a marked struggle engaging with the external world (Bradley & Westen, 2005). Individuals exhibiting borderline pathology live with a constant inner turmoil that is largely determined by transient environmental circumstances or situations they find themselves in. The associated disorder known as borderline personality disorder (BPD) has been extensively researched and is best understood as genetically influenced with aetiological roots in childhood experiences, an onset in adolescence, and diagnosis occurring in early adulthood (APA, 2013; Bornovalova, Hicks, Iacono, & McGue, 2009).

The purpose of *Section 2.2* is to provide an account of borderline personality presentation by describing the research literature examining affective, cognitive, behavioural and interpersonal functioning. As discussed in the Introduction, where possible, the entire spectrum of borderline personality presentation will be considered. Following this, a description of the prevalence and impact will be included. Lastly, a brief overview of the general risk factors and aetiology of borderline personality will

be presented, with a particular focus on early trauma experiences often seen to occur in people with borderline personality.

2.2.1 Definition

Borderline personality impacts on one's affective, cognitive and behavioural functioning, the combined outcome of which is perhaps the most marked diagnostic feature of BPD: impaired interpersonal relationship functioning (APA, 2013). Clinically, the DSM describes BPD as '*a pervasive pattern of instability of interpersonal relationships, self-image, and affect, and marked impulsivity beginning by early adulthood and present in a variety of contexts*' (APA, 2013, p. 663). Despite diagnosis often occurring in young adulthood however, there are some signs that can indicate BPD development in adolescence, including body-image issues, intense shame, persistent search for exclusive relationships, and marked sensitivity to rejection, in addition to maladaptive overt behaviours such as deliberate self-harm (Gunderson, 2011). Table 1 summarises nine criteria used to diagnose BPD, of which at least five are required for a clinical diagnosis (APA, 2013). It is important to note however, that misdiagnosis is not uncommon, with similar symptoms commonly occurring with other mental health conditions such as bipolar disorder as well as other personality disorders such as histrionic and antisocial personality disorders (APA, 2013; Gunderson, 2011). Further challenging the accuracy of diagnosis using this categorical approach are the different clusters of BPD symptoms that can simultaneously occur. The varied combinations are likely to translate to a range of

BPD presentations that all meet the clinical level of severity, yet are unique in their features representative of maladaptive functioning.

Table 1

Diagnostic Criteria for Borderline Personality Disorder from DSM-5

Diagnostic Criteria 301.83 (F60.3)

A pervasive pattern of instability of interpersonal relationships, self-image, and affects, and marked impulsivity, beginning by early adulthood and present in a variety of contexts as indicated by five (or more) of the following:

1. Frantic efforts to avoid real or imagined abandonment.
Note: *Do not include suicidal or self-mutilating behaviour covered in Criterion 5.*
 2. A pattern of unstable and intense interpersonal relationships characterised by alternating between extremes of idealisation and devaluation.
 3. Identity disturbance: markedly and persistently unstable self-image or sense of self.
 4. Impulsivity in at least two areas that are potentially self-damaging (e.g., spending, sex, substance abuse, reckless driving, binge eating).
Note: *Do not include suicidal or self-mutilating behaviour covered in Criterion 5.*
 5. Recurrent suicidal behaviour, gestures, or threats, or self-mutilating behaviour.
 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.
-

Source: (APA, 2013)

In light of the heterogeneous nature of borderline personality presentation, there has been a body of research assessing the underlying construct in both clinical (Benazzi, 2006; Blais, Hilsenroth, & Castlebury, 1997; Johansen, Karterud, Pedersen, Gude, & Falkum, 2004) and non-clinical (Nestadt et al., 2006; Rosenberger & Miller, 1989) populations. The quest to clarify specifically which main factors contribute to the borderline personality construct has led to the confirmation that borderline personality is indeed complex and multifaceted. More specifically, in a study conducted by Taylor and Reeves (2007), diagnostic interviews were used to assess BPD structure in a non-clinical sample of young college students. In particular, unstable relationships, identity disturbance, chronic emptiness, efforts to avoid abandonment and self-injurious / suicidal behaviour were all found to be significant features loading onto the first and main BPD factor, named 'self-other instability'. The second factor identified by Taylor and Reeves (2007) was 'affective instability', reflecting a general disposition for negative affect. Lastly, 'stress-related paranoia' was the third factor in this three-component model. Taken together these findings were largely consistent with previous research conducted using clinical samples (Benazzi, 2006; Blais et al., 1997), indicating that not only is borderline personality multifaceted in its constructs translating to a range of different presentations at the non-clinical, subclinical and clinical levels, but that the very same factors are likely to underlie borderline personality across the full spectrum. These findings further support the utility of a continuous approach in examining borderline personality, yet also reiterate the core feature of interpersonal dysfunction, as highlighted by the 'self-other instability' factor identified. Therefore, the present discussion will now turn

towards a consideration of the maladaptive affective, cognitive and behavioural features observed in borderline personality, and in particular how these symptoms may impact overall relationship functioning.

2.2.1.1 Affective Functioning

One of the most prominent features of borderline personality presentation is emotional instability, commonly characterised by mood swings featuring depression, irritability and intense anger (Gunderson, 2011; Lowenstein, 2014). As a result, individuals with borderline personality often appear like they are in constant conflict with the world around them. Underlying this presentation is an emotional vulnerability that makes them susceptible to intense emotional reactions, which can, at times, drive problematic behaviours (Sauer-Zavala, Geiger, & Baer, 2013). This emotional vulnerability results from a genetic disposition for emotion dysregulation consolidated by early life experiences in an invalidating environment (Linehan, 1993). Neuroticism, which can be defined as a biological tendency to experience frequent and intense negative emotions in response to a range of stressors (Saulsman & Page, 2004), is a genetic predisposition found to be highly associated with BPD (Geiger, Peters, Sauer-Zavala, & Baer, 2013). Invalidating environments, in contrast, are characterised by the provision of consistently conflicting feedback regarding one's emotions and behaviours (Cole, Llera, & Pemberton, 2009; Linehan, 1993). This in turn leads to emotional invalidation where one's emotional states or feelings are ignored, discounted, minimised or punished (Brown, Tragesser, Tomko, Mehl, & Trull, 2014). At its most severe, this invalidating environment can stem from different

types of abuse. As a result of both these genetic and environmental circumstances, individuals are less able to develop appropriate skills and techniques to manage situations eliciting strong emotions, having significant implications for their interpersonal relationships (Dixon-Gordon, Gratz, Breetz, & Trull, 2013).

Emotion dysregulation refers to the use of maladaptive ways of responding to emotional distress, central to borderline personality presentation (APA, 2013; Linehan, 1993). This includes limited awareness, understanding and acceptance of emotions, resistance to tolerating emotional distress in the pursuit of goals, an inability to manage behaviours when faced with emotional distress, and deficits in modulating emotional arousal (Gratz & Roemer, 2004; Gratz et al., 2009). Research has consistently found that people with BPD find emotion regulation particularly challenging. In a review conducted by Domes, Schulze and Herpertz (2009) on studies of impaired facial emotion recognition, it was found that emotional hyperactivity resulting from underlying neural networks interfered with cognitive processes involved with facial emotion recognition. In other words, individuals with BPD find it difficult to accurately decipher or interpret emotions displayed by others. This struggle to understand emotions has also been investigated in non-clinical samples such as in the study conducted by Gardner, Qaulter and Tremblay (2010). This study utilised a community population where one-sixth of the sample ($N = 523$) reported high levels of borderline personality traits. Compared to those with low levels of borderline personality traits, individuals with high borderline personality characteristics were found to display significant deficits in emotional understanding and management of both their own emotions, as well as those of others (Gardner et

al., 2010). This limitation in emotional understanding and management can lead to individuals feeling misunderstood and without an avenue to adaptively express the intensity of the emotions or feelings they experience.

Individuals with BPD are likely to report significantly higher baseline levels of negative affect relative to their non-clinical counterparts. In particular, intense emotions that individuals with borderline personality tend to experience include an intense fear of abandonment, chronic feelings of emptiness, as well as inappropriately intense anger that they find difficult to control (APA, 2013). Due to deficits in emotion regulation skills, often individuals with borderline personality are unable to self-soothe when intense negative emotions are activated. This is particularly detrimental not only to their health and wellbeing but also, their interpersonal relationships. In a study conducted by Herr, Rosenthal, Geiger and Erickson (2013) involving a community sample, the relationship between emotion regulation difficulties and interpersonal dysfunction was examined. It was reported that difficulties with emotion regulation accounted for most of the interpersonal problems characteristic of those with BPD, and that this interpersonal dysfunction may further contribute to increasing difficulties with emotion regulation (Herr et al., 2013), creating a maladaptive cycle. Hence, due to the limited emotion regulation strategies available to those with borderline personality, this emotion can sometimes manifest in cognitive and behavioural consequences, such as the belief 'I am not worthy of being loved' and engaging in self-harm or suicidal behaviours as an outlet for the emotional pain. This has significant consequences for maintaining well-functioning relationships

which could otherwise be a protective factor challenging the negative beliefs and alleviating the need for maladaptive behaviours.

2.2.1.2 Cognitive Functioning

It has been observed that individuals with BPD have a tendency to evaluate themselves in an 'extreme, incoherent and simplistic manner' (Kernberg, 1976). Often, they demonstrate a range of distorted thoughts about themselves, others, and the world around them. From a psychodynamic perspective, people with borderline personality have a tendency to experience 'splitting', where an individual fails to integrate both positive and negative aspects of themselves and others (Kernberg, 1976). According to the object-relations theory, this occurs due to an inability to progress effectively through early development during which an individual normally gains a cohesive sense of self and others (Kernberg, 1976). Similarly, cognitive approaches conceptualise the same concept as a thinking error, termed dichotomous thinking (Beck, 1995). Consistent with this thinking pattern, one's self can either be extremely good or extremely bad. Such polarised views lead to a split sense of self, with this fractured self-concept being emblematic of an identity disturbance that features in a range of other functional problems (Westen, Betan, & Defife, 2011). In particular, interpersonal relationships are impacted greatly as individuals with borderline personality struggle with a sense of self, making it difficult for them to identify and subsequently articulate their needs (Bender & Skodol, 2007). In addition, this thinking error is also applied to how they interpret others' behaviours. Combined with emotional hypersensitivity and dysregulation (Gratz & Roemer, 2004; Herr et al.,

2013), individuals with borderline personality are more susceptible to negative experiences with others as a result of their 'black and white' over-simplified approach to applying meaning to interpersonal exchanges and encounters.

Schemas refer to core beliefs which shape how an individual evaluates and interprets environmental stimuli (Beck, Freeman, & Davis, 2004; Young, Klosko, & Weishaar, 2003). Three basic schemas have been proposed to play a role in the beliefs of those who experience borderline personality: 1) 'the world is (and others are) dangerous and malevolent; 2) 'I am powerless and vulnerable', and 3) 'I am inherently bad and unacceptable' (Arntz, Dreessen, Schouten, & Weertman, 2004; Pretzer, 1990). These core beliefs in turn impact on how one interprets their experiences as well as the behaviour of others that they interact with. For example, Barnow and colleagues (2009) conducted a study that examined the interpersonal evaluations of six film clips across three comparison groups: individuals with BPD, those with unipolar depressive disorder, and a control group. Of the evaluations, those who were categorised in the BPD group judged the person in the film as being more negative and aggressive in contrast to the controls. In comparison to the depressive group, individuals in the BPD category also made judgements of greater aggressiveness. These findings support the activation of the first schema, 'the world is (and others are) dangerous and malevolent'. Further, these findings also highlight the propensity for individuals with borderline personality characteristics to evaluate interpersonal events with increased negativity, perhaps contributing to more conflict in their relationships.

Another aspect of cognitive functioning that has been proposed to be impaired in those with borderline pathology is problem solving. According to Linehan (1993), founder of Dialectic Behavioural Therapy (DBT) for borderline personality disorder, individuals suffering from the disorder either do not have the necessary skills to adequately solve problems, or they are prevented from exercising them due to their elevated emotional state. In a study conducted by Bray, Barrowclough and Lobban (2007), an attempt was made to examine social problem solving ability more specifically, in individuals with BPD relative to clinical and non-clinical control samples. Data were collected via the Means-End Problem-Solving (MEPS) procedure (Platt & Spivack, 1975), which required participants to identify necessary steps to achieve a particular goal across five different scenarios utilising the same procedure as a previous study (Sidley, Whitaker, Calam, & Wells, 1997). All scenarios entailed an interpersonal theme where respondents were provided with the beginning of a scenario (e.g., 'there is a person moving into a new neighbourhood and wants to get to know his neighbours') along with a successful ending (e.g., 'he has many good friends in his neighbourhood') (Sidley et al., 1997). Participants were then required to propose what happened in the middle of the scenario that led to the successful outcome. Results from the study supported the notion that individuals with BPD had social problem solving deficits. Although some of these deficits were also seen within the clinical control group, suggesting psychopathology in general is associated with some problem solving limitations, the BPD group demonstrated specific deficits in the ability to provide specific answers to the scenarios, experienced higher levels of negative problem orientation, an impulsive or careless approach towards the problem

solving task, and an overall reduced ability to actually solve the problem (Bray et al., 2007). A plausible explanation for the reduced ability to problem solve may be a simultaneous deficit in memory encoding, storage or retrieval, experienced by individuals with borderline pathology lending them to have a limited knowledge base that can be readily accessed when required to solve issues in social situations (Goddard, Dritschel, & Burton, 1996).

2.2.1.3 Behavioural Functioning

When considering behavioural manifestations of borderline personality presentation, both affective and cognitive features are integral in explaining the types of maladaptive behaviours commonly observed. In other words, difficulties with emotion regulation in conjunction with cognitive deficits in problem solving are thought to underlie behaviours such as substance misuse / abuse, risk-taking / sensation-seeking (e.g., sexual promiscuity, reckless driving), as well as self-harm / mutilation and, at its most severe, suicide (Bouchard, Godbout, & Sabourin, 2009a; Gunderson & Singer, 1975; Tragesser, Jones, Robinson, Stutler, & Stewart, 2013; Whipple & Fowler, 2011). Theoretically, it has been proposed that these behaviours are triggered by extreme emotional distress, and in the absence of adaptive coping mechanisms, and in the presence of impulsivity commonly associated with borderline personality (Paris, 2005), individuals in turn act in such ways to avoid or escape the intense emotion experienced (Linehan, 1993). Consequently, not only do these behaviours impact significantly on the overall health and wellbeing of the individual, limiting their ability to maintain everyday functioning, but it likely also has

detrimental effects on their ability to engage in and maintain healthy interpersonal relationships.

As mentioned, impulsivity is a central trait believed to be strongly associated with BPD, indicated by the fact that it is one of the key criteria for its diagnosis (APA, 2013). Impulsivity can be understood as the absence of reflection and planning, carelessness, and quick action, without the provision of thought prior to the act (Chapman, Dixon-Gordon, Layden, & Walters, 2010). In other words, individuals who are impulsive have a tendency to respond in the moment without consideration of the consequences that may follow. In a study conducted by Links, Heslegrave and Reekum (1999), the stability of impulsivity in BPD over time was examined where a clinical cohort was assessed at the two and seven year mark. The results supported the notion that impulsivity is observed to be stable over time in BPD, and remains highly predictive of a BPD diagnosis at the seven year mark (Links et al., 1999). In other more recent research (Jacob et al., 2010), however, an interesting finding related to impulsivity was observed. The study compared a small sample ($N = 15$) of BPD women with that of healthy controls across self-report impulsivity measures, in addition to a behavioural Stroop task designed to measure impulsivity. Results demonstrated a significant difference in impulsivity observed between the clinical and non-clinical group for the self-report measures but not so for the behavioural task (Jacob et al., 2010). Whilst the small sample size and gender bias strongly limits the generalisability of this study, these findings highlight the need to better understanding how impulsivity may present in borderline personality, and in particular, for those

whom may have elevated levels of borderline personality traits yet do not meet the criteria for a diagnosis.

The most common maladaptive behaviours found to be associated with borderline personality appear predominantly to be investigated in clinical samples. Substance use disorders are commonly found to be comorbid with BPD diagnosis, and are also featured in the DSM as clinical disorders (APA, 2013). In a review conducted by Sansone and Sansone (2011c) examining the empirical literature on the comorbidity of substance use with psychiatric disorders, prevalence rates for individuals with borderline personality (including inpatient, outpatient and community samples) were estimated to be 14%, whilst a life time prevalence rate of 72% was identified. It is important to note, however, that the review analysed substance use disorders and therefore likely excludes a certain proportion of individuals with borderline personality who may still engage in substance use behaviour without meeting the criteria for the disorder. In another study conducted by Tragesser and colleagues (2013), opioid use / misuse was examined specifically in an adult non-clinical college population. The study found that college students with elevated borderline personality traits were at a higher risk for developing problems around the use of prescription opioid pain medication (Tragesser et al., 2013). Further, the study found that this association was mainly accounted for by the self-harm / impulsivity facets of borderline personality presentation (Tragesser et al., 2013).

Whilst substance use is one behavioural outcome observed in borderline personality in response to stress, other high-risk and sensation-seeking behaviours have also been commonly observed, such as sexualised behaviours. In a study

conducted by Sansone and Wiederman (2009), a large sample ($N = 972$) of patients from psychiatric, internal medicine and other types of medical settings were recruited to examine the association between borderline personality and two types of sexual impulsivity. Findings from the study indicated that those participants with borderline personality symptomatology reported twice the rate of endorsement for 1) having casual sexual relationships and 2) promiscuity (Sansone & Wiederman, 2009). Other studies have demonstrated that individuals with BPD appear to engage in sexual intercourse at an earlier age and have a greater likelihood of being involved in homosexual activity (Sansone, Barnes, Muennich, & Wiederman, 2008). In terms of overall sexual functioning within romantic relationships, individuals with BPD have also been found to have an increased likelihood of sexual problems, sexual dissatisfaction, and avoidance of sexual activity (Wiederman & Sansone, 2009). This last finding is particularly interesting as it suggests that whilst those with borderline personality tendencies are more likely to engage in risky sexual behaviours, this does not appear to translate to quality sexual experiences in romantic relationship contexts. Further, the literature has found an association between sexualised behaviours observed in BPD and early childhood abuse (Wiederman & Sansone, 2009), however it would be interesting to better understand how this behavioural manifestation may look in a community sample presenting only with borderline personality traits given the likely impact on successful romantic relationship functioning.

The association between non-suicidal self-injury or suicide and BPD has been a significant concern in the area of borderline personality research. The reasons reported for these two distinct behaviours differed in a study of women who met the

diagnostic criteria for BPD (Brown, Comtois, & Linehan, 2002). Whilst non-suicidal acts were more commonly associated with expressing anger, punishing oneself, generating ‘normal feelings’ and as a means of distraction, suicide attempts were reportedly intended to ‘make others better off’ (Brown et al., 2002). The commonality between the two, however, was the goal of relieving the negative emotions experienced. In another study conducted by Brooke and Horn (2010), qualitative analyses across four case studies were conducted to examine the meaning of self-injury and overdosing for women with a BPD diagnoses. Although the study was limited with its small sample size, it identified that these women appeared to live in a world in which they struggled to relate (both with themselves and others), finding it difficult to know how to seek support and understanding. Instead, the engagement in self-harming behaviours offered a means of self-expression and communication, whilst simultaneously meeting the need to self-soothe. When participants reflected on their overdose attempts, a significant finding was a perceived sense of ambivalence regarding their ‘decision to die’ (Brooke & Horn, 2010). Whilst the literature consistently suggests that BPD is associated with an increased rate of suicide attempts (Zimmerman et al., 2014), it remains important to ascertain the nature of these behaviours observable in non-clinical or subclinical populations who demonstrate some level of borderline personality traits.

2.2.1.4 Interpersonal Functioning

Having established that there are a range of affective, cognitive and behavioural symptoms that manifest in borderline personality, this leaves an

important discussion surrounding the most marked feature associated with borderline personality: maladaptive interpersonal functioning. Disturbed interpersonal functioning is the central feature of borderline personality, causing significant psychological distress for individuals (Gunderson, 2007). In fact, it is the very combination of maladaptive functioning across the other three domains outlined above that help explain why it is so difficult for people with elevated borderline personality traits to maintain adaptive and functioning interpersonal relationships. It has been observed that clinical patients with BPD possess a yearning to connect and be cared for, yet their need for unrealistic levels of availability and validation make this quest particularly challenging (Gunderson, 2011). As a result, there has been an abundance of research examining specifically what interpersonal dysfunction ‘looks like’ in borderline personality; in other words, what kinds of interpersonal impairments are characteristic of borderline personality.

In a review conducted by Lazarus and colleagues (2014), a number of studies were examined and synthesised in an attempt to characterise interpersonal dysfunction in BPD into specific areas of impairment. Four domains were proposed: social cognition, reactivity to interpersonal stressors, interpersonal aggression, as well as trust and cooperation (Lazarus et al., 2014). Social cognition refers to the way in which individuals interpret interpersonal situations. Individuals with BPD were found to have particular difficulty with emotional recognition, perceptual biases, deficits in theory of mind (i.e., an inability to understand or correctly interpret another person’s mental state) and limited problem solving abilities (Lazarus et al., 2014). Secondly, individuals with elevated borderline personality traits were found to demonstrate

stronger reactions to interpersonal stimuli, often with heightened negative emotion (Lazarus et al., 2014). Interpersonal aggression was another area that differed, where people with higher borderline personality traits displayed increased aggression within interpersonal contexts, and are more likely to respond aggressively particularly in response to rejection cues (Lazarus et al., 2014). Lastly, trust and cooperation were also found to differ in those with elevated borderline personality levels, resulting in an impaired ability to participate and fully engage in their social networks and relationships (Lazarus et al., 2014). Taken together, these impairments can result in turbulent relationships involving frequent conflict.

Interestingly, in light of the interpersonal challenges that people with borderline personality face, the ability to learn how to maintain functional romantic relationships plays a pivotal role in their ability to maintain stable functioning. In fact, research has consistently found that being in a well-functioning romantic relationship leads to positive outcomes for those with borderline personality (Linehan, 1993; Links & Hellsgrave, 2000; Links & Stockwell, 2001). In a more recent longitudinal study conducted by Zanarini and colleagues (2015), the rates of marriage or sustained cohabitation as well as parenthood were followed over the course of 16 years in a sample of BPD patients. The study identified that remission from BPD symptoms was more strongly associated with those who married or cohabited with a partner for a sustained period of time. These recovered patients were significantly more likely to have stability in their personal lives; more specifically, they were less likely to divorce or break up with an intimate partner, perhaps indicative of increased commitment. In summary, results indicate that stable functioning as a spouse or

partner is significantly associated with recovery status for BPD patients (Zanarini, Frankenburg, Bradford Reich, & Fitzmaurice, 2010). Speculatively, these results may potentially also apply to a community sample, where being in a stable romantic relationship may contribute to reduced distress and increased adaptive functioning even for those with non-clinical or subclinical levels of borderline personality traits.

To shed light on this a bit further, Kuhlken and colleagues (2014) conducted a study examining the impact of romantic relationship functioning on state-negative affect in a non-clinical sample with borderline personality traits. Findings from this research again support the fact that satisfying romantic relationships can be a protective factor for reducing borderline personality symptom presentation. In particular, the study found that the return of a romantic partner's attention (whether real or perceived) along with a satisfying romantic relationship can reduce anger in individuals scoring higher for borderline personality symptoms (Kuhlken et al., 2014). Taken together with other research examining the impact of successful romantic relationships on borderline personality, it becomes apparent the importance of investigating the aspects that contribute to successful romantic functioning for those individuals with elevated borderline personality traits. In doing so, it is imperative that one remains cognisant of the various affective, cognitive and behavioural manifestations that no doubt challenge the process of maintaining healthy romantic affiliations. Whilst this will be explored in more depth in the following sections as it is the central focus of this dissertation, a brief overview of the prevalence, impact and aetiology of BPD will be included first. This will provide some further context on borderline personality before looking more specifically at attachment and

commitment processes, both of which play a significant role in romantic relationship functioning.

2.2.2 Prevalence and Impact

Borderline personality represents a significant economic cost to society, requiring a range of expensive treatment services, yet individuals can be highly resistant to recovery (Gunderson, 2011). Notably, individuals with BPD are seen to disproportionately present for treatment in both inpatient and outpatient clinics relative to other personality disorders, contributing to high rates of service utilisation and costs (Skodal et al., 2005). Existing research has identified varied prevalence estimates for BPD across both inpatient and community settings. The estimated global prevalence of BPD is between 1.4% and 5.9% within the community (Coid et al., 2006; Grant et al., 2008; Lenzenweger et al., 2007; Samuels et al., 2002; Trull, Tomko, Brown, & Scheiderer, 2010). In Australia, however, there has been limited epidemiological research identifying BPD prevalence rates. The most recent Australian estimates were reported by Jackson and Burgess (2000) who identified a prevalence of 1%. There may be numerous explanations as to why varied estimates have been identified globally. Firstly, the diagnostic approach utilised to identify BPD may differ between clinicians, and secondly, cultural differences may impact on the perception of what constitutes a personality disorder.

Irrespective of the precise prevalence rate, the impact of borderline personality on society is high. In Australia, data suggests that BPD diagnoses contributes to the use of 23% of psychiatric outpatient services and 43% of psychiatric inpatient

services within the public mental health system (NHMRC, 2012). In addition, there is also a high mortality rate of 10% of those diagnosed with BPD that successfully commit suicide (APA, 2013), resulting in significant life-years lost to society. These statistics describe the significant impact that BPD has on society overall, and demonstrates the need for achieving successful intervention and treatment options to address the phenomenon.

2.2.3 Risk Factors and Aetiology: Trauma

Whilst an in-depth discussion surrounding risk factors and aetiology of borderline personality is outside the scope of the present review, it remains important to provide a brief overview on the type of factors that increase an individuals' vulnerability to the development of borderline personality symptoms. As highlighted earlier, there is general consensus that borderline personality results from a genetic disposition in combination with an invalidating early childhood environment (Linehan, 1993). Childhood trauma has been a frequently investigated risk factor associated with later borderline personality development, particularly in the form of abuse (Cohen et al., 2014). Abuse can range from physical, emotional and sexual abuse, to neglect, with each believing to impact on the development of different psychopathology (Cohen et al., 2014). With respect to BPD, however, sexual abuse has been most commonly linked to its development (MacIntosh, Godbout, & Dubash, 2015). Caution however, must be taken in interpreting this association. Steele and colleagues (2015) proposed that it is an error to understand trauma as a cause for BPD resulting in the range of functional impairments. Rather, alternatively BPD

presentation can be conceptualised as an adaptive response to traumatic or stressful life events, where an individual has failed to experience a secure environment in their development, and therefore has learnt to be hypervigilant and alert to the dangers they expect to encounter in their world (Steele et al., 2015).

Despite sexual abuse being most commonly associated with BPD development, there have been conflicting findings for this relationship. In a study conducted by Cohen and colleagues (2014) investigating risk factors for adult personality pathology, sexual abuse was not found to be significantly related to later BPD development. Further, a study conducted by Carr and Francis (2009) found that emotional abuse was the only significant predictor of BPD when controlling for other forms of childhood trauma and family functioning. In a study utilising a non-clinical population, the association between childhood abuse and borderline personality traits was also tested (Bornovalova et al., 2013). In this study, the relationship between all types of child abuse and borderline personality traits was linear, indicating that as borderline personality traits increase, so does the probability of having experienced child abuse. Taken together, the current research on childhood abuse and borderline personality development continues to yield mixed findings. Irrespective of whether a direct correlation exists between abuse and BPD, what is clear is that early childhood experiences, particularly those that are invalidating, have significant implications for how an individual relates to others in their adult life. This highlights the importance of a discussion surrounding attachment processes, which provide a framework for understanding how early life experiences can impact on later, adult relationships.

2.3 ATTACHMENT

It is well-established that humans experience an inherent need to belong, and that this motivation drives them to form secure attachment bonds throughout their lives (Baumeister & Leary, 1995). Attachment refers to the way in which one connects and relates with others in their social world (Bowlby, 1969) and assists in creating a safe and secure environment for an individual to thrive. Formed early in childhood, the affectional bonds developed between children and primary caregivers significantly contribute to the emerging self-concept of the child, along with their developing views of others and the world around them (Levy et al., 2015). These representational models are what becomes the blueprint for adult attachment styles established later in life (Hazan & Shaver, 1987). It is crucial to consider attachment processes in the present dissertation as they are not only strongly associated with development of borderline personality pathology but also have significant implications for interpersonal functioning. Thus, attachment styles form an integral piece of the puzzle to understanding how people with borderline personality function in their romantic relationships.

Section 2.3 provides an overview of attachment, beginning with an introduction to attachment theory. Next, research pertaining to childhood attachment is discussed, leading into a section reviewing the adult attachment literature. More specifically, the four-category adult attachment model (Bartholomew & Horowitz, 1991) utilised in the present research is introduced. To conclude, a brief overview of the impact of attachment styles on both borderline personality and interpersonal relationships is outlined, with a particular focus on romantic affiliations.

2.3.1 Attachment Theory

Attachment theory can be conceptualised as a framework for understanding the needs and motivations associated with why people form close emotional bonds with others (Park, Crocker, & Mickelson, 2004). John Bowlby (1969, 1973, 1980), who was the pioneer of attachment theory, proposed that people seek attachments with others to regulate emotional distress as well as to experience a sense of ‘felt security’. He postulated that forming close attachment relationships helps to achieve overall intimate proximity with other individuals. Further, attachment relationships extend throughout one’s lifetime from infant-parent to adult romantic relationships (Bowlby, 1969; Hazan & Shaver, 1987). The initial research on attachment theory focused specifically on early infant-parent relationships because it was believed that for each individual, interactions with their primary caregiver result in the development of internal working models, understood as mental representations of the self and others (Park et al., 2004). Such models then influence emotion regulation, behaviour and the development of an individual’s personality (Park et al., 2004). According to Bartholomew and Horowitz (1991), these mental models of the self, determine beliefs regarding one’s lovability and worthiness of care and attention, while mental models of others reflect one’s expectations of how emotionally available and responsive others will be towards one’s own needs. This provides the foundation for understanding the existing models that have been developed to conceptualise attachment and how people can be categorised into different types, capturing how an individual generally relates to another.

Based on Bowlby's initial work, attachment theory can be summarised into three propositions (Bowlby, 1973; Hazan & Shaver, 1987): 1) when an individual is confident that an attachment figure will be available when needed, that person will be much less prone to intense or chronic fear; 2) confidence in the availability of attachment figures, or lack of so, is built up slowly during the years of early development into adulthood (i.e. infancy, childhood and adolescence), and expectations developed during these years tend to persist relatively unchanged throughout the rest of life; 3) varied expectations of the accessibility and responsiveness of attachment figures that individuals learn during the development phase are reasonably accurate reflections of the experiences those individuals have actually had. These three propositions highlight not only the importance of early secure attachment interactions with primary caregivers, but also the significant foundation they create for close relationships developed later in life. The development of an insecure attachment early in childhood may lead to reduced confidence and a persistent fear regarding lack of safety and connectedness within future adult interpersonal relationships (Hazan & Shaver, 1987; Simpson & Rholes, 2010). Indeed, this was the focus of initial empirical studies on attachment which sought to explore early childhood attachment development through infant-caregiver observations (Ainsworth et al., 1978; Lamb, Thompson, Gardner, Charnov, & Estes, 1984). This research was critically important in helping to establish an understanding of how humans relate and function in their earliest infant-parent interactions.

Mary Ainsworth was a developmental psychologist who conducted research on attachment theory through a procedure known as 'the strange situation' (Ainsworth

et al., 1978). In this experiment, Ainsworth and her colleagues (1978) devised a series of situations with varied levels of stress impact for infants aged between 12 and 24 months, created by caregivers and strangers entering and leaving a room the infants were in. Throughout these situations, aspects of the children's behaviour were observed. From this experimental study, Ainsworth and colleagues (1978) identified three styles or types of attachment, now referred to as secure, anxious / ambivalent and avoidant. Securely attached children were able to welcome their caretaker's return following separation and, if distressed, were able to seek proximity to their primary caregiver and be readily comforted. Anxious / ambivalent attachment was seen in children that were ambivalent upon their caregiver's return, and demonstrated an inability to be comforted when reunited. Children that demonstrated avoidant attachment had a tendency to refrain from proximity or interaction with their caregiver when reunited. Such attachment patterns as observed by Ainsworth and colleagues are likely to be sustained over time due to the continued exposure to the same primary attachment relationships throughout one's development into adulthood (Lamb et al., 1984).

2.3.2 Adult Attachment

As stated above, attachment styles developed in early childhood are likely to persist over time, moulding adult attachment (Ainsworth et al., 1978; Bowlby, 1969). In contrast to the biological and physical needs of nurture and sustenance required by an infant, adult attachment is driven by more interpersonal needs such as trust, hope and relationship satisfaction (Welch & Houser, 2010). The attachment transfer

process refers to the transition of primary attachment figures from those bonds with parents or primary caregivers to relationships developed later in life with peers, extended family members, and the community, as well as with romantic partners (Feeney, 2014). During this transfer process, previous insecure attachment to parents or caregivers can impact on the quality of new attachments established (Welch & Houser, 2010). In order to study and better understand adult attachment Bartholomew and Horowitz (1991) proposed a model of adult attachment based on one's view of self and of others. Figure 1 depicts the model which includes four attachment prototypes. As a child matures, their sense of self, or how they view themselves, becomes increasingly important in their relationship bonds. Thus, the use of an attachment model such as the four category model (Bartholomew & Horowitz, 1991) incorporating one's perceptions about one's self and others, is fitting for examining adult attachment, particular in the context of romantic relationships.

		MODEL OF SELF (LEVEL OF DEPENDENCE)	
		POSITIVE LOW	NEGATIVE HIGH
MODEL OF OTHER (LEVEL OF AVOIDANCE)	POSITIVE LOW	Secure Comfortable with intimacy and autonomy	Preoccupied Preoccupied with relationships
	NEGATIVE HIGH	Dismissing Dismissing of intimacy Counter-dependent	Fearful Fearful of intimacy Socially avoidant

Source: Reproduced from (Bartholomew & Horowitz, 1991)

Figure 1 Adult attachment using the four-category model

Secure attachment, characterised by a positive view of self and others results in individuals feeling a sense of worthiness, along with an expectation that others in the world will generally be accepting and responsive to their needs (Bartholomew & Horowitz, 1991). In contrast, preoccupied, fearful and dismissing prototypes all fall under the umbrella of insecure attachment. *Preoccupied attachment* refers to a negative view of self with feelings of being unlovable, and a positive view of others. Individuals with this attachment style generally attempt to strive for self-acceptance, measuring their worth or value in accordance with others' perceptions of them (Bartholomew & Horowitz, 1991). Preoccupied attachment in this model parallels with the category of ambivalent attachment (Hazan & Shaver, 1987). Underlying *fearful attachment* is a negative view of self and others. Individuals with this attachment style not only feel they are unworthy, but also have the expectation that others will disappoint them by being untrustworthy or rejecting. It is proposed that this attachment style may be consistent with fearful-avoidant attachment (Bartholomew & Horowitz, 1991; Hazan & Shaver, 1987). Lastly, *dismissing attachment* is characterised by a positive view of self and a negative view of others. Individuals therefore feel worthy of being loved, yet display a negative disposition towards others, maintaining an independence that protects from vulnerability in relationships (Bartholomew & Horowitz, 1991). This style of attachment can be seen to align with dismissive avoidant attachment (Bartholomew & Horowitz, 1991; Hazan & Shaver, 1987). Overall, research conducted utilising this adult attachment framework has demonstrated support for this model (Bartholomew & Horowitz, 1991; Welch & Houser, 2010).

2.3.3 Attachment and Borderline Personality

Attachment difficulties are seen to be central to most personality disorders where established internal working models of self and others drive maladaptive affective, cognitive and behavioural manifestations characteristic of personality pathology (Levy et al., 2015). Therefore, when attempting to better understand the relationship between attachment processes and borderline personality, symptom presentation can assist in shedding light on this association. As reviewed previously, people with borderline personality features often experience difficulty in achieving an integrated sense of self (Fonagy, Target, Gergely, Allen, & Bateman, 2003). Their struggle with establishing a coherent identity is likely impacted by an underlying negative sense of self. In fact, borderline personality and attachment have been investigated in numerous studies, with a general consensus that a positive relationship exists with preoccupied and fearful attachment styles, as well as a significant negative relationship with secure attachment (Agrawal, Gunderson, Holmes, & Lyons-Ruth, 2004; Choi-Kain, Fitzmaurice, Zanarini, Laverdiere, & Gunderson, 2009; Gunderson & Lyons-Ruth, 2008; Hill et al., 2011; Levy, Meehan, Weber, Reynoso, & Clarkin, 2005; Scott et al., 2013). Given that both preoccupied and fearful attachment encompass a negative view of self, it follows that those with borderline personality are likely to struggle with self-acceptance and feeling worthy of love. Further, they are likely to have been exposed to invalidating childhood environments that have, over time, reinforced this negative view of self (Carr & Francis, 2009).

Although there is consistency regarding a negative sense of self underlying borderline personality, there remain mixed findings on internal mental representations

of others. Whilst a positive view of one's social world underlies preoccupied attachment, a contrasting negative view is observed in those with a fearful attachment style (Bartholomew & Horowitz, 1991). In a study conducted by Choi-Kain and colleagues (2009), attachment styles were examined across three groups: a clinical BPD sample, a clinical major depressive disorder (MDD) sample, as well as a non-borderline sample who did not meet the criteria for BPD or MDD. A comparison of self-report attachment found that a higher proportion of BPD participants reported both a preoccupied and fearful attachment style, leading the investigators to propose a mixed internal working model for BPD (Choi-Kain et al., 2009). Taking into consideration that childhood trauma, such as abuse, is commonly reported by people with BPD (Bornovalova et al., 2013; Liotti, Pasquini, Cirrincione, & Dissociation, 2000), it follows that such experiences will have a significant impact on how an individual forms their expectations about others and the safety associated with the world around them. In saying this, not all individuals with BPD report having experienced abuse. Therefore, it may be possible to speculate that an individual's early experience with trauma, such as abuse, may in part underlie the differentiation between developing a positive or negative internal working model of others, for those with borderline personality. However, irrespective of whether preoccupied or fearful attachment underlies borderline personality, both attachment styles have significant implications triggering a range of affective, cognitive and behavioural functioning outcomes observed in borderline personality presentation, impacting significantly on interpersonal functioning, particularly in the context of romantic affiliations.

2.3.4 Attachment and Romantic Relationships

There is increasing evidence to support the fact that insecure attachment styles of individuals with borderline personality are closely associated with their relationship challenges (Bouchard et al., 2009b). Given romantic relationships perform an attachment function (Hazan & Shaver, 1987), attachment styles have a significant role in determining how individuals act in their romantic relationships. In an earlier study conducted by Simpson (1990), the impact of secure, anxious and avoidant attachment styles were explored in 144 dating couples. Whilst secure attachment was associated with greater relationship interdependence, commitment, trust and satisfaction, anxious and avoidant attachment had a stronger correlation with less frequent positive emotional experiences and, similarly, greater negative emotional experiences (Simpson, 1990). Underpinning these relationship outcomes may be the individual's perception of daily relationship events, and this subjective interpretation is likely determined by their internal representational models of self and others. In a study conducted by Campbell and colleagues (2005), perceptions of relationship-based conflict and support were examined in dating couples who were both required to complete diaries for 14 days, and then videotaped during a discussion surrounding a major problem they had experienced during the diary study. Results found that those with anxious attachment styles not only perceived more conflict with their partners, but were also observed to appear more distressed and have a tendency to escalate the severity associated with the conflicts experienced (Campbell et al., 2005). In contrast, those who perceived greater daily support were associated with more positive relationship outcomes (Campbell et al., 2005). These findings indicate the importance

of one's subjective experience of a relationship, particularly those interpretations of one's partner's behaviours.

In the context of those experiencing borderline personality, the impact of attachment styles on such interpretations and experiences is often problematic. This is supported by the research that consistently highlights less adaptive and well-functioning relationship experiences for those individuals with borderline personality (Geiger et al., 2013; Gunderson, 2007; Herr et al., 2013). In light of this, it is therefore important to investigate more specifically the underlying processes that impact on successful romantic relationship functioning for people with borderline personality. In particular, the turbulent nature of relationships experienced by people with borderline personality as a result of their affective, cognitive and behavioural manifestations can be speculated to reduce their likelihood of persevering and sustaining healthy romantic relationships. Given commitment processes underlie relationship persistence, it would be particularly interesting to examine how associated borderline personality symptoms may impact on commitment. The investment model of commitment (Rusbult, 1980, 1983) offers an ideal framework for achieving this goal. The next section will briefly outline the literature on romantic relationships prior to highlighting the importance of commitment in achieving successful relationship outcomes.

2.4 ROMANTIC RELATIONSHIP COMMITMENT

The science of interpersonal relationships represents one of the most challenging yet invaluable areas of research. It is widely acknowledged that human

beings are fundamentally social creatures, needing to engage in human partnerships or groups for support in order to survive and thrive (Baumeister & Leary, 1995).

Existing research on health and wellbeing strongly supports this notion, with evidence demonstrating how close relationships can positively impact on both the physiological (Uchino, Cacioppo, & Kiecolt-Glaser, 1996) and psychological (Read & Grundy, 2011) functioning of individuals. This influence tends to remain important throughout one's life, from childhood to older age (Umberson & Montez, 2010). Furthermore, studies have found strong links between close relationships and both happiness and satisfaction (Berscheid & Reis, 1998; Diener & Seligman, 2002). In light of the benefits associated with engaging in close relationships, it is not surprising that research in this area continues to expand and develop with the aim of understanding the processes responsible for fostering high-functioning, adaptive and supportive interpersonal relationships. This is perhaps even more crucial for individuals with personality pathology such as borderline personality traits, who find it particularly difficult to sustain healthy close relationships.

The purpose of this section is to provide an overview of the existing romantic relationship literature, highlighting the benefits associated with establishing such connections in life. Following this is a discussion surrounding interdependence; the basis of which commitment processes can be understood. Next, commitment is defined, with an introduction to the investment model framework (Rusbult, 1980, 1983), which is utilised in the present study to examine commitment processes in the context of borderline personality traits.

2.4.1 Romantic Affiliations

The meaning of ‘relationship’ often varies when it is used in everyday language, highlighting one of the earliest difficulties faced in the field of interpersonal relationship research (Regan, 2011). Research in this area over time has led to the emergence of a clearer framework for defining and studying this phenomenon. Today, researchers have agreed on a well-established conceptual definition of the term ‘relationship’. This definition is marked by the notion of ‘interdependence’, which refers to the process by which two people interact in a manner where they mutually influence how the other thinks, feels or behaves (Berscheid & Regan, 2005; Regan, 2011). This implies ‘interaction’ is a necessary condition for a relationship to exist; however, on its own, it is insufficient. Two further conditions need to be satisfied in order for an interaction to be considered a ‘relationship’. Firstly, the interaction is required to be unique, where the ways in which two individuals interact with each other form a different interaction pattern to that of role-based interactions, such as those of social roles (e.g., teacher and student) where behaviours are primarily determined by group membership and social positions (Berscheid & Reis, 1998). In addition, partners within the interaction must form a mental representation of their relationship, also known as a relationship schema (Regan, 2011). This refers to a cognitive representation that details the history of the interaction, is held in memory, and has the potential to influence future interactions between the two individuals (Regan, 2011). Only when these three conditions are satisfied, can the exchange between two individuals be defined as a ‘relationship’.

Berscheid and Regan (2005) summarised the overall concept well, stating that a relationship *lives* in the interaction that takes place between two people. It is important to recognise that a hierarchy of complex systems such as culture, society, social and physical environments impact on such interactions (Regan, 2011). As a result, relationships are fundamentally dynamic and temporal in nature, capable of evolving and changing over time (Reis et al., 2000). There are numerous types of interactions that people experience in the course of their lifetime, which lead to the development of different relational bonds. These attachment bonds form the foundation for different types of relationships, of which the most influential have been found to be friend, family and romantic relationships (Berscheid & Reis, 1998). Friend relationships (or friendships) are distinguished by their voluntary nature because most individuals have the option of choosing their friends at any point in time. These relationships are characterised by flexibility, as they are often less restricted by social, legal and moral constraints, in contrast to family and romantic relationships (Allan, 2008). Family relationships are considered involuntary in nature, and unlike friendships, individuals often do not have the choice of selecting their family members, nor dissolving the relationships that exist given the majority of these associations are formed through birth, adoption, marriage, or another legal process (Dykstra, 2009). Finally, romantic relationships are unique and distinguished from the other two types of relationships by the anticipated occurrence of sexual involvement between partners as well as a range of other cognitive and emotional experiences that do not occur in friendships or family relationships. Regardless of the type of relationship, existing research has firmly established that quality interpersonal

relationships impact positively on an individual's overall health (Lyons, Mickelson, Sullivan, & Coyne, 1998), wellbeing and happiness (Diener, Suh, Lucas, & Smith, 1999). For the purpose of the present research study, romantic relationships are the central basis of investigation.

Romantic relationships are a significant type of interpersonal relationship unique to humans and central to obtaining intimate relational bonds (Graham, 2011). Originally, research into romantic relationships focused on exploring romantic attraction and how such relationships are initially established (Johnson, Johnson, & Maruyama, 1983; Kenrick & Cialdini, 1977; Schindler et al., 2010). However, over time, researchers have also become interested in understanding the underlying processes responsible for maintaining well-functioning romantic relationships (Rusbult, Verette, Whitney, Slovik, & Lipkus, 1991; Stafford & Canary, 1991; Tran & Simpson, 2009; Wieselquist, Rusbult, Foster, & Agnew, 1999). Traditionally, this examination revolved around adverse mechanisms that undermine close relationships (Westman & Vinokur, 1998). In more recent research, the influence of positive psychology has fostered a closer look at adaptive processes in relationships that encourage relationship maintenance and perseverance (Gable & Gosnell, 2011). Much of this research has been grounded on the establishment of 'interdependence' that evolves progressively with the development of relational bonds. Relationship interdependence implies that partners influence each other to obtain a range of needs, termed 'valued outcomes' by Kelley and Thibaut (1978). These valued outcomes may include, but are not limited to, love (affection), intimacy (emotional closeness), sexual

experiences (physical closeness) and social support; all of which are significant aspects of highly functioning romantic relationships.

2.4.2 Interdependence Theory

People initiate and maintain romantic relationships in the hope of obtaining valued outcomes, or satisfying some basic human needs. These needs are key to understanding the theoretical underpinnings of interpersonal interactions. The basic assumption of social exchange theories is that an individual's underlying motivation to initiate and maintain relationships is, in part, due to the rewards and costs experienced or expected from the relationship (Cate, Levin, & Richmond, 2002). Rewards can be defined as the pleasures, satisfactions, and gratifications partners enjoy as a consequence of being involved in the relationship, whereas costs refer to aspects associated with being in the relationship that have negative value to each partner. In fact, at times, costs can become factors that may operate to inhibit or deter partners from behaviours that promote continuance of the relationship whilst in other scenarios, they may be perceived as 'acceptable' and worthwhile in order to maintain the relationship (Thibaut & Kelley, 1959). During the initial stages of a romantic relationship, partners are likely to evaluate whether it is beneficial for them to continue being in the partnership through what are termed 'outcome values', determined by consideration of such rewards (i.e., what one is gaining from the relationship such as love, intimacy, sexual experiences and support) and costs (i.e., what one is losing as a consequence of having the relationship; for e.g., time, money, other close relationships). However, this is insufficient in explaining the full nature of

interactions within close relationships such as romantic relationships, which are temporal in nature and evolve over time. Interdependence theory, proposed by Kelley and Thibaut (1978; 1959) addresses this challenge by providing a framework for conceptualising how individuals in relationships interact, behave and persevere over time. In doing so, this theory takes into consideration not only the initial rewards and costs that motivate partners during the early stages of a relationship, but also the motivational shifts that result as the relationship progresses and evolves.

The association between rewards and costs is an insufficient explanation towards understanding how and why partners are motivated to respond and behave in a relationship. Immediate self-interest acquired from evaluating rewarding and costly outcome values have a greater influence on behaviours and responses initially; however, over time, partners are likely to move away from self-interest being their primary consideration. This is a direct result of ‘transformation of motivation’, which refers to the process by which a partner transitions from the initial basic consideration of rewards for and costs to the self, towards consideration of broader concerns for the wellbeing of their partner and the relationship as a whole (Rusbult & Van Lange, 2003). This shift is driven by considerations such as knowledge and concern for a partner’s outcomes, goals for the future of the relationship, as well as the influence of social norms (McClintock & Liebrand, 1988). These considerations are likely to form as the relationship progresses and partners become more involved and subsequently more committed to each other, increasing the level of ‘cognitive interdependence’ experienced within the relationship (Agnew, Van Lange, Rusbult, & Langston, 1998). Cognitive interdependence refers to the *‘collective mental representations of the self-*

in-relationship that leads individuals to perceive self as part of a relationship collective' (Agnew et al., 1998, p. 939). Put simply, over time, partners in a relationship move from references of 'I' towards 'we', which in turn drives the higher level considerations that produce a shift of motivation from self-interest towards the interests of one's partner and the overall relationship.

In addition to understanding what drives and motivates the evolution of exchanges in a relationship, interdependence theory also considers two significant criteria that contribute to the subjective evaluation of the relationship experience for each individual: 'comparison level' and 'comparison level for alternatives' (Drigotas & Rusbult, 1992). They are also commonly referred to in interdependence theory as CL and CL-alt respectively. These criteria are important in determining two relationship outcomes that are important in understanding why some relationships persevere over time while others end. The two outcomes are termed 'satisfaction level' and 'dependence level' (Kelley, 1979; Kelley & Thibaut, 1978; Thibaut & Kelley, 1959).

An individual's comparison level (CL) refers to *'the standard against which one evaluates the attractiveness of the relationship or how satisfactory it is'* (Thibaut & Kelley, 1959, p. 21). In other words, partners in a relationship each possess a subjective CL that determines where their expectations lie in order for them to feel 'satisfied' with the outcomes of the relationship. The location of one's CL is influenced by a collection of their direct experiences and cognitive understanding of the relationship (Thibaut & Kelley, 1959) that may include previous experiences in other relationships, observations of other relationships, as well as established social

norms (Rusbult & Buunk, 1993). This, in turn, impacts on the individual's 'satisfaction level' or degree to which an individual evaluates their relationship favourably and believes that the relationship fulfills important needs (Agnew et al., 1998; Rusbult & Buunk, 1993). An individual with a high CL is likely to hold greater expectations of their partner, and require higher levels of positive outcomes from the relationship than an individual with a low CL who, conversely, is likely to have lower expectations of their partner and require fewer positive outcomes to feel satisfied with the relationship. Across all individuals, however, when the outcomes obtained in a relationship meet or exceed one's own CL, the individual is likely to feel satisfied whereas, when outcomes fall below one's CL, the individual is likely to feel dissatisfied (Rusbult & Buunk, 1993). This is irrespective of where an individual's CL lies. It is important to recognise that the location of one's CL is not only subjective in nature, but also temporal; what may feel like a satisfying relationship at one point in time, may not be so at another point in time. This point may be particularly prescient for individuals with borderline personality, as their evaluation of their CL point may likely fluctuate as a result of limitations associated with emotion regulation, cognitive distortions and negative behavioural manifestations. For example, when they have a fight with their partner, their tendency to cognitive distort social interactions (Beeney et al., 2015; Whipple & Fowler, 2011) may increase their CL point, with their perception of past partners being 'great' compared to their current partner who has upset them. In contrast, when things are going well and their needs are being met in their relationship, their cognitive bias may result in the perception of a lowered CL point, reinforcing the notion of how much 'better' their current partner is. In sum,

their CL point is likely to fluctuate alongside their emotional experience of the relationship.

An individual's comparison level for alternatives (CL-alt) can be defined as *'the lowest level of outcomes one will accept in light of available alternative opportunities'* (Thibaut & Kelley, 1959, p. 21). In other words, each partner in a relationship possesses a CL-alt that encompasses his or her subjective evaluation of available options outside of the relationship. The location of one's CL-alt is influenced by the attractiveness of alternative relationships and their ability to fulfill the individual's overall needs, the broader field of eligible alternatives or potential partners (both existing and believed to exist), as well as the option of being single (Rusbult & Buunk, 1993). This impacts on the individuals 'dependence level' or the degree to which an individual relies on a relationship or a partner to obtain desirable outcomes or for the fulfillment of important needs (Rusbult & Buunk, 1993). An individual with a high CL-alt is likely to possess a greater number of attractive options outside the relationship in contrast to an individual with a low CL-alt, who is likely to be more 'dependent' on the relationship, needing to remain in the relationship to have their needs fulfilled. Similar to CL, CL-alt is also subjective in nature and characterised by temporality; the perceived availability of attractive alternatives at one point in time may change and fluctuate as a result of continued life experience and personal development over time as well as changes in situation. Consequently, for individuals with borderline personality, CL-alt will also likely be impacted by the range of affective, cognitive and behavioural symptoms associated, along with their inherent insecure attachment style marked by a negative self-view.

For example, individuals experiencing borderline personality traits may have an inherent fear of abandonment or being alone. It is possible that this may result in a low CL-alt, due to the need and dependence on being in a relationship. Alternatively, it is possible that this may also lead to a higher CL-alt, because the individual is more vigilant of potential opportunities for another partner.

In any given relationship, there are different patterns of satisfaction and dependence levels driven by the balance between rewards and costs. This balance contributes to determining stay or leave decisions made by partners in a relationship. When the outcomes in a relationship both exceed CL and CL-alt (i.e., the relationship fulfills needs at a greater level than expected and believed to be available with alternatives), higher satisfaction and dependence levels will be exhibited. This is termed 'voluntary dependence' (Rusbult & Buunk, 1993). In a relationship where outcomes measure below CL, but above CL-alt (i.e., the relationship does not fulfill one's needs but is better than what is believed to be available from alternatives), lower satisfaction and higher dependence levels will be exhibited. This is termed 'non-voluntary dependence' (Rusbult & Buunk, 1993) and is characteristic of individuals who stay in unhappy relationships because they feel there are no better alternatives available. Conversely, relationships where outcomes measure above CL, but below CL-alt (i.e., the relationship fulfills one's needs at a level that is greater than expected, but lower than what is believed to be available with alternatives), higher satisfaction and lower dependence levels will be exhibited. This is characteristic of the 'happy but free' relationship (Rusbult & Buunk, 1993). Lastly, relationships where outcomes fall below both CL and CL-alt (i.e., the relationship

does not fulfill one's needs at the level expected and is lower than what is believed to be available with alternatives), lower satisfaction and lower dependence will be exhibited. This type of relationship is unlikely to persevere over time, as there is little motivation for its continuation.

Interdependence theory provides a sound framework for conceptualising the interaction which characterises a relationship. At present, it is the most developed theory for understanding dyadic relationships, with the ability to explain not only how the interaction between partners drive communication and exchange, but also why some relationships are happier or more satisfying than others (Rusbult & Buunk, 1993). Since its establishment, the interdependence theory has paved the way for studying other relationship structures, processes and outcomes, through the extension of this theory toward the investment model of commitment proposed by Rusbult (1980, 1983), simply referred to as the investment model. This model builds on basic considerations of satisfaction and dependence to focus on the more complex phenomenon of 'commitment'. The investment model provides a framework for understanding the contributing factors, or predictors, that determine an individual's subjective experience of commitment to a relationship, which in turn is expressed in one's behaviour towards their partner and the decision of whether or not to persist in the relationship. A detailed discussion of the investment model is provided following an overview of existing commitment literature.

2.4.3 Commitment

Commitment occurs in the context of a relationship (Weigel, 2010), developing from the interactions and communications between partners (Ballard-Reisch & Weigel, 1999). However, it is by nature a very personal experience often highlighted when partners in a relationship assume that their level of commitment is also felt by their respective partner (Kirk, Eckstein, Serres, & Helms, 2007). In some relationships, or more so at certain temporal points within a relationship, commitment levels experienced by each partner differ, which can impact on relational outcomes. Whilst commitment has a range of functions it has often been described as the hallmark of lasting relationships, underlying the decision to stay and persevere (Weigel, 2010). In the instance where commitment is low, the potential for relationship termination increases. A range of adverse emotional (e.g., anger and sadness), psychological (e.g., depression, increased insecurity) and physical (e.g., depressed immunological functioning) consequences have been linked to relationship dissolution (VanderDrift, Agnew, & Wilson, 2009). This highlights the importance of understanding the concept of commitment and the role it plays in romantic relationship maintenance and perseverance. Given the established research outlining the challenges people with borderline personality have engaging and remaining in healthy romantic relationships, understanding commitment in the context of borderline personality traits is crucial.

2.4.3.1 The Construct of Commitment

In earlier literature surrounding commitment, Rusbult (1983) conceptualised the concept of commitment as possessing two components: psychological attachment and behavioural intent. Frank and Brandstatter (2002) later built upon this foundation and described commitment as a specific psychological state in which a person feels tied to or connected to someone (the psychological component) which directly influences the person's decision to continue or end a relationship (the behavioural component). In other research, Drigotas and colleagues (1999), followed by Arriaga and Agnew (2001), proposed that the state of commitment comprises three components: affective, cognitive and conative experiences, expressed in the form of psychological attachment, long-term orientation and intent to persist with the relationship, respectively. This conceptualisation was tested empirically in two longitudinal studies exploring the correlation between each of the three commitment components, with general couple functioning and relationship persistence (Arriaga & Agnew, 2001). Results indicated that in young dating couples, well-functioning relationships and relationship persistence were both positively correlated with higher levels of each proposed component of commitment. In particular, however, long-term orientation demonstrated the strongest relationship with the two outcome variables examined. It is apparent that commitment encompasses more than just the act of relationship persistence. Rather, commitment embodies a *'subjective state that links one's own emotional wellbeing to the wellbeing of the relationship, squarely places the partner in images and thoughts about the future, and fuels a sustained desire to continue the relationships'* (Arriaga & Agnew, 2001, p. 1201).

2.4.3.2 The Role of Commitment

A large body of commitment research has focused on the role of commitment in relationships and understanding how it contributes to relationship maintenance and perseverance. In a committed relationship, partners are likely to evaluate rewards and costs in a different manner, displaying forms of altruism where costs or exerted efforts are endured without counting what is received in return (Drigotas et al., 1999). Research suggests that the level of commitment predicts a range of relationship perseverance mechanisms known as pro-relationship acts that can take the form of behavioural or cognitive outcomes (Rusbult & Reghetti, 2009). Behavioural maintenance acts may include accommodation, willingness to sacrifice and forgiveness of betrayal. Cognitive maintenance acts include cognitive interdependence, positive illusion or derogation of alternatives (Rusbult & Reghetti, 2009). With respect to individuals with borderline personality, it can be speculated that such pro-relationship mechanisms may be harder to initiate as a result of their underlying attachment and personality symptoms. For example, inherent in borderline personality pathology is an insecure attachment style marked by a negative view of self. It is possible that this insecurity may be reinforced in situations of betrayal, and activated where potential alternatives are perceived. Complicated by emotion regulation difficulties and impulsivity, people with borderline personality may in turn find it much more difficult to execute many pro-relationship maintenance acts, particularly when their fears and insecurities are activated.

Rusbult and colleagues (1991, p. 53) define accommodation as '*an individual's willingness, when a partner has engaged in a potentially destructive*

behaviour, to (a) inhibit tendencies to react destructively in turn and (b) instead, engage in constructive reactions'. For people with borderline personality, utilising these two strategies when significantly distressed, may feel impossible. Research into accommodation reactions stemmed from earlier investigations exploring how individuals respond to relationship decline when one's partner behaves negatively toward the relationship. A response typology was proposed by Rusbult, Zembrodt and Gunn (1982) to describe four primary responses to dissatisfaction in close relationships. This is known as the exit-voice-loyalty-neglect typology (Rusbult et al., 1982). *Exit* refers to acts with the intention to end the relationship. Example of exit strategies include threatening to leave, divorce, as well as yelling or screaming at one's partner. *Voice* can be understood as constructive acts to communicate and discuss one's dissatisfaction with the intention of remaining together and moving forward. Examples of such behaviour include discussing problems or seeking external support such as that with a therapist. *Loyalty* refers to passively waiting and hoping for things to change in the relationship. Lastly, *neglect* refers to passively waiting for a relationship to deteriorate and end. This can include acts of ignoring one's partner and avoidance of discussion surrounding problems. Although there are no studies examining the predominant approach that people with borderline personality may enact, it could be speculated that due to the associated symptoms of emotion dysregulation and impulsivity, *exit* may be their primary response to conflict. However, bearing in mind that a fear of abandonment is also pervasive in borderline personality, it is also possible that *loyalty* and *neglect* may also be prominent, depending on their attachment style and whether they have a positive or negative view

of their social world, respectively. Given that, speculatively, *voice* appears the least likely strategy to be selected by those with borderline personality, it is apparent that accommodation processes are likely compromised for these individuals.

Whilst commitment positively impacts on relationship maintenance and persistence through a range of processes, such as accommodation (Weigel, Brown, & O'Riordan, 2011; Wieselquist et al., 1999), commitment also implies vulnerability. Vulnerability can be perceived as a negative consequence because it places an individual at risk of adverse outcomes (e.g., distress resulting from relationship dissolution), and this may be particularly salient for individuals with insecure attachment, such as those with borderline personality. Commitment mutuality refers to the degree of similarity in commitment levels between partners (Drigotas et al., 1999). Logically, people want to be in relationships where their partners feel the same way and have the same expectations about the relationship (Knobloch & Solomon, 2003). In research conducted by Arriaga, Reed, Goodfriend and Agnew (2006), two longitudinal studies examined fluctuations in perceived partner commitment. Results found that of those relationships where individuals' perceptions of partner commitment fluctuated over time, those relationships were more likely to eventually end relative to those that remained relatively stable over time. This can perhaps be applied to people with borderline personality, who often have distorted cognitions which impact negatively on their relationship evaluations, and combined with their emotional regulation difficulties, this places them at greater risk of perceiving and responding to fluctuations in partner commitment.

In summary, commitment plays an important role in initiating a range of relationship maintenance acts such as accommodation, but also lends an individual to become vulnerable. For individuals with borderline personality, not only are relationship maintenance acts difficult to achieve with their underlying affective, cognitive and behavioural manifestations (Bouchard et al., 2009b; De Montigny-Malenfant et al., 2013), but being vulnerable is likely to trigger their underlying insecure attachment. Therefore, it is important to better understand what commitment processes look like for people with borderline personality traits in order to understand the mechanisms that disrupt and reduce commitment functioning. In order to do so, the present research utilises the investment model framework (Rusbult, 1980, 1983) to examine commitment in the context of borderline personality.

2.4.3.2 The Investment Model of Commitment

Although several models of relationship commitment have been proposed in the literature (Cox, Wexler, Rusbult, & Gaines Jr, 1997; Johnson, Caughlin, & Huston, 1999), the present study uses the investment model (Rusbult, 1980, 1983) to examine relationship commitment in the context of borderline personality, which has been shown to be robust and generalisable across multiple contexts and populations (Bui, Peplau, & Hill, 1996; Le & Agnew, 2003). Based on principles proposed by interdependence theory discussed above (Kelley & Thibaut, 1978; Thibaut & Kelley, 1959), the investment model assumes that individuals are generally motivated to maximise their rewards and minimise their costs tied with being in a relationship (Rusbult, 1980). According to this model, there are three determinants of

commitment: relationship satisfaction, perceived quality of alternatives, and investment size (Rusbult, 1980, 1983). *Relationship satisfaction* (or attraction to the relationship) refers to the degree of positive affect an individual associates with the relationship (Rusbult, 1980, 1983). Each individual experiences personal needs that seek to be fulfilled from their relationship (e.g., companionship, intimacy, sexual experience and belongingness). The level of relationship satisfaction increases relative to one's needs being met, and even more so, when needs are met to a standard that exceeds one's expectations (Rusbult & Reghetti, 2009). *Quality of alternatives* refers to the perceived desirability of other options to the relationship, in the form of alternative partners or remaining single (Rusbult, 1980, 1983; Rusbult, Martz, & Agnew, 1998). Lastly, *investment size* broadly refers to all resources (e.g., time, money, emotional involvement) invested into a relationship measured by both the amount and perceived importance to the individual (Rusbult et al., 1998). The defining aspect of an investment is that once entered into the relationship, it cannot be readily recovered in the event of relationship dissolution (Rusbult, 1980, 1983). These three independent predictors, in combination, determine commitment level and hence relationship persistence. This model has been robustly tested with findings indicating that *high* relationship satisfaction, *low* perceived quality of alternatives, and *high* investment size contribute to *higher* levels of commitment (Rusbult, 1980, 1983; Rusbult et al., 1998). The investment model is illustrated in Figure 2.

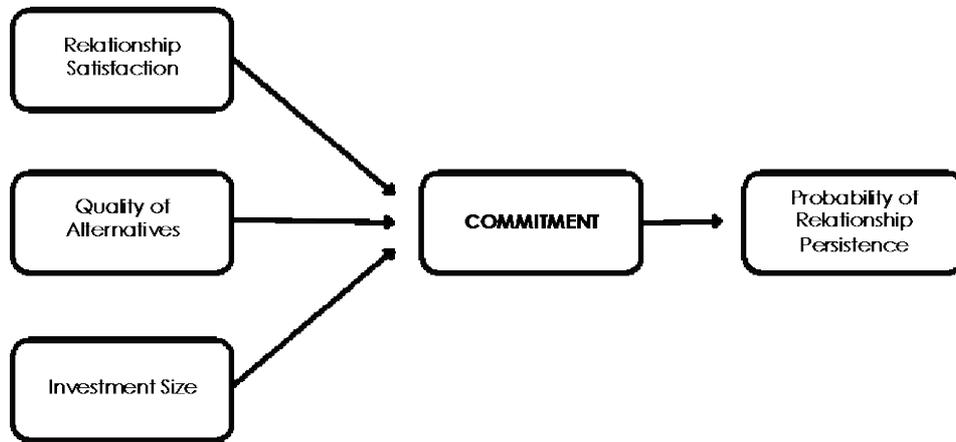


Figure 2 Investment model of commitment

Relationship satisfaction (or satisfaction level) refers to the positive versus negative affect experienced in a relationship (Rusbult et al., 1998). In a relationship, individuals are likely to feel more satisfied with their relationship to the extent that it provides high rewards (e.g., having an attractive partner, aligned expectations towards the future), involves low costs (e.g., infrequent quarrelling), and exceeds the comparison level or expectations regarding close relationships (Rusbult et al., 1986). It is more likely in such conditions that an individual's needs from the relationship are met. Relationship satisfaction encompasses one's perception of how ideal their relationship is, how happy they are being in the relationship, and how much they love their partner (Rusbult et al., 1998). The association between satisfaction level and commitment level has been tested in a number of different studies. In a meta-analysis of 52 studies conducted by Le and Agnew (2003), it was found that relationship satisfaction was the strongest predictor of commitment in comparison with quality of alternatives and investment size. An important point to note from this finding is that although one's satisfaction in a relationship is crucial to relationship outcomes,

satisfaction alone does not provide a complete explanation as to why an individual decides to persist in a relationship. Perceived quality of alternatives and investment size need also to be considered.

Quality of alternatives refers to the perceived desirability of the best available alternative to a relationship (Rusbult et al., 1998). In other words, the perceived level of alternatives for an individual is based on whether one feels their level of satisfaction or needs may be better met outside of their current relationship. It is important to recognise that attractive alternatives do not always refer to another partner or relationship. In some circumstances, an attractive alternative for an individual may be having no relationship or relying on non-romantic relationships, such as friendships, for satisfaction. Much of the literature relating to alternatives and commitment has examined the mechanism by which an individual either devalues or derogates potential partners in order to maintain their existing relationship. In a study conducted by Miller (2010), attentiveness to alternative relationship partners was examined. It was found that satisfaction with, investment in, commitment to, and adjustment in dating relationships were all negatively associated with reports of attention paid to potential alternatives, supporting the notion that inattentiveness is a strategy that can be used to protect relationship commitment. In another study, suppression of thoughts for attractive alternatives was identified as another strategy for maintaining lower perceived quality of alternatives (Gonzaga, Haselton, Smurda, Davies, & Poore, 2008). This study identified love as a factor that acts to increase thought suppression regarding other potential partners, which in turn operates to maintain relationship commitment (Gonzaga et al., 2008).

Investment size refers to how much one contributes or places into their relationship (Rusbult et al., 1998), and can come in many different forms. Consistent across different investments is the fact that once invested into the relationship, it becomes inextricably ‘attached’ to the relationship (Goodfriend & Agnew, 2008) and cannot be easily taken back. Rusbult (1980) proposed two types of investments: *extrinsic* investments, which are investments that do not have a direct link to enhancing relationship commitment (e.g., a car or house), and *intrinsic* investments, which refer to those investments that have a direct impact on increasing commitment (e.g., time, self-disclosure, emotional involvement). There has been limited research examining the contribution of each to overall relationship commitment levels as the intrinsic-extrinsic distinction can sometimes be unclear (Goodfriend & Agnew, 2008). However, Goodfriend and Agnew (2008) conducted a study that compared the materiality (tangible versus intangible) and timing (past versus planned) of investments. Their study demonstrated that intangible investments and planned investments were particularly consistent predictors of relationship commitment outcomes (Goodfriend & Agnew, 2008). Intangible investments are believed to involve more subjective judgement, so when a relationship is going well, such investments are more likely to be perceived as high. Further, planned investments may also be a more pertinent predictor of commitment as dissolution of a relationship will simultaneously mean the loss of investment placed in the future where rewards have not necessarily been met (Goodfriend & Agnew, 2008).

2.4.3.3 Applications of the Investment Model

The investment model has been stringently tested throughout the past few decades, demonstrating its robustness among different demographics and applicability to a diverse range of relationship types. The first studies in developing the model involved examining the predictive associations that the three separate constructs of relationship satisfaction, quality of alternatives and investments held with commitment (Rusbult, 1980, 1983). In Rusbult's (1980) initial research, two experiments were conducted to examine the investment model via an experimental role-play approach followed by a cross-sectional survey. Both studies provided support for the investment model's central prediction that higher satisfaction, lower quality of alternatives, and higher investment size, are associated with stronger commitment. Following this research, Rusbult (1983) conducted a longitudinal study to examine the postulates of the investment model over an extended period of time, in addition to its ability to predict relationship stability. The results of the study provided evidence to support the model's robustness over time, and demonstrated that commitment strength mediated the link between the investment model's components and the likelihood of relationship dissolution. This further demonstrated the robustness of the theoretical framework underlying the investment model.

A study conducted by Bui et al. (1996) examined the investment model using multiple regression analyses of data obtained from 167 heterosexual couples from 1972 until 1987, with findings indicating that satisfaction, quality of alternatives and investments accounted for a significant proportion of the variance in commitment. In addition, the analyses also confirmed predictions that rewards and costs account for a

significant proportion of the variance in satisfaction levels. A meta-analysis conducted by Le and Agnew (2003) examining 52 studies, including 60 independent samples and 11,582 participants, further supported previous findings that satisfaction with, alternatives to, and investments within a relationship each significantly correlated with commitment in the predicted directions. More precisely, it was found that the three variables, collectively, were able to account for nearly two-thirds of the variance in commitment. These two studies collectively suggest that the investment model possesses good predictive power.

Research conducted by Rusbult, Johnson and Morrow (1986) also examined the investment model and found further support for its predictions and generalisability. The study found that the investment model's predictions generalised across a range of close relationships and different demographic groups. More specifically, it was established that the investment model was applicable to both females and males, married and unmarried individuals, younger and older individuals, different education and income levels, and relationships of varied duration (Rusbult et al., 1986). Sanderson and Kurdek (1993) also examined generalisability of the investment model within two demographic domains: gender and race. Results indicated that there was no significant impact of either demographic variable on relationship satisfaction or commitment levels. Le and Agnew's (2003) research assessed the investment model in different types of interpersonal relationships. Applicability of the model was found in both relational (e.g., commitment to romantic partnerships) and non-relational (e.g., commitment to a job) domains, although it was apparent that support for the investment model was stronger in the relational domain.

In summary, a review of the literature examining the investment model provides substantial evidence for its robustness and generalisability across different demographic groups and types of relationships. Little research, however, has tested the investment model in subclinical or clinical contexts, which represents an important gap in the literature. In this domain, two studies have examined the applicability of the investment model amongst individuals with higher narcissistic traits or Narcissistic Personality Disorder (NPD) (Campbell & Foster, 2002; Foster, 2008). These studies revealed that narcissism is associated with lower levels of commitment overall, and that narcissistic individuals' perceptions of the quality of their alternatives are usually higher than those of the general population (Foster, 2008). Furthermore, the investment model has been found to predict commitment more strongly for narcissistic individuals relative to those low in narcissism; with low satisfaction, high quality of alternatives and low investment being more pronounced for those with higher levels of narcissistic personality traits (Foster, 2008). This may be due to their consistently held belief of superiority (perceived high quality of alternatives) and primary self-focus (minimal investments and perceived entitlement to satisfaction). These studies have paved the pathway to understanding relationships in the context of personality psychopathology. Given that interpersonal dysfunction is a key feature associated with personality disorders, and particularly with borderline personality, the investment model provides an opportunity to investigate commitment processes in relation to this dysfunction.

2.5 BORDERLINE PERSONALITY, ATTACHMENT AND ROMANTIC RELATIONSHIP COMMITMENT

As highlighted in the literature review, borderline personality is associated with a range of affective, cognitive and behavioural symptoms that in combination negatively impact on interpersonal functioning (APA, 2013). However, like all humans, people with borderline personality still want and need successful relationships in their lives to maintain their overall health and wellbeing. Romantic relationships, in particular, are a significant type of interpersonal relationship that affords the opportunity to access needs such as love, physical and emotional intimacy, as well as social support (Kelley et al., 1983; Kelley & Thibaut, 1978). Hence, the ability to maintain well-functioning romantic relationships that persist over time is crucial in meeting such needs. Commitment is fundamental to achieving relationship perseverance (Weigel, 2010), and encompasses psychological and cognitive components that act to promote pro-relationship behaviours (Arriaga & Agnew, 2001; Rusbult & Reghetti, 2009). The investment model of commitment (Rusbult, 1980, 1983) proposes that the decision to remain committed to one's romantic relationship is dependent upon three predictors: relationship satisfaction, perceived quality of alternatives and investment size. With respect to people with borderline personality, it is clear in the literature that commitment processes may be compromised because their romantic relationships are less stable and they have a tendency to engage in a greater number of relationships, of which duration is generally shorter (Bouchard et al., 2009b; Gunderson, 2011). What is less clear, however, is the mechanism by which commitment processes are impacted by borderline personality traits. Nevertheless,

several hypotheses can be made based on the range of affective, cognitive and behavioural manifestations that are consistent with borderline personality presentation. Further, it is also important to consider the insecure attachment styles underlying borderline personality (Levy et al., 2005) because how one evaluates oneself and others is likely to have significant implications for how one relates in romantic affiliations.

As discussed, attachment styles are formed during early childhood and mould adult attachment styles that develop later in life (Ainsworth et al., 1978; Bowlby, 1969, 1973, 1980). Bartholomew and Horowitz (1991) proposed a four-category model of adult attachment based on positive versus negative view of self and others. Because attachment styles have been significantly implicated in the development of personality disorders in general (Levy et al., 2015), there has been some research investigating which type of attachment style best predicts the development of borderline personality (Levy, 2005). As such, it is apparent that secure attachment (positive view of self and others) demonstrates a consistent negative relationship with borderline personality, in contrast to insecure attachment, which positively predicts borderline personality (Agrawal et al., 2004). More specifically, a number of studies have identified both preoccupied (negative view of self and positive view of others) and fearful (negative view of self and others) attachment as being predictive of borderline personality (Agrawal et al., 2004; Choi-Kain et al., 2009; Gunderson & Lyons-Ruth, 2008; Hill et al., 2011; Levy, 2005; Scott et al., 2013). Such findings make it clear that people with borderline personality have a tendency to feel less worthy and less loveable, which is driven by an underlying negative view of self. In

contrast, how people with borderline personality perceive their social world is less clear. Some studies have suggested that people with borderline personality are more likely to have a positive view of others (Morse et al., 2009; Scott et al., 2013), which in turn causes them to constantly strive for self-acceptance and measuring their worth or value in accordance to others' perceptions, whilst other studies have indicated that they may have a negative view (Choi-Kain et al., 2009; Levy, 2005). It can be argued that this negative view translates to a consistent expectation that others will disappoint and are untrustworthy or rejecting, making it more difficult to adaptively trust and engage in interpersonal relationships (Bartholomew & Horowitz, 1991). An integrated preoccupied and fearful attachment model has been proposed to be more appropriate in capturing the attachment style most predictive of borderline personality (Choi-Kain et al., 2009). Based on this perspective, two interpretations can be made; 1) activation of both mental representational models may fluctuate for people with borderline personality, or 2) both attachment styles can each uniquely predict borderline personality with the distinction between the two possibly being due to differences in significant aversive childhood experiences.

There has been a large body of research investigating the impact of early childhood trauma on the development of borderline personality (Bornovalova et al., 2013; Carr & Francis, 2009; Cohen et al., 2014). In particular, sexual abuse has been consistently examined as a precursor for the onset of borderline personality (MacIntosh et al., 2015). At present, findings have been inconclusive and it remains uncertain whether such abuse is a direct predictor of developing borderline personality. In saying this, a large proportion of people who are diagnosed with BPD

appear to also report early childhood abuse (Bornovalova et al., 2013). Given this, it can be speculated that both preoccupied and fearful attachment may be significantly predictive of borderline personality, but that the added experience of early trauma, such as prolonged emotional, sexual or physical abuse, as well as neglect, may be responsible for shaping the negative view of others and the world, observed in fearful attachment. Whilst this does not necessarily preclude those with preoccupied attachment styles from having early adverse experiences with their social world, it may be the nature and severity of the adverse experience(s) that distinguishes between the two. Further, it is also important to recognise that preoccupied and fearful attachment represent two ends of a continuum regarding one's view of the world. Formed views of one's social world can fall across any point along this spectrum. For this very reason, it is more appropriate to investigate attachment styles on a continuum, as is the case in this dissertation. Because early childhood experiences and / or trauma was not included in the scope of this study, this particular theory regarding trauma cannot be tested. However, given the study recruited a community sample of participants with varying levels of borderline personality traits, it can be inferred that symptoms are likely less severe, and similarly, the likelihood of this group having experienced any significant trauma is lower. Partly for this reason, it is expected that preoccupied attachment may be found to be more predictive of borderline personality traits relative to fearful attachment.

Bearing in mind that insecure attachment underlies borderline personality, it is also important to draw some ideas as to how this, along with the affective, cognitive and behavioural symptoms may impact on commitment processes in romantic

relationship functioning. Some postulations can be made particularly in relation to the established predictors of commitment. The investment model posits that high relationship satisfaction is likely to result in increased commitment (Rusbult, 1980, 1983), and conversely, lower levels of satisfaction will result in reduced commitment. Based on the research literature, it can be inferred that people with borderline personality find it more difficult to be satisfied with their relationship (Bouchard et al., 2009b). For example, it is well known that emotional experiences fluctuate often for people with borderline personality (Gunderson, 2011; Lowenstein, 2014), perhaps in part due to their limited emotion regulation ability (Gratz & Roemer, 2004), along with their tendency to cognitively distort their experiences (Bhar, Brown, & Beck, 2008; Kernberg, 1976). As a result, these individuals may be more likely to perceive their relationship as ‘great’ one day and ‘terrible’ the next day. Further, the cognitive distortion that can sometimes occur will also likely impact on how an individual interprets their partner’s behaviours, and the relationship as a whole. Given the literature has indicated that people with borderline personality have a general negative bias when it comes to interpersonal evaluations (Barnow et al., 2009), it follows that they may apply a similar bias in evaluating their romantic relationship experience leading to lower satisfaction levels. Based on these assumptions, it is proposed that people with elevated borderline personality traits will be more likely to report lower relationship satisfaction.

With respect to perceived quality of alternatives, the investment model proposes that higher perceived quality of alternatives will produce lower levels of commitment (Rusbult, 1980, 1983). With the established literature demonstrating that

borderline personality is commonly associated with a negative sense of self (Agrawal et al., 2004; Fonagy et al., 2003), an initial interpretation of this may be that they are unlikely to believe they have many options available. However, given the literature suggests that commitment processes are likely compromised in those with borderline personality (Bouchard et al., 2009b), it is important to consider the potential impact of borderline personality traits on this predictor more closely. One of the fundamental symptoms associated with BPD, and perhaps to a lesser extent for those with elevated but non-clinical levels of borderline personality traits, is an intense fear of abandonment, along with an intolerance of being alone (APA, 2013). It is possible that in response to this fear, and the persistent emptiness felt, these individuals may be more aware of, and actively seek potential alternatives. This view is somewhat supported by research demonstrating that those with borderline personality engage in a greater number of casual sexual relationships and promiscuity (Sansone & Wiederman, 2009). In conjunction with an underlying tendency to be impulsive (Links et al., 1999), these behaviours may be triggered particularly during times of distress as a means of avoiding or escaping loneliness.

Further, when commitment levels are high, a range of cognitive and behavioural maintenance acts can be activated to protect the relationship from potential threats, such as alternative partners (Rusbult & Reghetti, 2009). Commitment to one's relationship activates processes that devalue or derogate potential alternatives as a mechanism to promote relationship persistence (Miller, 1997). In addition, other cognitive processes may also impact on reducing awareness of potential alternatives by not paying attention to them (Maner, Gailliot, & Miller,

2009). It is possible that these strategies may be compromised in people with borderline personality for various reasons. Firstly, the strategies mentioned above are largely cognitive in nature, and cognitive deficits associated with borderline personality may impact on the successful activation and execution of such strategies (Zanarini, Gunderson, & Frankenburg, 1990). Secondly, it is well known that people with borderline personality have a preoccupation with being in relationships along with a simultaneous fear of abandonment (APA, 2013). During times of heightened emotion, to which people with borderline personality are prone, they may be unable to access the cognitive strategies available. Instead, an increased sensitivity to potential alternatives may be activated to ensure one is not abandoned. Based on these ideas, it is plausible to suggest that for people with elevated borderline personality traits, perceptions of a greater number of alternative partners may be more psychologically salient, contributing more markedly to reduced commitment toward their existing romantic relationship.

The last predictor of commitment as indicated by the investment model is investment size. Higher levels of investments into a relationship predict greater levels of commitment (Rusbult, 1980, 1983). As discussed above, investments can be both tangible or intangible, as well as past or planned (Goodfriend & Agnew, 2008). Speculatively, it is possible that people with borderline personality may invest more into their romantic relationships for a number of reasons. Firstly, their preoccupation with being in a relationship may drive large intangible investments of time and emotion toward the relationship. Secondly, their fear of being abandoned may also promote higher investment contributions, in order to maintain the relationship. And

thirdly, the inherent lack of self-esteem and confidence in one being worthy may see someone with borderline personality attempt to compensate through investments and giving to the relationship. Taken together, it is postulated that people with borderline personality will invest more in their relationships to ensure the relationship continues, thereby avoiding abandonment. It is also important to note that investment size can fluctuate at various points in a relationship (Goodfriend & Agnew, 2008). For people with borderline personality, this fluctuation may be even more pronounced due to emotion regulation difficulties and the activation of dichotomous thinking (i.e., 'my relationship is perfect' versus 'my relationship is doomed'). During times of distress, it is possible that people with borderline personality may abruptly reduce their level of investment, which will likely negatively impact on their overall commitment.

To summarise, the literature highlights that an insecure attachment style characterised by a negative view of self is consistently associated with borderline personality (Choi-Kain et al., 2009; Hill et al., 2011; Scott et al., 2009). Further, people with borderline personality have significant difficulties in maintaining well-functioning and lasting romantic relationships (Daley, Burge, & Hammen, 2000; Hill et al., 2011). Thus, the present study aims to draw together these three specific areas: attachment, borderline personality and romantic relationship commitment, to create a more integrated understanding of how these processes may interact to compromise successful romantic relationships. The study first examines the association between attachment and borderline personality using the Bartholomew and Horowitz (1991) framework for adult attachment to explore which attachment styles are more consistent with borderline personality presentation. This will provide insights into

how people with elevated borderline personality traits perceive themselves, and others in the context of relationship functioning. Secondly, the study will explore borderline personality as a potential moderator for the well-established investment model (Rusbult, 1980, 1983); determining whether the presence of specific borderline personality traits may impact on commitment processes proposed by the investment model. This will provide insights into how commitment may be compromised in those with elevated levels of borderline personality. Further, it is recognised that any level of personality pathology can impact on an individual's functioning, and for this reason, a community sample was used. Findings from this study will not only add to the theoretical literature in these research areas, but also offer insights into treatment and intervention opportunities, particularly surrounding romantic couple functioning in the context of borderline personality. Given the positive and protective effects of successful romantic relationship functioning on borderline personality prognosis (Zanarini et al., 2015), it follows that this is a particularly fruitful area of research to pursue.

3.0 METHOD

3.1 PARTICIPANTS

Participants were recruited from the general population using convenience-sampling techniques. In order to take part in the study, eligibility criteria specified that individuals must be aged 18 years or over, and be involved in an existing romantic relationship. At the conclusion of the data collection phase, 645 individuals were recorded to have viewed the online survey, of which 422 commenced. A total of 204 respondents completed the questionnaire, producing a response rate of 48%. Missing data were detected for 26 respondents; however, no differences in participant or relationship characteristics were identifiable for participants with missing data compared with those who completed the full questionnaire. It was therefore inferred that the cases containing incomplete data occurred at random and were excluded from the analyses. In sum, the final study sample comprised 178 participants from the general community, with levels of borderline personality traits ranging from non-clinical to clinical levels.

Of these 178 participants ($M age = 29.56$ years, $SD = 8.76$ years), there were 37 males ($M age = 31.38$ years, $SD = 9.03$ years) and 141 females ($M age = 29.09$ years, $SD = 8.65$ years). The sample included 176 heterosexual couples and two homosexual couples. The majority of participants had a Caucasian ethnic background (76%) and the remaining had either an East Asian (19%), mixed (2%), South Asian (1%) or Latino / Hispanic (1%) background. The majority of participants reported having partners with the same ethnic background as their own; therefore, relationships

reported were predominantly Caucasian (69%) or East Asian couples (14%). However, 15% of participants had partners with different ethnic backgrounds. Relationship duration for the sample ranged from 0.17 (i.e., 2 months) to 40 years ($M = 6.61$ years, $SD = 8.11$ years). However, due to an error in the initial online survey development, only 94 participants responded to this question. Participants were also asked about cohabitation, and 64% of the study sample indicated living with their partner.

3.2 MATERIALS

An online questionnaire was constructed using the software program QuestionPro. The questionnaire comprised a series of demographic questions regarding age, gender, ethnicity, relationship duration and cohabitation. This was followed by three established measures of the key variables of interest: 1) borderline personality; 2) adult attachment styles, and 3) relationship commitment. Specifically, the measures included were the Borderline Personality Questionnaire (Poreh et al., 2006), Self-report Attachment Style Prototypes (Bartholomew & Horowitz, 1991) and the Investment Model Scale (Rusbult et al., 1998). Appendices A, B, and C outline each of these scales, respectively.

3.2.1 Borderline Personality Questionnaire (BPQ)

The Borderline Personality Questionnaire or BPQ (Poreh et al., 2006) is a self-report screening measure for borderline personality traits as defined by DSM-IV criteria (APA, 1994), in both clinical and non-clinical populations. The questionnaire

comprises 80 statements to which participants respond 'true' or 'false'. Each statement belongs to one of nine subscales, including *impulsivity* (e.g., I often do things without thinking them through), *affective instability* (e.g., I often become depressed or anxious 'out of the blue'), *abandonment* (e.g., people often leave me), *relationships* (e.g., I often exaggerate the potential of friendships only to find out later that they will not work out), *self-image* (e.g., I feel inferior to other people), *suicide / self-mutilation* (e.g., I have threatened to hurt myself in the past), *emptiness* (e.g., I often feel like I have nothing to offer others), *intense anger* (e.g., I frequently get into physical fights), and *quasi-psychotic states* (e.g., sometimes I feel like I am not real). Scores for each subscale are computed based on the sum of all relevant items belonging to that subscale (where true = 1 and false = 0, except in the case where the item is reverse-scored). There are 13 items that are required to be reverse-scored (refer to Appendix A for specific items). A *total BPQ score* between 0 and 80 is determined by the summation of all items on the scale.

This instrument was originally developed in the United States but has since been tested within English and Australian samples. Existing research on the psychometric properties of the BPQ has demonstrated high internal consistency for the full scale and strong internal consistency for the majority of the subscales (Poreh et al., 2006). Table 2 provides a summary of the reliability estimates for the BPQ subscales and total score for the study sample compared with previously established U.S, English and Australian samples. The Kuder-Richardson 20 (KR-20) statistic was used as an internal consistency reliability measure to fit the dichotomous response format of the BPQ measure. The KR-20 is an equivalent measure to Cronbach's

alpha, which is commonly utilised for assessing internal consistency across continuous scales, such as those requiring Likert-type responses. Values in the table indicate that the internal consistency estimates for the study sample were comparable to those previously established in an Australian sample. Research suggests that an acceptable KR-20 (or its equivalent Cronbach's alpha) is .70 (Tavakol & Dennick, 2011). The impulsivity and quasi-psychotic states subscales were found to be below the recommended .70, and therefore had lower internal consistency relative to the other subscales. The total BPQ score, however, had a KR-20 of .94, suggesting good internal consistency for measuring the proposed construct of borderline personality in the present study.

Table 2

Reliability Estimates for BPQ Subscales and Total Score

	U.S Sample*	English Sample*	Australian Sample*	Study Sample
	KR-20	KR-20	KR-20	KR-20
BPQ Subscales				
Impulsivity	.66	.65	.64	.58
Affective Instability	.74	.83	.89	.85
Abandonment	.65	.70	.67	.76
Relationships	.70	.79	.85	.79
Self-Image	.68	.76	.79	.79
Suicide/Self-Mutilation	.71	.81	.77	.86
Emptiness	.73	.80	.81	.78
Intense Anger	.84	.85	.84	.82
Quasi-Psychotic States	.65	.62	.51	.54
BPQ Total Score	.94	.92	.94	.94

*U.S, English and Australian samples were obtained from Poreh (2006).

Further psychometric properties relating to validity were also established for the BPQ during its development (Poreh et al., 2006). The process involved an assessment of the BPQ with the Minnesota Multiphasic Personality Inventory-2 Borderline Personality Disorder Scale (MMPI-2 BPD) (Colligan, Morey, & Offord, 1994) and the Borderline Personality Scale in the Symptom-based Two-Scale Questionnaire (STB) (Claridge & Broks, 1984) for convergent validity. Further, the BPQ was also examined with the Minnesota Multiphasic Personality Inventory-2

Schizotypal Disorder Scale (MMPI-2 STY) (Colligan et al., 1994) and the Schizotypal Personality Questionnaire (SPQ) (Raine, 1991) for discriminant validity. Strong convergent validity was identified for the BPQ with the MMPI-2 BPD ($r = .85$) and the STB ($r = .72$ and $r = .78$ across two samples). Sound discriminant validity was also identified with the MMPI-2 STY ($r = .48$) and the SPQ ($r = .45$). In addition, criterion validity was supported by results, which demonstrated that a significant relationship existed between the questionnaire and the clinical classification system. Previous psychometric properties for the BPQ (Poreh et al., 2006) in conjunction with the reliability estimates obtained from the present study sample suggests that the BPQ provides a reliable and valid instrument for measuring borderline personality traits within a community sample.

3.2.2 Self-report Attachment Style Prototypes (SRASP)

The Self-report Attachment Style Prototypes or SRASP (Bartholomew & Horowitz, 1991) comprise four short paragraphs, each corresponding to one of four adult attachment styles. These include *secure attachment* (i.e., comfortable with intimacy and autonomy), *preoccupied attachment* (i.e., preoccupied with relationships), *fearful attachment* (i.e., fearful of intimacy and socially avoidant) and *dismissing attachment* (i.e., dismissing of intimacy and counter-dependent). Participants were asked to rate the extent to which they agree with how much each paragraph describes them, using a 9-point Likert scale. The scale anchors were 0 = 'do not agree at all', 4 = 'somewhat agree' and 8 = 'agree completely'. Given the SRASP consists of a single item for each attachment style, reliability was established

through examining inter-rater reliability during the initial development of the measure. Inter-rater reliability estimates ranged from .74 to .88 for all four of the prototypes (Bartholomew & Horowitz, 1991), thus demonstrating strong inter-rater reliability. This scale was selected because it assesses adult attachment structure utilising the four-category approach of interest, and has a short and easy to administer self-report response format. It is also important to note that this scale does not categorise each participant into a specific adult attachment style but rather, enables a measure of the level at which each attachment style may be present in each participant. Hence, attachment styles are not conceptualised as mutually exclusive and instead, people can display each attachment style to a greater or lesser extent. This dimensional approach is supported by previous research (Griffin & Bartholomew, 1994).

3.2.3 Investment Model Scale (IMS)

The Investment Model Scale or IMS (Rusbult et al., 1998) is a self-report measure designed to assess four constructs: the three bases of relationship dependence (relationship satisfaction, quality of alternatives, and investment size) and overall commitment level. These four constructs combined predict relationship persistence as proposed by the investment model (Rusbult, 1980, 1983). The scale comprises two types of items; facet items that are scored on a 4-point Likert scale ranging from 'don't agree at all' to 'agree completely' and global items that are scored on a 9-point scale ranging from 0 = 'do not agree at all' to 8 = 'agree completely'. There are five facet items for each of the three bases of commitment constructs (e.g., *satisfaction*:

‘my partner fulfils my needs for intimacy’; *quality of alternatives*: ‘my needs for intimacy (sharing personal thoughts, secrets, etc.) could be fulfilled in alternative relationships’; and *investment size*: ‘I have invested a great deal of time in our relationship’). Facet items were designed to elicit initial thinking about the three bases of dependence; however, responses to these items are not included in the final scoring of the IMS. Five global items for each of the three bases of dependence constructs (e.g., *satisfaction*: ‘I feel satisfied with our relationship’; *quality of alternatives*: ‘the people other than my partner with whom I might become involved are very appealing’; and *investment size*: ‘I have put a great deal into our relationship that I would lose if the relationship were to end’), and seven global items relating to the overall *commitment* construct (e.g., ‘I want our relationship to last for a very long time’) form the remainder of the scale. These global items in turn produce four averaged scores for each respective construct.

Psychometric properties for the IMS were initially tested across three studies (Rusbult et al., 1998) with participants from the general population. Table 3 provides a summary of the reliability estimates across the IMS constructs for the study sample, relative to previously established internal consistency across samples used during the initial scale development phase. Results indicate that the reliability estimates for the present study sample were all within an acceptable range and consistent with those previously established for the scale.

Table 3

Reliability Estimates for the IMS Constructs

	Sample 1*	Sample 2*	Sample 3*	Study Sample
	Cronbach's α	Cronbach's α	Cronbach's α	Cronbach's α
IMS Predictors				
Satisfaction	.92	.95	.94	.91
Alternatives	.82	.85	.88	.81
Investments	.84	.84	.82	.77
Commitment	.91	.91	.95	.87

*Reliability estimates for samples 1, 2 and 3 were obtained from Rusbult et al. (1998).

Validity was also examined by Rusbult and colleagues (1998) in the initial scale development phase using evidence to support construct, convergent and discriminant validity of the IMS. Factor analysis of the four constructs (satisfaction level, quality of alternatives, investment size and commitment level) identified Eigenvalues exceeding 1.00 for all four factors, collectively accounting for 98% to 100% of the variance in scale items. Furthermore, each item on the IMS loaded onto a single factor with coefficients exceeding .40, and no items identified with cross-factor loads exceeded an absolute value of .40 (Rusbult et al., 1998). These results provide sound evidence for the independence of items contributing to each of the IMS constructs, supporting construct validity of the scale.

Convergent and discriminant validity was also considered in the initial IMS development phase. Convergent validity was examined against a range of measures

associated with ongoing relationships and superior couple functioning, including the Dyadic Adjustment Scale (DAS) (Spanier, 1976), Relationship Closeness Inventory (Berscheid, Snyder, & Omoto, 1989), Inclusion of Other in the Self Scale (Aron, Aron, & Smollan, 1992), Trust Scale (Rempel, Holmes, & Zanna, 1985), Liking and Loving Scale (Rubin, 1970), Equity in Relationship Scale (Walster, Walster, & Traupmann, 1978) and relationship duration. Findings from the study indicated that the investment model variables demonstrated moderate to strong associations with most indices of superior couple functioning, with 97 out of 108 correlational analyses deemed to be statistically significant. These results support sound convergent validity of the IMS, hence stronger commitment and greater dependence on a relationship (defined as higher satisfaction level, poorer perceived quality of alternatives, and greater investment size) were consistently associated with superior functioning in relationships (Rusbult et al., 1998).

Discriminant validity was examined against a range of measures that assess personal dispositions. It was assumed that the investment model variables reflect differences between relationships rather than those between individuals, and therefore it was expected that support for discriminant validity would be identified from these analyses. The personal disposition measures included the Balanced Inventory of Desirable Responding (Paulhus, 1991), Multivariate Need for Cognition (Tanaka, Panter, & Winborne, 1988), Multivariate Evaluation of Self (Hoyle, 1991), Affiliation and Independence Inventory (Eidelson, 1980), Collective Self-Esteem Scale (Luhtanen & Crocker, 1992) and Internality, Powerful Others and Chance Scale (Levenson, 1981). A total of 104 analyses were performed, with a total of 29 effects

identified to be statistically significant. Of these 29 effects, only two exceeded an absolute value of .25. Given the investment model variables were found to be weakly associated with personal dispositions, sound discriminant validity was evidenced; hence commitment and the three bases of dependence as measured by the IMS are generally independent of personal disposition characteristics (Rusbult et al., 1998). To summarise, it was established that the IMS demonstrates sound psychometric properties across construct, convergent and divergent validity in the present sample.

3.3 PROCEDURE

Ethics approval was obtained via the Victoria University Human Research Ethics Committee (VUHREC) prior to the commencement of this research. Participants were recruited from the general population via a research participation advertisement titled 'Understanding the Relationship Between Personality Traits and Commitment in Romantic Relationships'. This advertisement was distributed throughout Victoria University electronically via their research participant recruitment portal. In addition, the advertisement was further distributed using the snowballing technique amongst friends and colleagues. Participants who volunteered for the study were provided with two modes of questionnaire completion: via a secure online website at <http://personalityandcommitment.questionpro.com>; or alternatively, upon request, paper copies were supplied with a replied paid envelope for return. Participants were informed prior to survey commencement that participation was voluntary and that they were eligible to withdraw at any point during the survey. Participants were also made aware that all responses would remain anonymous and

confidential, with only aggregate data to be presented in the research outputs.

Recruitment and data collection were completed between October 2009 and May 2010. At the conclusion of the data collection period, the raw data set was extracted from the QuestionPro website for cleaning, coding and analyses.

3.4 DATA ANALYSIS APPROACH

Data were analysed using the Statistical Package for Social Sciences (SPSS) V.23 and V.24 for Macs. Firstly, descriptive statistics were assessed to provide an overview of the general trends in participant characteristics. Next, a series of bivariate correlations were conducted between variables within each scale, as well as the main outcome variables of interest across the three measures. These correlations enabled the preliminary analyses and identification of any significant relationships evident in the data. Following this initial overview of the data, the main research objectives were addressed using regression modelling. All model assumptions were assessed and met for normality, linearity and homoscedasticity.

To further explore the first objective of the study, therefore the association between attachment and borderline personality, an assumption was made based on the literature that certain attachment styles that develop early on during infancy and childhood (Ainsworth et al., 1978; Bowlby, 1969, 1973, 1980) are likely to impact on the expression of borderline personality traits later in life (Fonagy et al., 2003). In order to test this assumption, multiple regression modelling was used. This statistical technique enables the known values of more than one predictor variable to be used to estimate the value of the outcome variable, whilst taking into consideration the

variance between the predictor variables (Tabachnick & Fidell, 2013). In other words, each attachment style could be simultaneously modelled to predict borderline personality, providing a more detailed account of which attachment style is more strongly associated with specific borderline personality traits and overall borderline personality presentation.

The second research objective was to explore the role of borderline personality on romantic commitment processes, in the context of the investment model framework (Rusbult, 1980, 1983). In order to achieve this, borderline personality was examined as a moderator using hierarchical moderated regression. A moderator refers to *'a variable that affects the direction and / or strength of relation between an independent or predictor variable and a dependent or criterion variable'* (Baron & Kenny, 1986, p. 1174). Hierarchical regression modelling was used to identify whether any changes could be observed in overall commitment level when specific borderline personality traits are introduced into the investment model. Each borderline personality subscale was modelled, in addition to the total score, to establish a clearer understanding as to which specific borderline personality traits may demonstrate unique interactions with the investment model predictors to impact on overall relationship commitment.

Taken together, these analyses are intended to provide an overall theoretical account of how attachment, borderline personality and commitment interact to influence romantic relationship functioning, addressing the third objective of the study. Whilst the use of a more sophisticated statistical approach such as structural

equation modelling (SEM) would have been ideal to examine these relationships more complexly, the relatively small sample size limited this option (Kline, 2005).

4.0 RESULTS

Chapter 4.0 presents the overall findings of the data analyses addressing the central aim of the study; that is, to explore the impact of elevated borderline personality traits on commitment levels in romantic relationships, with consideration of attachment processes. The results are structured in four main sections, consistent with the data analyses approach described above.

4.1 DESCRIPTIVE SUMMARY

Descriptive statistics were computed to gain an understanding of participant characteristics, and to ascertain whether there were any differences in their presentation across the main outcome variables of interest. In particular, gender and age were examined. Further, the distributions of the main outcome variables of interest were also explored to provide additional participant characteristic information, whilst also examining the data assumptions required to be met for inferential statistical analyses to follow.

4.1.1 Gender Differences

The total sample comprised 37 males and 141 females ($N = 178$). Table 4 summarises the mean scores for males, females and the total sample, across each subscale and total score for the BPQ. A series of independent samples t-tests found no statistically significant differences between males and females across all BPQ subscales and total score, with the exception of the subscales: impulsivity and self-

image. More specifically, males reported statistically significant higher levels of impulsivity traits, relative to females, $t(44.52) = 2.17, p = .04$ (heterogeneous variance). In contrast, females reported statistically significant higher levels of self-image traits, relative to males $t(70.40) = -2.16, p = .04$ (heterogeneous variance). Taken together, these results demonstrated that the presentation of borderline personality traits amongst the study sample was relatively similar for males and females, with the exception of impulsivity and self-image traits.

Table 4

Means and Standard Deviations for the BPQ Subscales and Total Score

	Males		Females		Total Sample	
	<i>n</i> = 37		<i>n</i> = 141		<i>N</i> = 178	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
BPQ Subscales						
Impulsivity	2.16	2.09	1.38	1.38	1.54	1.58
Affective Instability	2.84	2.52	3.40	3.02	3.28	2.93
Abandonment	1.08	1.74	1.43	1.85	1.36	1.83
Relationships	2.11	2.11	2.38	2.34	2.33	2.29
Self-image	1.68	1.89	2.48	2.42	2.31	2.34
Suicide / Self- mutilation	0.89	1.65	1.00	1.79	0.98	1.76
Emptiness	1.81	2.25	2.05	2.26	2.00	2.25
Intense Anger	2.19	2.54	2.30	2.42	2.28	2.44
Quasi-psychotic States	1.32	1.43	1.18	1.24	1.21	1.28
BPQ Total Score	16.08	13.01	17.60	13.13	17.28	13.08

Adult attachment styles were explored in the study based on four prototypes measured by the SRASP, with the means and standard deviations presented in Table 5. Independent samples t-tests revealed that there were no statistically significant differences between males and females across all four attachment styles.

Table 5

Means and Standard Deviations for the SRASP Scores

	Males		Females		Total Sample	
	<i>n</i> = 37		<i>n</i> = 141		<i>N</i> = 178	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Attachment Style						
Secure	5.03	1.92	4.96	2.08	4.98	2.04
Dismissing	4.38	2.19	3.69	2.08	3.83	2.12
Preoccupied	2.43	2.35	2.69	2.25	2.63	2.27
Fearful	2.49	2.17	2.84	2.52	2.76	2.45

Central to the present study is relationship commitment. This was examined utilising the IMS, which posits that three predictors: relationship satisfaction, perceived quality of alternatives, and investment size, together predict commitment level. The means and standard deviations for each predictor and overall commitment level scores are summarised in Table 6. A series of independent samples t-tests revealed no statistically significant difference in relationship satisfaction level and perceived quality of alternatives, across gender. However, females reported higher levels of investment $t(176) = -1.99, p = .05$; and overall commitment $t(41.05) = -3.10, p = .003$ (heterogeneous variance) to their romantic relationship.

Table 6

*Means and Standard Deviations for the IMS Predictors and Overall Commitment**Scores*

	Males		Females		Total Sample	
	<i>n</i> = 37		<i>n</i> = 141		<i>N</i> = 178	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
IMS Predictors						
Satisfaction	5.91	1.95	6.55	1.45	6.42	1.58
Alternatives	3.35	1.88	2.95	1.71	3.03	1.75
Investments	4.74	1.85	5.34	1.56	5.21	1.64
Commitment	6.30	2.00	7.35	1.02	7.14	1.35

To summarise, the descriptive analyses conducted revealed that there were some differences across gender for the outcome variables of interest. Females reported significantly higher levels of self-image traits, investment into, and commitment toward their romantic relationships. In contrast, males reported a significantly higher level of impulsivity traits.

4.1.2 Age

Participants in the sample were aged between 18 to 64 years ($M = 29.56$ years, $SD = 8.76$ years), with the age distribution being skewed towards younger individuals. A series of correlations revealed no statistically significant patterns of association between age and most outcome variables of interest. However, statistically significant correlations were found between age and the suicide / self-mutilation subscale $r(176)$

= -.15, $p = .04$, as well as between age and relationship satisfaction $r(176) = -.24, p = .001$. More specifically, the results suggest that with increasing age, lower levels of suicide / self-mutilation traits, and relationship satisfaction were reported. In sum, whilst some significant differences were observed across gender and age, both did not appear to influence the main outcome variables of interest: borderline personality, attachment styles and overall commitment level, and therefore these variables were not included in further analyses.

4.2 CORRELATIONS

Bivariate analyses were conducted as part of a preliminary examination of the correlations between variables within each scale, as well as the associations across the main outcome variables. In particular, the present research was interested in exploring the relationship between attachment and borderline personality, as well as how borderline personality impacts on overall romantic relationship commitment. This section summarises the significant associations identified.

4.2.1 Correlations Within the Scales

Table 7 summarises the correlation coefficients between each BPQ subscale and total score. A statistically significant positive association was observed between all individual subscales with the BPQ total score. Further, all BPQ subscales demonstrated a statistically significant association with one another.

Table 7

Correlations Between the BPQ Subscales and Total Score

	I [#]	AI [#]	A [#]	R [#]	SI [#]	S/SM [#]	E [#]	IA [#]	QPS [#]	BPQT [#]
BPQ Subscales										
Impulsivity (I)	-									
Affective Instability (AI)	.27***	-								
Abandonment (A)	.32***	.59***	-							
Relationships (R)	.25***	.55***	.63***	-						
Self-image (SI)	.16*	.57***	.62***	.52***	-					
Suicide / Self-mutilation (S/SM)	.38***	.31***	.35***	.34***	.27***	-				
Emptiness (E)	.36***	.67***	.64***	.55***	.72***	.34***	-			
Intense Anger (IA)	.26***	.46***	.36***	.47***	.27***	.22**	.37***	-		
Quasi-psychotic States (QPS)	.30***	.47***	.34***	.28***	.20**	.24**	.34***	.32***	-	
BPQ Total (BPQT)	.49***	.83***	.79***	.76***	.73***	.53***	.83***	.63***	.52***	-

*Significant at the .05 level (2-tailed); **Significant at the .01 level (2-tailed); ***Significant at the .001 level (2-tailed); [#] Abbreviated notation for each subscale and total BPQ score

Next, Table 8 summarises the correlation coefficients between the four attachment styles, as measured by the SRASP. A statistically significant negative association was found between secure attachment and the insecure attachment styles: preoccupied and fearful. Further, preoccupied and fearful attachment demonstrated a statistically significant positive association. Dismissing attachment was not correlated with the other three attachment styles.

Table 8

Correlations Between the Attachment Style Scores

	Secure	Dismissing	Preoccupied	Fearful
Attachment Style				
Secure	-			
Dismissing	-.06	-		
Preoccupied	-.27***	-.05	-	
Fearful	-.46***	.14	.52***	-

*Significant at the .05 level (2-tailed); **Significant at the .01 level (2-tailed); ***Significant at the .001 level (2-tailed)

Lastly, Table 9 presents the correlation coefficients between the predictors of the investment model and overall commitment as measured by the IMS. Relationship satisfaction, investment size and overall commitment level were all positively and significantly correlated with one another. In contrast, perceived quality of alternatives was negatively and significantly associated with these three factors.

Table 9

*Correlations Between the Investment Model Predictors and Overall Commitment**Level*

	Satisfaction	Alternatives	Investments	Commitment
IMS Predictors				
Satisfaction	-			
Alternatives	-.27***	-		
Investments	.26***	-.15*	-	
Commitment	.58***	-.41***	.41***	-

*Significant at the .05 level (2-tailed); **Significant at the .01 level (2-tailed); ***Significant at the .001 level (2-tailed)

4.2.2 Correlation Between Attachment Style and Borderline Personality

Having established an understanding of the correlations within each scale, it was important to assess the observed relationships between the main outcome variables of interest. Firstly, Table 10 summarises the correlation coefficients for the associations between each of the four adult attachment styles with each BPQ subscale and the BPQ total score. The analyses revealed a statistically significant negative correlation between secure attachment and all BPQ subscales and total score, with the exception of impulsivity. No association was found between dismissing attachment and the BPQ subscales or total score. Further, preoccupied and fearful attachment both revealed a statistically significant positive relationship with all BPQ subscales and total score. An exception was the quasi-psychotic states subscale, which was not found to be correlated with preoccupied attachment. In sum, these results demonstrate

a significant association between borderline personality, with secure, preoccupied and fearful attachment styles.

Table 10

Correlations Between Attachment Style and Borderline Personality

	Self-Report Attachment Style Prototype (SR-ASP)			
	Secure	Dismissing	Preoccupied	Fearful
BPQ Subscales				
Impulsivity	-.12	.01	.19*	.17*
Affective Instability	-.39***	-.02	.35***	.48***
Abandonment	-.45***	-.07	.47***	.51***
Relationships	-.34***	-.00	.44***	.45***
Self-image	-.47***	-.08	.43***	.49***
Suicide / Self-mutilation	-.28***	-.09	.18*	.19*
Emptiness	-.43***	-.03	.36***	.44***
Intense Anger	-.18*	.03	.24**	.32***
Quasi-psychotic States	-.21**	.17*	.14	.27***
BPQ Total	-.47***	-.02	.46***	.55***

* Significant at the .05 level (2-tailed); **Significant at the .01 level (2-tailed); ***Significant at the .001 level (2-tailed)

4.2.3 Correlation Between Borderline Personality and Commitment

Secondly, also of interest was the relationship between borderline personality and commitment. Table 11 presents the correlation coefficients computed between borderline personality and the investment model variables. Relationship satisfaction

demonstrated a statistically significant negative relationship with all BPQ subscales and total score, except for the suicide / self-mutilation subscale. The quality of alternatives predictor revealed no significant association with borderline personality. Further, investment size was found to have a statistically significant negative association with the BPQ subscales impulsivity and quasi-psychotic states, whilst also demonstrating a statistically significant positive association with the relationships subscale. Similarly, relationship commitment also revealed a statistically significant negative relationship with the BPQ subscales impulsivity and quasi-psychotic states.

Table 11

Correlations Between Borderline Personality and Commitment

	IMS Predictors			Commitment
	Satisfaction	Alternatives	Investments	
BPQ Subscales				
Impulsivity	-.26***	.14	-.19*	-.16*
Affective Instability	-.15*	-.09	-.00	-.11
Abandonment	-.15*	-.13	.05	-.06
Relationships	-.16*	-.07	.15*	-.12
Self-image	-.16*	-.09	.12	-.01
Suicide / Self-mutilation	-.06	.03	-.02	.06
Emptiness	-.24**	-.04	.04	-.12
Intense Anger	-.18*	-.06	.06	-.04
Quasi-psychotic States	-.19*	.07	-.15*	-.20**
BPQ Total	-.24***	.07	.03	-.12

*Significant at the .05 level (2-tailed); **Significant at the .01 level (2-tailed); ***Significant at the .001 level (2-tailed)

To summarise, the correlational analyses between the main variables of interest demonstrated some statistically significant associations warranting further investigation. Firstly, preoccupied and fearful attachment styles were both positively related with most borderline personality facets, whilst secure attachment was negatively associated. Based on this finding, further regression analyses were conducted to examine more closely the extent to which particular attachment styles are associated with different aspects of borderline personality presentation. Secondly,

although there were some statistically significant associations between the investment model predictors and some facets of borderline personality, these associations were generally weak and inconsistent. An exception to this was relationship satisfaction, which demonstrated a consistent negative and significant relationship with borderline personality. Further, and surprisingly, commitment did not reveal a statistically significant association with borderline personality overall, and was only significantly correlated with two borderline personality subscales; impulsivity and quasi-psychotic states. Although there are possible reasons for this, as will be outlined later in Chapter 5, it was speculated nonetheless that rather than influencing commitment levels directly, borderline personality may have a moderating impact on the associations between investment model predictors and commitment. Therefore, a series of hierarchical multiple regression models were built to examine this possibility with both borderline personality overall and specific facets of borderline personality considered as potential moderators.

4.3 ATTACHMENT AND BORDERLINE PERSONALITY

This section presents further analyses examining the specific association between attachment styles and facets of borderline personality in order to address the first objective of the study. To reiterate, the bivariate analyses conducted in Section 4.2 revealed a statistically significant negative correlation with secure attachment, in contrast to statistically significant positive correlations with both preoccupied and fearful attachment. Further, many of the borderline personality subscales demonstrated statistically significant correlations with these three attachment styles.

Therefore, a series of multiple regressions were conducted to explore the nature of these relationships more closely to better understand whether specific attachment styles revealed a stronger association with particular facets of borderline personality. Given that dismissing attachment did not show a statistically significant correlation with any of the BPQ subscales or total score, it was not included in the models below. Findings indicated that the impulsivity subscale was not significantly associated with any of the attachment styles examined, and therefore the output for this model was included in Appendix D. In contrast, BPQ total, and all other subscales showed significant associations with at least one attachment style included. These models are described below.

Firstly, Table 12 outlines the regression model examining the association between attachment and BPQ total. The overall model was statistically significant, $F(3,174) = 39.05, p < .001$, where 40% of the variance (adjusted $R^2 = .39$) observed in the BPQ total score, could be accounted for by attachment styles. Secure attachment demonstrated a statistically significant negative association with borderline personality traits, $t(177) = -4.09, p < .001$, accounting for 6% of the variance. In contrast, preoccupied, $t(177) = 3.23, p = .001$, and fearful, $t(177) = 4.16, p < .001$ attachment styles both revealed statistically significant positive associations with borderline personality traits, each accounting for 4% and 6% of the variance, respectively.

Table 12

Multiple Regression Model with Attachment Styles Predicting BPQ Total

Predictors: Attachment Styles	<i>b</i>	SE <i>b</i>	β	95% CI for <i>b</i>
Constant	17.95***	2.87		[12.28, 23.62]
Secure	-1.74***	.42	-.27	[-2.57, -0.90]
Preoccupied	1.28***	.40	.22	[0.50, 2.06]
Fearful	1.66***	.40	.31	[0.87, 2.45]

* $p < .05$ (2-tailed); ** $p < .01$ (2-tailed); *** $p < .001$ (2-tailed)

DV = BPQ Total; IVs = Attachment Styles (Secure, Preoccupied and Fearful)

Next it was of interest to examine more closely how specific attachment styles are related to individual facets of borderline personality. Whilst impulsivity did not reveal any significant associations, Table 13 summarises the statistically significant overall model conducted between attachment and affective instability, $F(3,174) = 22.29$, $p < .001$, where 28% of the variance (adjusted $R^2 = .27$) in affective instability was accounted for by attachment styles. More specifically, secure attachment demonstrated a statistically significant negative association with the affective instability subscale, $t(177) = -2.83$, $p = .01$, accounting for 3% of the variance. In contrast, fearful attachment revealed a statistically significant positive association, $t(177) = 3.91$, $p < .001$, accounting for 6% of the variance. Preoccupied attachment was not significantly associated with affective instability, when secure and fearful attachment styles are accounted for, $t(177) = 1.62$, $p = .11$.

Table 13

Multiple Regression Model with Attachment Styles Predicting BPQ Subscale Affective Instability

Predictors: Attachment Styles	<i>b</i>	SE <i>b</i>	β	95% CI for <i>b</i>
Constant	3.27***	.71		[1.88, 4.67]
Secure	-.30**	.10	-.21	[-0.50, -0.09]
Preoccupied	.16	.10	.12	[-0.04, 0.35]
Fearful	.39***	.10	.32	[0.19, 0.58]

* $p < .05$ (2-tailed); ** $p < .01$ (2-tailed); *** $p < .001$ (2-tailed)

DV = Affective Instability BPQ traits; IVs = Attachment Styles (Secure, Preoccupied and Fearful)

Table 14 summarises the regression model examining attachment and the abandonment subscale. The overall model was statistically significant, $F(3,174) = 34.81$, $p < .001$, where 38% of the variance (adjusted $R^2 = .36$) in abandonment traits was attributable to attachment styles. Secure attachment was again, significantly and negatively associated with abandonment traits $t(177) = -3.94$, $p < .001$, accounting for 6% of the variance. In contrast, both preoccupied $t(177) = 3.88$, $p < .001$, and fearful $t(177) = 3.20$, $p = .002$ attachment styles revealed a statistically significant positive association with abandonment. Each accounted for 5% and 4% of the variance in abandonment, respectively.

Table 14

*Multiple Regression Model with Attachment Styles Predicting BPQ Subscale**Abandonment*

Predictors: Attachment Styles	<i>b</i>	SE <i>b</i>	β	95% CI for <i>b</i>
Constant	1.46***	.41		[0.65, 2.27]
Secure	-.24***	.06	-.27	[-0.36, -0.12]
Preoccupied	.22***	.06	.27	[0.11, 0.33]
Fearful	.18**	.06	.25	[0.07, 0.30]

* $p < .05$ (2-tailed); ** $p < .01$ (2-tailed); *** $p < .001$ (2-tailed)

DV = Abandonment BPQ traits; IVs = Attachment Styles (Secure, Preoccupied and Fearful)

The regression model examining attachment styles and the relationship subscale was explored next, with the model summarised in Table 15. The overall model was statistically significant, $F(3,174) = 22.66$, $p < .001$, where 28% of the variance (adjusted $R^2 = .27$) in the relationship subscale could be accounted for by attachment styles. Similar to the previous models, secure attachment showed a statistically significant negative association with the relationship subscale $t(177) = -2.26$, $p = .03$, accounting for 2% of the variance. In contrast, both preoccupied $t(177) = 3.62$, $p < .001$, and fearful $t(177) = 2.82$, $p = .005$ attachment revealed a statistically significant negative association with the relationship subscale. Respectively, each accounted for 5% and 3% of the variance in relationship issues seen in borderline personality.

Table 15

*Multiple Regression Model with Attachment Styles Predicting BPQ Subscale**Relationships*

Predictors: Attachment Styles	<i>b</i>	SE <i>b</i>	β	95% CI for <i>b</i>
Constant	1.91***	.56		[0.83, 3.00]
Secure	-.18*	.08	-.16	[-0.34, -0.02]
Preoccupied	.28***	.08	.27	[0.13, 0.43]
Fearful	.22**	.08	.23	[0.07, 0.37]

* $p < .05$ (2-tailed); ** $p < .01$ (2-tailed); *** $p < .001$ (2-tailed)

DV = Relationships BPQ traits; IVs = Attachment Styles (Secure, Preoccupied and Fearful)

Self-image was the next BPQ subscale modelled with attachment, and the results are presented in Table 16. The overall model was statistically significant, $F(3,174) = 30.94, p < .001$, with 35% of the variance (adjusted $R^2 = .34$) in self-image accounted for by attachment styles. Again, a similar pattern to the previous subscales examined was observed. Secure attachment demonstrated a statistically significant negative association with self-image issues, $t(177) = -4.40, p < .001$, accounting for 7% of the variance. In contrast, preoccupied $t(177) = 3.15, p = .002$, and fearful $t(177) = 2.87, p = .005$ attachment revealed a statistically significant positive association with self-image issues. Each contributed to 4% and 3% of the variance seen in the BPQ self-image subscale.

Table 16

*Multiple Regression Model with Attachment Styles Predicting BPQ Subscale Self-**Image*

Predictors: Attachment Styles	<i>b</i>	SE <i>b</i>	β	95% CI for <i>b</i>
Constant	2.83***	.54		[1.78, 3.89]
Secure	-.35***	.08	-.30	[-0.50, -0.19]
Preoccupied	.23**	.07	.23	[0.09, 0.38]
Fearful	.21**	.08	.23	[0.07, 0.36]

* $p < .05$ (2-tailed); ** $p < .01$ (2-tailed); *** $p < .001$ (2-tailed)

DV = Self-image BPQ traits; IVs = Attachment Styles (Secure, Preoccupied and Fearful)

Table 17 summarises the overall significant model between attachment and the suicide / self-mutilation subscale, $F(3,174) = 5.74$, $p = .001$, with 9% of the variance (adjusted $R^2 = .07$) in the suicide / self-mutilation subscale accounted for by attachment styles. Secure attachment revealed a statistically significant negative association with the suicide / self-mutilation subscale, $t(177) = -2.96$, $p = .003$ accounting for 5% of the variance. However, both preoccupied $t(177) = 1.13$, $p = .26$ and fearful $t(177) = .30$, $p = .77$ attachment was not significantly associated with this subscale.

Table 17

*Multiple Regression Model of the Association between Attachment Styles and BPQ**Subscale Suicide / Self-mutilation*

Predictors: Attachment Styles	<i>b</i>	SE <i>b</i>	β	95% CI for <i>b</i>
Constant	1.76***	.48		[0.82, 2.70]
Secure	-.21**	.07	-.24	[-0.35, -0.07]
Preoccupied	.07	.07	.10	[-0.06, 0.20]
Fearful	.02	.07	.03	[-0.11, 0.15]

* $p < .05$ (2-tailed); ** $p < .01$ (2-tailed); *** $p < .001$ (2-tailed)

DV = Suicide / Self-mutilation BPQ traits; IVs = Attachment Styles (Secure, Preoccupied and Fearful)

The regression model conducted between attachment and emptiness is outlined in Table 18. The overall model was statistically significant, $F(3,174) = 22.59$, $p < .001$, with attachment styles accounting for 28% of the variance (adjusted $R^2 = .27$) in the emptiness subscale. Secure attachment demonstrated a statistically significant negative association with emptiness, $t(177) = -3.84$, $p < .001$, accounting for 6% of the variance. In contrast, both preoccupied $t(177) = 2.22$, $p = .03$ and fearful $t(177) = 2.75$, $p = .01$ attachment revealed a statistically significant negative association. They each respectively accounted for 2% and 3% of the variance observed in the BPQ emptiness subscale.

Table 18

*Multiple Regression Model with Attachment Styles predicting BPQ Subscale**Emptiness*

Predictors: Attachment Styles	<i>b</i>	SE <i>b</i>	β	95% CI for <i>b</i>
Constant	2.52***	.54		[1.45, 3.59]
Secure	-.31***	.08	-.28	[-0.47, -0.15]
Preoccupied	.17*	.08	.17	[0.02, 0.31]
Fearful	.21**	.08	.23	[0.06, 0.36]

* $p < .05$ (2-tailed); ** $p < .01$ (2-tailed); *** $p < .001$ (2-tailed)

DV = Emptiness BPQ traits; IVs = Attachment Styles (Secure, Preoccupied and Fearful)

Intense anger was the next BPQ subscale examined with attachment styles, summarised in Table 19. The overall model was found to be statistically significant, $F(3,174) = 7.02, p < .001$, with attachment styles accounting for 11% of the variance (adjusted $R^2 = .09$) in the intense anger subscale. In contrast to previous models, secure attachment was not significantly associated with the intense anger subscale $t(177) = -.50, p = .62$, and neither was preoccupied attachment $t(177) = .73, p = .47$. However, fearful attachment did reveal a statistically significant positive association with the intense anger subscale $t(177) = 2.96, p = .003$, accounting for 4% of its variance.

Table 19

*Multiple Regression Model of the Association between Attachment Styles and BPQ**Subscale Intense Anger*

Predictors: Attachment Styles	<i>b</i>	SE <i>b</i>	β	95% CI for <i>b</i>
Constant	1.60*	.65		[0.30, 2.89]
Secure	-.05	.10	-.04	[-0.24, 0.14]
Preoccupied	.07	.09	.06	[-0.11, 0.24]
Fearful	.27**	.09	.27	[0.09, 0.45]

* $p < .05$ (2-tailed); ** $p < .01$ (2-tailed); *** $p < .001$ (2-tailed)

DV = Intense Anger BPQ traits; IVs = Attachment Styles (Secure, Preoccupied and Fearful)

Lastly, the final regression model examined attachment and the quasi-psychotic states subscale, which is presented in Table 20. The overall model was statistically significant, $F(3,174) = 5.07, p = .002$, with attachment styles accounting for 8% of the variance (adjusted $R^2 = .06$) in the quasi-psychotic subscale. Similar to the intense anger subscale, both secure $t(177) = -1.39, p = .17$ and preoccupied $t(177) = -.09, p = .93$ attachment styles were not significantly associated with the quasi-psychotic subscale. However, again, fearful attachment revealed a statistically significant positive association with the quasi-psychotic states subscale, $t(177) = 2.32, p = .02$, accounting for 3% of its variance.

Table 20

*Multiple Regression Model of the Association between Attachment Styles and BPQ**Subscale Quasi-psychotic States*

Predictors: Attachment Styles	<i>b</i>	SE <i>b</i>	β	95% CI for <i>b</i>
Constant	1.27***	.35		[0.58, 1.96]
Secure	-.07	.05	-.11	[-0.17, 0.03]
Preoccupied	-.00	.05	-.01	[-0.10, 0.09]
Fearful	.11*	.05	.22	[0.02, 0.21]

* $p < .05$ (2-tailed); ** $p < .01$ (2-tailed); *** $p < .001$ (2-tailed)

DV = Quasi-psychotic States BPQ traits; IVs = Attachment Styles (Secure, Preoccupied and Fearful)

To summarise, regression modelling examining the association between attachment and borderline personality traits yielded different patterns for each of the BPQ subscales. Firstly, there was no significant association between attachment and impulsivity however, attachment was significantly associated with all remaining subscales. In particular, secure attachment demonstrated significant negative associations with the BPQ subscales: affective instability, abandonment, relationships, self-image, suicide / self-mutilation and emptiness. In contrast, preoccupied and fearful attachment styles both revealed significant positive associations with the BPQ subscales: abandonment, relationships, self-image and emptiness. Further, fearful attachment showed significant positive associations with affective instability, intense anger and quasi-psychotic states. Overall, all three attachment styles were found to be significantly associated with general borderline personality traits as measured by the BPQ total. Whilst secure attachment was negatively associated, the insecure attachment styles preoccupied and fearful were both positively associated.

4.4 BORDERLINE PERSONALITY AND COMMITMENT

This section focuses on the second objective of the study and explores the role of borderline personality traits on overall relationship commitment using the investment model framework. As identified in the preliminary bivariate analyses, borderline personality traits did not demonstrate a direct significant relationship with commitment. Therefore, the study proposed to examine whether an indirect relationship via moderation may occur instead, where borderline personality traits act as a moderator to influence the established relationships in the investment model. In order to test this theory, a series of hierarchical multiple regression models were developed. In performing these analyses all independent variables (i.e., the predictors) were standardised to z-scores prior to being inputted into the model (Aiken & West, 1991). Once all variables were prepared, each model comprised three sequential steps.

The first step predicted the basic investment model relationships, looking at whether relationship satisfaction, perceived quality of alternatives and investment size were significant predictors of commitment level. This step was consistent across all models tested. The second step involved the inclusion of the moderator variable (i.e., borderline personality as determined by the BPQ total score or BPQ subscales) as an additional independent variable into the model. The third and final step tested for any interaction effects between the investment model predictors and the moderator variable, as determined by the products of each predictor variable with the moderator variable in each model. Where significant effects were identified, the interaction effects were graphed for high and low levels of the moderator. Further, simple-slope analysis was performed where necessary to identify whether the moderation effect

was statistically significant. These analyses revealed that whilst borderline personality alone was not a statistically significant predictor of overall commitment level, the relationships between the three predictors and commitment level were moderated by various levels of particular borderline personality traits. For brevity, only the statistically significant results are presented, however the non-significant models have been included in Appendix D.

Firstly, findings from the hierarchical multiple regression exploring total BPQ score (hereafter ‘total BPQ’) as the moderator revealed an overall statistically significant effect of the model, as summarised in Table 21. In the first step, the investment model predictors accounted for 47% of the variance observed in commitment level, adjusted $R^2 = .46$, $F_{\text{Change}}(3, 174) = 51.53$, $p < .001$. Hence, relationship satisfaction [$t(177) = 7.61$, $p < .001$], perceived quality of alternatives [$t(177) = -4.38$, $p < .001$] and investment size [$t(177) = 4.46$, $p < .001$] all demonstrated a statistically significant association with commitment level. Note that because this first step represents the conventional investment model, and remains the same for the first step of all the remaining regression models reported in this section, it will not be repeated in the description and reporting of these subsequent models. The inclusion of total BPQ in the second step of the model did not account for an additional variance observed in commitment level, $\Delta R^2 = .001$, $F_{\text{Change}}(1, 173) = .36$, $p = .55$; and on its own, total BPQ was not a predictor of commitment level. Lastly, in the third step of the model, the interaction between total BPQ and the investment model predictors accounted for an additional variance of 5% on commitment level, $\Delta R^2 = .05$, $F_{\text{Change}}(3, 170) = 5.98$, $p = .001$. Further, the interaction between total BPQ and perceived quality of alternatives was a predictor of commitment level [$t(177) =$

-4.02, $p < .001$]. This indicated that the association between quality of alternatives and commitment was moderated by the overall level of borderline personality symptomology.

Table 21

*Hierarchical Multiple Regression for Borderline Personality (total BPQ),**Relationship Satisfaction, Quality of Alternatives and Investment Size on Commitment**Level*

Predictor: BPQ Total	<i>b</i>	SE <i>b</i>	95% CI	R²_{adj.}	ΔR²	F
<i>Step 1</i>						
Constant	.00	.06	[-0.11, 0.11]			
Satisfaction	.45*	.06	[0.33, 0.57]			
Alternatives	-.25*	.06	[-0.37, -0.14]			
Investments	.26*	.06	[0.14, 0.37]	.46	.47	51.53*
<i>Step 2</i>						
Constant	.00	.06	[-0.11, 0.11]			
Satisfaction	.44*	.06	[0.32, 0.56]			
Alternatives	-.26*	.06	[-0.37, -0.14]			
Investments	.26*	.06	[0.15, 0.37]			
BPQ Total	-.04	.06	[-0.15, 0.08]	.46	.00	38.59*
<i>Step 3</i>						
Constant	-.03	.06	[-0.14, 0.08]			
Satisfaction	.40*	.06	[0.28, 0.52]			
Alternatives	-.30*	.06	[-0.42, -0.19]			
Investments	.28*	.06	[0.17, 0.39]			
BPQ Total	-.10	.06	[-0.21, 0.02]			
Satisfaction x BPQ Total	-.04	.06	[-0.15, 0.07]			
Alternatives x BPQ Total	-.25*	.06	[-0.38, -0.13]			
Investments x BPQ Total	.07	.06	[-0.04, 0.17]	.50	.05	26.52*

* $p < .05$ (2-tailed); ** $p < .01$ (2-tailed); *** $p < .001$ (2-tailed)

DV = Commitment Level; IVs = Relationship Satisfaction, Quality of Alternatives, Investment Size and Total Borderline Personality Traits

The moderating effect of total borderline personality traits on the association between perceived quality of alternatives and commitment level is illustrated in Figure 3. In this figure, relatively high and low levels of both BPQ total and quality of alternatives correspond to scores of one standard deviation above the mean and one standard deviation below the mean, respectively, of that variable. It can be seen in Figure 3 that perceived quality of alternatives was negatively associated with overall commitment level. However, this relationship appeared to be stronger for those with higher levels of borderline personality traits. Subsequent simple-slope analyses revealed that this negative relationship was statistically significant for those with higher levels of borderline personality traits [$t(170) = -5.86, p < .001$] but not statistically significant for those with lower levels [$t(170) = -0.50, p = .50$].

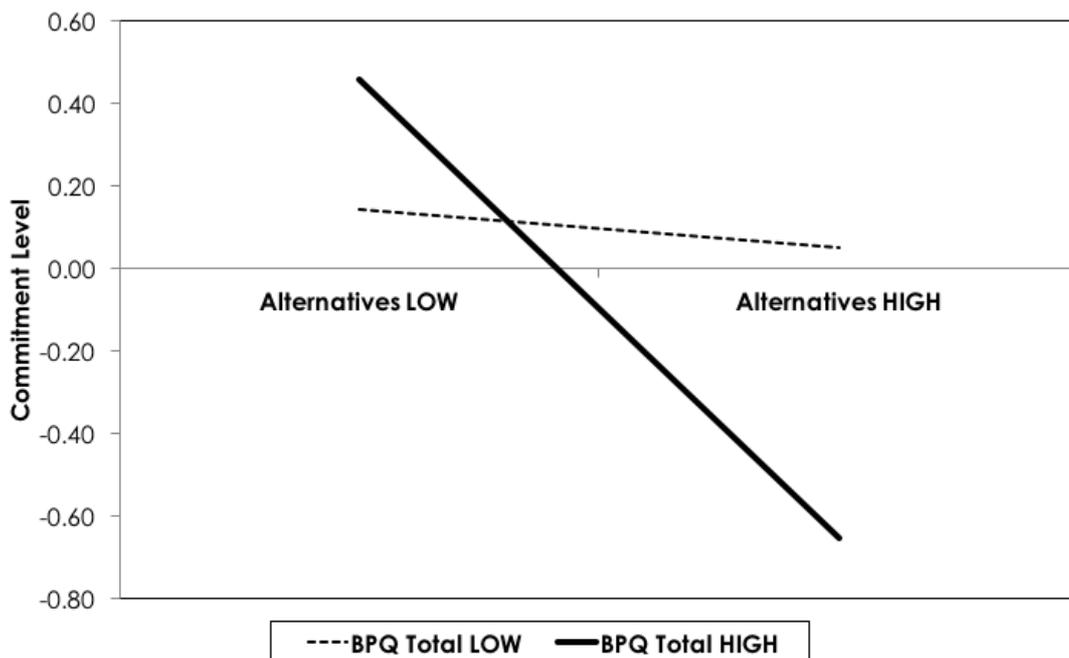


Figure 3 Interaction effect between perceived quality of alternatives and borderline personality on commitment level

Having established that overall borderline personality is a significant moderator of the investment model, it was of interest to explore whether particular borderline personality traits were also moderators. In earlier analyses, individual BPQ subscales were found to correlate with one another, and therefore a Bonferroni correction was used to determine a more conservative alpha level, which takes into account these multiple comparisons. Given that a further nine hierarchical moderated regression models were examined, the standard alpha level of .05 was divided by 9, resulting in statistical significance being set at $p < .006$ for each model. Whilst seven of the nine subscales were not found to be significant moderators of the investment model, both the impulsivity and relationships subscale did reveal that they were significant moderators. These two models are presented below, whilst the non-significant models have been included in Appendix D.

The hierarchical multiple regression exploring the impulsivity subscale score (hereafter ‘impulsivity’) as the moderator revealed an overall statistically significant effect of the model, summarised in Table 22. The inclusion of impulsivity in the second step of the model accounted for no additional variance observed in commitment level, $\Delta R^2 = .00$, $F_{\text{Change}}(1, 173) = .49$, $p = .49$ and on its own, impulsivity was not a predictor of commitment level. In the third step of the model, the interaction between impulsivity and the investment model predictors accounted for an additional variance of 6% on commitment level, $\Delta R^2 = .06$, $F_{\text{Change}}(3, 170) = 6.65$, $p < .001$. Overall, there was no statistically significant association between impulsivity and commitment level. However, the interaction between impulsivity and perceived quality of alternatives was a statistically significant predictor of commitment level [$t(177) = -4.23$, $p < .001$]. This indicated that the association

between quality of alternatives and commitment was also moderated by the level of impulsivity traits.

Table 22

Hierarchical Multiple Regression for Impulsivity, Relationship Satisfaction, Quality of Alternatives and Investment Size on Commitment Level

Predictor: Impulsivity Subscale	<i>b</i>	SE <i>b</i>	95% CI	R²_{adj.}	ΔR²	F
<i>Step 2</i>						
Constant	.00	.06	[-0.11, 0.11]			
Satisfaction	.46*	.06	[0.34, 0.58]			
Alternatives	-.25*	.06	[-0.37, -0.14]			
Investments	.26*	.06	[0.15, 0.38]			
Impulsivity	.04	.06	[-0.07, 0.16]	.47	.00	38.65*
<i>Step 3</i>						
Constant	.04	.05	[-0.07, 0.15]			
Satisfaction	.43*	.06	[0.32, 0.55]			
Alternatives	-.23*	.06	[-0.34, -0.12]			
Investments	.28*	.06	[0.17, 0.39]			
Impulsivity	.03	.06	[-0.08, 0.15]			
Satisfaction x Impulsivity	.02	.04	[-0.07, 0.10]			
Alternatives x Impulsivity	-.21*	.05	[-0.31, -0.11]			
Investments x Impulsivity	.03	.06	[-0.09, 0.15]	.53	.06	27.10*

* $p < .006$ (2-tailed)

DV = Commitment Level; IVs = Relationship Satisfaction, Quality of Alternatives, Investment Size and Impulsivity

Figure 4 depicts the moderating effect of impulsivity traits on the association between perceived quality of alternatives and commitment level. In this figure,

relatively high and low levels of both impulsivity and quality of alternatives correspond to scores of one standard deviation above the mean and one standard deviation below the mean, respectively, of that variable. The graphical representation demonstrates that quality of alternatives was negatively associated with overall commitment level. However, this relationship was obviously stronger for those with higher levels of impulsivity traits. Simple-slope analyses revealed that this negative relationship was statistically significant for those with higher levels of impulsivity traits [$t(170) = -6.25, p < .001$] but not so for those with lower levels [$t(170) = -0.31, p = .76$].

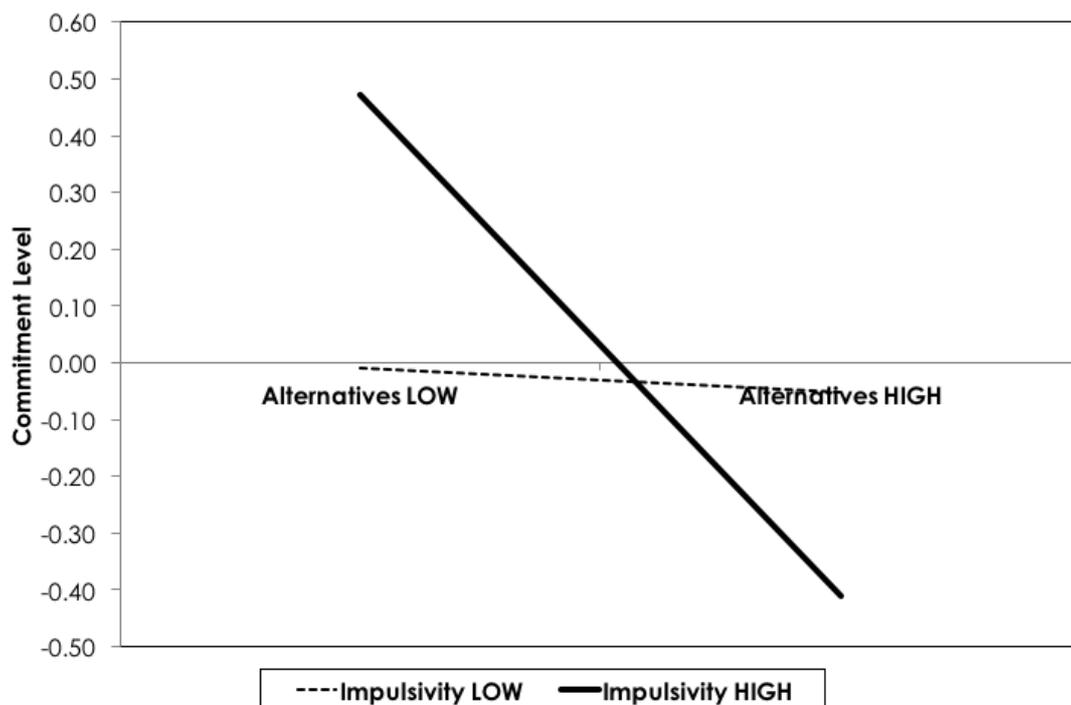


Figure 4 Interaction effect between perceived quality of alternatives and impulsivity on commitment level

The hierarchical multiple regression exploring the relationship subscale score (hereafter, 'relationship issues') as the moderator revealed an overall significant effect of the model, summarised in Table 23. The introduction of relationship issues in the second step of the model accounted for an additional 1% variance observed in commitment level, $\Delta R^2 = .01$, $F_{\text{Change}}(1, 173) = 4.08$, $p = .05$ and on its own, relationship issues was not a statistically significant predictor of commitment level [$t(177) = -2.02$, $p = .05$]. In the third step of the model, the interaction between relationship issues and the investment model predictors accounted for an additional variance of 5% on commitment level, $\Delta R^2 = .05$, $F_{\text{Change}}(3, 170) = 5.62$, $p = .001$. Overall, there was a statistically significant association between relationship issues and commitment level [$t(177) = -2.90$, $p = .004$]. Further, the interaction between relationship issues and quality of alternatives was a statistically significant predictor of commitment level [$t(177) = -3.55$, $p < .001$]. This indicated that the association between quality of alternatives and commitment was moderated by the overall level of traits underlying relationship issues.

Table 23

Hierarchical Multiple Regression for Relationship Issues, Relationship Satisfaction, Quality of Alternatives and Investment Size on Commitment Level

Predictor: Relationships Subscale	<i>b</i>	SE <i>b</i>	95% CI	R²_{adj.}	ΔR²	F
<i>Step 2</i>						
Constant	.00	.06	[-0.11, 0.11]			
Satisfaction	.42*	.06	[0.30, 0.54]			
Alternatives	-.27*	.06	[-0.38, -0.15]			
Investments	.28*	.06	[0.16, 0.39]			
Relationships	-.12	.06	[-0.23, -0.00]	.47	.01	40.35*
<i>Step 3</i>						
Constant	-.04	.05	[-0.15, 0.07]			
Satisfaction	.40*	.06	[0.28, 0.51]			
Alternatives	-.28*	.06	[-0.39, -0.17]			
Investments	.29*	.06	[0.18, 0.40]			
Relationships	-.16*	.06	[-0.28, -0.05]			
Satisfaction x Relationships	-.06	.06	[-0.17, 0.05]			
Alternatives x Relationships	-.21*	.06	[-0.33, -0.10]			
Investments x Relationships	.11	.05	[-0.01, 0.20]	.51	.05	27.31*

* $p < .006$ (2-tailed)

DV = Commitment Level; IVs = Relationship Satisfaction, Quality of Alternatives, Investment Size and Relationship Issues

The moderating effect of traits underlying relationship issues on the association between quality of alternatives and commitment level is illustrated in Figure 5. In this figure, relatively high and low levels of both relationship issues and investment size correspond to scores of one standard deviation above the mean and

one standard deviation below the mean, respectively, of that variable. It can be observed that quality of alternatives was negatively associated with overall commitment level. However, this relationship appeared to be stronger for those with higher levels of traits underlying relationship issues. Subsequent simple-slope analyses revealed that this negative relationship was statistically significant for those with higher levels of traits underlying relationship issue [$t(170) = -5.84, p < .001$] but not so for those with lower levels [$t(170) = -0.73, p = .47$].

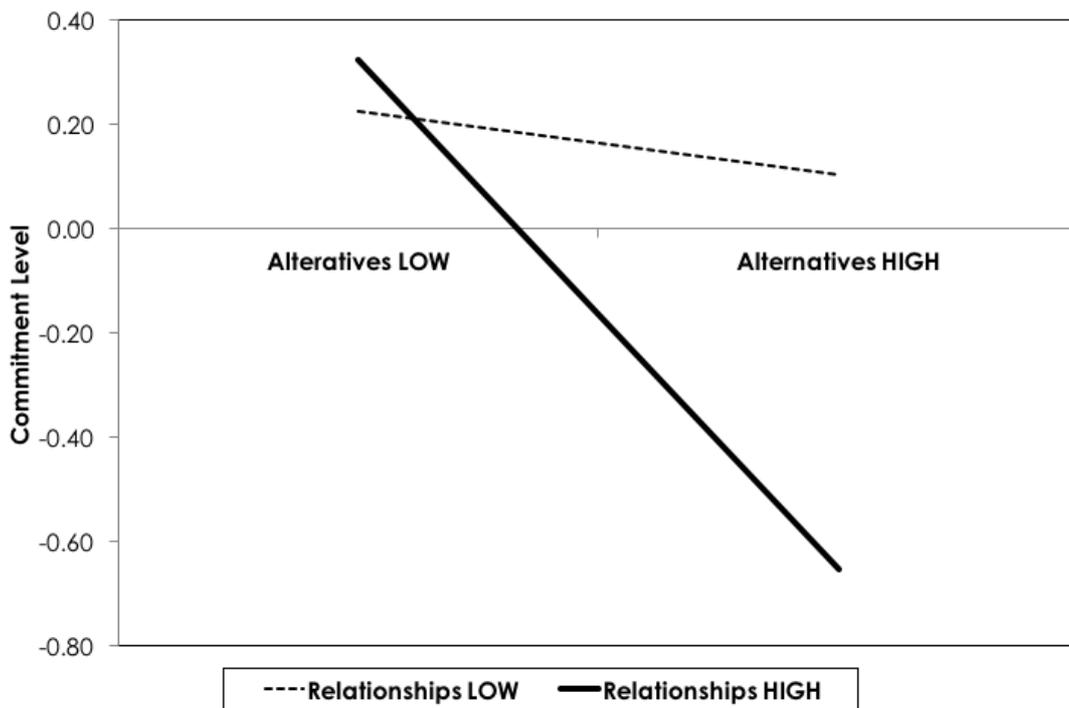


Figure 5 Interaction effect between relationships and quality of alternatives on commitment levels

To summarise, a series of hierarchical multiple regressions were modelled to explore borderline personality traits as a moderator of the commitment processes proposed by the investment model framework. The BPQ subscales affective instability, abandonment, self-image, suicide / self-mutilation, emptiness, intense anger and quasi-psychotic states did not moderate the investment model relationships predicting commitment. However, three significant moderators were identified. The association between perceived quality of alternatives and commitment was moderated by overall levels of impulsivity, relationship issues and borderline personality traits. In the next chapter, these results will be discussed in conjunction with the outcomes from the previous section on attachment and borderline personality to highlight the main implications of these findings.

5.0 DISCUSSION

The present dissertation explored the role of borderline personality traits in romantic relationship commitment processes, with consideration of attachment styles. Existing literature has consistently demonstrated that those diagnosed with BPD display significant interpersonal difficulties, representing its core presentation (APA, 2013; Gunderson, 2011). The processes that contribute to interpersonal dysfunction remain complex, resulting in a broad area of research that attempts to understand the specific mechanisms underlying these difficulties. In particular, research has identified that those with BPD appear to be prone to romantic relationship dissolution (Bouchard et al., 2009b), and therefore engage in a higher number of unsuccessful romantic relationships. Given commitment is central to relationship maintenance and persistence (Arriaga & Agnew, 2001; Rusbult, 1983), it follows that research focusing on how borderline personality traits may influence commitment will contribute to a better understanding of why individuals with borderline personality struggle to achieve stable romantic relationships. Further, there is an increasing appreciation for the need to understanding personality pathology on a spectrum (APA, 2013; Haslam et al., 2012; Westen et al., 2006) in order to fully capture the degree of functional impairment across varying levels of symptom presentation. It is for this reason that the present research utilised a dimensional approach to investigating borderline personality. The study also employed the well-established investment model (Rusbult, 1980, 1983) to examine romantic relationship commitment amongst a general population with borderline personality traits on a continuum, recognising that a

diagnosis of BPD does not necessarily need to be met for romantic relationship functioning to be impaired.

This section highlights and discusses the main findings from the study, with consideration of the implications for theory and in practice. Firstly, borderline personality presentation observed in the study sample is explained to provide a context for how the following results may be generalised. Secondly, the association between attachment and borderline personality is discussed. It has been established in the literature that insecure attachment is significantly associated with borderline personality (Choi-Kain et al., 2009; Hill et al., 2011; Scott et al., 2009). This study explores which insecure attachment style is most strongly associated with borderline personality traits in a community sample, utilising the four category adult attachment model proposed by Bartholomew and Horowitz (1991). Given that attachment styles also influence how one engages in their interpersonal relationships (Simpson & Rholes, 2010), outcomes are also considered in the context of romantic relationship functioning. Thirdly, the impact of borderline personality traits on romantic relationship commitment was explored, using the investment model framework (Rusbult, 1980, 1983). More specifically, borderline personality traits were explored as possible moderators of the associations between the three investment model predictors: relationship satisfaction, perceived quality of alternatives, and investment size; and overall commitment level. Insights into how commitment processes may operate in the context of mild borderline personality pathology are identified and discussed. Following this, an integrated summary is provided on how borderline personality, attachment and romantic relationship commitment may all interact to influence romantic relationship functioning. Whilst the influence of attachment on

relationship commitment was not directly tested, inferences are made based on the established associations identified between attachment and borderline personality symptoms. Theoretical and practical implications are also outlined. Lastly the limitations of the present study are acknowledged, along with consideration of future research opportunities.

5.1 BORDERLINE PERSONALITY IN A COMMUNITY

SAMPLE

Borderline personality, conceptualised as a variety of potentially maladaptive traits ranging in severity, was examined in a community sample in the present study. Past research has identified significant challenges in obtaining accurate prevalence estimates for borderline personality as a clinical disorder due to issues surrounding sampling bias and use of varied BPD measures for assessment (Paris, 2010). Whilst the present study did not attempt to gain prevalence estimates, nor did it focus on borderline personality in its clinical form, 18 out of 178 (10%) participants were found to self-report above clinical thresholds for borderline personality traits as measured by the BPQ (Poreh et al., 2006). Whilst the decision was made to retain these participants in the analyses because part of the goal for this research was to understand borderline personality on a continuum, it follows that the study's findings need to be interpreted with caution, and cannot be directly generalised to a clinical BPD population. Nevertheless, these results shed light on borderline personality observable in the general community, where inferences regarding clinical populations can be made.

A closer examination of gender and age trends found that there were no significant gender differences across the BPQ subscales, with the exception of impulsivity and self-image issues in borderline personality presentation. Males were found to report higher levels of BPD-related impulsivity traits relative to females. This is consistent with existing research which has identified a greater likelihood for men to engage in socially problematic behaviours such as aggression and criminal behaviour, both of which are strongly linked to impulsivity (Chapple & Johnson, 2007; Cross, Copping, & Campbell, 2011). Further, it is common for individuals who consistently engage in delinquent behaviours to experience incarceration, where the prevalence of borderline personality presentation is also often high (Sansone & Sansone, 2009). The difference in gender for the impulsivity subscale identified in the present study suggests that even amongst a general population, levels of impulsivity that characterise borderline personality is more likely to be seen in males, relative to females.

In contrast, females were found to report significantly higher rates of self-image concerns consistent with those observable in BPD. This is in line with existing research on gender differences in perceptions of self-image generally, where self-image concerns occur more traditionally, in females, perhaps resulting from societal expectation and pressure for females for example, to remain thin, in order to be seen as attractive (Feingold & Mazzaella, 1998). Insecure attachment, marked by a negative view of self (Bartholomew & Horowitz, 1991), may also contribute to self-image symptoms observed in borderline personality. It is possible that individuals with a negative view of self, and therefore who experience feelings of being unlovable or feelings of being 'not good enough' (Agrawal et al., 2004), are more susceptible to

being influenced by external expectations imposed by society. In particular, it has been suggested that people with preoccupied attachment styles have a tendency to seek the approval of others in order to gain a sense of self-worth or value (Bartholomew & Horowitz, 1991). For this very reason, underlying insecure attachment may particularly predispose females with borderline personality to be more prone to self-image concerns relative to males.

Further, there was no significant gender difference regarding borderline personality presentation overall. This particular finding is consistent with previous research conducted by Sansone and Sansone (2011a) which also found no gender differences in BPD presentation in a general community sample. In fact, the authors proposed that previously established gender differences reported in the literature may be a direct result of sampling bias where people with BPD are largely recruited from inpatient / outpatient units. Research suggests that females with BPD have a tendency to develop eating, mood, anxiety and posttraumatic stress disorders often resulting in hospitalisation, and therefore presentation at inpatient / outpatient units (Sansone & Sansone, 2011a). In contrast, males with BPD are more likely to display symptoms of intense anger and novelty seeking behaviour leading to potential incarceration (Sansone & Sansone, 2011a). These different outcomes may contribute to observations related to gender differences in BPD prevalence estimates. It may also be speculated that there are no gender differences in borderline personality presentation at the non-clinical and subclinical levels; however, gender distinctions in expression of borderline personality traits may become more evident with increasing severity. Future epidemiological studies involving a larger sample assessing the full spectrum of borderline personality will assist in gaining clarity on this issue.

Analyses of the study sample also revealed a significant negative association between age and the BPQ subscale suicide / self-mutilation. This finding is partly consistent with existing literature that has suggested that overall borderline personality symptoms are likely to decline with age (Paris & Zweig-Frank, 2001), however it was not consistent with research that has identified impulsivity to be the main trait observed to decline with age (Stepp & Pilkonis, 2008). Whilst the trait impulsivity was not found to be significantly associated with age, it is possible that impulsivity which manifests as suicide / self-mutilation behaviours also decreases with age. Other studies however have demonstrated conflicting results indicating that improvement in overall functioning may in fact reverse with age for some individuals with BPD (Shea et al., 2009). These findings demonstrate that there are mixed outcomes observed in the relationship between age and borderline personality presentation, and it is possible that specific traits may differ in their association with age, although this was only supported by the suicide / self-mutilation trait in the present study. It is also important to note that most study findings examine BPD functioning, and there are limited studies which focus on those with mild borderline personality tendencies such as those likely present in the community. Similar to gender, it is possible that for those with non-clinical or subclinical levels of borderline personality traits, increasing age may not coincide with significant changes in overall functioning, whilst those with clinical levels of BPD symptom presentation may show clearer changes with age, as is seen in the case of impulsivity (Stepp & Pilkonis, 2008). Hence, findings from the study sample examining gender and age in relation to mild borderline personality tendencies suggest there are some differences observable

however, these results do need to be interpreted with caution given the sample size and gender imbalance which limits the power of the statistical tests conducted.

5.2 ATTACHMENT AND BORDERLINE PERSONALITY

Existing research has identified a significant relationship between attachment styles and borderline personality (Agrawal et al., 2004; Levy et al., 2005; Scott et al., 2009; Steele et al., 2015). Findings from the present study support such existing studies that have demonstrated a negative relationship between borderline personality and secure attachment, as well as positive associations between borderline personality and the preoccupied and fearful attachment styles (Agrawal et al., 2004; Choi-Kain et al., 2009; Hill et al., 2011; Levy et al., 2005). Given that attachment styles are formed from early life experiences (Bowlby, 1969, 1973, 1980) and later consolidated in adult relationships, the study examined whether specific attachment styles were more strongly associated with particular borderline personality characteristics. In order to achieve this, a series of multiple regression models assessed the contribution that each attachment style has towards specific borderline personality subscales and total score. It is important to reiterate that attachment in the present study was conceptualised as being on a continuum, rather than categorically, where each participant self-reported the extent to which they felt each of the four adult attachment prototypes described them. A decision was made to exclude gender and age from the modelling as preliminary analyses indicated that neither variable was associated with overall borderline personality in the present study sample. The dismissing attachment style was not included in the modelling either, as bivariate analyses did not reveal an

association with borderline personality. Given that dismissing attachment is characterised by a positive view of self (Bartholomew & Horowitz, 1991), and that borderline personality is in general associated with a negative view of self (Choi-Kain et al., 2009; Hill et al., 2011; Scott et al., 2013), this finding is not surprising and is consistent with previous research. Specifically, this finding reinforces earlier research that people with borderline personality struggle with having a developed sense of self-worth and an integrated sense of self (Gunderson, 2011; Levy et al., 2015).

The multiple regression modelling revealed that secure, preoccupied and fearful attachment styles were not significantly associated with impulsivity. However, secure attachment demonstrated significant associations with the BPQ subscales: affective instability, abandonment, relationships, self-image, suicide / self-mutilation and emptiness, whereby more secure attachment was associated with lower levels of these borderline traits. In contrast, preoccupied and fearful attachment styles both revealed significant positive associations with the BPQ subscales: abandonment, relationships, self-image and emptiness. Fearful attachment further showed significant positive associations with affective instability, intense anger and quasi-psychotic states. Overall, all three attachment styles were found to be significantly associated with general borderline personality traits as measured by the BPQ total.

Whilst these findings are not surprising, they represent some interesting observations.

Firstly, it appears that attachment styles are generally less associated with behavioural symptoms (e.g., impulsivity) of borderline personality and more so with the emotional or psychological symptoms (e.g., affective instability, fear of abandonment, feelings of emptiness). As discussed, attachment styles represent a combination of one's view of self and the social world around them (Bartholomew &

Horowitz, 1991) and hence is a psychological process in itself. Influenced by one's early life experiences, insecure attachment styles are developed from consistent invalidating messages from primary caregivers in response to one's needs (Ainsworth et al., 1978; Bowlby, 1969). This experience of early relationships is then integrated into mental models representing a self-concept of being unworthy or unlovable, impacting on the ability to form a healthy identity of self (Bender & Skodol, 2007). It is perhaps this fractured or incomplete sense of self that dictates the struggles people with borderline personality feel when they attempt to navigate their social world (Fonagy et al., 2003). This in turn may manifest as emotional or psychological features such as consistent fear of being left by a relationship partner, or chronic feelings of emptiness and loneliness, all of which have the underlying core of insecure attachment representing a lack of self-worth. In contrast, insecure attachment may be more likely to have an indirect association with behavioural manifestations observed in borderline personality such as impulsivity, as this may be a learnt strategy employed to release or avoid dealing with the emotional pain experienced. Taken together, these findings suggest that insecure attachment is strongly associated with affective and cognitive traits that characterise borderline personality, but less so for behavioural manifestations, namely impulsivity.

Secondly, the finding that individuals with elevated borderline personality traits are likely to have a more negative view of self, but may vary in their perceptions of others and the world is consistent with previous research that has identified support for both preoccupied and fearful attachment (Choi-Kain et al., 2009). This finding is in line with research that has found that people with borderline personality often have significant identity disturbances and are unable to establish a stable sense of who they

are (Koenigsberg et al., 2001; Westen et al., 2011). Results also revealed that a greater number of specific borderline personality traits are associated with fearful relative to preoccupied attachment. It could be speculated that those who hold a negative view of self, yet also expect the worse from others are likely to exhibit a greater number of dysfunctional traits that are consistent with borderline personality. Given that preoccupied and fearful attachment can be conceptualised to fall on continuum of anxious attachment (Agrawal et al., 2004), it is possible that the number of symptoms consistent with borderline personality may also increase as the level of anxious attachment moves towards the fearful end. In fact, some researchers have argued for a combined preoccupied and fearful attachment model to understand attachment observed in borderline personality. Whilst the current study is unable to draw firm conclusions about this speculation, the results do support the association between borderline personality and both attachment styles. Future studies that utilise an attachment model which incorporates both preoccupied and fearful attachment will assist in a better understanding of attachment processes in borderline personality, as well as the types of predictors (e.g, childhood trauma, mother with BPD) that may influence this outcome.

Applied to romantic relationships, this insecure sense of self can assist in explaining some of the key features associated with borderline personality presentation. For example, individuals may develop a dichotomous view of themselves that lead to thoughts such as ‘if I make one mistake, my partner will hate me and leave me’, an example of how fear of abandonment may manifest itself. Alternatively, chronic feelings of loneliness can be characterised by individuals who develop a belief that ‘without my relationship, I have nothing’. Such cognitions in

combination with emotional instability and other behavioural manifestations can result in turbulence and conflict that is often characteristic of relationships involving one partner who experiences BPD (Daley et al., 2000; Selby, Braithwaite, Joiner Jr, & Fincham, 2008). The present findings suggest that even amongst a community sample of borderline personality traits, attachment styles, and in particular preoccupied and fearful attachment, can still impact on specific features of borderline personality, which in turn has implications for successful romantic relationship functioning.

5.3 BORDERLINE PERSONALITY AND RELATIONSHIP COMMITMENT

It has been well established that individuals with borderline personality are likely to experience significant dysfunction associated with their interpersonal relationships (APA, 2013; Lazarus et al., 2014). In particular, research has identified that those with borderline personality have a tendency to engage in a greater number of romantic relationships, that their relationships often involve more conflict, and are limited in duration (Bouchard et al., 2009b; Daley et al., 2000; Hill et al., 2011; Selby et al., 2008). Given that the process of commitment is fundamental to relationship perseverance (Arriaga & Agnew, 2001; Rusbult & Buunk, 1993), an improved understanding of how commitment operates in romantic relationships for people with borderline personality traits was deemed worthwhile to investigate; and the well-established investment model (Rusbult, 1980, 1983) offered a robust framework for doing so. The analysis explored whether borderline personality features moderate the relationship between the predictors in the investment model (i.e., relationship

satisfaction, perceived quality of alternatives and investment size) and overall commitment level. In other words, the study was interested in examining whether varying levels of borderline personality traits impact on the strength of the relationship between the investment model predictors and overall commitment level. This section discusses the significant findings from a series of hierarchical multiple regression models, outlining their potential theoretical and practical implications.

Prior to this discussion, it is important to note that the study first confirmed the established relationships between the investment model predictors, and overall commitment level. Findings indicated that the direction and significance of each of these relationships were consistent with previous research (Bui et al., 1996; Lin & Rusbult, 1995; Rusbult et al., 1986). Specifically, stronger commitment was predicted by higher satisfaction levels, lower perceived quality of alternatives to the current relationship, and a greater degree of investment in the relationship. These findings support the model's robustness and provide further evidence for its applicability to a general population. It has been noted however, that there is a gap in research surrounding the investment model and its ability to consider personality factors (Campbell & Foster, 2002; Foster, 2008), which likely impact commitment processes in romantic relationship functioning (Donnellan, Larsen-Rife, & Conger, 2005; Lehnart & Neyer, 2006). This limitation has been addressed in two studies examining narcissistic personality traits in a general population (Campbell & Foster, 2002; Foster, 2008). In particular, Foster's (2008) study examined narcissism as a moderator for the established relationships between the investment model predictors and commitment. Results identified that those who reported higher narcissistic tendencies also reported a lower level of commitment associated with low satisfaction, high

quality of alternatives, and low investments (Foster, 2008). Translated, these findings suggest that people with higher levels of narcissistic traits are less willing to persist during low satisfaction, more opportunistic when they perceive other opportunities, and find it relatively easy to abandon their relationships because they feel they have little to lose in doing so (Foster, 2008). Further, this is consistent with how narcissists are likely to operate in their relationships; they are driven by self-interest and preoccupation with what they can gain from a relationship, with less consideration and concern for their respective partner (Campbell & Foster, 2002).

Given the significant interpersonal difficulties also experienced by people with borderline personality (Bouchard et al., 2009b; Hill et al., 2011), and the challenges associated with maintaining successful romantic relationships, the present study replicated the design of the above study (Foster, 2008) and explored whether borderline personality traits moderate the relationships between the investment model predictors and commitment. Results indicated that overall borderline personality, as well as the BPQ subscales impulsivity and relationships, demonstrated significant interaction effects with the investment model predictor, perceived quality of alternatives to moderate commitment levels. No meaningful interactions between borderline personality and the predictors relationship satisfaction and investment size were identified. The implications of these findings are discussed in more detail below.

5.3.1 Moderating Effects of Borderline Personality on Relationship Satisfaction and Commitment

The investment model postulates that there is a positive association between relationship satisfaction and overall commitment level (Rusbult, 1980, 1983); hence

those who experience greater satisfaction with their relationship, are more likely to remain committed and persevere with their relationship. When borderline personality was considered in the investment model as a potential moderator, this relationship did not change. Findings indicated that borderline personality did not moderate the commitment mechanism associated with relationship satisfaction, suggesting that even in the context of borderline personality presentation, the predictive strength of this established association remained consistent. Firstly, this result supports the robustness or strength of the investment model, demonstrating that despite the consideration of borderline personality traits, relationship satisfaction is consistent in its ability to predict commitment levels. Secondly, this has theoretical implications for those experiencing borderline personality. It would appear that irrespective of the presence of borderline personality, or any of its specific traits, the relative importance of relationship satisfaction remains the same. For example, regardless of whether an individual is experiencing a fear of abandonment, intense anger (both traits of borderline personality) or neither, the subjective perception of relationship satisfaction exercises the same strength in predicting overall commitment. In other words, it appears that borderline personality does not influence this mechanism of commitment.

5.3.2 Moderating Effects of Borderline Personality on Quality of Alternatives and Commitment

The investment model posits a negative relationship between perceived quality of alternatives and overall commitment level (Rusbult, 1980, 1983); therefore those who perceive a greater number of quality alternatives to their relationship, are less likely to remain committed and persevere in that relationship. When borderline

personality was considered as a moderator, several significant interactive effects between borderline personality features and perceived quality of alternatives were identified. Firstly, results indicated that there was a significant interaction effect between the trait impulsivity and perceived quality of alternatives on commitment levels. However, this was only significant for those deemed to have higher levels of this trait and not so for those with lower levels, relative to the mean. In other words, those who reported that they were more impulsive were more likely to demonstrate reduced commitment when they perceive their quality of alternatives to be high. An explanation for this observation may be that those with greater impulsivity may be more willing to act on highly attractive alternative opportunities relative to those who are less impulsive, resulting in the stronger negative relationship observed between perceived quality of alternatives and commitment. Research supporting this speculation can be found, for example, in the literature which has identified greater sexual impulsivity for individuals with BPD (Sansone & Sansone, 2011b; Sansone & Wiederman, 2009). Those with borderline personality have a tendency to engage with a greater number of sexual partners and are often believed to demonstrate higher levels of promiscuity (Sansone & Wiederman, 2009), both of which are likely to reduce relationship quality and commitment. It may also be speculated that impulsivity can contribute to rash or premature decision making processes when one becomes aware of potential alternatives, leading to a greater readiness to dissolve a current relationship in preference for engaging with an attractive alternative other. It would be interesting in future to explore whether this interaction between impulsivity and perceived quality of alternatives differs across varied alternative options (e.g., being alone, alternative sexual partner or potential romantic relationship partner).

Perhaps the alternative of being alone would be less appealing to those with borderline personality tendencies relative to the alternative of another partner, given their general preoccupation with being in relationships, and intense fear of abandonment (APA, 2013; Gunderson, 2011). Irrespective, these findings support the notion that higher levels of impulsivity can significantly interact with perceived quality of alternatives to reduce an individual's commitment to a romantic relationship, even within a community sample of borderline personality traits.

In contrast however, the association between quality of alternatives and commitment was virtually non-existent for below average levels of impulsivity. This finding is somewhat surprising, as it conflicts with the established research on the investment model (Le & Agnew, 2003). It may be plausible to suggest that individuals with very low levels of impulsivity in a general population may have a tendency to be unusually cautious and risk-averse. Consequently, irrespective of perceiving high levels of alternatives, commitment to the current relationship may still remain the preferred option for these individuals, opting for comfort and familiarity instead of something new and different. In fact, the idea of leaving a relationship for individuals who are particularly careful in making decisions and avoid risk where possible, is more likely to be daunting than appealing. Alternatively, this could be a limitation of the investment model to explain commitment at extreme levels of psychological traits (Foster, 2008). Further research, however, is required to better understand exactly how and why very low levels or the absence of impulsivity may influence this commitment mechanism and eliminate its effect entirely.

Secondly, results revealed that there was a significant interaction effect between the BPQ relationships subscale and quality of alternatives on commitment

level. Again, this was only significant for those deemed to have higher levels of this trait and not so for those with lower levels, relative to the mean. This translates as those who reported greater relationship issues were more likely to demonstrate reduced commitment when they perceive their quality of alternatives to be high. Indeed, when examining the items loading onto the BPQ relationship subscale, the majority of the items represented difficulties relating with other (e.g., ‘the relationships with people I care about have lots of ups and downs’) or disappointment experienced with relationships (e.g., ‘people often let me down’) suggesting that this trait may represent a consistent negative cognitive bias in interpreting social interactions consistent with borderline personality (Barnow et al., 2009; Whipple & Fowler, 2011). It can therefore be speculated that those individuals that exhibit high levels of this trait experience frequent relationship challenges and are perhaps more likely to perceive their relationship as ‘hard work’. This may lead to a lower CL-alt, and combined with a sensitivity to noticing potential alternatives (because their current relationship is ‘hard work’) their desire to remain committed to their relationship is lowered. This may explain why the quality of alternatives commitment mechanism is more pronounced for those with elevated BPQ relationship traits.

In contrast however, for those with extremely low levels of the BPQ relationship trait, quality of alternatives did not appear to predict commitment levels. Speculatively, it is possible that people with extremely low levels of the relationship trait may operate on the other extreme with positive cognitive bias, where they perceive no relationship challenges at all. It is likely that in such a scenario, the concept of alternatives to their relationship may be completely absent and therefore, no association with commitment would be exhibited. In other words, these individuals

would not be cognisant of alternative opportunities relative to their relationship being available. Again, this scenario refers to an extreme presentation of psychological continua, and similar to extremely low, or absence of impulsivity, the investment model has not been designed to capture such cases (Foster, 2008). Further the sensibleness or reality of an individual who displays a complete absence of, or negligible levels of impulsivity or relationship traits remains questionable in itself.

Lastly, overall, borderline personality was also found to significantly moderate the relationship between perceived quality of alternatives and commitment level. Findings revealed that this relationship was significant for those who reported higher borderline personality traits and not for those who are extremely low on these traits. This finding suggests overall that the commitment mechanism associated with perceived quality of alternatives is strengthened or more pronounced in the context of borderline personality broadly, and more specifically for the BPQ traits of impulsivity and relationships. In other words, in the presence of borderline personality symptoms, an increased perception of quality alternatives appears to exert a greater influence on reducing commitment levels. It may be speculated that the combination of features already discussed in this section contribute to an increased sensitivity towards noticing, and acting on alternatives to one's relationship. Therefore commitment maintenance acts (Maner et al., 2009; Tran & Simpson, 2009) are compromised. Further, as the literature suggests, individuals with borderline personality present with an overarching desire to be engaged in a relationship and experience emotional distress when this is jeopardised (Gunderson, 2011). This heightened emotional state may result in a greater hypervigilance toward opportunities for potential partners, even for those amongst a general population with elevated borderline traits without

meeting the criteria for a diagnosis. Embedded in people who display borderline personality tendencies is a negative sense of self, as identified and discussed in the attachment research (Agrawal et al., 2004); and this likely contributes to a need for external validation that can only be obtained via seeking out others. In response to this, individuals may be more sensitive and at times misread cues of interest from others in order to fulfil their own internal needs. Combined with impulsivity and challenges experienced in relationships, this can underlie behaviours that ultimately lead to reduced commitment levels (e.g., cheating on one's partner or ending a relationship abruptly). This perspective is consistent with the relationship literature indicating that there is a strong association between borderline personality and a greater number of unsuccessful relationships (Bouchard et al., 2009b; Daley et al., 2000).

5.3.3 Moderating Effect of Borderline Personality on Investment Size and Commitment

The investment model also stipulates that a positive association can be observed between increased investment size and commitment level (Rusbult, 1980, 1983); that is those who put in more investment toward their relationship and partner, are likely to demonstrate greater commitment levels. When borderline personality was considered in the model, this commitment mechanism did not change. In other words, investment size exerted the same influence on commitment irrespective of whether individuals displayed traits of borderline personality or not. Consistent with the relationship satisfaction mechanism, this finding provides further support for the robustness of the investment model. In addition, this finding also has theoretical

implications, whereby irrespective of borderline personality symptoms such as relationship challenges, emotional ups and downs, or impulsive behaviours, the level of investment into their relationship continues to predict commitment at the same level as when these symptoms are at a minimal.

In sum, borderline personality was only a significant moderator for the quality of alternatives commitment mechanism. The investment model was found to remain a robust and consistent model for predicting commitment, however in the presence of borderline personality traits, and in particular those of impulsivity and relationships, the influence of quality alternatives became more pronounced in reducing overall commitment levels. This would suggest that this is indeed the commitment mechanism to further explore in future studies examining romantic relationship perseverance in the context of borderline personality.

5.4 BORDERLINE PERSONALITY, ATTACHMENT AND COMMITMENT: IMPLICATIONS AND FUTURE RESEARCH

The overarching aim of the present dissertation was to explore the role of borderline personality traits on romantic relationship commitment, taking into consideration attachment styles. The results from this study support the idea that insecure attachment, and in particular preoccupied and fearful attachment, are strongly associated with borderline personality. Further, borderline personality along with its specific BPQ traits of impulsivity and relationships moderated the association between the investment model predictor perceived quality of alternatives and overall

commitment level. These findings suggest that for people with elevated levels of each trait, and overall borderline personality, the quality of alternatives mechanism that operates to determine commitment becomes more pronounced. Possible reasons for this may be that these individuals become more aware of and sensitive to perceived availability of alternatives when they experience impulsivity or relationship challenges, which markedly reduces their overall commitment to their existing relationship when alternatives are perceived to be especially high quality. This is likely to coincide with a reduction in commitment maintenance acts, which would otherwise strengthen commitment (Rusbult et al., 1991). In summary, these results indicate that insecure attachment and borderline personality tendencies even at levels in a general population, have the ability to impact overall romantic relationship functioning, through compromising commitment processes associated with perceived quality of alternatives, which in turn affect relationship maintenance and perseverance. It is important to consider the theoretical and practical implications of the present research.

5.4.1 Theoretical Implications

Findings from this study have significant theoretical implications that extend existing research surrounding borderline personality. Whilst much previous research has utilised clinical populations to explore this area (Drapeau & Perry, 2009; Lazarus et al., 2014; Stepp, Pilkonis, Yaggi, Morse, & Feske, 2009), the present study took the approach of considering borderline personality on a continuum. Thus, the sample was recruited from the general population. Emerging literature supports this approach (Haslam et al., 2012; Trull & Durrett, 2005; Westen et al., 2006), as it offers a more

comprehensive understanding of how different levels of borderline personality can impact on relationship functioning to varying extents. The results from the study highlight that even people who do not meet the criteria for a BPD diagnosis can still experience insecure attachment processes and demonstrate some level of impairment in their romantic relationship functioning. This finding confirms the importance of investigating personality pathology on a continuum and supports applying this dimensional approach to future studies investigating personality. Whilst the present study only included a limited sample size, future studies should ideally aim to recruit the complete spectrum from non-clinical to clinical presentations of borderline personality, to gain a more comprehensive understanding of how different levels of personality pathology may impact on the severity of dysfunction. This larger sample size will also enable strong power for statistical analyses and alternate avenues of modelling the relationships of interest.

The present study also adds to the investment model (Rusbult, 1980, 1983) literature with respect to its application. This research provided further support for the utility of the investment model in predicting commitment in romantic relationships. In addition, the study examined how borderline personality traits moderate the established relationships between the investment model predictors and commitment level. There has been a limited number of previous studies that have considered the impact of personality factors on the investment model, and of those, the focus has been on narcissism (Campbell & Foster, 2002; Foster, 2008). To the author's knowledge, this is the first study that has applied borderline personality traits to the model. By incorporating personality characteristics in considering commitment processes, a better understanding of the specific mechanisms that reduce relationship

duration can be learnt. As the literature suggests, relationship dysfunction is the main feature that characterises all personality disorders (APA, 2013; Hopwood, Wright, Ansell, & Pincus, 2013), but particularly so for BPD (APA, 2013; Jeung & Herpertz, 2014; Lazarus et al., 2014; Wright, Hallquist, Beeney, & Pilkonis, 2013). It is clear from the present research that borderline personality traits can strengthen the quality of alternatives mechanism of commitment, and in turn compromise commitment maintenance acts, which may in part explaining why people with borderline personality symptoms appear to have less successful and persevering romantic affiliations. In sum, this supports the utility of the investment model in the context of borderline personality and it would be of interest for future studies to consider other personality factors also.

Lastly, this study also extends on theory surrounding the association between attachment and borderline personality. It is acknowledged that there has been considerable research that has identified that insecure attachment, and more specifically preoccupied and fearful attachment styles, are predictive of borderline personality (Agrawal et al., 2004; Choi-Kain et al., 2009; Levy, 2005). Findings from this study further support the association between these two insecure attachment styles and borderline personality in a general population. Also, this provides further evidence for the utility of the four-category adult attachment model developed by Bartholomew and Horowitz (1991). In addition, the study looked at the association between specific borderline personality traits and attachment. In particular, the findings suggest that BPD traits that are emotional and psychological in nature are consistently associated with insecure attachment. In contrast, behavioural traits, and more specifically impulsivity did not appear to be correlated with insecure

attachment. This finding adds to the existing literature on borderline personality and attachment, however highlights that both preoccupied and fearful attachment processes are indicated in borderline personality. Therefore, it may be beneficial for future research to utilise a measure that conceptualises the two specific attachment styles as a continuum. This is further discussed below in the limitations and future research section.

5.4.2 Practical Implications

Having considered the theoretical implications of the study, it is also important to discuss the potential practical applications of these findings, particularly in the context of counselling for relationship problems such as conflict or impending relationship dissolution. The study has identified that the perceived quality of alternatives mechanism is particularly pronounced for people with borderline personality tendencies, and perhaps poses the greatest risk to relationship commitment. However, individuals with borderline personality traits may be unaware of this increased sensitivity to alternative partners, nor how it is activated within them. Therefore, one approach to treatment for such relationship issues may be to use the knowledge offered by the present study to educate and assist clients with becoming more aware of the unconscious processes that dictate their patterns of behaviour. In fact, it is plausible to suggest that an increased preoccupation with potential alternatives may function as an avoidance technique for individuals with elevated borderline personality traits when they encounter discord with their partner or doubt the overall security of their relationship. In turn, the perception of increased alternatives will likely reduce their overall commitment level to their present

relationship, undermining pro-relationship maintenance acts and for some, increasing the likelihood of engaging in relationship sabotaging behaviours. This highlights the importance of equipping individuals displaying elevated borderline personality traits with the necessary adaptive skills to manage their underlying triggers. This can be achieved through a range of therapies that have demonstrated effectiveness for treating BPD such as schema therapy (Young et al., 2003) or dialectic behaviour therapy (DBT) (Linehan, 1993), which generally focus on teaching individuals strategies to manage their distress. Specifically, interventions could focus on encouraging individuals not to avoid difficulties in their relationships, but rather identifying the positives of their current relationship, as well as constructive and proactive ways of resolving any discord experienced with one's partner. This in turn may afford the opportunity to renew commitment to one's existing relationship, whilst promoting adaptive relationship functioning.

5.5 LIMITATIONS

Prior to concluding, it is important to acknowledge some of the limitations associated with the present study. First and foremost, aspects of the study design need to be considered. In particular, the study utilised a convenience sampling approach to recruitment in an attempt to examine mild borderline personality presentation in the general community. One of the advantages of utilising a convenience sampling approach is the reduced costs associated with large scale representative sampling methods; however, conversely, the ability to generalise the findings to the wider Australian population is limited. One factor that impacted on the representative power

of this approach is the small sample size; clearly, a significantly larger sample size would have been ideal and provided greater statistical power. Further, a larger sample would have enabled the relationships between attachment, borderline personality and romantic commitment to be modelled simultaneously using techniques such as structural equation modelling (SEM). As it stands, the present study could only provide a theoretical account of how these three areas may interact, deduced from the association found between attachment and borderline personality, along with the moderating effects of borderline on commitment mechanisms proposed by the investment model. This highlights the potential for future research to address these three areas using a more integrated modelling approach.

In addition, the study utilised self-report measures for data collection. Self-report can be limited in that it poses the risk of potential biases in individuals reporting their experiences. For example, in the present study, the commitment data in this research appeared skewed and suggested that most of the sample were very committed to their relationship. It is possible that the sample was biased because it included very high functioning individuals with well-adapted relationship functioning skills; however, it may also be speculated that due to the self-report nature of the measures, a potential responding bias, such as social desirability (Fisher, 1993) or self-presentation bias (Greenberg, Pyszczynski, & Solomon, 1982), may have occurred. Hence, individuals may have felt more inclined or preferred to report their relationship commitment to be higher, given they were currently engaged in their romantic relationship. The use of dyadic approaches (Kenny & Cook, 1999) to data collection may, to an extent, address this concern.

On a related note, a further limitation of this study is the fact individual participants rather than couples were recruited. This was due to constraints on time and resources; nevertheless, future studies investigating the topics explored in this dissertation would benefit from utilising a dyadic approach to data collection. Dyadic approaches collect information about various relationship variables from both partners involved in the relationship and, thus, provide a reference point for a variable measured that takes into consideration both perspectives (Kenny & Cook, 1999). Relationship research supports the notion that data collected from a relationship dyad enables a more balanced representation of the relationship experience (Campbell & Kashy, 2002). It also enables consideration of how one partner's behaviour may impact on the other. For example, in the present study, it would have been interesting to examine whether personality traits in one partner may impact on the other partner's relationship satisfaction, perceived quality of alternatives, and investment into the relationship, as speculatively, this is likely. Further, it would also have been interesting to see whether one partner's level of commitment was reflective of the other partner's level of commitment. The use of dyadic data affords the opportunity to examine another dimension of the relationship experience.

Lastly, it should also be acknowledged that there are limitations associated with the selected scales included in the dissertation. Firstly, whilst the BPQ is a good measure of borderline personality within the community (Poreh et al., 2006), it is well known that specific personality disorders are often comorbid with other personality pathology, as well as a range of other mental health disorders (APA, 2013; Lenzenweger et al., 2007). It might have been useful to have included a screening tool for other personality traits that are particularly comorbid with BPD, and also other

mental health conditions such as depression, anxiety and posttraumatic stress disorder (APA, 2013; Sansone & Sansone, 2011a). Because previous or current mental health factors were not screened for in the present study, it is important to acknowledge the possibility that some of the findings may be influenced by other mental health related factors. Further, attachment was measured utilising a self-report one-item prototype measure based on the four-category adult attachment framework. It may have been useful to combine interview formats such as the Adult Attachment Interview (AAI) (Bakermans-Kranenburg & van IJzendoorn, 2009) to provide a more objective measure of attachment style. In fact, it has been noted that whilst self-report measures assess explicit attachment-related cognitions, feelings and beliefs, interview or clinician-rated measures are able to examine both explicit and implicit attachment-related representations (Shaver, Belsky, & Brennan, 2000). The use of both may provide a richer source of information regarding participant attachment. Further, given the results identified mixed findings for both preoccupied and fearful attachment, it is possible that an alternative scale that measures these two insecure attachment styles on a continuum would offer an opportunity to better examine attachment processes in borderline personality. An example of such a scale is the Experience in Close Relationships – Revised (ECR-R) (Fraley, Waller, & Brennan, 2000). One of the advantages of this scale is the continuous approach to measuring attachment anxiety and avoidance, where an individual receives a score for each category. When considering the concept of preoccupied and fearful attachment, the attachment anxiety score in the ECR-R would determine how far on a continuum between preoccupied and fearful attachment an individual is situated (Bartholomew &

Horowitz, 1991; Fraley et al., 2000). Hence this scale should be considered in future research examining underlying attachment processes in borderline personality.

5.6 FUTURE RESEARCH

While the present research has demonstrated some significant findings on which attachment processes are associated with borderline personality, and how borderline personality may influence romantic relationship commitment, there are several questions that remain pertinent for future research. The first relates to the conflicting findings associated with insecure attachment, and whether preoccupied or fearful attachment is most prevalent in borderline personality. As highlighted earlier, future research that utilises a continuous attachment measure such as the ECR-R will assist in addressing this issue. Such research will extend on current knowledge pertaining to how attachment processes operate in borderline personality, and may also provide a better understanding of how it may contribute toward clinical forms of BPD. Further, attachment represents how an individual perceives themselves as well as their social world around them, which is a rich source of information when it comes to understanding the affective, cognitive and behavioural manifestations characterising borderline personality. It also has significant implications for interpersonal functioning, as highlighted in the present study. Therefore, a more integrated examination of the three areas should be addressed.

The second area of proposed future research relates to the investment model predictor perceived quality of alternatives. In the present study, the perceived quality of alternatives mechanism of commitment appeared to be the most impacted by

borderline personality traits. It was speculated that people with elevated borderline personality traits may be more sensitive to perceived alternatives, which can lead to reduced overall commitment. Quality of alternatives refer to any options outside of the relationship, including alternative partners, the possibility of being alone, or having one's needs met by other non-romantic relationships (Rusbult, 1980; Rusbult & Buunk, 1993). It will be particularly interesting for future research to explore whether different types of alternatives may produce varied findings. It can be postulated that given people with borderline personality often have a preoccupation with being in relationships and a fear of abandonment (APA, 2013; Gunderson, 2011), it is likely that the alternative of being alone will be less appealing than an alternative partner. Future studies that examine the predictors in more detail will assist in the development of a more nuanced understanding surrounding how borderline personality traits impact on the relationship between the investment model predictors and overall commitment.

5.7 CONCLUSION

To summarise, the overall aim of the present research was to investigate how borderline personality traits in a general population influence romantic relationship functioning through commitment processes. This was achieved by utilising Rusbult's (1980, 1983) well-established investment model to further understand whether borderline personality traits moderate the established relationships between the model predictors and commitment. It was confirmed that the investment model can be applied to this context within a general community population. Borderline personality

traits were found to strengthen the association between perceived quality of alternatives and commitment level. In other words, for people with elevated borderline personality traits, relationship or partner alternatives were more predictive of lowered relationship commitment. In addition, both preoccupied and fearful attachment was found to be associated with borderline personality presentation, consistent with previous research (Choi-Kain et al., 2009) This indicates that at their core, people with borderline personality have an insecure attachment represented by a consistently held belief they are ‘not good enough’ or ‘not worthy’ of being loved. Perhaps this is one reason why they are observed to be more sensitive to potential relationship alternatives. Taken together, the findings from this study demonstrate some of the challenges that people with elevated borderline personality face in remaining committed to their romantic relationships.

Future studies should aim to expand upon these findings, taking into consideration the above suggestions made and the limitations identified in the present study. Given the significant impact that relationship problems can have on people with borderline personality, and conversely, the established protective role that successful romantic relationships can have on their overall health and wellbeing, it follows that this area of research is particularly meaningful, with potential benefits that extend across both the individual and societal level. BPD is attached to considerable stigma (Gunderson, 2011), and often these individuals can be significantly misunderstood in their interpersonal experiences. More often than not, their inability to contain their emotions, distorted cognitions and behavioural outbursts all merely reflect the fear of loss in the event of their relationship ending. It is for this reason that an increased understanding surrounding adaptive processes that

can promote healthy romantic relationship functioning is needed for people with borderline personality, and with personality pathology more generally.

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APPENDIX A: BORDERLINE PERSONALITY QUESTIONNAIRE (BPQ)

Please put a circle around the response that you feel best DESCRIBES YOUR USUAL SELF (for the past two years or longer) in relation to each statement. Circle T if you think the statement is true. Circle F if you think the statement is false. There are no right or wrong answers and there are no trick questions. Please respond as honestly as you can, but don't ponder too long over each item. Please answer every question, even though sometimes you may find it hard to decide.

	Circle One	
1. I often do things without thinking them through.	T	F
2. I often become depressed or anxious 'out of the blue'.	T	F
3. People often leave me.	T	F
4. I am rarely disappointed by my friends.*	T	F
5. I feel inferior to other people.	T	F
6. I have threatened to hurt myself in the past.	T	F
7. I do not believe that I have the skills to do anything with my life.	T	F
8. I rarely get angry at other people.*	T	F
9. Sometimes I feel like I am not real.	T	F
10. I will not have sex with someone unless I have known them for quite some time.*	T	F
11. I sometimes feel anxious or irritable and become sad a few hours later.	T	F
12. When people close to me die or leave me, I feel abandoned.	T	F
13. I often exaggerate the potential of friendships only to find out later that they will not work out.	T	F
14. If I were more like other people I would feel better about myself.	T	F
15. I have deliverately tried to hurt mself without trying to kill myself.	T	F
16. In general, my life is pretty boring.	T	F
17. I frequently get into physical fights.	T	F

18.	People are sometimes out to get me.	T	F
19.	My friends have told me that my mood changes very quickly.	T	F
20.	I am afraid to spend time alone.	T	F
21.	People who seem trustworthy often disappoint me.	T	F
22.	I have made a suicide attempt in the past.	T	F
23.	I often feel like I have nothing to offer others.	T	F
24.	I have trouble controlling my temper.	T	F
25.	I can read other people's minds.	T	F
26.	I have tried 'hard' street drugs (e.g., cocaine, heroin).	T	F
27.	My mood frequently alternates throughout the day between happiness, anger, anxiety and depression.	T	F
28.	When my friends leave, I am confident I will see them again.*	T	F
29.	My friends often disappoint me.	T	F
30.	I have cut myself on purpose.	T	F
31.	I often feel lonely and deserted.	T	F
32.	I have no difficulty controlling my temper.*	T	F
33.	I sometimes see or hear things that others cannot see or hear.	T	F
34.	It is not unusual for me to have sex on the first date.	T	F
35.	I sometimes feel very sad but this feeling can change quickly.	T	F
36.	People often let me down.	T	F
37.	I wish I could be more like some of my friends.	T	F
38.	I used to try to hurt myself to get attention.	T	F
39.	I am often different with different people in different situations so that sometimes I am not sure who I am.	T	F
40.	I easily become irritated by others.	T	F
41.	Sometimes I can actually hear what other people are thinking.	T	F
42.	I get high on drugs whenever I feel like it.	T	F
43.	I rarely feel sad or anxious.*	T	F
44.	No one loves me.	T	F
45.	When I trust people, they rarely disappoint me.*	T	F
46.	I feel that people who would not like me if they really knew me well.	T	F

47.	I get angry easily.	T	F
48.	It is impossible to read others' minds.*	T	F
49.	I sometimes feel very happy but this feeling can change quickly.	T	F
50.	I find it difficult to depend on others because they will not be there when I need them.	T	F
51.	The relationships with people I care about have lots of ups and downs.	T	F
52.	I feel comfortable acting like myself.*	T	F
53.	I have never made an attempt to hurt myself.*	T	F
54.	I rarely feel lonely.*	T	F
55.	I often find that the littlest things make me angry.	T	F
56.	Sometimes I can't tell between what is real and what I imagined.	T	F
57.	When I drink, I drink too much.	T	F
58.	I consider myself to be a moody person.	T	F
59.	I have difficulty developing close relationships because people often abandon me.	T	F
60.	My friends are always there when I need them.*	T	F
61.	I wish I were someone else.	T	F
62.	I feel like my life is not interesting.	T	F
63.	When I am angry, I sometimes hit objects and break them.	T	F
64.	I often receive speeding tickets.	T	F
65.	I often feel like I am on an emotional 'roller coaster'.	T	F
66.	I feel like my family has deserted me.	T	F
67.	I am very comfortable with who I am.*	T	F
68.	I often do things impulsively.	T	F
69.	My life is without purpose.	T	F
70.	I am not sure what I want to do in the future.	T	F
71.	At times I eat so much that I am in pain or have to force myself to throw up.	T	F

72.	People tell me that I am a moody person.	T	F
73.	The people I love often leave me.	T	F
74.	In social situations, I often feel that others will see through me and realise that I don't have much to offer.	T	F
75.	I have been in the hospital for trying to harm myself.	T	F
76.	I often feel empty inside.	T	F
77.	Others often make me angry.	T	F
78.	I often become frantic when I think that someone I care about will leave me.	T	F
79.	I am confused about my long-term goals.	T	F
80.	Others say I'm quick tempered.	T	F

SCORING INSTRUCTIONS

Subscale Scores: Add the items for each subscale. Score one point for each item when TRUE is selected, except for items followed by an asterisk(*). These receive one point when FALSE is selected.

Impulsivity:	1, 10*, 26, 34, 42, 57, 64, 68, 71
Affective Instability:	2, 11, 19, 27, 35, 43*, 49, 58, 65, 72
Abandonment:	3, 12, 20, 28*, 44, 50, 59, 66, 73, 78
Relationships:	4*, 13, 21, 29, 36, 45*, 51, 60*
Self-image:	5, 14, 37, 46, 52*, 61, 67*, 70, 74
Suicide / Self-mutilation:	6, 15, 22, 30, 38, 53*, 75
Emptiness:	7, 16, 23, 31, 39, 54*, 62, 69, 76, 79
Intense Anger:	8*, 17, 24, 32*, 40, 47, 55, 63, 77, 80
Quasi-psychotic States:	9, 18, 25, 33, 41, 48*, 56

Total BPQ Score: The total score is the sum of all the subscales.

APPENDIX B: SELF-REPORT ATTACHMENT STYLE PROTOTYPES

Please rate on a scale from 0 to 8, the extent to which you agree with each of the following statements about yourself. 0 = 'do not agree at all', 4 = 'somewhat agree' and 8 = 'agree completely'.

Secure: It is relatively easy for me to become emotionally close to others. I am comfortable depending on others and having others depend on me. I don't worry about being alone or having others not accept me.

Dismissing: I am comfortable without close emotional relationships. It is very important to me to feel independent and self-sufficient, and I prefer not to depend on others or have others depend on me.

Preoccupied: I want to be completely emotionally intimate with others, but I often find that others are reluctant to get as close as I would like. I am uncomfortable being without close relationships, but I sometimes worry that others don't value me as much as I value them.

Fearful: I am somewhat uncomfortable getting close to others. I want emotionally close relationships, but I find it difficult to trust others completely, or to depend on them. I sometimes worry that I will be hurt if I allow myself to become too close to others.

SCORING INSTRUCTIONS

A single score based on the rating is obtained for each attachment style.

APPENDIX C: INVESTMENT MODEL SCALE (IMS)

Satisfaction Level Facet and Global Items

1. Please indicate the degree to which you agree with each of the following statements regarding your current relationship (circle an answer for each item).

(a) My partner fulfills my needs for intimacy (sharing personal thoughts)	Don't agree at all	Agree slightly	Agree moderately	Agree completely
(b) My partner fulfills my needs for companionship (doing things together, enjoying each other's company, etc.)	Don't agree at all	Agree slightly	Agree moderately	Agree completely
(c) My partner fulfills my sexual needs (holding hands, kissing, etc.)	Don't agree at all	Agree slightly	Agree moderately	Agree completely
(d) My partner fulfills my needs for security (feeling trusting, comfortable in a stable relationship, etc.)	Don't agree at all	Agree slightly	Agree moderately	Agree completely
(e) My partner fulfills my needs for emotional involvement (feeling good when another feels good, etc.)	Don't agree at all	Agree slightly	Agree moderately	Agree completely

2. I feel satisfied with our relationship (please circle a number).

0	1	2	3	4	5	6	7	8
Do not agree at all				Agree some			Agree completely	

3. My relationship is much better than others' relationships.

0	1	2	3	4	5	6	7	8
Do not agree at all				Agree some			Agree completely	

4. My relationship is close to ideal.

0	1	2	3	4	5	6	7	8
Do not agree at all			Agree some			Agree completely		

5. Our relationship makes me very happy.

0	1	2	3	4	5	6	7	8
Do not agree at all			Agree some			Agree completely		

6. Our relationship does a good job of fulfilling my needs for intimacy, companionship, etc.

0	1	2	3	4	5	6	7	8
Do not agree at all			Agree some			Agree completely		

Quality of Alternatives Facet and Global Items

1. Please indicate the degree to which you agree with each statement regarding the fulfillment of each need in alternative relationships (e.g., by another dating partner, friends, family).

<p>(a) My needs for intimacy (sharing personal thought, secrets, etc.) could be fulfilled in alternative relationships.</p>	Don't agree at all	Agree slightly	Agree moderately	Agree completely
<p>(b) My needs for companionship (doing things together, enjoying each other's company, etc.) could be fulfilled in alternative relationships.</p>	Don't agree at all	Agree slightly	Agree moderately	Agree completely
<p>(c) My sexual needs (holding hands, kissing, etc.) could be fulfilled in alternative relationships.</p>	Don't agree at all	Agree slightly	Agree moderately	Agree completely
<p>(d) My needs for security (feeling trusting, comfortable in a stable relationship, etc.) could be fulfilled in alternative relationships.</p>	Don't agree at all	Agree slightly	Agree moderately	Agree completely

(e) My needs for emotional involvement (feeling emotionally attached, feeling good when another feels good, etc.) could be fulfilled in alternative relationships.	Don't agree at all	Agree slightly	Agree moderately	Agree completely
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2. The people other than my partner with whom I might become involved are very appealing (please circle a number).

0	1	2	3	4	5	6	7	8
Do not agree at all			Agree some			Agree completely		

3. My alternatives to our relationship are close to ideal (dating another, spending time with friends or on my own, etc.).

0	1	2	3	4	5	6	7	8
Do not agree at all			Agree some			Agree completely		

4. If I weren't dating my partner, I would do fine – I would find another appealing person to date.

0	1	2	3	4	5	6	7	8
Do not agree at all			Agree some			Agree completely		

5. My alternatives are attractive to me (dating another, spending time with friends or on my own, etc.)

0	1	2	3	4	5	6	7	8
Do not agree at all			Agree some			Agree completely		

6. My needs for intimacy, companionship, etc., could easily be fulfilled in an alternative relationship.

0	1	2	3	4	5	6	7	8
Do not agree at all			Agree some			Agree completely		

Investment Size Facet and Global Items

1. Please indicate the degree to which you agree with each of the following statements regarding your current relationship (circle an answer for each item).

(a)	I have invested a great deal of time in our relationship.	Don't agree at all	Agree slightly	Agree moderately	Agree completely
(b)	I have told my partner many private things about myself (I disclose secrets to him / her).	Don't agree at all	Agree slightly	Agree moderately	Agree completely
(c)	My partner and I have an intellectual life together that would be difficult to replace.	Don't agree at all	Agree slightly	Agree moderately	Agree completely
(d)	My sense of personal identity (who I am) is linked to my partner and our relationship.	Don't agree at all	Agree slightly	Agree moderately	Agree completely
(e)	My partner and I share many memories.	Don't agree at all	Agree slightly	Agree moderately	Agree completely

2. I have put a great deal into our relationship that I would lose if the relationship were to end (please circle a number).

0	1	2	3	4	5	6	7	8
Do not agree at all				Agree some			Agree completely	

3. Many aspects of my life have become linked to my partner (recreational activities, etc.), and I would lose all of this if we were to break up.

0	1	2	3	4	5	6	7	8
Do not agree at all				Agree some			Agree completely	

4. I feel very involved in our relationship – like I have put a great deal into it.

0	1	2	3	4	5	6	7	8
Do not agree at all				Agree some			Agree completely	

5. My relationships with friends and family members would be complicated if my partner and I were to break up (e.g., partner is friends with people I care about).

0	1	2	3	4	5	6	7	8
Do not agree at all			Agree some			Agree completely		

6. Compared to other people I know, I have invested a great deal in my relationship with my partner.

0	1	2	3	4	5	6	7	8
Do not agree at all			Agree some			Agree completely		

Commitment Level Items

1. I want our relationship to last for a very long time (lease circle a number).

0	1	2	3	4	5	6	7	8
Do not agree at all			Agree some			Agree completely		

2. I am committed to maintaing my relationship with my parnter.

0	1	2	3	4	5	6	7	8
Do not agree at all			Agree some			Agree completely		

3. I would not feel very upset if our relationship were to end in the near future.

0	1	2	3	4	5	6	7	8
Do not agree at all			Agree some			Agree completely		

4. It is likely that I will date someone other than my partner within the next year.

0	1	2	3	4	5	6	7	8
Do not agree at all			Agree some			Agree completely		

5. I feel very attached to our relationship – very strongly linked to my partner.

0	1	2	3	4	5	6	7	8
Do not agree at all			Agree some			Agree completely		

6. I want our relationship to last forever.

0	1	2	3	4	5	6	7	8
Do not agree at all			Agree some			Agree completely		

7. I am oriented toward the long-term future of my relationship (for example, I imagine being with my partner several years from now).

0	1	2	3	4	5	6	7	8
Do not agree at all			Agree some			Agree completely		

SCORING INSTRUCTIONS

The *facet* items (item 1 in the categories satisfaction level, quality of alternatives and investment size) are designed to elicit thinking and are not included in the scoring. The *global* items are added in each of the categories to form a score.

Satisfaction Level Score: Add scores for items 2 to 6 in the satisfaction level category.

Quality of Alternatives Score: Add scores for items 2 to 6 in the quality of alternatives category.

Investment Size Score: Add scores for items 2 to 6 in the investment size category.

Commitment Level Score: Add scores for items 1 to 7 in the commitment level category.

APPENDIX D: NON-SIGNIFICANT REGRESSION MODELS

Multiple regression model: The association between attachment style and impulsivity (statistical significance set at $p < .05$)

Predictors: Attachment Styles	<i>b</i>	SE <i>b</i>	β	95% CI for <i>b</i>
Constant	1.32**	.44		[0.45, 2.18]
Secure	-.03	.07	-.04	[-0.16, 0.10]
Preoccupied	.09	.06	.13	[-0.03, 0.21]
Fearful	.05	.06	.08	[-0.07, 0.17]

Heirarchical multiple regression model: Affective instability as a moderator of the investment model (statistical significance set at $p < .006$)

Predictor: Affective Instability Subscale	<i>b</i>	SE <i>b</i>	95% CI	R²_{adj.}	ΔR²	F
<i>Step 2</i>						
Constant	.00	.06	[-0.11, 0.11]			
Satisfaction	.43*	.06	[0.32, 0.55]			
Alternatives	-.26*	.06	[-0.38, -0.15]			
Investments	.26*	.06	[0.15, 0.37]			
Affective Instability	-.07	.06	[-0.18, 0.04]	.46	.01	39.16*
<i>Step 3</i>						
Constant	-.02*	.06	[-0.13, 0.09]			
Satisfaction	.42*	.06	[0.30, 0.54]			
Alternatives	-.31*	.06	[-0.41, -0.19]			
Investments	.26	.06	[0.15, 0.38]			
Affective Instability	-.10	.06	[-0.21, 0.02]			
Satisfaction x Affective Instability	-.02	.06	[-0.13, 0.10]			
Alternatives x Affective Instability	-.17	.06	[-0.30, -0.05]			
Investments x Affective Instability	.03	.06	[-0.08, 0.14]	.48	.03	24.31*

Heirarchical multiple regression model: Abandonment as a moderator of the investment model (statistical significance set at $p < .006$)

Predictor: Abandonment	<i>b</i>	SE <i>b</i>	95% CI	R²_{adj.}	ΔR²	F
Subscale						
<i>Step 2</i>						
Constant	.00	.06	[-0.11, 0.11]			
Satisfaction	.44*	.06	[0.32, 0.56]			
Alternatives	-.26*	.06	[-0.38, -0.14]			
Investments	.26*	.06	[0.15, 0.37]			
Abandonment	-.04	.06	[-0.15, 0.07]	.46	.00	38.67*
<i>Step 3</i>						
Constant	-.02	.06	[-0.13, 0.09]			
Satisfaction	.41*	.06	[0.29, 0.53]			
Alternatives	-.28*	.06	[-0.40, -0.17]			
Investments	.26*	.06	[0.15, 0.37]			
Abandonment	-.09	.06	[-0.21, 0.03]			
Satisfaction x Abandonment	.01	.06	[-0.11, 0.13]			
Alternatives x Abandonment	-.17	.07	[-0.30, -0.04]			
Investments x Abandonment	.06	.05	[-0.04, 0.16]	.49	.04	25.04*

Heirarchical multiple regression model: Self-image as a moderator of the investment model (statistical significance set at $p < .006$)

Predictor: Self-image Subscale	<i>b</i>	SE <i>b</i>	95% CI	R ² _{adj.}	ΔR ²	F
<i>Step 2</i>						
Constant	.00	.06	[-0.11, 0.11]			
Satisfaction	.45*	.06	[0.33, 0.57]			
Alternatives	-.25*	.06	[-0.37, -0.14]			
Investments	.26*	.06	[0.14, 0.37]			
Self-image	.01	.06	[-0.11, 0.12]	.46	.00	38.43*
<i>Step 3</i>						
Constant	-.01	.06	[-0.12, 0.11]			
Satisfaction	.43*	.06	[0.31, 0.55]			
Alternatives	-.28*	.06	[-0.40, -0.16]			
Investments	.26*	.06	[0.15, 0.38]			
Self-image	.00	.06	[-0.11, 0.12]			
Satisfaction x Self-image	.04	.07	[-0.09, 0.16]			
Alternatives x Self-image	-.13	.07	[-0.28, 0.02]			
Investments x Self-image	.02	.05	[-0.09, 0.12]	.46	.02	22.87*

Heirarchical multiple regression model: Suicide / Self-mutilation as a moderator of the investment model (statistical significance set at $p < .006$)

Predictor: Suicide / Self-mutilation Subscale	<i>b</i>	SE <i>b</i>	95% CI	R ² _{adj.}	ΔR ²	F
<i>Step 2</i>						
Constant	.00	.06	[-0.11, 0.11]			
Satisfaction	.45*	.06	[0.34, 0.57]			
Alternatives	-.25*	.06	[-0.36, -0.13]			
Investments	.26*	.06	[0.14, 0.37]			
Suicide / Self-mutilation	.08	.06	[-0.03, 0.19]	.47	.01	39.49*
<i>Step 3</i>						
Constant	-.00	.06	[-0.11, 0.11]			
Satisfaction	.47*	.06	[0.35, 0.59]			
Alternatives	-.23*	.06	[-0.35, -0.12]			
Investments	.25*	.06	[0.14, 0.37]			
Suicide / Self-mutilation	.07	.06	[-0.04, 0.18]			
Satisfaction x Suicide / Self-mutilation	.01	.06	[-0.12, 0.13]			
Alternatives x Suicide / Self-mutilation	-.01	.05	[-0.11, 0.10]			
Investments x Suicide / Self-mutilation	-.12	.06	[-0.24, 0.00]	.47	.01	23.28*

Heirarchical multiple regression model: Emptiness as a moderator of the investment model (statistical significance set at $p < .006$)

Predictor: Emptiness	<i>b</i>	SE <i>b</i>	95% CI	R²_{adj.}	ΔR²	F
Subscale						
<i>Step 2</i>						
Constant	.00	.06	[-0.11, 0.11]			
Satisfaction	.44*	.06	[0.32, 0.56]			
Alternatives	-.26*	.06	[-0.37, -0.14]			
Investments	.26*	.06	[0.15, 0.37]			
Emptiness	-.04	.06	[-0.15, 0.08]	.46	.00	38.62*
<i>Step 3</i>						
Constant	.00	.06	[-0.10, 0.12]			
Satisfaction	.42*	.06	[0.30, 0.54]			
Alternatives	-.28*	.06	[-0.40, -0.17]			
Investments	.27*	.06	[0.15, 0.38]			
Emptiness	-.02	.06	[-0.14, 0.09]			
Satisfaction x Emptiness	.07	.06	[-0.05, 0.19]			
Alternatives x Emptiness	-.15	.06	[-0.27, -0.03]			
Investments x Emptiness	-.03	.06	[-0.13, 0.08]	.48	.02	23.92*

Heirarchical multiple regression model: Intense anger as a moderator of the investment model (statistical significance set at $p < .006$)

Predictor: Intense Anger Subscale	<i>b</i>	SE <i>b</i>	95% CI	R²_{adj.}	ΔR²	F
<i>Step 2</i>						
Constant	.00	.06	[-0.11, 0.11]			
Satisfaction	.45*	.06	[0.33, 0.57]			
Alternatives	-.25*	.06	[-0.37, -0.14]			
Investments	.25*	.06	[0.14, 0.37]			
Intense Anger	.01	.06	[-0.10, 0.13]	.46	.00	38.45*
<i>Step 3</i>						
Constant	.00	.06	[-0.14, 0.08]			
Satisfaction	.47*	.06	[0.35, 0.59]			
Alternatives	-.26*	.06	[-0.38, -0.15]			
Investments	.26*	.06	[0.15, 0.37]			
Intense Anger	-.02	.06	[-0.14, 0.09]			
Satisfaction x Intense Anger	-.10	.05	[-0.20, -0.01]			
Alternatives x Intense Anger	-.12	.06	[-0.23, 0.00]			
Investments x Intense Anger	.05	.06	[-0.07, 0.17]	.47	.02	23.54*

Heirarchical multiple regression model: Quasi-psychotic states as a moderator of the investment model (statistical significance set at $p < .006$)

Predictor: Quasi-psychotic States Subscale	<i>b</i>	SE <i>b</i>	95% CI	R ² _{adj.}	ΔR ²	F
<i>Step 2</i>						
Constant	.00	.06	[-0.11, 0.11]			
Satisfaction	.44*	.06	[0.32, 0.56]			
Alternatives	-.25*	.06	[-0.37, -0.14]			
Investments	.25*	.06	[0.14, 0.36]			
Quasi-psychotic States	-.06	.06	[-0.17, 0.06]	.46	.00	38.89*
<i>Step 3</i>						
Constant	.03	.05	[-0.08, 0.14]			
Satisfaction	.41*	.06	[0.30, 0.53]			
Alternatives	-.26*	.06	[-0.37, -0.15]			
Investments	.25*	.06	[0.14, 0.36]			
Quasi-psychotic States	-.02	.06	[-0.13, 0.09]			
Satisfaction x Quasi-psychotic States	.01	.06	[-0.10, 0.12]			
Alternatives x Quasi-psychotic States	-.16	.06	[-0.28, -0.04]			
Investments x Quasi-psychotic States	.11	.06	[-0.00, 0.22]	.49	.04	25.55*