“THE LINKS BETWEEN ATTACHMENT STYLES AND PSYCHOPATHOLOGY: ANYTHING BEYOND THE BIG FIVE?”

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University of
Southern Denmark

Author: Kristina Hasle Mo (15.06.1994)

Supervisor: Steven Ludeke

University of Southern Denmark: Department of Psychology

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Abstract

Bakgrunn: Dette studiet hadde som formål var å utforske hvilke forhold voksne tilknytningsstiler har til ulike psykopatologiske symptomer, i en ikke-klinisk populasjon, og om disse forholdene delvis kan forklares av ulike personlighetstrekk. Ifølge tilknytningsteori er individer som utvikler utrygge tilknytningsstiler mer sårbare for psykopatologi i motsetning til trygg tilknytningsstil som er assosiert med bedre psykisk helse. Videre viser studier at voksne tilknytningsstiler er relatert til enkelte personlighetstrekk som nevrotisisme og ekstroversjon. Ettersom lite tidligere forskning har fokusert på sammenhengene mellom alle disse tre faktorene (tilknytningsstiler, psykopatologi og personlighet), anses det som hensiktsmessig å oppnå en bedre forståelse på området. **Metode:** Deltakerne (N = 1135) kom fra det amerikanske Eugene-Springfield Community Sample (ESCS). De svarte på spørreskjemaer som målte de ulike voksne tilknytningsstilene (*sikker, engstelig, overopptatt og avvisende*), ikke-klinisk psykopatologi (depresjon, OCD, dissosiasjon, somatoform dissosiasjon, BPD, psykopati, helseangst og schizotypi), samt de fem store personlighetstrekkene fra femfaktormodellen (neverotisisme, ekstroversjon, åpenhet, planmessighet og omgjengelighet). Et antall multiple regresjonsanalyser ble anvendt for å teste hvordan de fire voksne tilknytningsstilene predikerer symptomer på de ulike psykiske lidelsene, samt om de fem store personlighetstrekkene intervenerte disse forholdene. **Resultater:** Resultatene indikerte at utrygge tilknytningsstiler, særlig overopptatt og engstelig tilknytning, positivt predikerer psykopatologi. Avvisende tilknytningsstil predikerte kun symptomer på borderline personlighetsforstyrrelse og psykopati. I tillegg ble det funnet at enkelte personlighetstrekk, spesielt nevrotisisme, delvis forklarte forholdet mellom tilknytningsstiler og psykopatologi. **Konklusjon:** Disse funnene antyder at utrygge tilknytningsstiler øker risikoen for å utvikle symptomer på psykopatologi.

Tilknytningsrammeverket blir ikke ansett som overflødig for femfaktormodellen i relasjon til psykopatologi da de kun delvis overlapper.

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Abbreviations

AAI	Adult Attachment interview
ADHD	Attention Deficit Hyperactivity Disorder
BPD	Borderline personality disorder
BPI	The Behavioral Report Inventory
CHS	A Comprehensive Health Survey
DSM	The diagnostic and statistical manual of mental disorders
DV	Dependent variable
ECR-R	The Experiences in Close Relationships - Revised
ESCS	Eugene Springfield community sample
FFM	The five-factor model
ICD	International classification of disease and related health problems
IMRaD	Introduction, Methods, Results and Discussion
IV	Independent variable
IWM	Internal working model
NEO-PI R	The Revised NEO Personality Inventory
OCD	Obsessive Compulsive Disorder
PEA	Personality, Emotions and Attitudes
PTSD	Posttraumatic stress disorder
RQ	The Relationship questionnaire
SPSS	Statistical Package for the Social Sciences

1. Introduction

Bowlby (1969/1982) originally established attachment theory to explain the development of emotional disturbances. Infants' early experiences with caregivers that are less sensitive and supportive can potentially result in insecure attachment patterns (e.g., Ainsworth et al, 1978). Furthermore, research has suggested that such insecure attachment patterns are associated with symptoms of psychopathology (Mikulincer & Shaver, 2007). Although much early research on attachment theory focused on infancy and early childhood, Bowlby (1979, p.129) pointed out that attachment behaviours follow humans 'from the cradle to the grave'. The conceptualisation of attachment behaviour as a lifespan phenomenon can be explained by what Bowlby called internal working models (IWMs). That is, early interactions between infants and their primary caretakers become generalised as infants' basic beliefs about self and others, which results in prototypical IWMs of close relationships. In adulthood, these working models still affects interactions with significant others, wherein romantic relationships are thought to be comprised in the attachment system and are experienced differently depending on each individual's attachment history (Surcinelli et al., 2010).

In line with Bowlby and others' (Bowlby, 1969; Ainsworth et al., 1978) developmental perspective of attachment theory, Bartholomew and Horowitz (1991) created a four-factor model of adult attachment to assess individuals' adult attachment styles. They differentiated between individuals' positive and negative view of both self and others which resulted in four prototypes of adult attachment; secure (positive view of self and others), preoccupied (negative view of self, but positive of others), dismissing (positive view of self, but negative of others) and fearful (negative view of self and others). In this model, Bowlby's (1973) IWMs are divided between a model of the self, representing the individual's internalised notion of self-worth (i.e. attachment anxiety dimension), and a model of others

(i.e. attachment avoidance dimension), indicating how much the individual expect others to be available and supportive (Bartholomew & Horowitz, 1991)

This approach to adult attachment styles corresponds to theories of personality development conceptualising adult personality along the lines of a self-dimension and an interpersonal dimension, equivalent to attachment theory's other-dimension (Blatt, 1990; Blatt & Luyten, 2011). In this theory, the self-dimension is defined as "the development of the capacity to establish and maintain a differentiated, integrated, realistic, essentially positive identity", whereas interpersonal relatedness is defined as "the development of the capacity to establish and maintain reciprocal relationships" (Blatt & Luyten, 2011, p.38). Although separate, these two developmental dimensions usually evolve in a dynamic, reciprocal process throughout life. According to Blatt (Blatt, 1990; Blatt & Luyten, 2011), normal variations in personality results from a rather equal emphasis on each of the dimensions, while exaggerated emphasis on one of them may contribute to psychopathology. Blatt and Luyten (2011) compared interpersonal theory and attachment theory in that they both indicate how adaptive personality development comprises a balance between coping with both attachment and separation. Conversely, maladaptive personality is suggested to result from an overemphasis on interpersonal relations through extreme attachment anxiety, or in a defensive preservation of self, conveyed through attachment avoidance.

Attachment styles are thought to become a central part of people's general personality structure in terms of affecting their greater personality domains, and in ways of how individuals react and respond to internal and external demands (Diehl et al., 1998). More recently, research has begun to focus on the associations between attachment styles and 'big five' personality traits such as neuroticism and extraversion. While this research field is still under development, some promising findings have already been made.

Universal for both adult attachment styles and certain personality traits are their shared association with psychopathology. Bowlby (1977) early emphasised the importance of attachment in both normal- and psychopathological development. He suggested that the effects of early childhood attachment experiences can last for a lifetime and that they are crucial determinants for personality organisation and psychological dysfunction (Bowlby, 1977). Furthermore, Bowlby linked insecure attachment to disordered personality traits such as 'dependent or hysterical personalities' and 'psychopathic personalities' (Bowlby, 1973, p. 14). Thus, the association between attachment styles and personality disorders was established early in attachment theory's history. More recent research supports Bowlby's view on attachment's influence on personality disorders. For example, dismissive attachment has been linked to narcissistic and antisocial personality disorders, whereas preoccupied attachment has been related to personality disorders such as borderline and histrionic (Meyer & Pilkonis, 2005).

In addition, Bowlby (1977) implied that IWMs as derived from early attachment interactions, has an impact on other psychological disturbances such as relational problems, depression, anxiety, neurotic symptoms and anger. Hence, insecure attachment, as characterized by negative models of self and others, may lead to both intra-and interpersonal regulatory difficulties which in turn increases the risk of psychopathology (Mikulincer & Shaver, 2007). This assumption has also been supported by a body of research in later years. Mental illnesses that have been associated with insecure attachments more recently, include depression (e.g., Simpson & Rholes, 2015), anxiety (e.g., Eng et al., 2001), OCD (e.g., Myhr et al., 2004), PTSD (e.g., Ein-Dor et al., 2010) and eating disorders (e.g., Illing et al., 2010), to mention some.

Some research has a general approach by investigating the relationship between attachment patterns and general proneness to distress, measured as neuroticism or negative

affectivity, while other studies connect attachment styles to specific disorders. For instance, Mikulincer and Shaver (2007) notes in their review of 30 relevant studies, that attachment anxiety is particularly related to neuroticism. Several of these studies, although fewer, also found a significant correlation between attachment avoidance and neuroticism, but these correlations tended to not be weaker than those for attachment anxiety. These results show that although anxious and avoidant individuals initially have used coping strategies that have appeared to be adaptive ways of relating to attachment figures, this might later cause them emotional disturbance.

When reviewing findings of associations between attachment styles and specific diagnoses, it can be useful to distinguish between internalising and externalising disorders. Internalising disorders encompass disorders characterised by internal distress and fear and includes disorders such as depression, anxiety and PTSD, while externalising disorders are characterised by distress directed outwards such as substance use, ADHD and antisocial disorders (Carragher et al., 2015). With regard to internalising disorders, particularly much research has found a relationship between insecure attachment and depression, anxiety, PTSD and eating disorders. While concerning research on externalising psychopathology, there has frequently been found links between insecure attachment styles and conduct disorders, substance abuse and antisocial personality disorder (Jacobs, 2013; Guttmann-Steinmetz & Crowell, 2006). Thus, insecure attachment styles appear to be associated with both internalising- and externalising psychopathology.

Attachment theory suggests that type of psychopathology depends on which insecure strategies that have been applied to either maximise or minimise the expression of attachment needs (Muris et al., 2003). More specifically, this entails that minimising strategies (i.e. inhibition of negative emotions) make individuals susceptible to externalising disorders as they supress their distress and rather adopt attitudes that are defensive and hostile towards

their caregiver (Dozier et al., 2008). In contrast, maximising strategies (i.e., increased expression of negative emotions) make individuals prone to internalising disorders as they intensely focus on their own distress and therefore express an exaggerated need for love and support from their caregiver. Internalising disorders are typically associated with preoccupied attachment, and externalising conditions are often related to both dismissing and preoccupied attachment (Bakermans-Kranenburg, & van IJzendoorn, 2009).

Since not much previous research has studied adult attachment styles, major personality traits and psychopathology at once, the current study aims to further investigate the link between these three variables in the general population.

1.1. Reader's Guide

It should be noted that this study does not attempt to follow any specific diagnostic criteria from classification systems such as the DSM-5 or ICD-11 since the sample consist of a nonclinical population. By including a sample representative for the general population, it is anticipated that the findings will apply to a larger group of people, which in turn can be beneficial in terms of preventative interventions and/or treatment. Also, it should be stressed that symptoms of psychopathology, rather than clinical diagnoses, are described in this thesis. Some of the psychopathologies included, such as psychopathy, are not even classified as clinical diagnoses. Therefore, this report has a more theoretical focus rather than a clinical, seeing that general processes are emphasised over clinical diagnoses. Hopefully, this is an advantage bearing in mind the rapid changes of diagnostic classification systems.

The thesis' structure is based on an IMRaD disposition, with the addition of a theory section following the instruction. Hence, the first chapter provides a short introduction including the background for the current project. Next, the second chapter offers a thorough review of the relevant theories and previous research related to attachment, personality and psychopathology. This section finishes off with a summary followed by the study's rationale,

aim and hypotheses. Chapter 3 presents the method with the participants, procedure, measures and statistical analyses applied in the present study. Subsequently, chapter 4 encompasses the results from the statistical analyses and associated visual representations. Finally, the discussion in chapter 5 provides a summary of the results in relation to previous research, conceptual issues, implications, strengths and limitations and conclusions. The appendences include tables of the regression analyses (model 2) that were not included in the main text.

2. Theory

2.1 Attachment Theory

Attachment theory concerns the emotional bonds in human relations, first established between an individual and his or her attachment figure. Attachment theory was originally developed by Bowlby (1969/1982, 1973, 1977, 1979, 1980, 1988), who suggested that infants' emotional, social and cognitive development is dependent on the relationship to their attachment figures in early childhood. Attachment figures are usually infants' primary caregivers and can be defined as close, important individuals offering protection and support when needed (Bowlby, 1969/1982). Moreover, attachment figures serve as a target for proximity seeking (staying near and resisting separation), a 'safe haven' (turn to for comfort and support) and as a 'secure base' (a safe place for risk taking and exploratory behaviours; Bowlby 1969/1982; Hazan, & Shaver, 1994).

During his early work, Bowlby and his colleagues (Bowlby et al., 1952), observed that infants who were separated from their primary caregiver often expressed fear and distress through behaviours such as crying, clinging and searching, as a way of getting their caretakers' attention. Bowlby (1969/1982) explained that this behaviour is a result of maintaining physiological or psychological proximity between the child and the caregiver. He proposed that the attachment behavioural system is an innate motivational system resulting

from natural selection with the purpose of enhancing the infant's safety and survival (Bowlby, 1969/1982). That is, when the caregiver is in close proximity, the infant will usually be sociable and playful, whereas if the caregiver is not proximate the infant might perceive this as a threat and is more likely to seek attention and comfort from his/her caregiver.

Bowlby argued that infants eventually develops a set of IWMs based on repeated interactions with their caregiver (Bowlby, 1969/1982). These cognitive structures both enable the child to react adequately to reach certain goals, such as regaining their caregivers' attention, as well as it determines the child's sense of security and availability of the caregiver and others (Fraley & Roisman, 2015). Bowlby (1973) suggested that IWMs of attachment can be divided in two; IWMs of others and IWMs of self. If a caregiver provides the child with warmth, attention and availability, the infant will most likely be confident that a caregiver is available when needed and thus approach the world in a confident and exploring manner. This is represented through a secure IWM of attachment. However, if the caregiver acts cold, rejecting, unpredictable, frightening or insensitive, the child might feel abandoned and develop an insecure IWM of attachment, which makes it difficult for the child to count on others when needed (Fraley & Roisman, 2015). Once a child has established their IWMs, his or her response to a signal of danger is usually not a result of the caregivers' immediate reaction, but rather a result of the history of the caregivers' reactions, and the child's following pattern of self-regulation (Zimmermann, 1999).

Research conducted by Ainsworth and others suggest that how a mother respond to her infant's needs during the very beginning of life (between 9-18 months), make a crucial fundament for the infant. Ainsworth and colleagues (1978) designed the well-known paradigm called the 'Strange Situation' to investigate individual differences in infants' attachment. In a series of separations and reunions between the infant and the caregiver, the

attachment behaviours of the infant and the caregiver gets assessed. For example, in one scenario the caregiver and the infant are first alone in the room, then a stranger enters the room and the caregiver leaves. After the infant has spent some time with the stranger, the caregiver returns and comforts her child before he/she leaves again. The infant's responses to the different scenarios are observed in terms of the amount of exploration, reaction to the caregiver's departure, anxiety experienced with the stranger and behaviour when reunited with the caregiver. Based on this, the children can be classified into one of three attachment styles representing the patterns of behaviour; secure, anxious or avoidant (Ainsworth et al., 1978). The differences between the styles represents how the infants respond to separation from their mothers; secure infants are easily soothed when reunited with their mothers, anxious infants display ambivalence and distress when reunited, and avoidant infants avoid contact when reunited. Later, a fourth style called disorganised/disoriented was added by Main and Solomon (1990), which is characterised by odd and contradictory behaviour patterns.

In line with Bowlby's attachment theory, these responses were considered to portray the IWMs developed during the dyadic interaction between the caregiver and infant (Rholes & Simpson, 2004). More specifically, secure infants usually have accessible working models of successful proximity-seeking attempts, as a result of consistent warmth from their primary caregiver. Avoidant infants typically have accessible working models related to deactivation of the attachment system resulting from consistent unresponsiveness or rejection from the primary caregiver. Anxious infants seem to have working models that are associated with hyperactivation of the attachment system following inconsistent warmth and/or responsiveness from their primary caregiver. Finally, disorganised/disoriented infants appear to have no organised attachment strategies (primary, hyperactivating or deactivating), which may be caused by unpredictable and discomforting attachment behaviour. Research suggests

that such attachment behaviour may be related to primary caregivers suffering from unresolved losses or traumas (e.g., Lyons-Ruth & Jacobvitz, 1999). According to Bowlby and Ainsworth, these attachment styles are usually developed within the first 18 months of life (Bowlby, 1969/1982; Ainsworth et al., 1978).

In sum, attachment theory, established by Bowlby and Ainsworth in the seventies, suggests that attachment includes a behavioural motivational system that is activated by perceived threats, which cause infants to seek protection in terms of proximity to their attachment figure. The theory proposes that infants' early interactions with their caregivers become internalised as IWMs within 18 months of age. According to the nature of the caregivers' responses to the infants' behaviours, these IWMs can either be secure or insecure, and are manifested through different attachment styles. Thus, experiences with attachment figures are generalised to expectations of others responsiveness and trustworthiness as well as perceived self-worth.

2.2. Adult Attachment

Although Bowlby emphasised the importance of the attachment system in childhood, he also considered it to be active throughout adolescence and adulthood, through emotional bonds with close friends and romantic partners (Bowlby, 1988). However, it was not until later, theories of adult attachment truly emerged, with Hazan and Shaver (1987, 1990, 1994) among the pioneers in this field. They started exploring Bowlby's ideas with regards to romantic relationships. Although underlining the differences between childhood and adult attachment, Hazan and Shaver (1987) pointed out how the emotional bonds formed earlier in life can be translated into adult romantic relationships. They suggested that functions of the attachment behavioural system are the same across the life span due to the consistency of its neural foundation. As opposed to childhood in which it is likely that the primary caregiver (usually one or both parents) is the attachment figure, adult attachment figures includes a

wider variety of relationships such as siblings, relatives, colleagues, close friends and romantic partners (Mikulincer, & Shaver, 2007).

Weiss (1982) defined adult attachment in terms of certain criteria corresponding to infant attachment as proposed by Bowlby and Ainsworth. Firstly, he suggested that individuals turn to their attachment figure in times of stress. Secondly, Weiss implied that the attachment figure's role is to increase the individual's comfort and to decrease his or hers distress. Lastly, he suggested that when actual separation or a threat of separation from the attachment figure occurs, the individual will perceive the attachment figure as inaccessible, which will lead to severe distress.

Moreover, West et al. (1987, p.738) distinguished adult attachment relationships from other social relationships by the following criteria; proximity seeking, secure base effect, separation protest, expectations of the relationship to be permanent, and reciprocity. These factors abide in addition to a unique relation to an individual who one will turn to for mental and practical support, and who is perceived to be available and responsive. These criteria are all similar to the ones applied when describing infant attachment.

Despite some fundamental parallels between infant- and adult attachment (Weiss, 1982; West et al., 1987), there are also some important differences worth noting. One of the main dissimilarities, pointed out by Hazan and Shaver (1994), is perhaps the difference in reciprocity of the attachment figure. While infants rely on care from their primary caregiver without usually returning it, adults tend to have a more reciprocal relationship with their attachment figure, both receiving and providing safety for the other part. Furthermore, there is a difference in whether proximity behaviours are physical or mental (Hazan & Shaver, 1994). In order for infants to feel safe, they typically seek to their attachment figure in terms of physical proximity, whereas adolescents and adults usually feel safe merely by the realisation that their attachment figure can be contacted when needed.

In contrast to infancy, primary attachment strategies in adulthood does not usually involve actual proximity seeking behaviour. However, it is more common that mental representations of attachment figures become symbolic sources of protection and might therefore function as so-called 'symbolic proximity' to close ones (Mikulincer & Shaver, 2007). A person can successfully deal with threats if mental representations of the self have incorporated traits from secure attachment figures, so that soothing by both self and others become an alternative way of self-regulating.

For example, if a woman is nervous when preparing for an important job interview, she might recall previous support provided on similar occasions by a secure attachment figure, and therefore manage to regulate the distress by soothing herself in some of the ways she was previously soothed by her attachment figure. After the interview, the woman can proudly call her attachment figure and share the joy from the facts that her efforts paid off. With that being said, under more dramatic or traumatic circumstances, these strategies might not be sufficient, and even secure adults have to seek immediate, actual proximity to their attachment figure(s).

Finally, adult attachment also differ from infant attachment in that their primary attachment figure is often a peer, typically a sexual partner, and not necessarily a parent as usually seen in childhood attachment. Therefore, prototypical adult attachment pair bonds involve the following behavioural systems; attachment, caregiving and sexual mating (Hazan & Shaver, 1994; Weiss, 1982). Proximity seeking in relation to an individual's feeling of distress and discomfort is universal for all ages. However, in contrast to infant attachment, adult proximity seeking can also be a consequence of a need to offer protection (caregiving) or a sexual desire (sexual mating).

In short, although Bowlby described attachment as a lifetime phenomenon, it was not until later years the concept of adult attachment truly emerged. It was then suggested that

significant others such as romantic partners could be conceptualised as attachment figures. Many parallels between infant and adult attachment were then drawn: proximity seeking, secure base effect and separation protest. Additionally, as with infants', adults are also likely to turn to their attachment figure in times of stress to gain comfort and support. However, some differences were also emphasised: adult attachment's element of reciprocity, adult attachment's option of symbolic/mental proximity seeking as well as the caregiving- and sexual mating aspect of adult attachment.

2.3. Adult Attachment Styles

Main and colleagues developed an inventory exploring adults' representations of their childhood attachment relationships named the Adult Attachment Interview (AAI; Main et al., 1985; George et al., 1987). Based on these interviews, adult attachment styles were classified into one of the three groups parallel to the traditional infant attachment styles; secure, anxious/ambivalent or avoidant. Similarly, Hazan and Shaver (1987) developed a self-report scale to measure adult attachment styles, however, with romantic partners conceptualised as the attachment figure, also corresponding to the three traditional attachment styles. The secure adult attachment style comprises individuals comfortable with close relationships and the ability to trust and rely on others. Next, the anxious/ambivalent adult attachment style is characterized by individuals who desires close relations, but fears rejection. Lastly, the avoidant adult attachment style is conceptualised by individuals uncomfortable with intimate relationship as well as problems trusting and depending on others.

While both of these measures of adult attachment styles applies the three styles corresponding with Ainsworth and colleagues' (1978) original styles of infant attachment, they differ both in method and focus on attachment figure (infant-caregiver versus romantic relationships). Bartholomew and Horowitz (1991), noted that these differences resulted in a gap between the definitions of the avoidant group. Thus, they proposed that a

conceptualization of adult attachment theory closer to Bowlby's (1973) idea of IWMs of self and others, was appropriate. Accordingly, they combined the positive and negative levels of self-image with positive and negative image of others. Each dimension could either be high or low, which resulted in a new four-category model of adult attachment including the categories 'secure', 'preoccupied', 'dismissing' and 'fearful' (see Figure 1).

Bartholomew and Horowitz's (1991) version of the secure style (positive model of self and others) corresponds to the previous descriptions of secure adult attachment (Main et al., 1985; Hazan & Shaver, 1987), as it describes individuals who are comfortable with intimacy and autonomy. Their preoccupied style (negative model of self, positive of others) can be compared with Hazan and Shaver's (1987) anxious group, indicating a feeling of unworthiness paired with a positive appraisal of others. These individuals are preoccupied with relationships in order to gain self-acceptance and acceptance by others. Bartholomew and Horowitz's fearful style (negative model of self and others), is characterized by individuals feeling unworthy combined with the expectation that others cannot be trusted. These individuals tend to avoid intimate relationships as a defence from rejection.

The adult fearful attachment style may be best compared with Hazan and Shaver's avoidant category. In addition, it has been suggested that it may be equivalent to the disorganised childhood attachment pattern, as they both result in a conflict between desiring and fearing intimacy (Bartholomew & Horowitz, 1991; Brennan et al., 1998). However, George and West (1999) pointed out a considerable difference between the two; while fearful adult attachment encompasses a strategy that permits maintenance of attachment relationships by reducing attachment needs, disorganised attachment represents the failure to acquire such a strategy. Disorganised individuals instead tend to shift between strategies related to different internal representations, and if several of these internal representations are active at the same time, it can cause emotional and behavioural dysregulation or dissociation (Baker &

Beech, 2004). In contrast to fearful attachment, Baker and Beech (2004) argue that these tendencies cannot be represented in a two-dimensional construct, if so only by understanding them as processes changing between these dimensions over time. Thus, a direct comparison between adult fearful attachment and disorganised attachment cannot be made. The final style, dismissive attachment (positive model of self, negative of others), represents individuals whom have a sense of love-worthiness and a negative view of others at the same time, making these individuals avoid intimate relationships to protect themselves from others disappointment (Bartholomew & Horowitz, 1991).

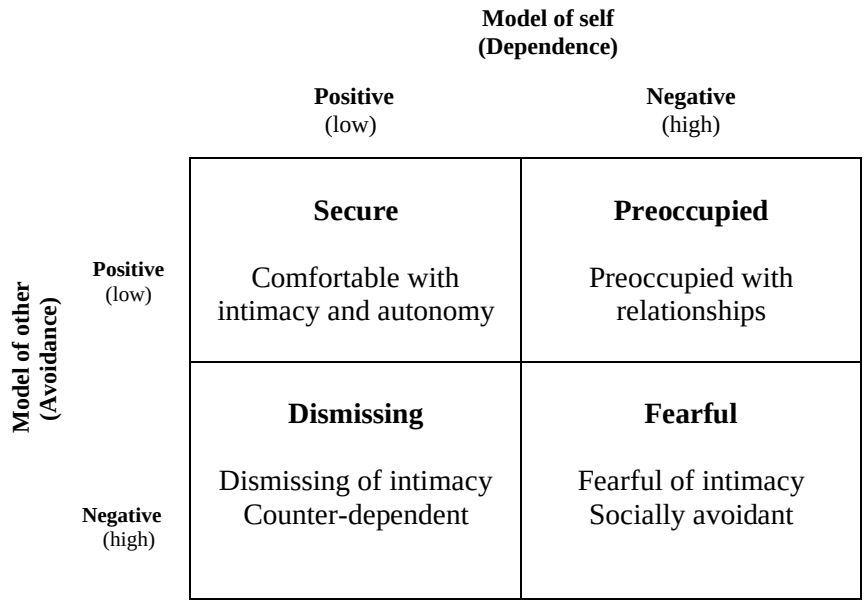
With reference to these four styles, Bartholomew and Horowitz (1991) developed the Relationship Questionnaire (RQ), including four statements describing each of the four styles. The scale can either be used to categorise respondents into their attachment style prototype, or to attain a continuous score of each of the four attachment styles. Earlier, researchers have had an ongoing debate about whether individual differences in adult attachment are best measured using categorical or continuous models (see Fraley et al., 2015). This debate, however, appear to now have settled as researchers seem to agree that a dimensional approach is certainly most expedient (Roisman et al., 2007; Fraley et al., 2015). Fraley and colleagues argued that the dimensional approach better distinguishes individual differences in attachment as it is assumed that individuals vary continuously regarding attachment anxiety and avoidance and that the combination of the two constitutes the categorical prototypes seen in for example Bartholomew and Horowitz's (1991) four-category measures (Fraley et al., 2015).

Accordingly, the current study applied the RQ to measure participants' continuous adult attachment styles (see 'Method' section). It should then be specified that when referring to the four prototypes of adult attachment, the term 'category' may be used (despite it being

measured dimensionally), whereas the term ‘dimensions’ is applied when referring to attachment avoidance and anxiety. Therefore, the context should be considered when reading the word ‘dimensions’ or ‘dimensionally’.

By and large, the development of adult attachment styles and its associated measures, have gone from being very similar to that of infant attachment styles to a more comprehensive and separate construct. That is, the original secure-, anxious/ambivalent- and avoidant patterns can also be measured in adults either through the AAI or self-report measures such as that of Hazan and Shaver (1987). However, the four-category conceptualisation of adult attachment as proposed by Bartholomew and Horowitz (1991), have also received much regard as it includes dimensions of both self and others, in line with Bowlby’s notion of IWMs. The four adult attachment styles, ‘secure’, ‘fearful’, ‘preoccupied’ and ‘dismissing’, are now considered to be best measured continuously rather than categorically.

Figure 1.
Bartholomew and Horowitz's (1991) four-category model of adult attachment



2.4. Attachment Style Stability (from Infancy to Adulthood)

Attachment stability is a crucial matter regarding attachment theory and research, as childhood attachment is considered an important determinant for later adjustment. More specifically, the IWMs established in infancy are thought to act as a blueprint for later experiences (e.g., Bowlby, 1973; Pinquart et al., 2013). Bowlby (1969/1982) originally suggested that once they are formed, IWMs stay fairly stable throughout life. In subsequent years, a large amount of studies has investigated the stability of attachment from infancy to adolescence and adulthood in both high- and low risk samples (Fraley, 2002; Vice, 2005; Aikins et al., 2009; McConnell & Moss, 2011; Pinquart et al., 2013), some less certain of attachment stability than others.

According to the prototype approach of attachment style stability, attachment patterns at a certain time, such as in adulthood, are results of IWM prototypes established during infancy combined with current- and past attachment-relevant experiences (Mikulincer & Shaver, 2007). Thus, this approach supports the notion that infant attachment patterns tends to be stable throughout life. However, the prototype view also includes the belief that stability of attachment patterns can be reduced through experiences that are inconsistent with the prototype during life. Therefore, only a moderate level of attachment stability can be expected from infancy to adulthood. Although the prototype perspective acknowledges that IWMs can change over time, it is also stressed that "there is a stable factor underlying the variance in those representations" (Fraley et al., 2011, p.974).

However, many scholars have criticised attachment theory for ignoring the importance of infants' individual differences, in particular temperament (e.g., Lamb et al., 1984; Sroufe, 1995). They imply that the deterministic view of development, does not allow for much growth and change. The temperament debate has been divided, with one part suggesting that both temperament and caregiver responsiveness impact the quality of

attachment (Colin, 1991). However, a recent meta-analysis by Groth and co-workers revealed that secure attachment was only weakly associated with lower levels of negative temperament (Groh et al., 2017). Accordingly, this provided little evidence that temperament does determine security status, in support of traditional attachment theory.

Previously, it has been challenging to determine the degree of attachment stability from infancy to adulthoods, due to inconsistent findings in longitudinal studies (Fraley, 2002). However, more recent work on attachment stability, conducted by Pinquart and colleagues (2013), attempted to gather and make sense of the existing literature in a meta-analysis. The analysis included results from 127 relevant studies with individuals ranging from two weeks of age to 29 years, assessed during 225 different time intervals. Their main findings imply moderate average levels of attachment stability in time intervals up to 15 years. However, the decrease in stability of secure attachment was already significant beyond five-year intervals.

Moreover, Pinquart et al. (2013) found that on average, individuals with secure attachment patterns without social risks, are more likely to preserve their attachment styles than those with insecure attachment patterns and those with secure attachment with social risks. Findings from this meta-analysis also propose that attachment stability is stronger when children's IWMs can be measured verbally, at a representational, as opposed to observational level. In sum, Pinquart and colleagues' findings indicate that there is not currently sufficient evidence to support a long-term perspective of attachment stability. Nevertheless, the prototype approach cannot be completely rejected as this meta-analysis only had 18 effect sizes available for time-intervals beyond 15 years, and considering that reliability of the test-retest measures applied may have been slightly poor.

Attachment instability may be explained by changes in the caregiving environment. Research has suggested that major changes in the caregiving environment, such as parental

divorce or death, can contribute to changes of the IWMs and thus attachment pattern (e.g., Lewis et al., 2000; Shear et al., 2007). Moreover, IWMs of attachment might be affected by the dramatic biopsychosocial changes that take place in childhood and adolescence. For example, children and adolescences ongoing brain development and related cognitive capacity, facilitate the formation of increasingly abstract representations of attachment relationships and other concepts (Krawczyk, 2012). This process may in turn lead to re-evaluation of past experiences. Lastly, changes of attachment pattern assessment methods, is another possible explanation of attachment instability. That is, inconsistencies may be caused by moving from observational measures of attachment in infancy, to intrapsychic measures applied on older children whom can describe their own experiences (Pinquart et al., 2013).

Regarding attachment stability in adulthood, this matter is even more complicated due to the fact that individual differences in adult attachment often are associated with big five personality traits (see the section below for a comprehensive review). Considering that there is a consensus in that personality traits are highly stable, it is plausible that personal characteristics may explain the patterns of stability evident in adult attachment. However, research conducted by Fraley et al. (2011), controlled for variations in the big five personality traits when assessing attachment stability in adults, and found that patterns of stability could not be explained by the stable nature of basic personality traits. Hence, this finding supports the prototype perspective of adult attachment, which have also been supported by several others (e.g., Scharfe & Bartholomew, 1994; Zhang & Labouvie-Vief, 2004).

To summarize, attachment patterns have mostly been considered as somewhat stable. The prototypical approach to attachment stability is similar to Bowlby's view in that attachment styles are rather constant throughout life, but it also emphasises that inconsistent prototype experiences may disrupt stability. While some scholars have criticised the attachment stability approach for not considering individual differences such as temperament,

research has demonstrated that this may not have a significant impact on changes in attachment. Moreover, recent research indicate that attachment is only moderately stable up to 15 years. Changes in attachment patterns can either be due to the biopsychosocial influences during life or methodological changes of attachment measures.

2.5. Attachment Styles and Personality

Bowlby mostly understood personality development as a result of environmental influences, empathizing relationships over instincts or genetics (Holms, 1993). Further, Sroufe (1979) explained personality development as "a foundation, increasing in organisational complexity, differentiating from early general modes of engaging the environment" (p. 836), and that this foundation later is transformed by reorganisations. In the same paper, Sroufe (1979) used examples from the Strange Situation to argue that attachment patterns are results of infant-caregiver interactions, and not individual differences such as temper. One example was that securely attached children may exhibit opposing behaviours such as being hyper- or hypoactive, slow or fast, cuddly or non-cuddly, but still have in common that they use their caregivers as a secure base.

While attachment theorists usually have an environmental perspective, personality researchers rather focus on genetics, temper and causes of personality traits in their understanding of attachment styles (Noftle & Shaver, 2006). Personality researchers began to investigate the relationship between attachment styles and major personality constructs such as the 'big five', to examine whether attachment styles are redundant or overlapping with existing constructs of personality (sometimes referred to as the 'jangle fallacy'). The big five, or the five-factor model (FFM), is a well-established taxonomy of personality traits that can be applied for both normal and clinical populations. It includes the following dimensions; neuroticism, extraversion, openness to experience (sometimes referred to as just 'openness'), agreeableness and conscientiousness (Costa, & McCrae, 1992).

One of the first studies to examine the relationship between attachment styles and the FFM, was conducted by Shaver and Brennan (1992) and included the three category ratings of attachment and a former measure of the big five. Interestingly, the results showed that the attachment patterns were better predictors of relationship outcomes over time, than was the big five. This finding was important for attachment theory, as it suggests that the attachment framework cannot actually be considered redundant to the FFM framework despite some overlap.

Since Shaver and Brennan's (1992) study, several other scholars have contributed with findings to this field, gathered in a comprehensive review by Noftle and Shaver (2006). By and large, most studies found that attachment security was negatively correlated with neuroticism, while positively correlated with extraversion, agreeableness and conscientiousness. Furthermore, attachment anxiety was found to mostly correlate positively with neuroticism. Although this dimension was also found to have negative, moderate correlations with extraversion, agreeableness and conscientiousness, this was only found in half of the studies and is thus less certain. Finally, attachment avoidance was usually found to have a negative correlation with extraversion and agreeableness. None of the attachment dimensions were generally associated with openness to experience. See 'Table 1' for a summary of these and other results regarding the relationship between attachment dimensions and the big five.

In addition to their review, Noftle and Shaver (2006) conducted a large study of their own, including more than 8000 participants. Their results revealed that attachment anxiety was most strongly related to neuroticism, while attachment avoidance was most strongly (negatively) related to agreeableness. Further, both dimensions were negatively associated with extraversion, agreeableness and conscientiousness. Although modest, in contrast to previous research, openness was found to be negatively associated with both attachment

avoidance and anxiety. However, it should be noted that such a large sample results in statistical power, which caused most of the variables in this study to show significant correlations. More recent research has found similar correlations, however without any significant correlations with openness (Donnellan et al., 2008; Davarinejad et al., 2017). Thus, more research is needed for the relationship between attachment dimensions and openness to be well established. Also, since pervious research focus on the relationship between attachment dimensions and big five personality traits, more research is required to determine the links between the four specific attachment styles and the big five.

Still, the question about the causal relationship between attachment styles and personality traits remains unanswered. Do the FFM and adult attachment partially overlap because they capture variance from the same genetically influenced psychobiological traits? Donnellan et al. (2008) investigated this question in their study applying multivariate behavioural genetic techniques, and found that (a) individual differences in attachment anxiety and avoidance are heritable, and (b) much of the relationship between big five traits and attachment dimensions are accounted for by genetic factors. That is, 45% and 39% of the variance was accounted for by genetic factors for attachment anxiety and attachment avoidance, respectively.

The fact that the remaining variance was due to environmental factors, suggests that they are just as important for creating individual differences in adult attachment as genes are. Thus, this research does not contradict adult attachment theory, but rather highlights a novel aspect of it. Moreover, it was found that attachment anxiety and neuroticism may be related to the same biologically rooted system governing vulnerability to negative emotionality such as fear and anxiety, whereas attachment avoidance and extraversion share the same susceptibility to positive emotionality such as willingness to approach situations (Donnellan

et al. (2008). Accordingly, Donnellan et al. (2008) concluded that much of the overlap between attachment and personality traits is genetically mediated.

Though attachment theorists have typically had an environmental approach to personality and attachment, personality researchers have emphasised genetics and personality traits in this context. Many associations between the attachment dimensions and the big five have been proposed (summarized below). Moreover, personality researchers questioned whether major personality traits and attachment styles were overlapping. Much research to date have found that these constructs only partially overlap, and that attachment styles therefore are not redundant to personality traits. Finally, recent research suggests that some of the overlap between attachment and personality may be accounted for by genes.

Table 1.
Correlations between attachment dimensions and Big Five personality traits based on consistent findings from previous research

	Secure	Anxious	Avoidant
Neuroticism	-	+	+
Extraversion	+	-	-
Openness			
Agreeableness	+	-	-
Contentiousness	+	-	-

Note. These correlations are based on the numerous studies reviewed in section 2.5.

2.6. Attachment Styles and Underlying Psychopathological Processes

From the very beginning of attachment theory's history, Bowlby (1969/1982) made it clear that it was a theory of psychopathology. He was not the first to suggest that disordered behaviour could be connected to relations from childhood such as primary caregivers (i.e. psychodynamic theory), but attachment theory's remarkable empirical approach was rather novel at the time (Mikulincer, & Shaver, 2007). The expanding empirical support on attachment theory, finally contributed to explain why and how childhood relationships sometimes are related to psychopathology. While secure attachments usually provide a

fundament for mental wellbeing and health, attachment insecurities built on negative internal models of self and others combined with deficits in inter- and intrapersonal regulation, increase the risk of mental illness (Ein-Dor, & Doron, 2015; Mikulincer, & Shaver, 2007; Sroufe et al., 2000).

However, it is crucial to stress that causality is a complex matter when it comes to psychopathology and attachment theory (Sroufe et al., 1999; Mikulincer & Shaver, 2007; Sroufe et al., 2000). Claiming that psychopathology is the sum of negative experiences is very much an oversimplification. Changes in the environment (e.g., losing a family member) can result in interactional changes, which in turn can change relationships (Sroufe et al., 1999). Thus, psychopathology is conceived as a result of a complex and organic development. This does not mean that there is no connection between attachment insecurity and mental distress and disorders, it rather stresses that psychopathology is a result of several converging processes and that insecure attachments may facilitate other unhealthy processes by decreasing psychological resources and individual resilience (Mikulincer & Shaver, 2007).

Consequently, such difficulties determine a general vulnerability to mental illness, whose specific form depends on environmental factors. Mikulincer and Shaver (2007) suggests that attachment insecurity may increase an individual's chance of developing a mental illness by amplifying the effects of other maladaptive factors such as traumatic events, significant losses, poverty or physical illness. In addition, they imply that the causal relationship between insecure attachments and psychopathology is bidirectional, as psychological disorders may also activate and intensify attachment insecurity resulting in more severe attachment dysfunctions (Mikulincer & Shaver, 2007).

There is a strong link between dysfunctional emotional regulation and dysfunctional relationships. As these difficulties are considered clear markers of psychopathology, it is a natural starting point when investigating the developmental-relationship perspective of

psychopathology (Sroufe et al., 2000). The process of evolving from co-regulation in the caretaker-infant dyad, to self-regulation, is a vital within this perspective (Fogel, 1993). In infancy, the baby is dependent on their primary caretaker's reactions and responsiveness to regulate their emotions. Eventually the dyadic-regulation experiences are generalised to models for self-regulation. Consequently, if the emotion regulation in the caretaker-infant dyad is affected by insecure attachment, the subsequent self-regulation will most likely not be of optimal function (Sroufe et al., 2000). This, in turn, can provoke destructive and impulsive behaviour and contribute to dysfunctional relationships. While individuals who have experienced effective regulation usually value relationships, individuals whom have experienced insecure attachment are more prone to develop relationships that are not supportive and are easily disrupted (Sroufe et al., 1999).

Research has shown that infants who have experienced successful co-regulation and are securely attached, later tend to master effective self-regulation. This entails processes such as efficiently recovering from being upset, expressing different emotions appropriate to the context, being empathic and to remain in interactions even if a conflict arises (Sroufe et al., 2000). In contrast, Sroufe and colleagues (2000) imply that children whom have a history of insecure attachment behave in different ways. For example, individuals with anxious attachment histories gets easily frustrated, break down in stressful situations and do not manage to endure interactions with peers. Contrary, those with avoidant attachment histories struggle to connect with other children, express antipathy for others, and may be emotionally over-controlling. Thus, expressing signs of poor self-regulation.

In sum, attachment theory has always been a theory of psychopathology. It stood out from other theories linking childhood experiences to later psychopathology, by having a substantial empirical approach. Thus, attachment theory managed to describe why and how

these factors are related. That includes the description of the development of psychopathology as a complex and dynamic process with a bidirectional relationship to insecure attachment, rather than the plain sum of maladaptive experiences. As attachment theory emphasise the transition from co-regulation to self-regulation and the following consequences, insecure attachments are typically characterised by dysfunctional emotion-regulation and associated dysfunctional relationships. Conversely, secure attachment is associated with adaptive emotion-regulation and relationships.

2.7. A Transdiagnostic Model of Attachment Insecurities

Ein-Dor and Doron (2015) introduced the transdiagnostic model of attachment insecurities in order to address the following questions; (a) which underlying mechanisms of the different attachment styles cause the different psychopathologies they are associated with (i.e., multifinality), and (b) why certain dispositions result in different disorders between people or across disorders within the same individual over time. Thus, they addressed some of the matters discussed above, aiming to place them in a theoretical model. They suggested that each attachment dimension (i.e., anxiety and avoidance) has its own 'dark triad of processes' linking it to mental illnesses. Furthermore, when they interact with a specific moderator they lead an individual on a pathway for a specific disorder.

More specifically, this model implies that attachment anxiety's dark triad of processes includes maladaptive emotion regulation processes (i.e., inclination to upregulate negative affectivity), heightened vigilance to possible threats and increased empathic accuracy, as well as decreased perception of others responsiveness (i.e., viewing others as less understanding and supportive of one's needs). Next, the dark triad of processes regarding the relationship between attachment avoidance and multiple mental illnesses, also comprises maladaptive emotion regulation processes, however with inclination to downregulate affectivity and

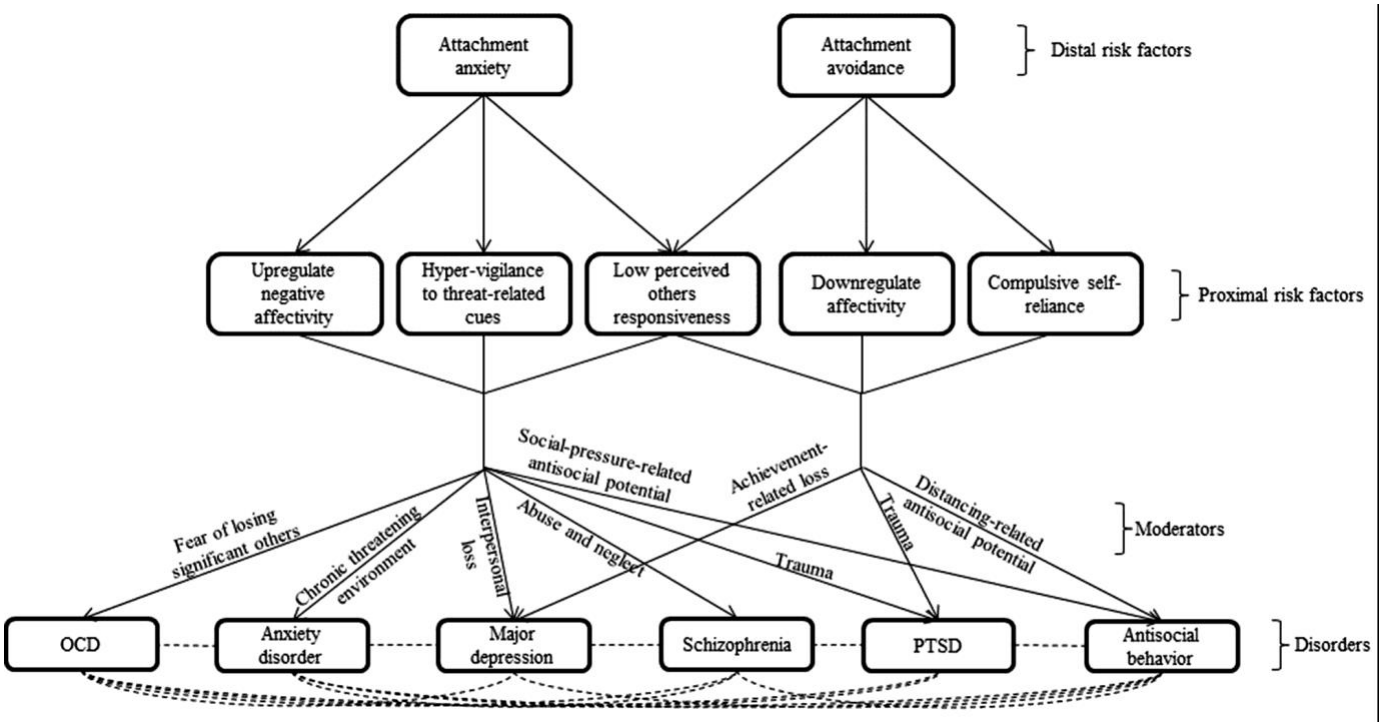
applying distancing strategies, in addition to compulsive self-reliance, less social support and decreased perceived others responsiveness. These dark triads of processes may in turn constitute the proximal risk factors that mediate the relationship between the attachment dimensions and several mental disorders (Ein-Dor & Doron, 2015; Ein-Dor et al., 2016).

The moderators in the transdiagnostic model of attachment, influences which symptoms that will appear in an individual due to the proximal risk factors. Symptoms arises when moderators (e.g., threatening environment) raise concerns that the risk factors (e.g., low perceived others responsiveness) act upon, when they determine responses through conditioning, or when they influence the reinforcement value of particular stimuli (Ein-Dor & Doron, 2015). If the moderator for example was to be a threatening environment, it is likely that feelings of fear and anxiety would appear. As individuals with attachment anxiety tend to be hyperattentive to threats, the feelings of anxiety and fear would probably be intensified and maintained. Simultaneously, their low perceived others responsiveness would keep them from seeking emotional support which could have helped them sooth the anxious feelings. Consequently, the chance of developing an anxiety disorder might increase. Contrary, the fact that individuals within the attachment avoidance dimension apply distancing strategies, may in this case protect them from the feelings of anxiety and fear. In turn, this may decrease their chance of developing an anxiety disorder under such conditions.

Taken together, the transdiagnostic model of attachment insecurity is valuable as it stresses the fundamental underlying processes of psychopathology and partly explains comorbidity, which in turn may result in more effective assessment and treatment of psychopathologies. The model suggests that each attachment dimension has its own ‘dark triad of processes’ heightening the risk for psychopathology: attachment anxiety may

increase the risk of upregulating negative affectivity, whereas attachment avoidance may increase the chance of downregulating negative affectivity.

Figure 2.
The Transdiagnostic Model of Attachment and Psychopathology



Note. Retrieved from Ein-Dor, Viglin, & Doron, 2016, used with permission.

2.8. Attachment Styles and Specific Disorders

In some cases, the processes described above can result in the development of specific mental illnesses. For example, individuals with insecure attachment styles can potentially develop attachment disorders, classified as diagnoses both in DSM-5 and ICD-11. Attachment disorders are thought to be serious and rather rare (Seim et al., 2019). However, the prevalence is higher among institutionalised young children (Zeanah et al., 2016). There has not been much consensus in defining attachment disorders or how to differentiate between subtypes, which have caused great controversy (O'Connor & Zeanah, 2003). Attachment disorders will not be further empathised as they are not included in the current

study. The next section will provide a description and short review of the psychopathologies that are included in this study, as well as their relation to attachment.

2.8.1. Depression

Depression is a common and serious mood disorder characterized by emotional symptoms (e.g., feelings of sadness, hopelessness and loss of interest), cognitive symptoms (e.g., indecisiveness, reduced concentration and attention) and physical symptoms (e.g., sleep disturbances, change of appetite and fatigue; American Psychiatric Association, 2013). In the third volume of his attachment trilogy, Bowlby (1980) suggested that the loss of attachment security during early life could contribute to depression vulnerability. The loss could either be literal, in terms of death of the primary caregiver, or symbolic through insecure attachment patterns with the caregiver. Either way, Bowlby (1980) argued that the loss would lead to maladaptive representations of both the self and others. He suggested that in these loss situations, the child would easily feel helpless in trying to gain attention, support and love from the unavailable caregiver, and that these emotions in turn could contribute to depression. Moreover, Bowlby (1980) implied that this would particularly be the case for insecure individuals suffering from following losses, traumatic experiences or other distressful times.

Bowlby's viewpoints on the effects of maladaptive attachment experiences in childhood on later proneness to depression, have been supported by several studies since, both in nonclinical samples (e.g., Irons et al., 2006; Simon et al., 2019) and in clinical samples (e.g., Bifulco et al., 2002; Conradi et al., 2018). Regarding clinical samples, insecure attachment styles have for example been associated with more severe symptoms of depression in psychiatric inpatients as well as patients with diabetes, HIV, eating disorders, substance abuse and major depression (Simpson & Rholes, 2015). Findings from nonclinical

samples also indicates that insecure attachment patterns are associated with more severe depressive symptoms.

However, what remains unclear about the existing literature, is that while there is an agreement about the link between insecure attachment and depression, the evidence of specific attachment styles at risk are unfortunately inconsistent. While some studies suggest that the more anxious/ambivalent styles such as preoccupied attachment (Rosenstein & Horowitz, 1996; Gerlsma & Luteijn, 2000) and fearful attachment (Murphy & Bates, 1997; Kwon et al., 2017) are associated with depression, others have emphasised avoidant styles (Besser et al., 2002). The findings are less clear concerning avoidant attachment, but according to Simpson and Rholes (2015), about half of the studies included in their review concluded that avoidant individuals, especially fearful avoidant ones, get depressed more often than secure individuals do. Moreover, some posits that there may be little or no differentiation between the insecure styles in relation to depression (Mickelson et al., 1997; Bifulco et al., 2002). These incontinences may be due to use of different samples (i.e., clinical vs. nonclinical, different types of depression etc.), variation in sample sizes, how adult attachment is assessed (i.e., two-, three- or four-dimensional conceptualisation), and/or how depression is measured (i.e., self-reported depression vs. interviews/clinical diagnoses). Nevertheless, the lack of clarity regarding the specific insecure attachment styles related to depression, calls for further investigation.

2.8.2. Obsessive-Compulsive Disorder (OCD)

OCD is among the most disabling and prevalent anxiety disorders and is characterised by the presence of obsessions (i.e. recurrent, intrusive and persistent thoughts) and compulsions (i.e., repetitive behaviours in response to obsessions), or both (American Psychiatric Association, 2013; World Health Organization, 1996). Cognitive models of OCD imply that obsessions derive from intrusive thoughts that are considered threatening or

dangerous, and thus needs to be neutralised (Rachman, 1998). According to the Obsessive Compulsive Cognitions Working Group (2003), dysfunctional/obsessive beliefs, such as exaggerated personal responsibility, overestimation of threat, the urge to control thoughts, and perfectionism, underlie ineffective strategies used to manage intrusive thoughts and impulses. Although recent neurobiological theories suggest that the aetiology of OCD may be explained by dysfunctional corticostriatal circuits (e.g., Jung et al., 2013), behavioural scholars have proposed that factors related to social learning may also be a contributing factor in those who are biologically vulnerable. For example, numerous studies have found a significant, inverse relationship between recalled parental care, OCD symptoms and personality traits (Timpano et al., 2010; Alonso et al., 2004; Wilcox et al., 2008).

Research by Yarbro and colleagues aimed to clarify the association between inadequate parental care and obsessive beliefs, focusing on the specific contribution of attachment styles (Yarbro et al., 2013). They found that attachment anxiety mediated the relationship between perceived cold- and neglectful parenting. In addition, it was found that attachment anxiety mediated the association between attachment anxiety and two obsessive belief domains, namely responsibility/threat estimation and perfectionism/uncertainty. Contrary, attachment avoidance was not found to mediate the relationship between cold and neglectful parenting, nor perfectionism/uncertainty. These results suggest that perception of inadequate parental care is associated with anxious attachment and related distorted thoughts about the self and others, which in turn may act as vulnerabilities for OCD.

Other studies have revealed more direct links between attachment patterns and OCD symptoms. Myhr and colleagues (2004), for instance, attained results indicating that adults with OCD are more likely to have insecure attachment patterns than controls. Furthermore, Donron et al. (2009), found that self-reported attachment anxiety and avoidance were related

to more OCD symptoms and cognitions in a nonclinical sample. Later, Doron and his colleagues (2012) found similar results in a clinical sample. More specifically, the participants with OCD had significantly higher levels of attachment anxiety than the control group, also when controlling for depression. However, no differences in attachment avoidance were found. These findings support the link between OCD and attachment insecurity, particularly anxiety, in adulthood. Thus, it is expected that the attachment categories linked to attachment anxiety, namely preoccupied and fearful attachment, will be related to OCD in the current study.

Some suggest that the link between attachment insecurities and vulnerability to OCD symptoms might be explained by the negative view of self and/or others, seen in insecure attachment styles. For example, Doron and Kyrios (2005) suggested that obsessive-compulsive thoughts and behaviours share some of the same underlying cognitive-affective structures seen in IWMs of insecure attachment patterns. That is, increased risk of dysfunctional perceptions of the self (feeling incompetent in valued domains), others (increased perceptions of social threat), and the world (increased perceptions of physical threat). This implies that the possible influence that attachment insecurities have on OCD, might be mediated by maladaptive beliefs that have already been associated with OCD, such as overestimation of threat, the need to control thoughts, and perfectionism. In line with that idea, is an assumption that insecure attachment patterns result in poorer emotion regulation, which might disrupt the process of coping with experiences that challenge sensitive self-domains and thus contribute to OCD (Doron et al., 2009, 2012).

2.8.3. Dissociation

Dissociative symptoms are described as disconnection of identity consciousness and memory, which can be manifested through a continuum of symptoms ranging from

daydreaming to dissociative identity disorder (American Psychiatric Association, 2013; Ogawa et al., 1997). Bowlby (1973) first introduced the association between processes of attachment and dissociation when investigating how infants' unhappy care-seeking interactions with attachment figures could result in the development of several IWMs of self and the primary caregivers, instead of united and secure internal representations. Further, he explained that when multiple IWMs occur, one dominantly regulates interpersonal perceptions and emotions, whereas the other IWMs are separated from the conscious mind. In times of stress, the separate IWMs might appear to regulate emotions and cognitions in ways that are unfamiliar to the individuals' typical sense of self. Later, Bowlby (1979) explained that a patient's apparent dissociative symptoms (i.e., derealisation and depersonalisation) were caused by accepting false versions of attachment experiences, in which attachment figures would subtly reject the child's own first-hand experiences.

Much research has since established a link between infant disorganised attachment and later symptoms of dissociation (e.g., Liotti, 1992; Ogawa et al., 1997; Carlson 1998; Lyons-Ruth, 2003; Paetzold, Rholes, & Andrus, 2017)**.** For example, Liotti (1992, 2006, 2009) first specified that disorganised attachment may be the fundament for the development of dissociative disorders. This because both pathological dissociation and disorganised attachment are characterised by a disruption in the organisation of the usually integrated functions of consciousness, memory, identity, and perception of the environment (Liotti, 2009). For example, an infant with disorganised attachment may exhibit trance-like behaviour before resuming to his/her original task as if nothing has happened, which indicate an impairment of conscious processes also observed in dissociation. This behaviour may work as a defence mechanism against frightening or frightened caregiver behaviour (Liotti, 1992; Main & Hesse, 1990). Moreover, such trance-like behaviour might be processed or encoded differently, and thus be challenging to recollect later.

Liotto (1992) argued that an infant with several, incompatible IWM of self and others as seen in disorganised attachment, would swiftly shift between models in stressful situations involving the primary caretaker. He suggested that this immature cognitive system could potentially overwhelm normal conscious processing, resulting in a primitive conscious state. In turn, this state could cause both models to determine actions at the same time, which again would result in the dissociative behaviours seen in disorganised infants. Liotti (1992), further hypothesised that infants with disorganised attachment patterns who later had severely traumatic and chronic experiences, potentially could develop dissociative identity disorder. Main and Hesse (1990) offered a similar account; the combination of childhood trauma experiences and unsupportive attachment figures, triggers the development of incoherent IWMs of self and others, which results in cognitive models that make individuals vulnerable to dissociation.

The hypothesis concerning the link between disorganised attachment and later dissociation has since been confirmed by multiple longitudinal studies (Ogawa et al., 1997; Carlson, 1998; Dutra et al., 2009). For instance, Carlson (1998) established a connection between infant disorganised attachment and dissociation in both later childhood and early adulthood in her research. In fact, three of the adolescent participants in her study had developed dissociative disorders when they were recruited, in which all of them had been disorganised in the attachment to their primary caregiver during infancy (Carlson, 1998). Although somewhat inconsistent, some of the longitudinal studies also found that other factors such as maltreatment contributed to dissociation (e.g., Ogawa et al., 1997). Similar results have been obtained through self-report measures in adults (Paetzold et al., 2017). Taken together, researchers appear to have a mutual agreement about the association between disorganised attachment and dissociation. As this particular attachment style is not included

in the current study, it is challenging to hypothesize which of the four attachment styles from the RQ, if any, will predict dissociation.

2.8.4. Somatoform Dissociation

Nijenhuis and colleagues first introduced the concept of somatoform dissociation characterised by bodily dissociative symptoms such as loss of sensory and/or motor control as well as involuntary perception of sensory- (e.g., prickling), motor- (e.g., tremor) and/or pain symptoms (Nijenhuis et al.,1996; Kienle et al., 2017). According to Van der Hart et al. (2001), somatoform dissociation has been 'seriously neglected' within contemporary research. Nijenhuis et al. (1996) strived to compensate for this by phenomenologically describing somatoform dissociation and by developing a valid and reliable instrument to measure it (included in the current study). Although somatoform dissociation is not represented as a single disorder in diagnostic manuals, the symptoms can be found in dissociative disorders (e.g., depersonalisation-derealisation syndrome) and somatoform disorders (e.g., conversion disorder; Nijenhuis, 2001).

Research suggests that somatoform dissociation is significantly associated with mental trauma related to physical, sexual or emotional abuse (Van der Hart et al., 2001; Bob et al., 2013). Van der Boom and colleagues (2010) posits that disorganised attachment may possibly mediate the trauma-dissociation connection. Which, in that case, parallels the theoretical framework between somatoform dissociation and psychoform dissociation (as reviewed above). Unfortunately, little or no research on the relationship between somatoform dissociation and attachment has been conducted. However, since both dissociative disorders (e.g., Carlson, 1998) and somatoform disorders (e.g., Van Dijke & Ford, 2015), have previously been associated with insecure attachment patterns, it is likely that somatoform dissociation will have a similar outcome. It will, however, be difficult and perhaps

speculative, to predict which particular insecure attachment styles are related to somatoform dissociation.

2.8.5. Borderline Personality Disorder (BPD)

The BPD diagnosis includes symptoms of marked impulsivity combined with a "pervasive pattern of instability of interpersonal relationships, self-image and affects" (American Psychiatric Association, 2013). The importance of disrupted interpersonal functioning in BPD has long been stressed in the clinical literature (Kernberg, 1967; Gunderson, 1984). Although some research suggests that there might be a strong biogenetic component in the development of BPD (Siever et al., 2002; Skodol et al., 2002), the potential role that disturbed relationships have as a contributing factor in the pathogenesis of BPD does not vanish.

Interestingly, these interpersonal features are also evident in two of the insecure attachment styles, namely the preoccupied and fearful attachment patterns, in which numerous studies have found to be significantly associated with BPD (Levy, 2005; Choi-Kain et al., 2009). A review of 13 empirical studies examining the links between attachment styles and BPD, demonstrated a strong consensus about the relationship between insecure attachments and BPD (Agrawal et al., 2004). Further, this review concluded that the unresolved, preoccupied and fearful attachment patterns were most common in BPD. In addition, research show that there is an inverse relationship between secure attachment and BPD (Levy, 2005).

Bearing these clinical features of BPD in mind, more recent clinical theories have conceptualised BPD as a disorder of insecure attachment (Fonagy et al., 2000; Gunderson, 1996; Levy & Blatt, 1999). For example, Fonagy and colleagues' (2000) argue that secure attachment facilitates exploration of the caregiver's mind, which in turn promotes

mentalisation (ability to understand own or others mental state). In contrast, this theory suggests that insecurely attached individuals may defensively inhibit their capacity to mentalise in order to avoid thoughts about their caregiver's potential wish to harm them. Furthermore, Fongy's theory imply that some of the BPD characteristics, such as an unstable sense of self, impulsivity and feelings of emptiness, may be due to the developmental pathology associated with this inhibition (Fonagy, 2000).

Some scholars have proposed that intolerance of aloneness is a core feature of BPD, which even resulted in it being a diagnostic criterion in DSM (Gunderson, 1996). Gunderson (1996) argued that this intolerance may be explained by early attachment failures observed in individuals with BPD whom have difficulties obtaining 'soothing introject' during distressful times and thus require external reassurance. Moreover, Gunderson noted that some behaviours of insecure attachment that are caused by interactions with insensitive or unresponsive caregivers, such as clinging and attention seeking, are also present in BPD.

2.8.6. Psychopathy

Psychopathy is a personality construct characterised by a cluster of interpersonal, affective, lifestyle and antisocial features such as lack of empathy, manipulativeness, egocentricity, impulsivity and irresponsibility, callousness, inclination to lie, lack of remorse and lack of long-term goals (Hare, 2003; Christian et al., 2017; Schimmenti et al., 2014; Levenson et al., 1995). Although often used in clinical and forensic psychology, psychopathy is no longer a clinical diagnosis in the DMS-5 or ICD-11. Most psychopathic traits are though represented in antisocial personality disorder found in the DSM-5 (Hare, 1996; American Psychiatric Association, 2013). Furthermore, psychopathy can be assessed with The Psychopathy Checklist Revised (PCL-R; Hare, 1991, 2003), which is considered the golden standard to examine psychopathy (Cooke & Michie, 2001).

As early as in 1944, Bowlby published a study on attachment and psychopathy named ‘forty-four juvenile thieves’ (Bowlby, 1944). In this study, he found that young criminals displaying symptoms of psychopathy, ‘affectionless children’ in his words, were much more likely to have suffered from maternal deprivation/separation by two years of age, compared to non-psychopathic criminals and controls. Considering that attachment theory can be useful in understanding the interpersonal processes underlying psychopathy, surprisingly little research has since studied the relationship between psychopathy and attachment.

Brennan and Shaver (1998) obtained some findings suggesting that self-reported attachment as measured by the RQ, is not related to psychopathy. However, others have found a significant relationship between insecure attachment styles and psychopathy and/or related disorders such as antisocial personality disorder (Timmerman & Emmelkamp, 2006; Conradi et al., 2016; Bakermans-Kranenburg, & van IJzendoorn, 2009; Frodi et al., 2001; Schimmenti et al., 2014). Although these studies show some inconsistency in their findings, it appears to be a general agreement that particularly dismissing attachment is related to psychopathy. Additionally, some studies also found a link between psychopathy and the preoccupied- (e.g., Bakermans-Kranenburg, & van IJzendoorn, 2009) and disorganised (e.g., Schimmenti et al., 2014) attachment styles. Unfortunately, some of the research had small sample sizes (i.e., $N = 14$; Frodi et al., 2001; and $N = 10$ Schimmenti et al., 2014), which may have influenced their ability to obtain significant relations. Hence, it might be difficult to draw any conclusions from existing literature on attachment and psychopathy. In addition, most research conducted on psychopathy and attachment uses institutionalised samples (usually from prisons), which implies that findings cannot be generalised to individuals with psychopathic traits that are not criminals.

Bowlby (1977) observed that those who are emotionally detached, as in those with psychopathic traits, are usually delinquent. However, emotional detachment is perhaps not properly measured by the classical attachment measures such as the AAI (Timmerman & Emmelkamp, 2006). Although the dismissing category from the AAI is treated as the equivalent to detachment, this may be inappropriate seeing that dismissing attachment is characterised by fear of being disappointed whereas in psychopathy feelings are usually absent. Thus, Timmerman and Emmelkamp (2006) notes that emotionally detached people may perhaps be better distinguished by Bartholomew and Horowitz's (1991) conceptualisation of adult attachment, as it differentiates between a fearful avoidant category and a dismissive avoidant category. Further, they also stress the lack of research examining the relationship between attachment as measured by the RQ and personality disorders. Bearing this and the lack of research on psychopathy and attachment in non-institutionalised samples in mind, the current study will hopefully be a useful contribution in this field.

2.8.7. Health Anxiety

Health anxiety, or hypochondriasis, is conceptualised as "pathological worries of harbouring a severe disease and preoccupation by bodily sensations and function", in which symptoms include 'fear of becoming contaminated or infected', 'obsessive rumination about one's health', 'fear of taking prescribed medication', 'difficulties in believing the doctor' and 'fascination with health information' (Fink, 2019, p. 26). Although ICD-11 has kept the term hypochondriasis, I will from here on refer to the condition as health anxiety due to the strongly stigmatising associations to the former term (e.g., Gray, 2018). According to Alberts and Hadjistavropoulos (2014) there are several approaches explaining how environmental factors may cause health anxiety. They posit that the primary approach is the cognitive-

behavioural model and that the second primary approach is that of the interpersonal model of health anxiety.

According to the interpersonal model, proposed by Stuart and Noyes (1999), health anxiety is associated with insecure attachment patterns which manifests as abnormal care-seeking behaviour in adults. That is, the reassurance seeking behaviours that are often found in health anxiety allows individuals to seek support from others during stress, which again may alleviate attachment insecurity. However, the interpersonal interactions that individuals with health anxiety have with others, including doctors, may lead to rejection that increases his/her belief about being rejected. This may keep them from seeking social interactions, which in turn might cause amplified levels of anxiety. Thus, this model implies that health anxiety is preserved through a vicious maladaptive interpersonal cycle consisting of reassurance seeking, alienation from others and worry.

While majority of research has found support of the interpersonal model of health anxiety (Wearden et al., 2006; Noyes et al., 2003; Sherry et al., 2014; Reiser et al., 2019; Alberts & Hadjistavropoulos, 2014; Anagnostopoulos & Botse, 2016), others do not clearly support this model (Fortenberry & Wiebe, 2007). Among the supporters were Wearden and colleagues (2006), whom found that students with preoccupied attachment had significantly higher health anxiety scores than students with other attachment styles. Further, they proposed that this association could be explained by a general tendency to seek reassurance in relationships. Also, it was found that negative affectivity significantly predicted health anxiety. These findings suggest that health anxiety indeed can be predicted by insecure attachment, more specifically preoccupied attachment, which corresponds with research relating general anxiety with preoccupied attachment (e.g., Marazziti et al., 2007; Dagan et al., 2020). Moreover, Noyes et al. (2003) found that fearful attachment in addition to

dismissing attachment, also significantly related to health anxiety. Finally, others have found that attachment anxiety, as opposed to attachment avoidance, uniquely contributes to health anxiety (Sherry et al., 2014; Alberts, & Hadjistavropoulos, 2014; Anagnostopoulos & Botse, 2016). Despite somewhat inconsistent findings regarding specific patterns, it appears to be a consensus in previous literature that health anxiety is related to insecure attachments.

2.8.8. Schizotypy

Schizotypy is conceptualised as a latent personality organisation which can indicate schizophrenia and psychosis liability, and may therefore cause a variety of schizophrenia-related phenotypic outcomes (Lenzenweger, 2018; Eckblad & Chapman, 1983). This personality organisation can be manifested on a continuum ranging from clinical schizophrenia through personality disorders such as schizotypal and paranoid personality disorders, to sub-clinical symptoms such as magical ideation (Lenzenweger, 2018). Since interpersonal difficulties are known characteristics of psychosis, researchers have previously linked it to attachment theory (Berry et al., 2007).

Dozier and colleagues have probably conducted the majority of research concerning attachment and schizotypy. They used the AAI to assess attachment in samples of individuals suffering from serious psychopathological illnesses, and found that schizophrenia was associated with insecure attachment patterns (Dozier, 1990; Dozier et al., 1991). In addition, they found that avoidant deactivating strategies were more prominent in those with schizophrenia, compared to those with affective disorders. This finding was later supported by studies suggesting that most individuals with schizophrenia were classified in the avoidant attachment pattern as assessed by the AAI (Dozier et al., 1994; Tyrell & Dozier, 1997). However, it should be noted that the sample sizes in all these studies were relatively small (< N = 40), with even less subjects diagnosed with schizophrenia or related disorders, which

may influence the generalisability of the findings. Research by others which have used nonclinical samples (Berry et al., 2006; Wilson & Costanzo, 1996), have found associations between avoidant attachment and negative schizotypy (i.e., social withdrawal) and between anxious attachment and positive schizotypy (i.e., voices and paranoia).

According to Harder (2014) the insecure attachment styles in psychosis are distributed as follows; dismissing in the dominant category (48-71% compared to 27% in norm group) whereas the preoccupied style is more or less equivalent to the norm (12-20% compared to 19% in norm group). Contrary, the relationship between secure attachment and psychosis is inverse with 27-32% in the psychosis group as compared to 58% in the norm group. As Harder (2014) emphasises, this distribution is different from most other psychopathologies, where preoccupied attachment is usually dominant, as seen in several of the disorders reviewed above such as depression and BPD. Further, Harder (2014) notes that although there have been found high levels of disorganised attachment (29-35%) in psychosis, no conclusions can be drawn seeing that only two studies have reported this association. However, others argue that disorganised attachment may indeed be a risk factor for the development of later schizotypal experiences, and that this relation may be mediated by dissociation (Liotti & Gumley, 2008; Shearman et al., 2018). Moreover, Harder (2014) reported similar correlations in nonclinical samples. By and large, the evidence most strongly points towards a relation between dismissing-, and perhaps disorganised attachment, and schizotypal symptoms.

2.9. The Big Five and Psychopathology

Ever since the time of certain ancient Greeks, the relationship between personality and mental health have been addressed. A good example of this is Hippocrates and Galen's theories of the four humours; sanguine, phlegmatic, choleric and melancholic (Kotov et al.,

2010). At that time, it was hypothesised that these four personality types could determine a predisposition to both physical and mental illness. Psychology has since continued to develop this tradition (e.g., Freud and Pavlov). Today, the four humours may have been replaced with the big five, but the interest of the relationship between personality and psychopathology have remained strong. Fortunately, research in this field may improve prognostic abilities and possibly clarify psychopathology's aetiology through identification of its mutual mechanisms with personality (Kotov et al., 2010). Consistent findings suggest that high neuroticism, low conscientiousness and low extraversion are associated with psychopathology in general (Malouff et al., 2005; Kotov et al., 2010). However, the next section will go into more detail about which personality traits are related to the specific psychopathologies included in the present study.

Depression has previously been associated with higher neuroticism and lower extraversion and conscientiousness (e.g., Koorevaar et al., 2013; Allen et al., 2018). Findings regarding the link between FFM dimensions and OCD symptoms have been rarer and less consistent; some have found OCD to be associated with higher neuroticism, lower extraversion and lower agreeableness (Samuels et al., 2000), while others suggest that lower levels of openness are associated with OCD (Rector et al., 2005). Furthermore, previous research demonstrate that health anxiety is positively correlated with neuroticism and negatively correlated with conscientiousness (Ferguson, 2000, 2004). Regarding BPD and FFM personality traits, it has been reported that these individuals tend to score higher on neuroticism and lower on agreeableness compared to the norm (Clarkin et al., 1993; Distel et al., 2009).

Dissociation has been found to be positively correlated with neuroticism and openness to experience, while negatively related to agreeableness and conscientiousness (Ruiz et al.,

1999; McCrae & Costa, 1997; Kwapil et al., 2002). Recently, Serrano-Sevillano and colleagues (2017) found that individuals scoring higher on somatoform dissociation showed significantly greater scores in neuroticism, the extraversion facet 'excitement seeking' and the 'fantasy' facet related to openness to experience. However, no other studies to my knowledge have to date investigated the links between the FFM and somatoform dissociation specifically, which limits current knowledge to associate it only to the neuroticism domain.

For schizotypy the following traits resulted in a measure called the Five Factor Schizotypal Inventory (FFSI; Edmundson et al., 2011); low extraversion (i.e., warmth, gregariousness and positive emotion) and agreeableness (i.e., trust) combined with high neuroticism (i.e., anxiousness and self-consciousness) and openness to experience (i.e., openness to fantasy, actions and ideas). However, as the FFSI is built on the specific facets described, schizotypy may therefore not have the same outcomes with the higher-order domains when the other facets are also included.

Psychopathy is the only externalising condition included in this thesis, and this understandably entail a different personality profile than the internalising psychopathologies do. In previous literature, it is often described as a 'dark personality' profile exhibiting a mixture of lower levels of agreeableness and conscientiousness, higher extraversion (however, lower in warmth) and a combination of high and low neuroticism (i.e., low anxiety and self-consciousness, but high impulsiveness and angry hostility) (Harpur et al., 2002; Lynam, 2002; Lynam et al., 2005).

This line of research suggests that most of the psychopathologies included in the present study have previously been associated with higher levels of neuroticism as well as lower levels of agreeableness and conscientiousness. A summary of the associations between

the different psychopathologies and big five traits, based on consistent previous findings, is displayed in Table 2.

Table 2.
Correlations Between the Big Five and Internalising and Externalising Psychopathologies from Previous Research

	Neuroticism	Extraversion	Openness	Agreeableness	Contentiousness
Depression	+	-			-
OCD	+	-	-	-	
BPD	+			-	
Dissociation	+		+	-	-
Somatoform Dissociation	+				
Psychopathy		+		-	-
Schizotypy	+	-	+	-	
Health anxiety	+				-

2.10. Summary

Initially, attachment theory described how the emotional bond between infants and their caregivers are crucial for later development of self- and others view. Later, the concept of adult attachment was established as its own, yet related, construct. Despite many similarities between childhood and adult attachment, some differences such as physical versus mental proximity seeking, are essential. Although attachment have typically been considered rather stable throughout life, evidence suggest it might only be moderately stable for a restrained period. Regarding big five personality traits relation to both attachment and

psychopathology, many remarkable associations have been made in both domains. However, research suggests that there is only some overlap between the big five and attachment styles.

Attachment theory has always been a theory related to psychopathology. It appears to be a clear prevalence of insecure attachment patterns among individuals with a wide variety of psychological disturbances, ranging from negative affectivity and poor self-regulation, to severe mental illnesses such as personality disorders and schizophrenia. This supports the attachment theoretical idea postulating that attachment security works as a protective factor against psychopathology, even in times of distress and trauma. Contrary, insecure attachment styles seem to be rather pathogenic and are considered risk factors for psychopathology. Although much of the research is based on correlational findings and thus are subject to several interpretations, numerous studies also demonstrate associations between earlier attachment patterns and later vulnerability to mental illness. Furthermore, the recent emergence of a more dynamic understanding of the relation between attachment and psychopathology, provides a more comprehensive insight to this topic.

2.11. Rationale, Aim and Hypotheses

Although a growing body of adult attachment research has recently emerged, the majority of it has investigated the relationship between adult attachment patterns and romantic functioning (e.g., Wegner et al., 2018; Simpson & Rholes, 2017) and/or affect regulation (e.g., Mikulincer & Shaver, 2008; Brennan & Shaver,1995). Less studies have examined the associations between adult attachment styles and psychopathology, let alone in combination with major personality traits. That is, previous research has found associations between insecure attachment styles and personality traits such as neuroticism and extraversion (Shaver & Brennan, 1992; Noftle & Shaver, 2006), as well as insecure

attachments and certain psychopathologies such as depression (e.g., Wei et al., 2005) and personality disorders (e.g., Scott et al., 2009).

However, these variables are usually not combined in the same study, resulting in an inadequate understanding of connections between adult attachment, personality and psychopathology. Of the existing research combining adult attachment styles, personality traits and psychopathology, some have used a clinical sample (see Riggs et al., 2007). The current study therefore wished to explore the effects of these factors in a nonclinical sample. While a study by Mickelson et al. (1997) did include a nationally representative sample of American adults, their results were based on a two-part interview with the respondents assessing their attachment styles based on Hazan and Shaver's (1987) three-category conception of adult attachment. In addition, the psychopathology measures applied in Mickelson and colleagues' study were built on the DSM-III criteria. Thus, the measures used in their study is now somewhat outdated.

The current study hopes to better discriminate between the anxious and avoidant dimensions of adult attachment styles by employing Bartholomew and Horowitz' (1991) four-category conception of adult attachment continuously. Further, Surcinelli et al. (2010) implemented the four-category conception of adult attachment in their study on adult attachment styles, psychological disease and personality traits. However, they only included two psychopathologies; depression and anxiety. In pursuit of a more comprehensive understanding of the links between attachment, personality and psychopathology, the present study wanted to encompass a broader range of psychopathologies, including some that have been less frequently studied in relation to attachment styles, such as somatoform dissociation and health anxiety.

The current study aims to investigate the link between adult attachment styles, personality traits and psychopathology in a community sample. Only specific hypotheses

were made about the variables that have had rather consistent findings in previous research. Also, considering that much previous research on the relationship between attachment styles and psychopathology have used different conceptualisations of adult attachment with other categories and/or terms than the current study (e.g., disorganised attachment), I chose not to make any clear hypotheses where this applied. Thus, the general hypotheses are made with the distinction between secure and insecure attachment styles, while more specific hypotheses have been made about the variables with consistent previous findings. Based on this, the hypotheses were formulated as follows:

1. Individuals reporting higher levels of insecure attachment styles will report higher levels of nonclinical symptoms of psychopathology and neuroticism, while lower levels of conscientiousness and agreeableness
2. Individuals reporting higher levels of secure attachment will report less symptoms of psychopathology, lower levels of neuroticism and higher levels of extraversion, agreeableness and conscientiousness
3. Different insecure attachment styles will positively predict different psychopathologies
    a) Preoccupied attachment will positively predict OCD, BPD and health anxiety
    b) Fearful attachment will positively predict OCD and BPD
    c) Dismissing attachment will positively predict psychopathy and schizotypy
4. Secure attachment will negatively predict psychopathology
5. The relationships in hypothesis 3 and 4 will be accounted for by certain big five traits
    a) Neuroticism will positively predict symptoms of all psychopathology except from psychopathy
    b) Agreeableness and conscientiousness will negatively predict most symptoms of psychopathology

3. Methods

3.1. Participants

Participants were members of the ESCS. A total of 1135 participants responded to at least one of the questionnaires included in the current study. Of these, 531 (46.8%) were males and 603 (53.1%) were females. The age range among the participants were 18-89 (*M* = 49.67, *SD* = 13.08). Furthermore, the sample predominantly consisted of Caucasian participants (96.5%). Respondents' backgrounds were varied in terms of educational level and employment status. The responses from questionnaires used in the current study were collected from the following surveys: The revised NEO Personality Inventory (NEO-PI-R), administered summer 1994 (*N* = 856), The Behavioral Report Inventory (BRI), administered fall 1997 (*N* = 793), A Comprehensive Health Survey (CHS), administered spring 1999 (*N* = 772) and Personality, Emotions, and Attitudes (PEA), administered spring 2000 (*N* = 741). For additional details regarding the ESCS, see information published by Goldberg (2008). The data was retrieved from the open source web application Harvard Dataverse.

3.2. Procedure

Recruitment took place through direct mailings from a list of homeowners in 1993. Participants agreed to complete questionnaires for at least five to ten years, in return of financial compensation for their time. They were informed that they had the right to decline to answer any item while responding. To ensure anonymity, each questionnaire was marked with an identification number. The ESCS researchers attained ethical approval by the independent ethics committee (IRB) prior to data collection.

3.3. Measures

The current study was based on questionnaires and included a total of 10 scales, described below. Apart from the demographic information, these scales were collected from

four different surveys (NEO-PIR, BRI, CHS and PEA).

3.3.1. Adult Attachment Styles

The RQ by Bartholomew & Horowitz (1991), included in the PEA survey, was used to assess adult attachment styles. It consists of four statements representing the four different adult attachment styles: secure, preoccupied, fearful and dismissing. The four prototypical attachment styles are based on two underlying dimensions, namely the positivity of an individual's model of self- and that of others. The attachment styles by Bartholomew & Horowitz (1991), secure, preoccupied, fearful and dismissing, respectively, read as follows:

> It is easy for me to become emotionally close to others. I am comfortable depending on them and having them depend on me. I don't worry about being alone or having others not accept me.
>
> 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.
>
> I am 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 worry that I will be hurt if I allow myself to become too close to others.
>
> 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. (p. 244)

Participants were instructed to indicate how well each paragraph described them on a 7-point Likert scale (from 1 = '*Not at all like me*' to 7 = '*Very much like me*'). The RQ can

either be used as a continuous measure with four single-item subscales, or as a nominal classification into four attachment categories (Roisman et al., 2007; Fraley et al.2015). This study applied the former method, as it has been recommended. Previous studies have demonstrated the RQ's construct validity, and the different methods of measurement have appeared to be moderately correlated (Bartholomew & Horowitz, 1991; Griffin & Bartholomew, 1994; Scharfe & Bartholomew, 1994).

3.3.2. Depression

To measure symptoms of depression, Radloff's (1977) The Center for Epidemiologic Studies Depression (CES-D) Scale was applied. The total of 20 items (e.g., '*Thought that my life had been a failure*') were included in the BRI. Four of the items were reversed as they were positively worded (e.g., '*Felt hopeful about the future*'). Items were rated on a 5-point Likert scale (from 1 = *never*, to 5 = *almost always*). The CES-D scale has demonstrated high internal consistency, acceptable test-retest stability, excellent concurrent validity and substantial construct validity (Radloff, 1977). Combining the CES-D and the additional four items, internal consistency also appeared to be excellent in the current study (24 items, α = .93).

3.3.3. OCD

The 18-item revised Obsessive-Compulsive Inventory (OCI-R; Foa et al., 2002) which was comprised in the CHS, was used to measure obsessive compulsive symptoms including washing, checking, ordering, obsessing, hoarding and neutralising. Participants rated the items (e.g., '*I get upset if objects are not arranged properly*') on a 5-point Likert scale (1 = *never*, 2 = *almost never*, 3 = *sometimes*, 4 = *often*, 5 = *almost always*). The OCI-R has presented good internal consistency, convergent validity, and test-retest reliability in both patients with OCD and healthy controls (Foa et al., 2002). Likewise, the internal consistency was good in the present study (18 items, α = .88).

3.3.4. Dissociation

Goldberg's (1999) the Curious Experiences Survey (CES), incorporated in the BRI, was used to measure dissociative symptoms. The scale consists of 31 items (e.g., '*Was told that I sometimes do not recognize a friend or a family member*') which were rated on a 5-point Likert scale (from 1 = *never*, to 5 = *almost always*). The psychometric properties of the CES has previously been demonstrated through good internal consistency and construct validity (Goldberg 1999; Cann & Harris, 2003). As expected, considering the use of the same sample as Goldberg, the internal consistency of the CES was also excellent in the present study (31 items, α = .90).

3.3.5. Somatoform Dissociation

Somatoform dissociation was measured with the Somatoform Dissociation Questionnaire (SDQ-20) by Nijenhuis et al. (1997). Out of the original 20 items, 17 were included in the present study. Two of the missing items concerned urination (e.g., '*I experience pain while urinating*'), however, it is uncertain why these items were excluded from the PEA survey. Items were rated on a 5-point Likert scale (from 1 = *very inaccurate*, to 5 = *very accurate*). Nijenhuis and colleagues (1997) have previously demonstrated excellent reliability of the SDQ-20. In this study, the internal consistency for the SDQ-20 was good (17 items, α= .81).

3.3.6. BPD

Leichsenring's (1999) Borderline Personality Inventory (BPI), also comprised in the PEA survey, was applied to assess borderline personality organisation. The BPI originally consist of 53 items, in which 47 of them were included in the present study (e.g., '*I have intentionally done myself physical harm'*). Some of the missing items were follow-up questions to certain items (e.g., '*If yes, please mark the following'*). Although the BPI originally was a true-false instrument, respondents in the current study rated the items on a 5-

point Likert scale (from 1 = *very inaccurate*, to 5 = *very accurate*). The BPI has previously demonstrated acceptable psychometric properties in terms of good reliability and validity (Leichsenring, 1999). This was also found in the current study as the internal consistency for the BPI was good (47 items, α = .89).

3.3.7. Psychopathy

Psychopathic attributes were measured with the Levenson Self-Report Psychopathy (LSRP) scale (Levenson et al., 1995). Of the original 26 items, 25 items (e.g., '*I tell other people what they want to hear so that they will do what I want them to do*'), were included in the PEA survey and thus in this study. It is uncertain why one item ('*My main purpose in life is getting as many goodies as I can*') was excluded. However, research has suggested that occasional low reliability of the LSRP may be due to certain items, as the reliability improved when they were removed (Gummelt et al., 2012). In the current study, internal consistency for the LSRP total score was acceptable (25 items, α= .77). Participants rated the items on a 5-point Likert scale (1 = *very inaccurate*, 2 = *moderately inaccurate*, 3 = *neither inaccurate nor accurate*, 4 = *moderately accurate*, 5 = *very accurate*). Seven items were positively worded and therefore revered scored.

3.3.8. Health Anxiety

The Survey of Health Concerns (SHC; Katz & Zenger, 1999) was encompassed in the PEA survey to measure health anxiety. The health concern questionnaire included in the PEA survey consisted of the 20 items from the SHC (e.g., '*I worry a lot about catching a serious illness*') and three additional items (e.g., '*Discuss my health problems with my family and friends*'). Five items were positively worded (e.g., '*Feel healthy and vibrant most of the time*') and thus reversed. All the 23 items were rated on a 5-point Likert scale (from 1 = *very inaccurate*, to 5 = *very accurate*). By presenting good reliability and validity of the SHC, Katz and Zenger (1999) have previously demonstrated acceptable scale properties. In the

present study, with the three additional items, the health concern scale still had good internal consistency (23 items, α= .86).

3.3.9. Schizotypy

The 30-item Magical Ideation Scale (MIS; Eckblad & Chapman, 1983), found in the PEA survey, was used to assess magical ideation and childhood fantasies as an indicator for schizotypy/schizophrenia proneness. The MIS is originally a true-false instrument, but in the current study a 5-point Likert scale consistent with the other PEA scales, was used to rate the items (e.g., '*I think I could learn to read other's minds if I wanted to*'). Only three of the items were reversed (e.g., '*Good luck charms don't work*'). The psychometric properties of the MIS were established by Eckblad and Chapman (1983) with good internal consistency and validity. The internal consistency of the present study was excellent (30 items, α = .92).

3.3.10. The Big Five

The big five personality traits were measured with the NEO PI-R by Costa and McCrae (1992). This survey consists of 240 items, divided in 30 facets and five domains; neuroticism (e.g., '*I often worry about things that might go wrong'*), extraversion (e.g., '*I find it easy to smile and be outgoing with strangers*'), openness (e.g., '*I often try new and foreign foods*'), agreeableness (e.g., '*My first reaction is to trust people'*) and conscientiousness (e.g., '*I strive for excellence in everything I do'*). Some of the items (104) were reversed scored. Items were rated on a 5-point scale (from 0 = *strongly disagree* to 4 = *strongly agree*). The psychometric properties of the NEO PI-R, including scale reliability, stability and construct validity, have been thoroughly established throughout the years (Costa & McCrae,1992; Young & Schinka, 2001). The current study obtained similar results, with acceptable-good internal consistency of the five domains; neuroticism (48 items, α = .85), extraversion (48 items, α = .75), openness (48 items, α = .78), agreeableness (48 items, α = .75) and conscientiousness (48 items, α = .84).

3.4. Statistics

All statistical analyses were conducted on IBM SPSS Statistics for Mac, version 26.

3.4.1. Correlations

The Pearson correlation coefficient (*r*) measures the strength of a linear relationship between two variables (Sedgwick, 2012). It can have a value between -1 through 0 to +1, in which 1 (or -1) represents a perfect correlation and 0 indicates no linear association between the variables (i.e., uncorrelated). That is, the closer the correlation is to (-)1, the stronger it is. However, the statistical significance of the correlation depends on the sample size. While small samples require *r* to have a greater value for the association to be significant, larger samples can obtain significant correlation coefficients with weaker *r* values (Sedgwick, 2012). Therefore, it is as important to consider the significance test (i.e., p-value), as the *r* value, when investigating the strength of the relationship between two variables. Pearson correlations was applied to examine the linear relationship between all variables; attachment styles, the big five, psychopathologies, age and gender.

3.4.2. Multiple Regression Analyses

Multiple regression analyses were conducted to test how the attachment styles predicted the different psychopathologies, and the degree to which the big five could account for those relationships. Multiple regression analyses are a popular data-analytic framework in psychology research as it allows to examine the predictive power multiple correlated independent variables (IVs) have on a dependent variable (DV), as well as it can be used to test sophisticated models involving mediation or moderation (Hoyt et al., 2008). Multiple regression analyses investigate the association between several predictor variables (i.e., X_1, X_2, X_3, etc.) and a single DV (Y) at the same time.

The equation for multiple regression is: $\hat{y} = a_0 + b_1X_1 + b_2X_2 + \ldots + b_pX_p$ (Knight, 2018). Here, $\hat{y}$ represents the predicted value of the dependent variable based on some

weighted linear combination of the IVs (represented as *X*). Next, the a_0 represents the predicted dependent ŷ score when all IVs have a value of zero. Finally, the b's in the equation, refer to the contribution of the associated IVs when the other IVs are held constant (i.e., the estimated regression coefficients). Thus, the regression coefficients indicate the relative importance of each IV in predicting the criterion variable. Other important effect sizes in multiple regression analyses includes β (standardized regression coefficients), *r* (the bivariate correlation between two variables) and R_2 (the squared multiple correlation coefficient) (Hoyt et al., 2008). In this study, multicollinearity was controlled for by ensuring that the intercorrelations among the IVs were below .80, that the variance inflation factor (VIF) scores were <10 and that tolerance scores were >.10 (Field, 2018).

4. Results

Regarding gender, females are represented with a higher value, while males have been coded with the smaller value. Thus, negative correlations imply that males have higher levels of the given factor and positive correlations suggests that females have higher levels of the variable.

4.1. Correlations

Table 3 demonstrates the correlations between all the variables. The main results for attachment styles, psychopathology and the big five will be reported, respectively. The correlations matrix showed that Secure attachment was significantly, negatively correlated with all psychopathologies, except from schizotypy (no significant correlation). Both fearful and preoccupied attachments had significant positive correlations with all the psychopathologies. However, dismissing attachment only significantly correlated with OCD, somatoform dissociation, BPD and psychopathy.

Pearson correlations analyses revealed that Neuroticism was significantly positively correlated with and secure and dismissing attachments, whereas it was significantly

negatively correlated with fearful and preoccupied attachments. Fearful and dismissing attachments were both significantly negatively correlated with extraversion, openness and agreeableness, while secure attachment was positively correlated with the same three personality traits. Only fearful and preoccupied attachments had significant (negative) correlations with conscientiousness.

The overall pattern of correlations demonstrated that all psychopathologies were positively correlated with neuroticism and that most of the psychopathologies were negatively correlated with extraversion, agreeableness and conscientiousness. However, dissociation and schizotypy showed some deviation from this pattern; they both revealed positive, significant correlations with openness. Also, dissociation was not significantly correlated with extraversion, whereas schizotypy was positively correlated with extraversion (in contrast to the other psychopathologies).

Older age was positively correlated with dismissing attachment, agreeableness and OCD, while it was negatively correlated with neuroticism, extraversion, depression, dissociation, BPD and psychopathy. Secure attachment, neuroticism, openness, agreeableness and depression were all significantly associated with female gender. Contrary, fearful attachment, dismissing attachment, somatoform dissociation and psychopathy were all correlated with male gender.

Table 3.

Pearson Correlation Matrix Among All Variables (Attachment Styles, the Big Five, Psychopathologies, Age and Gender)

Variable	*1.*	*2.*	*3.*	*4.*	*5.*	*6.*	*7.*	*8.*	*9.*	*10.*	*11.*	*12.*	*13.*	*14.*	*15.*	*16.*	*17.*	*18.*	*19.*
1. Secure																			
2. Fearful	-.54**																		
3.Preoccupied	-.08*	.28**																	
4. Dismissing	-.29**	.33**	-.13**																
5. N	-.16**	.25**	.27**	-.10*															
6. E	.36**	-.35**	-.05	-.20**	-.27**														
7. O	.20**	-.12*	-.03	-.12*	-.02	.34**													
8. C	.07	-.11*	-.11*	.05	-.47**	.18**	-.13**												
9. A	.18**	-.19**	-.03	-.17**	-.21**	.05	.02	.15**											
10. Dep.	-.15**	.18**	.21**	-.05	.48**	-.19**	.02	-.21**	-.07										
11. OCD	-.18**	.25**	.22**	.10*	.35**	-.15**	-.25**	-.02	-.09*	.34**									
12. Disso.	-.09*	.15**	.19**	.02	.32**	-.00	.18**	-.21**	-.14**	.40**	.33**								
13. SD	-.20**	.24**	.25**	.10**	.32**	-.16**	-.09*	-.20**	-.15**	.35**	.43**	.34**							
14. BPD	-.23**	.36**	.33**	.09*	.54**	-.13*	.02	-.33**	-.26**	.46**	.45**	.58**	.73**						
15. Psycho.	-.23**	.31**	.19**	.20**	.39**	-.10*	-.11**	-.32**	-.51**	.24**	.29**	.26**	.46**	.59**					
16. HA	-.10**	.17**	.20**	-.02	.47**	-.23**	-.05	-.26**	-.17**	.36**	.33**	.25**	.43**	.48**	.34**				
17. Schizo.	-.01	.12**	.22**	.02	.21**	.09*	.22**	-.18**	-.10	.22**	.25**	.50**	.50**	.61**	.33**	.24**			
18. Age	.06	-.04	.05	.10**	-.18**	-.12**	-.04	.03	.20**	-.13**	.12**	-.17**	.05	-.14**	-.09*	.05	-.05		
19. Gender	.16**	-.10**	-.03	-.15**	.11**	.02	.08*	-.01	.31**	.14**	-.07	-.03	-.10**	-.06	-20**	.05	.05	.05	

Note. **p <.01, *p <.05

N= Neuroticism, E= Extraversion, O= Openness, C= Conscientiousness, A= Agreeableness, Dep.= Depression, Disso.= Dissociation, SD= Somatoform Dissociation, Psycho.= Psychopathy, HA= Health Anxiety, Schizo. = Schizotypy

4.2. Multiple Regression Analyses

Several multiple regression analyses were conducted to determine whether the different attachment styles predicted each psychopathology. Age and gender were controlled for in all the psychopathologies. Furthermore, it was tested whether the big five personality traits could account for each of the psychopathologies. This resulted in 8x3 multiple regression models; one for each of the eight psychopathologies with three models for each (one with only the four attachment styles as IVs, one also including age and gender, and the final one adding the big five personality traits). Results from the first and third models for each psychopathology will be reported in tables in this section, while tables for the second models (controlling for age and gender) are available in the appendices.

4.2.1. Attachment Styles, Personality Traits and Depression

Multiple regression analysis was applied to test whether the different adult attachment styles significantly predicted depression. Table 4 displays the standardized regression coefficients (β) and probability values. The regression model revealed that all the attachment styles significantly predicted depression, $p < .05$. That is, Secure ($\beta = -.105$, $p < .05$) and dismissing ($\beta = -.097$, $p < .05$) attachment styles negatively predicted depression, whereas fearful ($\beta = .124$, $p < .05$) and preoccupied ($\beta = .161$, $p < .001$) attachment styles positively predicted depression.

Table 4.
Attachment styles, age, gender and Big Five personality traits predicting Depression in a multiple regression analysis

	Model 1		Model 3	
Independent variable	β	*p*	β	*p*
Secure	-.105	<.05*	-.068	.113
Fearful	.124	<.05*	.041	.358
Preoccupied	.161	<.001**	.081	<.05*
Dismissing	-.097	<.05*	-.009	.812
Age			-.189	<.05*
Gender			.090	<.05*
Neuroticism			.409	<.001**
Extraversion			-.086	<.05*
Openness			.078	<.05*
Conscientiousness			.015	.713
Agreeableness			.047	.234
	Note. R = .276, F (4,679) = 14.016, p < .001 R^2 = .076, Adj. R^2= .071		*Note.* R = .517, F (11,608) = 20.121, p <. 001 R^2 = .267, Adj. R^2 = .254	

When adding age and gender in the next regression model, the dismissing attachment style no longer predicted depression. However, the three other attachment styles still did (see Appendix 1). As expected from the correlations, both younger age and females also significantly predicted depression (p = < .001). This finding suggests that being younger and/or female can account for the relationship between dismissing attachment and depression.

In the next round, the big five personality traits were added in the multiple regression analysis to assess whether any of them could account for the relationship between attachment styles and depression. As illustrated in Table 4, six of the IVs significantly predicted depression. While preoccupied attachment (β = .081, p < .05), females (β = .090, p < .05), neuroticism (β = .409, p < .001) and Openness (β = .078, p < .05) positively predicted depression, older age (β = -.189, p < .05) and extraversion (β = - .105, p < .05) negatively predicted depression. These findings generally correspond with the correlation matrix, except for openness which did not show a significant correlation with depression in the initial correlation analysis. Only the preoccupied attachment style remained a significant predictor of depression when controlling for age, gender and personality traits. This implies that the

relationship between secure- and fearful attachment and depression was accounted for by neuroticism, extraversion and/or openness.

4.2.2. Attachment Styles, Personality Traits and OCD

Model 1 (Table 5) revealed that both fearful (β = .151, p = .001) and preoccupied (β = .193, p < .001) attachments positively predicts OCD.

Table 5.
Attachment Styles, Age, Gender and Big Five Personality Traits Predicting OCD in a Multiple Regression Analysis

	Model 1		Model 3	
Independent variable	β	*p*	β	*p*
Secure	-.066	.134	-.054	.211
Fearful	.151	.001*	.088	.05*
Preoccupied	.193	<.001**	.085	<.05*
Dismissing	.058	.147	.054	.170
Age			.196	<.001**
Gender			-.120	<.05*
Neuroticism			.446	<.001**
Extraversion			.087	<.05*
Openness			-.203	<.001**
Conscientiousness			.147	<.001**
Agreeableness			.031	.427
Note. R = .312, F (4,675) = 18.197, p < .001 R^2 = .097, Adj. R^2 = .092			*Note.* R = .526, F (11,599) = 20.849, p < .001 R^2 = .277, Adj. R^2 = .264	

In model 2 (see Appendix 2) it was discovered that both fearful and preoccupied attachments remained positive significant predictors of OCD. Additionally, as expected based on the correlation matrix, older age significantly positively predicted OCD in this model.

As model 3 in Table 5, shows, eight of the eleven IVs significantly predicted OCD. fearful (β = .088, p = .05) and preoccupied (β = .085, p < .05) attachment continued to be positive predictors of OCD, accompanied by older age (β = .196, p < .001), neuroticism (β = .446, p <.001), extraversion (β = .087, p <.05) and conscientiousness (β = .147, p < .001). Contrary, openness (β = -.203, p < .001) and females (β = -.120, p < .05) negatively predicted OCD. Thus, the significant personality predictors only contributed to the variance explained in OCD.

4.2.3. Attachment Styles, Personality Traits and Dissociation

In Model 1 (Table 6) it was found that both fearful attachment (β = .101, $p < .05$) and preoccupied attachment (β = .168, $p < .001$) significantly predicted dissociation.

Table 6.
Attachment Styles, Age, Gender and Big Five Personality Traits Predicting Dissociation in a Multiple Regression Analysis

	Model 1		Model 3	
Independent variable	β	*p*	β	*p*
Secure	-.024	.589	-.040	.388
Fearful	.101	<.05*	.035	.455
Preoccupied	.168	<.001**	.097	<.05*
Dismissing	.005	.905	.073	.086
Age			-.109	<.05*
Gender			-.033	.413
Neuroticism			.267	<.001**
Extraversion			.049	.281
Openness			.198	<.001**
Conscientiousness			-.072	.094
Agreeableness			.002	.966
	Note. $R = .221$, $F(4,677) = 8.724$, $p < .001$		*Note.* $R = .423$, $F(11,601) = 11.919$, $p < .001$	
	$R^2 = .049$, Adj. $R^2 = .043$		$R^2 = .179$, Adj. $R^2 = .164$	

Further, it was found that older age ($p = .001$) negatively predicted dissociation (see Appendix 3). This corresponded with prior correlations. Both fearful and preoccupied attachment remained significant predictors of dissociation in model 2.

In model 3 (see Table 6), it was found that only preoccupied attachment remained a significant predictor of dissociation. Instead, the model revealed that neuroticism (β = .267, $p < .001$) and openness (β = .198, $p < .001$) were positive significant predictors, which suggest that they fully accounted for the effect fearful attachment had on dissociation. Although both neuroticism and openness displayed significant correlations with dissociation in the matrix, dissociation appeared to be more strongly related to conscientiousness than openness. Considering that conscientiousness did not significantly predict dissociation in this model, it either indicates that the two attachment styles obscured this relationship or that the causality

of the relationship is opposite. Also, older age (β = -.109, $p < .05$) remained a negative predictor of dissociation.

4.2.4. Attachment Styles, Personality Traits and Somatoform Dissociation

Model 1 (Table 7), revealed that Fearful attachment (β = .122, $p < .05$) and preoccupied attachment (β = .220, $p < .001$) positively predicted somatoform dissociation. Contrary, secure attachment (β = -.091, $p < .05$) was a negative predictor. No differences appeared when controlling for age and gender in model 2 (see Appendix 4).

Table 7.
Attachment Styles, Age, Gender and Big Five Personality Traits Predicting Somatoform Dissociation in a Multiple Regression Analysis

	Model 1		Model 3	
Independent variable	β	*p*	β	*p*
Secure	-.091	<.05*	-.075	.092
Fearful	.122	<.05*	.059	203
Preoccupied	.220	<.001**	.144	<.001**
Dismissing	.064	.102	.077	.060
Age			.090	<.05*
Gender			-.089	<.05*
Neuroticism			.257	<.001**
Extraversion			.017	.691
Openness			-.050	.205
Conscientiousness			-.074	.073
Agreeableness			-.026	.521
	Note. $R = .327$, F (4,716) = 21.385, $p < .001$ $R^2 = .107$, Adj. $R^2 = .102$		*Note.* $R = .432$, F (11,632) = 13.196, $p < .001$ $R^2 = .187$, Adj. $R^2 = .173$	

Only the preoccupied attachment style (β = .144, $p < .001$) remained a positive predictor of somatoform dissociation in model 3. In addition, older age (β = .090, $p < .05$), males (β = -.089, $p < .05$) and neuroticism (β = .257, $p < .001$) also positively predicted somatoform dissociation. These results suggest that neuroticism fully accounted for the relationship between two of the attachment styles (secure and fearful) and somatoform dissociation. The fact that age and gender did not appear as significant predictors until the third model was run, suggests that those two factors and somatoform dissociation have a shared association with neuroticism. When reviewing the correlation matrix (Table 3), the

significant negative correlation between neuroticism and age (< .01), between neuroticism and females (< .01) and between males and somatoform dissociation (< .01), may explain this finding.

4.2.5. Attachment Styles, Personality Traits and BPD

Model 1 demonstrated that both fearful attachment (β = .273, $p < .001$) and preoccupied attachment (β = .269, $p < .001$) positively predicted BPD. When controlling for age and gender in model 2 (see Appendix 5), both attachment styles remained significant predictors. Also, corresponding with the previous correlation, it was revealed that older age negatively predicted BPD.

Table 8.
Attachment styles, age, gender and Big Five personality traits predicting BPD in a multiple regression analysis

	Model 1		Model 3	
Independent variable	β	*p*	β	*p*
Secure	-.053	.197	-.037	.353
Fearful	.273	<.001**	.182	<.001**
Preoccupied	.269	<.001**	.148	<.001**
Dismissing	.020	.591	.083	<.05*
Age			-.035	.297
Gender			-.011	.753
Neuroticism			.398	<.001**
Extraversion			.078	<.05*
Openness			.038	.273
Conscientiousness			-.112	<.05*
Agreeableness			-.098	<.05*
	Note. $R = .448$, F (4,687) = 43.040, $p < .001$ $R^2 = .200$, Adj. $R^2 = .196$		*Note.* $R = .630$, F (11,611) = 36.461, $p < .001$ $R^2 = .396$, Adj. $R^2 = .358$	

In model 3, all the previous predictors remained significant, though accompanied by dismissing attachment (β = - .083, $p < .05$) and four additional significant predictors from the big five; neuroticism (β = .398, $p < .001$) and extraversion (β = .078, $p < .05$) were positive predictors of BPD, whereas conscientiousness (β = - .112, $p < .05$) and agreeableness (β = - .098, $p < .05$) were found to be negative predictors of BPD. Interestingly, the fact that extraversion positively predicted BPD in this model, contrasts the correlation matrix in which extraversion was found to be significantly negatively correlated with BPD. Otherwise, these

predictions correspond with the correlation matrix. The sudden appearance of dismissing attachment as a positive predictor for BPD, suggests that these two factors have a shared association with one of the significant personality predictors. Possibly agreeableness in which they are mutually strongly related to, (r = -.17, p < .001 and r = - .26, p < .001 with dismissing and BPD, respectively). These results imply that the four personality variables did not fully account for any of the significant attachment styles, but rather supplemented to the explained variance in BPD.

4.2.6. Attachment Styles, Personality Traits and Psychopathy

Model 1 (Table 9) established that all the insecure attachment styles positively predicted psychopathy; Fearful (β = .191, p < .001), preoccupied (β = .161, p < .001) and dismissing (β = .139, p < .001). All the insecure attachment styles continued to predict psychopathy in model 2 (see Appendix 6). In addition, both males (< .001) and younger age (< .05) positively predicted psychopathy (in line with previous correlations). Thus, age and gender contributed to further variance in psychopathy.

Table 9.
Attachment Styles, Age, Gender and Big Five Personality Traits Predicting Psychopathy in a Multiple Regression Analysis

	Model 1		Model 3	
Independent variable	β	*p*	β	*p*
Secure	-.079	.058	-.051	.167
Fearful	.191	<.001**	.116	<.05*
Preoccupied	.161	<.001**	.056	.088
Dismissing	.139	<.001**	.142	<.001**
Age			.038	.236
Gender			-.064	.05*
Neuroticism			.235	<.001**
Extraversion			.144	<.001**
Openness			-.118	<.001**
Conscientiousness			-.187	<.001**
Agreeableness			-.364	<.001**
	Note. R = .370, F (4, 720) = 28.552, p < .001 R^2 = .137, Adj. R^2 = .132		*Note.* R = .658, F (11,637) = 44.168, p < .001 R^2 = .433, Adj. R^2 = .423	

In model 3 (Table 9), preoccupied attachment and age no longer significantly predicted psychopathy. Hence, only the Fearful (β = .116, p < .05) and dismissing (β = .142,

$p < .001$) attachment styles remained positive predictors of psychopathy. Considering that all of the big five instead contributed to the prediction of psychopathy, it implies that they fully accounted for the variance between the previous predictor variables (preoccupied attachment, younger age) and psychopathy. While neuroticism (β = .235, $p < .001$) and extraversion (β = .144, $p < .001$) positively predicted psychopathy, openness (β = - .118, $p < .001$), conscientiousness (β = - .187, $p < .001$) and agreeableness (β = - .364, $p < .001$) all negatively predicted psychopathy. Again, it was surprising that extraversion positively predicted psychopathy, as their relationship was negative in the correlation matrix (see Table 3). Also, the absence of openness as a negative predictor for psychopathy, despite a significant relationship in the correlation matrix ($r = - .11$, $p < .001$), may indicate that the fearful and dismissing attachment styles obscured this relationship.

4.2.7. Attachment styles, Personality Traits and Health Anxiety

Two of the insecure attachment styles positively predicted health anxiety in Model 1 (see Table 10); Fearful (β = .141, $p < .05$) and Preoccupied (β = .161, $p < .001$). As expected considering the non-significant correlations, no differences occurred when controlling for age and gender in Model 2 (see Appendix 7).

Table 10.
Attachment Styles, Age, Gender and Big Five Personality Traits Predicting Health Anxiety in a Multiple Regression Analysis

	Model 1		Model 3	
Independent variable	β	*p*	β	*p*
Secure	-.032	.470	.048	.267
Fearful	.141	<.05*	.020	.654
Preoccupied	.161	<.001**	.066	.081
Dismissing	-.057	.158	-.045	.260
Age			.118	.001**
Gender			.022	.570
Neuroticism			.392	<.001**
Extraversion			-.115	<.05*
Openness			-.012	.759
Conscientiousness			-.043	.278
Agreeableness			-.117	<.05*
	Note. R = .248, F (4, 696) = 11.417, p < .001 R_2 = .062, Adj. R_2 = .056		*Note.* R = .510, F (11,612) = 19.599, p < .001 R_2 = .261, Adj. R_2 = .247	

Health anxiety's third model (Table 10) revealed that none of the attachment styles continued to predict health anxiety when controlling for the big five. Instead, older age (β = .118, p = .001) appeared to be a positive predictor. Among the big five, neuroticism (β = .392, p < .001) was shown to be a positive predictor, while extraversion (β = - .115, p < .05) and agreeableness (β = .117, p < .05) were found to be negative predictors of health anxiety. After neuroticism, conscientiousness (r = - .26, p < .001) was found to have the next strongest correlation with Health Anxiety among the big five in the correlation matrix. However, conscientiousness did not appear as a significant negative predictor of health anxiety in this model, which might suggest that older age and/or some of the other personality variables obscured this relationship. Possibly the latter, since conscientiousness was also found to be strongly negatively correlated to neuroticism (r = - .47, p < .001). This finding indicates that neuroticism, extraversion and/or agreeableness could account for the association between the attachment styles that initially were significant predictors (fearful and preoccupied attachments) and health anxiety.

4.2.8. Attachment Styles, Personality Traits and Schizotypy

Also here, fearful (β = .109, $p < .05$) and preoccupied (β = .209, $p < .001$) attachment styles positively predicted the given psychopathology (i.e., schizotypy) in model 1. Next, when controlling for age and gender (see Appendix 8), it was revealed that younger age (< .05) contributed to the variation in schizotypy, along with the remaining predictive attachment styles (fearful and preoccupied).

Table 11.
Attachment styles, Age, Gender and Big Five Personality Traits Predicting Schizotypy in a Multiple Regression Analysis

	Model 1		Model 3	
Independent variable	β	*p*	β	*p*
Secure	.076	.079	.030	.513
Fearful	.109	<.05*	.091	.051
Preoccupied	.209	<.001**	.156	<.001**
Dismissing	.029	.460	.081	.053
Age			-.034	.385
Gender			.072	.072
Neuroticism			.132	<.05*
Extraversion			.108	<.05*
Openness			.191	<.001**
Conscientiousness			-.083	<.05*
Agreeableness			-.057	.170
	Note. $R = .245$, F (4, 722) = 11.530, $p < .001$ $R_2 = .060$, Adj. $R_2 = .055$		*Note.* $R = .510$, F (11,612) = 19.599, $p < .001$ $R_2 = .261$, Adj. $R_2 = .247$	

Finally, when adding the big five in the multiple regression analysis (Model 3, Table 11), fearful attachment and younger age were no longer predictors of schizotypy. Preoccupied attachment (β = .156, $p < .001$) remained a positive predictor, along with neuroticism (β = .132, $p < .05$), extraversion (β = .108, $p < .05$) and openness (β = .191, $p < .001$). Contrasting, conscientiousness (β = -.083, $p < .05$) negatively predicted Schizotypy in this model. These results are in line with the initial correlations between schizotypy and the big five (see Table 3). This suggests that at least one (possibly several) of the significant personality variables accounted for the relationship between fearful attachment and schizotypy.

A summary of the main findings, i.e., which attachment styles significantly predicted the given psychopathologies before and after including the control variables, can be displayed

in Table 12. Overall, it is evident that the insecure attachment styles, particularly preoccupied and fearful attachments, positively predicts most of the psychopathologies. However, when controlling for the big five, Preoccupied attachment remains the most frequent positive predictor for psychopathology. Other remarkable findings will be discussed in the next section (see 'Discussion').

Table 12.
Summary of main findings. Attachments styles direction of significant prediction for the different psychopathologies with- and without control variables

Secure	Fearful	Preoccupied	Dismissing
Depression (-)	Depression (+)	Depression (+)*	Depression (-)
	OCD (+)*	OCD (+)*	
	Dissociation (+)	Dissociation (+)*	
Somatoform Dissociation (-)	Somatoform Dissociation (+)	Somatoform Dissociation (+)*	
	BPD (+)*	BPD (+)*	BPD (+)**
	Psychopathy (+)*	Psychopathy (+)	Psychopathy (+)*
	Health Anxiety (+)	Health Anxiety (+)	
	Schizotypy (+)	Schizotypy (+)*	

Note. * = Predictors that remained significant in model 3,
** = Significant predictor in model 3, but not model 1

5. Discussion

5.1. Main Findings

This study aimed to explore the links between adult attachment styles, big five personality traits and nonclinical psychopathology. The correlation- and multiple regression analyses revealed that these variables were indeed related and that several of the hypotheses were supported. As partly expected, the main finding was that individuals reporting higher levels of insecure attachments, especially preoccupied attachment, are more likely to

experience symptoms of most psychopathologies, even when major personality traits, including neuroticism, were entered as covariates.

5.2. Insecure Attachments and Psychopathology

In concordance with some of the hypotheses and previous research (e.g., Murphy & Bates, 1997; Surcinelli et al., 2010), respondents with a negative model of self (higher levels of preoccupied and fearful attachments), reported the highest levels of symptoms in most psychopathologies assessed. More specifically, both fearful and preoccupied attachments positively predicted all psychopathologies in the first model. However, while the preoccupied prototype remained a positive predictor for all psychopathologies except from psychopathy and health anxiety in the third model, fearful attachment only continued to predict OCD, BPD and psychopathy when adding the control variables. This finding has several indications.

Firstly, this suggests that individuals with insecure attachment styles associated with negative thinking about the self, might have an increased vulnerability to internal psychopathology. This may be understood in the light of consistent research suggesting that anxiously attached individuals (i.e., preoccupied or fearful) often struggle with both low self-esteem and self-efficacy (Schmitt & Allik, 2005; Mikulincer & Shaver, 2007), which in turn make them more vulnerable to mental health problems. Although individuals with a more positive view of self (i.e., dismissing individuals) might appear to have better self-images (e.g., Brennan & Morris, 1997), this may unfortunately not be authentic and stable considering that it can result from defensive self-enhancement. However, since this defence may be unconscious for individuals with higher levels of dismissing attachment, it may explain why the dismissing attachment style less frequently predicted psychopathology in the current study.

Secondly, this finding indicates that while fearful attachment appears to have some overlap with the big five personality traits, preoccupied attachment emerges as a more

independent construct. Thus, supporting previous research suggesting that attachment styles are not entirely overlapping with personality and that attachment should not be considered as redundant with personality when investigating the aetiology of psychopathology (Surcinelli et al., 2010). In addition, it implies that between the four adult attachments styles assed, the preoccupied pattern has the least overlap with the big five.

Interestingly, this also show that none attachment styles continued to significantly predict health anxiety once the covariates were entered. Although there have previously been inconsistent findings regarding the relationship between adult attachment styles and health anxiety, it was hypothesised that health anxiety would be predicted by preoccupied attachment since most other anxiety disorders have previously been related to this attachment style (Wearden et al., 2006; Sherry et al., 2014). Even though both fearful and preoccupied attachment positively predicted health anxiety in model 1, their failure to remain significant predictors in model 3 suggests that this relationship may be accounted for by neuroticism, extraversion and/or agreeableness. This finding stresses that more research is needed to determine the exact relationship between attachment styles and health anxiety.

Another unexpected finding was that BPD, and not schizotypy as hypothesised, was positively predicted by dismissing attachment. In fact, as the only psychopathology in model 3, BPD was significantly predicted by all three insecure attachment patterns (not just fearful and preoccupied attachment as hypothesised). This comes to show the value of measuring adult attachment styles dimensionally as it provides a nuanced picture of BPDs relation to attachment. Although this finding was only partly expected, it is in line with theories conceptualising BPD as a disorder of insecure attachment (Fonagy et al., 2000), suggesting that insecure attachment experiences causes limited mentalising abilities, which in turn may result in unstable sense of self, impulsivity and intolerance of aloneness (Fonagy, 2000; Gunderson, 1996). According to this theory, then, patterns of insecure attachment and BPD

are viewed to be more or less the same. The current finding provides further evidence to Fonagy's BPD theory.

The unanticipated finding that schizotypy was predicted by preoccupied attachment, contrasts the hypothesis and previous findings suggesting that the dismissing attachment pattern is most related to schizotypy (e.g., Dozier et al., 1994; Tyrell & Dozier, 1997; Harder, 2014). Thus, the current result suggests that the preoccupied attachment style may have more impact on symptoms of schizotypy than previously expected. This is interesting considering that individuals high on dismissing attachment are comfortable without close relationships, whereas individuals characterised by preoccupied attachment are not. Considering that psychotic symptoms are sometimes described as a lonely experience (Lim et al., 2018), this could explain why individuals experiencing symptoms of schizotypy might be desiring close relationships to gain emotional support (i.e., preoccupied attachment).

The incongruent findings regarding schizotypy and attachment styles have several possible explanations. While the current study was fortunate to have a large sample, Dozier and colleagues' studies were limited by small sample sizes. Also, they applied the AAI to measure adult attachment, which does not measure current romantic relationships as do the RQ. Hence, it is possible that the inconsistency lie between the different measures of adult attachment and/or differences in sample sizes. A replication of the current finding would be beneficial in order to strengthen the evidence regarding the relationship between preoccupied attachment and schizotypal symptoms in a nonclinical population.

Next, considering that psychopathy was the only external condition included in the current study, it was expected that it would exhibit a somewhat different pattern in the results than the other psychopathologies. However, it was somewhat unexpected that the fearful attachment pattern would positively predict psychopathy. With that being said, as recommended and aspired by Timmerman and Emmelkamp (2006), applying Bartholomew

and Horowitz's (1991) four-category conceptualisation of adult attachment, may have better distinguished detached individuals by discriminating the avoidant dimension, including both the fearful and dismissing categories. Since not much previous research in the psychopathy field has applied the RQ before, this may be part of the explanation of the unforeseen appearance of fearful attachment as a predictor of psychopathy. Part of it may also be accounted for by the current study's use of a nonclinical sample in contrast to the vast majority of previous research.

Despite the lack of research linking psychopathy to both the fearful and dismissing attachment styles, Lyddon and Sherry (2001) placed antisocial personality at the interface between fearful and dismissive attachment. They argue that childhood abuse and neglect may have disturbed these individuals' self-views, causing them to believe that they are not loveable. As a defence mechanism, this may again be manifested in the development of an alternative positive self-view. Thus, returning to the earlier mentioned argument that the apparent positive self-view seen in dismissing attachment, perhaps is not authentic. In contrast, Lyddon and Sherry (2001) propose that as a result from the lack of love and support from their attachment figures, other-representations are more consistently negative for these individuals. This negative view of others, may cause these individuals to justify their antisocial behaviours driven by cognitions such as "I need to be powerful and in control or people will take advantage of me" (p.410), leaving them with little remorse for their destructive behaviours. Another possibility is that the positive self-view found in individuals with psychopathic traits is due to the early discovery that callous abuse and exploration represents success, which results in powerful feelings of competence and mastery (Meyer & Pilkonis, 2005).

The results regarding the psychopathologies that were not made specific hypotheses about (i.e., depression, dissociation and somatoform dissociation), were particularly exciting

to investigate. For depression, the striking differences found in previous literature resulted in an exploratory approach about its relation to specific attachment patterns in this study. As depression emerged to be positively predicted by preoccupied attachment in model 3, the present finding supports research previously relating depression to preoccupied attachment (e.g., Rosenstein & Horowitz, 1996; Gerlsma & Lutijn, 2000).

However, as all four attachment styles significantly predicted depression in model 1, the relationship between depression and attachment may be more complicated than first assumed. In Simpson and Rholes' (2015) review, they note that the findings concerning the relationship between attachment avoidance and depressive symptoms are conflicting in that half of the studies implies that attachment avoidance is significantly correlated with depressive symptoms, whereas the other half claims that they are not. They suggest that this may be explained by the fact that attachment avoidance is linked with aspects of depression that are related to achievement, such as perfectionism and self-criticism, but not with interpersonal depressive aspects including overdependence and neediness (Simpson & Rholes, 2015). Interestingly, the present study found that the relationship between fearful attachment (high avoidance) and depression perhaps is accounted for by neuroticism, openness and extraversion, partly supporting the notion that some characteristics apparent in depression and avoidant attachment is disrupted by certain personality traits.

Furthermore, as there has been a consensus in the literature about the relationship between dissociative disorders and disorganised attachment, no specific hypotheses were made about neither dissociation nor somatoform dissociation with regards to the four-category model of adult attachment. Although it was assumed that somatoform dissociation would show similar patterns as psychoform dissociation in relation to attachment styles, it could not be certain due to the absence of research in this field. Thus, curiosity struck before reviewing the results. As anticipated, the results revealed that both of the dissociative

disorders exhibited the same attachment patterns. That is, without the control variables, fearful and preoccupied attachment positively predicted symptoms of both dissociative disorders, while when all the covariates were added in the model, only preoccupied attachment predicted the two conditions.

This finding is therefore not in support of those implying that fearful attachment may be equivalent to disorganised attachment (e.g., Brennan et al., 1998). Instead of speculating too much on which four-category attachment style may or may not be equivalent to disorganised attachment, it is more reasonable to suggest that certain of Bartholomew and Horowitz's (1991) four categories may supplement disorganised attachment in its relation to dissociation. The results of this study indicate that in this instance, preoccupied attachment has this role. However, in order to establish the argument that disorganised attachment cannot be represented in a specific attachment category considering that IWMs may be shifting in this pattern (Baker & Beech, 2001; George & West, 1999), longitudinal research is required.

In sum, while previous research has usually associated internalising disorders with preoccupied attachment, and externalising conditions to both dismissing and preoccupied attachment (Bakermans-Kranenburg, & van IJzendoorn, 2009), findings from the current study display a more complex pattern. This might be due to the imbalance of the number of disorders represented from the internalising group versus the externalising group, or it might suggest that this distinction is not necessarily as fruitful as previously thought.

5.3. Secure Attachment and Psychopathology

Despite the anticipation that secure attachment would negatively predict most psychopathologies measured, this appeared to only be true for depression and somatoform dissociation *before* the other covariates were combined in the model. When controlling for age, gender and the big five, secure attachment no longer significantly predicted any of the

psychopathologies. Does this then imply that secure attachment may not be such a substantial protective factor against psychopathology as formerly assumed?

Although secure attachment did not appear to have a great impact on psychopathology in this study, a large body of previous research says otherwise (see Mikulincer, & Shaver, 2007). In fact, research suggests that elements of security can be introduced into the insecure cycle in ways that help stabilise attachment relationships and decrease risk for psychopathology (Kobak & Bosmans, 2019). I will return to this in the 'implications' segment. Thus, instead of suggesting that secure attachment is insignificant, there is probably a more reasonable explanation behind the present finding. For example, this finding may be understood in the light of the current sample's nonclinical participants. A larger proportion of individuals is likely to have higher ratings on secure attachment in a nonclinical sample than in a clinical sample, which may have resulted in a less distinctive pattern within this variable in the present study.

5.4. The Intervening Role of Personality Traits

Results from the present study support previous research suggesting that personality traits partially account for the relationship between attachment styles and psychopathology (Surcinelli et al., 2010; Urkin et al., 2004). This finding is in support of research by Donnellan et al. (2008), suggesting that the relationship between big five traits and attachment dimensions may be partly accounted for by genetic factors and partly by environmental factors such as attachment experiences. It was hypothesised that neuroticism would positively predict symptoms of all psychopathology except from psychopathy, whereas agreeableness and conscientiousness would negatively predict most symptoms of psychopathology and thus partially account for the relationship between attachment styles and psychopathology.

The reason why it was not hypothesised that neuroticism would positively predict psychopathy, was because previous research has been inconsistent in this matter; showing both higher and lower levels of neuroticism in psychopathy. However, it was not particularly surprising that neuroticism appeared to positively predict *all* psychopathologies in the current study, including psychopathy. This finding support the notion that individuals with psychopathic traits may have elevated levels of neuroticism due to increased levels of impulsivity and angry hostility (Harpur et al., 2002; Lynam et al., 2005). Furthermore, it supplements evidence suggesting that neuroticism may be the personality trait that is most relevant to psychopathology (e.g., Ormel et al., 2004).

It was also revealed that neuroticism usually was the strongest predictor for psychopathology among the big five, and that personality traits sometimes obscured the relationship between insecure attachments and psychopathology. This finding is in concordance with Donnellan and colleagues' (2008) proposition that attachment anxiety and neuroticism may be related to the same biologically rooted system that govern the susceptibility to negative emotionality. Thus, neuroticism may sometimes overshadow insecure attachment styles, especially fearful attachment, in its relation to psychopathology.

Considering that low conscientiousness and agreeableness potentially can disrupt effective treatment due to drop-outs or treatment adherence, these two traits warrant some special attention from researchers (Malouff et al., 2005). It was hypothesised that agreeableness and conscientiousness would negatively predict most symptoms of psychopathology. Although they appeared to significantly correlate with most of the psychopathologies measured, conscientiousness and agreeableness did not emerge as significant predictors in as many regression models as expected. More specifically, conscientiousness negatively predicted OCD, BPD, psychopathy and schizotypy, whereas agreeableness negatively predicted health anxiety, psychopathy and BPD. Hence, in partial

support of the hypothesis. This suggests that there is no significant pattern in the differences between internal or external psychopathologies regarding their relationship with neither agreeableness nor conscientiousness.

Furthermore, earlier studies have established conscientiousness' negative relationship with psychopathy (Lynam et al., 2005), but not with OCD, BPD and schizotypy. Similarly, while previous research has demonstrated that BPD (Pistel et al., 2009) and psychopathy (Lynam et al., 2005) are associated with agreeableness, its inverse relation with health anxiety is rather novel. It might be that individuals with symptoms of health anxiety are less agreeable because they are sceptical of others' intentions based on the vicious maladaptive interpersonal cycle described in the theory section (Stuart & Noyes, 1999). Future research should further investigate this possible link.

Due to inconsistent patterns in previous research, no clear hypotheses were made about which psychopathologies would be predicted by extraversion and openness. As expected, the results revealed that both traits vary in the direction of relationship with the different psychopathologies. Extraversion negatively predicted depression and health anxiety, while it positively predicted OCD, BPD, psychopathy and schizotypy. Although this finding for the most part was unsurprising, the fact that extraversion positively predicted OCD was less apparent seeing that extraverts are characterised as sociable, excitement-seeking and energetic people (Costa & McCrae, 1992), but also since previous studies suggest that OCD is associated with lower extraversion (Rector et al., 2002). Although it would be likely to assume that those with obsessive and compulsive thoughts and behaviours would prefer a more quiet and calm existence to maintain their 'rituals', it may simply be a misinterpretation considering the current results. This finding contrasts other types of anxiety disorders' relation to OCD, as for example seen with health anxiety here.

Slightly dissimilar, openness appeared to negatively predict OCD and psychopathy, whereas it positively predicted depression, dissociation and schizotypy. OCD have also previously been inversely related to openness (Rector et al., 2005), which can possibly be explained by how individuals low on openness prefer the familiar (Costa & McCrae, 1992). Moreover, research has suggested that the openness facets 'ideas' and 'feelings' negatively predicts psychopathy (Ross et al., 2004). In addition, the way Costa and McCrae (1992) describes closed people (i.e., low openness) as having their emotional responses 'somewhat muted', is in concordance with the descriptions of some psychopathic traits. As for the psychopathologies that were positively predicted by openness, both dissociation (Ruiz et al., 1999) and schizotypy (Edmundson et al., 2011) have been associated with higher levels of this trait before. However, since the latter has previously been related to certain facets of openness, it was interesting to find that this relationship also excised with the broader openness domain. Nevertheless, the positive relationship between openness and schizotypy is understandable considering that imagination is described as a core feature of openness (Costa & McCrae, 1992), and the applied measure for schizotypy in this study measured magical ideation. In addition, it has been found that the following facets are related to schizotypy: aesthetics, feelings and ideas (Mason & Claridge, 1998). Similarly, depression has earlier been found to be predicted by openness to fantasy (Carrillo et al., 2001).

While the present study has not included the facets of the five domains in the FFM, these previous findings might indicate why the different psychopathologies are related to the specific domains. Whereas previous and present findings suggest that neuroticism, agreeableness and conscientiousness may be vulnerability factors for psychopathology, the current findings suggest that extraversion and openness cannot be regarded either risk factors nor protective factors for psychopathology given their bidirectional relationship with various symptoms.

Although the current study has offered suggestions to how the different big five traits might predict different psychopathologies, the most crucial finding was that personality traits can only partly account for the relationship between attachment styles and psychopathology. Further, it was found that for some psychopathologies the relationship with attachment styles were obscured when controlling for personality traits. However, this finding may be partly due to one of the studies' limitations discussed below. Nevertheless, based on the present findings, certain personality traits, particularly neuroticism, are believed to have some overlap with insecure attachment styles, specifically fearful attachment.

5.5. Conceptual Issues

While both Bowlby and Ainsworth acknowledged the role of attachment across the lifespan, they did not give much guidance as of how to best measure adult attachment. Consequently, the development of excessive attachment measures, grounded in different assumptions of how adult attachment is best assessed, have emerged. This has again led to an unfortunate division between developmental and social/personality researchers (Bernier & Dozier, 2002). While developmental research has emphasised interview methodologies and longitudinal designs, social/personality research has employed self-report measures in addition to observational and experimental procedures. Some of the challenges with each of these are discussed in more detail under 'Strengths and Limitations'. Moreover, even after passing two decades filled with research on adult attachment and psychopathology, the research is unfortunately still vulnerable to correlational designs, lack of specificity and relatively small effect sizes (Kobak & Bosman, 2019).

Since the variations found in attachment research can cause confusion and assumptions, for instance that the different scales measure the same constructs merely because they apply the same terminology, a combination of the strengths from each discipline would be of great benefit for a global attachment framework. Fortunately, this process has

already begun. For example, several scholars have addressed these conceptual issues and thereby gradually started to combat them (Shaver & Mikulincer, 2002; Bernier & Dozier, 2002). Also, over the last few years, literature on adult attachment and psychopathology has developed into a more dynamic understanding of interplay between the two, as well as other moderating and mediating factors, as for example seen in Ein-Dor and Doron's (2015) transdignostic model. This offers a more nuanced view of this relationship and emphasises both self-regulatory processes and dyadic regulatory processes.

5.6. Implications

Attachment theory has implications in many domains, including groups, relationships and organisational settings, but when discussed in combination with psychopathology and personality, it is most relevant to explore its clinical and preventive implications. In fact, this was also where Bowlby's original initiative and engagement began; his main aim with his work was to prevent psychopathology and suffering, either through education, or through psychotherapy if it was too late for prevention (Mikulincer & Shaver, 2007). Since personality traits are known to be stable in adulthood (Damian et al., 2019), implications regarding maladaptive personality traits (e.g., neuroticism), will not be discussed here.

Preventative strategies would be most effective in terms of interventions applied in childhood, such as parental supervision, however, since the current study addresses adult attachment other strategies will be emphasised. Seeing as the current sample is nonclinical, it is important to stress that difficulties related to attachment insecurities can arise without the occurrence of a clinical diagnosis. This both applies to symptoms of the nonclinical psychopathologies included in this study, but also to other problems such as significant distress in social, occupational and relational functioning. Furthermore, innate variables (e.g., intelligence, temperament), life history, or other environmental factors, can contribute to the

maintenance of these insecure individual's mental health despite relatively negative IWMs and deficits in regulatory abilities (Mikulincer, & Shaver, 2007).

As it is firmly established that attachment insecurities are associated with a range of psychological difficulties both in nonclinical and clinical populations and are therefore viewed as a general vulnerability to psychopathology, this suggests that the creation, preservation or restoration of attachment security should increase resilience and improve mental health (Mikulincer & Shaver, 2012). This is possible considering that research has demonstrated that IWMs are malleable during adulthood and that corrective emotional experiences with new attachment figures (e.g., romantic partners) and the following reflections of these interactions, can assist the transformations of IWMs (Mikulincer & Shaver, 2007).

The benefits of secure attachment can possibly be retrieved through a technique named 'security priming' or through psychotherapy. Security priming is a paradigm in which priming procedures are used to get an individual to associate the stimuli presented with a sense of security, which in turn enter a semantic network and 'create a process of spreading activation', accordingly generating the same sense of security experienced with supportive attachment figures (Gillath et al., 2008). In Gillath and colleagues' (2008) review of security priming, they argue that most research, despite the scarcity of it, support the hypothesis that frequent activation of mental security representations have lasting adaptive effects such as positive views of self and relationships, positive mood, heightened compassion and improved work performance. These early promising findings are a great starting point for future research to further investigate how this technique may be applied outside of the laboratory.

Moreover, there is also preliminary findings suggesting that a sense of security can be provided by a psychotherapist. Bowlby (1988) already introduced this in his book 'A Secure Base' where he offered a model of therapeutic change based on helping the client gain

understanding of his or her attachment experiences and how to transform insecure IWMs into more secure ones. The strategies related to therapeutic change included psychological exploration of both current and past relationships with attachment figures in addition to corrective experiences with a therapist (Dozier & Tyrrell, 1998). Although Bowlby laid the theoretical foundation for therapeutic implications of attachment related difficulties, research on the topic is relatively new (due to the difficulty of developing good measures). Therefore, many questions regarding best practices remains unanswered, which calls for further research. Some promising approaches that have been suggested as suitable treatments for attachment related problems include menatalisation, emotion-focused therapy, cognitive-behavioural therapy and interpersonal therapy (Mikulincer & Shaver, 2007).

5.7. Strengths and Limitations

This study comes with several strengths worth noting. Although variants of the current study have been published previously (e.g., Surcinelli et al., 2010, Mickelson et al., 1997), no study applying the four-category conception of adult attachment to my knowledge, have before included a wide variety of both internal and external psychopathologies, neither in clinical nor nonclinical samples. As conveyed in the theory section, majority of previous research has focused on attachment dimensions over specific attachment styles. While the dimensional approach is also useful, the four-category approach of adult attachment is more specific, and may therefore provide a more detailed picture of adult attachment and its relation to psychopathology. Thus, the present study can hopefully fill this gap in the literature by contributing to a more comprehensive understanding of the links between the specific adult attachment styles, FFM personality traits and the many different psychopathologies that are addressed.

Additionally, the current study represents some methodological strengths. For example, the present study measured the adult attachment styles dimensionally, as opposed to

categorically such as similar previous studies have (e.g., Surcinelli et al., 2010). That is, recent research has suggested that the categorical approach only establish descriptive statistics of the data and does therefore not say much about the interplay between attachment, early maladaptive IWMs and symptoms of psychopathology (Fraley et al., 2015). This study demonstrate that one can apply the four-category conception of adult attachment in a dimensional manner. Additionally, this study adds to the line of correlational studies in the field, by including multiple regression analyses which determine the relative influence of the different predictors to the criterion variable (i.e. psychopathology).

Furthermore, there are some advantages with the sample. Since the sample was large, it provided more accurate values due to smaller margins of error. Although some argue that community-based samples are not necessarily nonclinical (Thurston et al., 2008), the fact that participants were from a community sample is considered to improve the understanding of the mechanisms underlying psychopathology in a nonclinical population, which in turn can be useful in preventative contexts. Together, the sample size and population, facilitates for greater generalisation of the findings, which again makes the theory applicable to more people.

Despite the central strengths of the current study, it also carries some limitations necessary to address. Some of these limitations concerns the applied questionnaires. To begin with, the data was collected many years ago (in the period of 1993-2000). However, it should be noted that this study was cross-sectional and not longitudinal. Although the scales used in this study are all well-established, some of them might be outdated today. Despite the nonclinical focus in this thesis, some of the scales included are based on DSM-IV criteria. Today the DSM-IV is replaced by DSM-5, which means that certain measures might have also been updated since the point of data collection.

Regardless of diagnostic criteria, the time that have passed may have caused researchers to further improve the measures applied here. For example, amongst more recent research in the adult attachment domain, the Experience in Close Relationships – Revised (ECR-R; Fraley et al., 2000) appears to be a more commonly used self-report measure of adult attachment than the RQ. An important advantage the ECR-R have, is that it is not a one-item scale such as the RQ. Applying the one-item measure RQ in this study, might have affected the results. That is, the RQ has weaker reliability than for example the NEO-PI R and most of the psychopathology measures. This implies that some of the attachment styles may have remained significant predictors in some of the regression models, after controlling for the big five, if they were measured with a multi-item scale with greater reliability. Opposite, it may look like certain personality traits accounts for the relationship between attachment styles and psychopathology due to the imbalance between the measures. Hence, the results need to be understood in the light of this limitation.

Moreover, the fact that the data was collected via self-report questionnaires, is unfortunately a limitation in itself seeing that there has been a controversy about whether interviews might better measure adult attachment considering its implicit nature. Although the AAI (Main et al., 1985) would be a suitable alternative for this, it is important to remember that it does not measure the same as the RQ (memory of childhood experiences as opposed to more recent experiences in romantic relationships). Again, a combination of the measurement strengths from different disciplines would be of great advantage for all researchers interested in adult attachment.

Despite the overall generalisability of the current sample, a demographic aspect may nevertheless limit it. As the participants were predominantly Caucasian Americans, the findings primarily only apply for this population and thus exclude other ethnicities and non-

Western cultures. However, it is most likely representable for other non-American Western cultures.

Finally, while this thesis has differentiated between internal and external psychopathology, it should be noted that the majority of psychopathologies included are internal disorders. Considering that the only external condition is psychopathy, the external group is largely underrepresented and cannot be generalised in the same way that the internal disorders can. However, the fact that psychopathy showed a slightly different pattern than most of the internal disorders suggests that this distinction (i.e., internal/external) may be fruitful, which implies that future research should further explore this.

5.8. Conclusion

The recent emergence of a more dynamic view of attachment processes sheds light on the variability of individual differences found insecure attachment patterns, as well as it empathises the idea that both attachment security and insecurity is at a continuum of risk for the development and maintenance of psychopathology. The beginning of a more dynamic understanding of attachment offers a framework that better facilitate for more individualised assessments of attachment related risk. In addition, it underlines the need to develop interventions aiming to increase security in particular elements of the insecure cycle in ways that might reduce the risk for psychopathology.

Taken together, the present study demonstrates that insecure attachments, particularly preoccupied attachment, predicts psychopathology in nonclinical adults and that despite some overlap, the attachment framework is not redundant to that of the big five. Additionally, these findings support the notion that attachment theory provides a framework for understanding the personality traits associated with psychopathology. Although it was demonstrated that four-factor model of adult attachment can distinguish differences in symptoms of mental illnesses in a dimensional manner, future research applying a more reliable multi-item

measure of adult attachment should attempt to replicate the present findings. In light of its strengths and limitations, the present research may hopefully contribute to a more comprehensive understanding of the interactions between adult attachment styles, personality and psychopathology, and thus the factors involved in the onset and maintenance of both internalising and externalising psychopathology.

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Appendices

Appendix 1.
Model 2, Depression.

	β	t	p
Secure	-.116	-2.680	<.05*
Fearful	.113	2.528	<.05*
Preoccupied	.185	4.877	<.001**
Dismissing	-.054	-1.347	.178
Age	-.131	-3.595	<.001**
Gender	.176	4.798	<.001**
R=.350, F(6,677) = 15,752, p<.001			
R^2=.123			
Adj. R^2=.115			

Appendix 2.
Model 2, OCD.

	β	t	p
Secure	-.069	-1.572	.116
Fearful	.163	3.576	<.001**
Preoccupied	.178	4.660	<.001**
Dismissing	.034	.840	.401
Age	.121	3.288	.001**
Gender	-.044	-1.174	.241
R=.336, F(6,673) = 14.314, p<.001			
R^2=.113			
Adj. R^2=.105			

Appendix 3.
Model 2, Dissociation.

	β	t	p
Secure	-.013	-.293	.770
Fearful	.091	1.981	<.05*
Preoccupied	.185	4.723	<.001**
Dismissing	.027	.649	.516
Age	-.153	-4.058	.001**
Gender	-.002	-.064	.949
R=.268, F(6,675) = 8.689, p<.001			
R^2=.072			
Adj. R^2=.063			

Appendix 4.
Model 2, Somatoform Dissociation.

	β	t	p
Secure	-.086	-2.024	<.05*
Fearful	.126	2.832	<.05*
Preoccupied	.213	5.705	<.001**
Dismissing	.049	1.247	.213
Age	.045	1.255	.210
Gender	-.058	-1.620	.106

R=.268, F(6,675) = 8.689, p<.001
R^2=.072
Adj. R^2=.063

Appendix 5.
Model 2, BPD.

	β	t	p
Secure	-.040	-.975	.330
Fearful	.264	6.229	<.001**
Preoccupied	.280	7.924	<.001**
Dismissing	.041	1.092	.275
Age	-.139	-4.056	<.001**
Gender	-.008	-.240	.811

R=.468, F(6,685) = 32.070, p<.001
R^2=.219
Adj. R^2=.212

Appendix 6.
Model 2, psychopathy.

	β	t	p
Secure	-.054	-1.327	.185
Fearful	.184	4.299	<.001**
Preoccupied	.164	4.551	<.001**
Dismissing	.038	3.632	<.001**
Age	-.095	-2.744	<.05*
Gender	-.138	-3.977	<.001**

R=.406, F(6, 718) = 23.656, p<.001
R^2=.165
Adj. R^2=.158

Appendix 7.
Model 2, health anxiety.

	β	t	p
Secure	-.043	-.982	.326
Fearful	.144	3.135	<.05*
Preoccupied	.159	4.117	<.001**
Dismissing	-.055	-1.344	.180
Age	.049	1.321	.187
Gender	.067	1.779	.076

R=.262, F(6, 694) = 8.502, p<.001
R^2=.068
Adj. R^2=.060

Appendix 8.
Model 2, schizotypy.

	β	t	p
Secure	.075	1.718	.086
Fearful	.103	2.288	<.05*
Preoccupied	.218	5.745	<.001**
Dismissing	.050	1.241	.215
Age	-.073	-1.985	<.05*
Gender	.060	1.632	.103

R=.261, F(6, 720) = 8.803, p<.001
R^2=.068
Adj. R^2=.061