Can Psychopathic Traits and Interpersonal Values Predict Use of Impression Management Strategies?

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Executive Summary

1. The Systematic Review

'Psychopathy' refers to a cluster of personality traits including a lack of empathy, superficial charm, delinquency and sexual promiscuity (Cleckley, 1941; Hare, 1991, 2003). According to Harpur, Hare and Hakstian (1989), and later Hare (1991, 2003), psychopathy is composed of two distinguishable, though related, broad trait dimensions. One trait dimension is affective and interpersonal in nature, including traits such as callousness and manipulativeness; while the other is comprised of lifestyle and antisocial traits, such as irresponsibility and criminal versatility. While there are conflicting theories regarding the structure of psychopathy (Patrick, 2010), the two dimensional model is the most widely used in clinical settings and scientific research (Harpur et al., 1989; Hare, 1991, 2003; Skeem, Polaschek, Patrick & Lilienfeld, 2011) and there is general agreement throughout the literature that psychopathy consists of both affective-interpersonal and lifestyle-antisocial traits (Conradi, Boertien, Cavus & Verschuere, 2016).

Attachment refers to a stable and enduring emotional bond between two people, initially between the infant and primary caregiver (Ainsworth, 1973; Bowlby, 1969). Individual differences in style of attachment have been observed in children (Ainsworth et al., 1978) and styles of attachment have

been found to have stability from childhood through to adulthood (Fraley, 2002; Hazan & Shaver, 1987). It has been demonstrated that attachment styles vary according to two underlying dimensions: attachment anxiety and attachment avoidance (Brennan, Clark & Shaver, 1998; Fraley & Spieker, 2003). Higher levels of attachment anxiety have been associated with increased levels of intimacy seeking, dependency, emotionality and impulsivity in close relationships (Mikulincer & Shaver, 2007). On the other hand, higher levels of attachment avoidance have been related to increased levels of intimacy avoidance, self-sufficiency, and suppression of emotions in close relationships (Mikulincer & Shaver, 2007).

Little is known about the experiences and behaviours of individuals with psychopathic traits in their close relationships. Furthermore, the aetiology of psychopathy is poorly understood. However, that psychopathy is characterised by emotional, interpersonal and social deviancy suggests that it may have its roots in attachment insecurity. Therefore, establishing the attachment styles associated with psychopathic traits could be important for illuminating a) the experiences of these individuals within their relationships, and, b) the aetiology of psychopathy. Thus, a systematic review was conducted with the aim of evaluating the evidence concerning the attachment styles associated with psychopathic traits.

A search for relevant articles in English language was carried out using the databases PsycINFO and Scopus. No publication date restrictions were imposed. The search terms were: ‘psychopath’, ‘psychopathy’, ‘psychopathic’,

and ‘attachment’. References lists of eligible articles were hand searched in order to identify additional articles. The included studies used quantitative, psychometrically validated measures of psychopathic traits and attachment styles; were conducted with participants aged 16 years and over; and performed either bivariate or multivariate statistical analyses in order to examine the relationships between psychopathic traits and attachment styles. Ten studies were included in the review. Due to the methodological and statistical heterogeneity observed among the studies, a narrative synthesis approach was taken. The findings from the studies were arranged into a common statistical rubric and grouped together.

The results demonstrated that a) higher levels of psychopathic traits are associated with a more avoidant attachment style, b) higher levels of affective-interpersonal psychopathic traits are associated with a more avoidant attachment style, and, c) higher levels of lifestyle-antisocial psychopathic traits are associated with a more anxious attachment style. Neither the size nor the direction of the findings was found to vary according to study quality or characteristics.

There were several limitations associated with the systematic review. The number of included studies was small and the majority of studies were considered to be of moderate quality. Moreover, due to variation in models of psychopathy used between the studies, psychopathic traits were grouped together into the affective-interpersonal and lifestyle-antisocial trait domains in the synthesis process. This meant that it was not possible to assess the

relationships between individual psychopathic traits and attachment styles. Therefore, the true complexity of the relationships between psychopathic traits and attachment styles was not captured within the findings. For these reasons, the findings detailed in the review should be interpreted with some caution.

Given that the included studies were cross-sectional in design, it is not possible to conclude with certainty that psychopathic traits are borne out of attachment insecurities. However, the findings provide important insights into the experiences of individuals with psychopathic traits in their close relationships. In order to clarify whether attachment styles have a role in the development of psychopathic traits, future research should seek to track the associations between attachment styles and psychopathic traits from infancy through to adulthood, using a longitudinal design.

2. The Empirical Studies

Impression management strategies are used in order to present a particular image of the self to others, in line with one's needs and goals (Goffman, 1959). Impression management strategies may be assertive, in that they are used to establish one's image, or defensive, in which case they are used to rescue one's image when he or she perceives it may be damaged (Piwinger & Ebert, 2001). There is evidence to suggest that psychopathic traits are associated with an assertive style of impression management (Goncalves &

Campbell, 2014; Jonason, Slomski & Partyka, 2012; Jonason & Webster, 2012; Semenyna & Honey, 2015). However, the way in which the affective-interpersonal and lifestyle-antisocial domains of psychopathy relate to impression management strategies is unclear.

Interpersonal values may be either agentic or communal (Locke, 2000). Agentic values refer to goals related to self-enhancement and economic achievement, such as power and status; whereas communal values refer to goals related to interpersonal relationships, examples of which are harmony and friendship (Trapnell & Paulhus, 2012). While there is some suggestion in the literature that interpersonal values are related to impression management strategies (Abele et al., 2016), whether they can explain variance in impression management beyond psychopathic traits is not known. Therefore, the aims of the empirical research were to investigate a) the relationships between psychopathic traits (affective-interpersonal and lifestyle-antisocial) and impression management strategies (assertive and defensive), and, b) whether interpersonal values (agentic and communal) can explain variance in impression management strategies (assertive and defensive) over and above psychopathic traits.

Two studies were conducted, one with a sample from a medium secure mental health unit (MSU; Study One) and another with a community sample (Study 2). Levels of psychopathy have been observed to be low among the general population, whereas they are higher within secure settings (Coid et al., 2009). In conducting two studies, it was thought that some observations

regarding differences in the relationships between the variables of interest could be made in a sample in which psychopathic traits are likely to be low, compared to higher.

Thirty-four individuals from an MSU took part in Study One, while 236 individuals from the community participated in Study Two. In both studies, participants completed self-report measures regarding impression management strategies, psychopathic traits and interpersonal values, as well as a demographic information sheet. Two hierarchical multiple regressions were conducted in a similar manner in the two studies. One regression was designed to predict use of assertive impression management strategies, while the other was designed to predict use of defensive impression management strategies. Due to the observation of multicollinearity between the two domains of psychopathy in the MSU sample, these were collapsed into total psychopathic traits in the regression analyses for Study One. In both studies, psychopathic traits (affective-interpersonal and lifestyle-antisocial traits in Study Two) were entered into the regression models first, followed by interpersonal values (agentic and communal).

The findings from both studies indicated that higher levels of psychopathic traits were associated with increased levels of assertive impression management strategies. In the community sample, it was demonstrated that this relationship concerned the affective-interpersonal trait domain of psychopathy. Future research is warranted in order to assess whether a similar relationship could be found among other offender populations.

Interpersonal values did not significantly predict use of assertive impression management strategies in either study.

With regard to defensive impression management strategies, the findings from the two studies were more conflicting. Among the MSU sample, neither psychopathic traits nor interpersonal values significantly predicted defensive impression management strategies. However, within the community sample, higher levels of lifestyle-antisocial psychopathic traits, lower levels of affective-interpersonal psychopathic traits, and lower levels of agentic values were associated with increased levels of defensive impression management strategies. The differences in findings between the two studies may have been due to the fact that levels of psychopathy were significantly higher among the MSU sample, which may have meant that the participants used defensive impression management strategies less consistently and for different purposes, such as to manipulate others. Alternatively, it could have been that psychotic disorders, which were reported by 44% of the MSU sample, were more important than psychopathic traits and interpersonal values in explaining defensive impression management. Future research should focus on comparing individuals high and low in psychopathy, and with and without a psychotic disorder, on the measures used in the present studies, in order to clarify the source, or sources, of the observed differences.

There were a number of limitations associated with the empirical research. Importantly, Study One was underpowered, thus significant effects may not have been detected. Moreover, factors such as social anxiety, low self-

esteem, depression and psychosis have been related to use of impression management strategies (Baumeister, 2006; Burke & Ruppel, 2015; Hassan, Flett, Ganguli & Hewitt, 2014; Leary & Allen, 2011; Weary, 1988; Westerbeek, Meeuwesen, Brinkgreve & Gomperts, 2014). In Study One, psychotic disorders were reported by 44% of the participants and depression was reported by 5.8%; while in Study Two, depression was reported by 11% of the participants and anxiety was reported by 9.7%. However, the effects of these variables on impression management strategies were not assessed. Therefore, future work should seek to identify the relative contributions of social anxiety, low self-esteem, depression and psychotic disorders, as well as psychopathic traits and interpersonal values, in determining impression management strategies.

The findings from the empirical research have several important theoretical implications. Firstly, social behaviours that would be expected to occur in individuals with psychopathic traits have been identified. Furthermore, the findings suggest that the two trait domains of psychopathy may co-occur among individuals within MSUs, and this may be because such a co-occurrence is linked to an increased probability of serious offending. An additional implication concerns the motives behind use of impression management strategies. It could be that the differences observed in use of impression management between the two studies are due to individuals with higher levels of psychopathic traits using impression management strategies in order to manipulate others and gain control. On the other hand, individuals with lower levels of psychopathic traits may use these strategies because they

want to be liked by others and form relationships with them. Therefore, future research should seek to clarify the motives behind use of impression management.

3. Integration, Impact and Dissemination

The empirical studies were carried out concurrently and prior to the systematic review. The overall purpose of the thesis was to further understanding with regard to the relational precursors and outcomes of psychopathic traits; hence relationships with attachment styles and impression management strategies were explored. Though not examined in the present research, it seems possible that attachment styles, which are considered to develop during infancy (Bowlby, 1958), may have a causal role in the development of psychopathic traits (Conradi et al., 2016), which could in turn influence use of impression management strategies. For instance, it may be that individuals who are avoidant of intimacy (have an avoidant attachment style) could develop a callous and unemotional interpersonal style (affective-interpersonal psychopathic traits), leading to instances of intimidation and blasting (assertive strategy use). Longitudinal research tracking the associations over time between attachment styles, psychopathic traits and impression management strategies, from infancy through to adulthood, would be important for examining the veracity of this theory.

There were a number of challenges associated with the research, particularly pertaining to Study One. The recruitment of participants from the MSU proved

to be a demanding process, resulting in a sample size which was smaller than the power analysis had indicated would be necessary, meaning that significant effects may not have been detected. An additional concern was that the participants in both studies may have lacked insight into their behaviours, personality traits and values, as has been shown in other work (Costa & McCrae, 1992; Hayes, Strosahl & Wilson, 2012; Vazire & Carlson, 2010), which may have impacted the accuracy of the findings. A further issue was around consent, and whether the participants within the MSU sample felt compelled to take part, given that there is an expectation of engagement within secure services (Royal College of Psychiatrists, 2016). However, efforts were made to emphasise to them that their participation was entirely voluntary.

Taken together, the findings from the systematic review and empirical research have important implications. Knowledge regarding the attachment styles and impression management strategies associated with psychopathic traits could be important for improving relationships between individuals with psychopathic traits and a) clinicians, b) their families. Specifically, understanding of the aforementioned associations could enable attachment and impression management-related difficulties to be identified, understood and worked on in collaborative manner, when they arise. A further benefit concerns the development of clinical interventions. If attachment styles are considered to have a role in the development of psychopathic traits, targeting attachment insecurities could be important in treating psychopathic traits.

The findings from the systematic review and the empirical research will be disseminated via publication in academic journals. The journal ‘Personality and Individual Differences’ will be targeted in the first instance. The findings from the empirical research will also be disseminated to the participants and clinicians from within the MSU via an information sheet.

What are the Relationships Between Psychopathic Traits and Attachment Styles? A Systematic Review

Abstract

The emotional, interpersonal and social deviances characteristic of psychopathy suggest that it may have its roots in attachment insecurity. However, the relationships between psychopathic traits and attachment styles have not been well established. The current systematic review endeavoured to assess the evidence for relationships between psychopathic traits and attachment styles. A search for relevant articles published in English language was performed using the databases PsycINFO and Scopus. Search terms included ‘psychopath’, ‘psychopathy’, ‘psychopathic’, and ‘attachment’. Additional articles were identified through hand searching reference lists of eligible articles. Only studies that conducted either bivariate or multivariate statistical analyses in order to investigate the relationships between psychopathic traits and attachment styles were included. Ten studies met the inclusion criteria. A narrative synthesis approach was taken due to the methodological and statistical heterogeneity observed among the studies. Findings from studies were organised into a common statistical rubric and grouped together. Consideration was given as to whether the size or direction of findings varied according to study characteristics or quality. The findings indicated that there was some evidence that a) the increased presence of

psychopathic traits is associated with a more avoidant attachment style; b) the increased presence of affective-interpersonal psychopathic traits is associated with a more avoidant attachment style; c) the increased presence of lifestyle-antisocial psychopathic traits is associated with a more anxious attachment style. Limitations included the fact that the majority of studies were of moderate quality and only two studies received a strong quality rating. Furthermore, the methodological and statistical heterogeneity of the studies limited their comparability. Further research is warranted in order to establish whether attachment styles have a role in the development of psychopathic traits.

1. Introduction

‘Psychopathy’ refers to a constellation of personality traits including callousness, manipulativeness, impulsivity and irresponsibility (Cleckley, 1941; Hare, 2003). No psychiatric or psychological organisation has sanctioned a diagnosis titled ‘psychopathy’. However, features of psychopathy such as a lack of remorse and irresponsibility are captured within the diagnoses of Antisocial Personality Disorder in the Diagnostic and Statistical Manual of Mental Disorders (DSM-5; American Psychiatric Association, 2013) and Dissocial Personality Disorder in the International Classification of Diseases (ICD-10; World Health Organization, 1992). Among the general population, psychopathy scores have been shown to correlate with younger age, male gender, suicide attempts, homelessness, drug dependence, panic disorder, obsessive-compulsive disorder, and histrionic, borderline and antisocial personality disorders (Coid, Yang, Ullrich, Roberts & Hare, 2009).

Despite the fact that psychopathy is characterised by emotional and interpersonal deviances, little is known about how individuals with psychopathic traits feel and behave in their close relationships. Furthermore, the aetiology of psychopathy is poorly understood. However, that emotional and interpersonal deviances are core features of psychopathy suggests that it may in part be rooted in attachment insecurity. Establishing the relationships between psychopathic traits and attachment styles could not only begin to answer questions regarding aetiology, but it could also provide insight into the experiences in close relationships of individuals with psychopathic traits.

Therefore, the purpose of the current systematic review was to attempt to clarify the associations between psychopathic traits and attachment styles.

1.1. Psychopathy

Although psychopathy was originally considered to be a monolithic entity, factor analytic research has indicated that it may be comprised of distinguishable broad trait dimensions (Patrick, Fowles & Krueger, 2009). Based on this type of research, a number of models of psychopathy have been proposed. The most dominant of these was first advanced by Harpur and colleagues (1989), which conceptualises psychopathy as being comprised of two broad trait dimensions known as 'Factor 1' and 'Factor 2'. Factor 1 traits are affective and interpersonal in nature, including a lack of empathy and grandiosity; whereas Factor 2 traits are in the lifestyle and antisocial domains, examples of which are irresponsibility and delinquency (Hare, 1991, 2003). This two-factor model can also be subdivided into a four-factor model, such that the affective, interpersonal, lifestyle and antisocial trait domains are considered separately (Hare, 2003; Hare & Neumann, 2006).

In another model of psychopathy, known as the triarchic model, psychopathy encompasses three distinct constructs: 'meanness', 'disinhibition' and 'boldness' (Patrick, 2010). Meanness is comprised of traits such as a lack of empathy and manipulativeness, and is considered to be very similar to Hare's (2003) Factor 1. Disinhibition consists of traits including impulsivity and irresponsibility, and is considered to be very similar to Hare's (2003) Factor 2

(Drislane, Patrick & Arsal, 2014; Patrick, 2010). Boldness, on the other hand, which is comprised of traits including social dominance, emotional resilience and venturesomeness (Patrick, 2010), is not considered to map clearly onto either of Hare's (2003) factors, but appears to reflect some aspects of Factor 1 (Drislane et al., 2014; Skeem et al., 2011). Although there are multiple conceptualisations of psychopathy, there is some consensus that psychopathy is characterised by affective-interpersonal traits on the one hand and lifestyle-antisocial traits on the other (Conradi et al., 2016). The two-factor model proposed by Harpur and colleagues (1989) and refined by Hare (2003) is the most typically used in modern clinical settings and research (Skeem et al., 2011).

The affective-interpersonal and lifestyle-antisocial trait domains of psychopathy are recognised to have different correlates. For instance, the affective-interpersonal traits have been shown to correlate negatively with reactive aggression, anxiety and depression, and positively with achievement-orientated behaviour and instrumental aggression (Fowles & Dindo, 2006; Hicks & Patrick, 2006; Porter & Woodworth, 2006). On the other hand, the lifestyle-antisocial traits have been shown to correlate negatively with achievement-orientated behaviour and instrumental aggression, and positively with reactive aggression, anxiety and depression (Fowles & Dindo, 2006; Hicks & Patrick, 2006; Porter & Woodworth, 2006). This correlational research supports that the affective-interpersonal and lifestyle-antisocial trait domains of psychopathy can be considered distinguishable.

It has been theorised that distinct developmental pathways lead to the phenotypic manifestation of the affective-interpersonal and lifestyle-antisocial trait domains of psychopathy. For instance, it has been suggested that the affective-interpersonal traits reflect stronger genetic influences whereas the lifestyle-antisocial traits reflect stronger environmental influences such as poor parenting, social disadvantage and exposure to trauma (Skeem, Poythress, Edens, Lilienfeld & Cale, 2003). Some preliminary evidence for this hypothesis comes from a large twin study conducted by Viding, Blair, Moffitt and Plomin (2005). In that study, it was demonstrated that callous-unemotional traits in children were under strong genetic influence; whereas antisocial behaviour traits were only found to be heritable in those children who were high in callous-unemotional traits, otherwise these were under strong environmental influence. Despite these findings, theories regarding the aetiology of psychopathy remain mostly speculative in nature. As mentioned previously, considering that psychopathy is characterised by emotional, interpersonal and social difficulties, it seems plausible that it could in part be rooted in attachment insecurity.

1.2. Attachment

Attachment is defined as a deep and enduring emotional bond that connects one person to another across time and space (Ainsworth, 1973; Bowlby, 1969). Attachment is characterised by specific behaviours in children, such as seeking close proximity with the attachment figure when threatened or under stress (Bowlby, 1969). According to Bowlby (1958), attachment is adaptive

because caregivers are able to provide safety and security, thus enhancing the child’s chances of survival. Furthermore, the attachment relationship enables the child to form concepts of the self, the other and the world (Bowlby, 1969).

It has been theorised that the propensity to form attachments is universal (Bowlby, 1969). However, as demonstrated by the work of Ainsworth and colleagues (1978) there are individual differences in children’s patterns, or styles, of attachment behaviour. These are believed to be the result of interplay between caregiver sensitivity and child temperament (Bowlby, 1982; Vaughn, Bost & van IJzendoorn, 2008). Furthermore, Bowlby (1969) believed that early attachment relationships stimulate the formation of ‘internal working models’ within the individual. According to Bowlby (1969), internal working models are expectations and beliefs about the self in relation to others, which serve as a guide for patterns of relating in adulthood. Bowlby’s (1969) theory regarding internal working models appears to be supported by a wealth of evidence. For instance, attachment patterns have been observed in adult relationships which appear to resemble those seen in children (Hazan & Shaver, 1987) and the attachment patterns individuals form with their parents appear to be stable over time (Fraley, 2002). Furthermore, retrospective accounts of childhood attachment relationships have been shown to correlate with current patterns of relating in adults (Hazan & Shaver, 1987).

Factor analytic research has indicated that attachment patterns vary depending on two underlying dimensions: attachment anxiety and attachment

avoidance; and this has been demonstrated in both children (Fraley & Spieker, 2003) and adults (Brennan et al., 1998). Individuals with high levels of attachment anxiety tend to seek high levels of intimacy, responsiveness and approval in their attachment relationships, often becoming overly dependent on the other (Mikulincer & Shaver, 2007). Furthermore, they tend to have less positive views of themselves and others, difficulties with trust, and can exhibit high levels of emotionality and impulsivity in their relationships (Mikulincer & Shaver, 2007). On the other hand, individuals who are low in attachment anxiety tend to be more secure in their relationships, worrying less about the other's responsiveness (Brennan et al., 1998; Fraley, 2010). Regarding attachment avoidance, those high on this dimension prefer not to rely on others or open up to them; sometimes appearing to avoid attachment relationships altogether (Mikulincer & Shaver, 2007). Moreover, they tend to suppress their feelings in relationships and tend to have a negative view of others (Mikulincer & Shaver, 2007). Conversely, individuals who are low in attachment avoidance tend to be more comfortable with intimacy and co-dependency (Brennan et al., 1998; Fraley, 2010).

1.3. Psychopathy and Attachment

As suggested previously, given the interpersonal features of psychopathy, it seems plausible that it could be related to attachment. Factors such as abusive experiences with caregivers, poor parental bonding, and the oxytocin receptor gene have been identified as relevant in the development of attachment patterns (Ainsworth, 1989; De Wolff & van IJzendoorn, 1997;

Raby, Cicchetti, Carlson, Egeland & Collins, 2013) and have also been related to psychopathy (Dadds et al., 2014; Dargis, Newman & Koenigs, 2016; Gao, Raine, Chan, Venables & Mednick, 2010; Marshall & Cooke, 1999; Schimmenti, Di Carlo, Passanisi & Caretti, 2015). Furthermore, insecure attachment patterns, particularly avoidant attachment, have been associated with a number of variables relevant to psychopathy, including a lack of empathy and compassion for others, early externalising behaviour problems and aggression (Britton & Fuendeling, 2005; Fearon, Bakermans-Kranenburg, van IJzendoorn, Lapsley, & Roisman, 2010; Lyons-Ruth, 1996; Mikulincer et al., 2001; Mikulincer, Shaver, Gillath & Nitzberg, 2005; Riggs & Kaminski, 2010; van IJzendoorn, 1997). Likewise, psychopathic individuals have been found to demonstrate a pattern of relating that has been associated with having an avoidant attachment style; for instance, they demonstrate lower levels of intimacy and commitment in their relationships, and have been found to hold negative views of close others (Ali & Chamorro-Premuzic, 2010; De Ganck & Vanheule, 2015; Jonason & Buss, 2012). These findings suggest that the affective-interpersonal traits of psychopathy in particular appear to be related to an avoidant attachment style. On the other hand, the relationship between the lifestyle-antisocial traits of psychopathy and attachment is less clear-cut. However, that these traits have been linked with impulsivity, suspiciousness and anger in relationships, as well as higher levels of anxiety more generally (Benning, Patrick, Blonigen, Hicks & Iacono, 2005; Brewer, Hunt, James & Abell, 2015; Hicks & Patrick, 2006; Massar, Winters, Lens & Jonason, 2017) suggests that they may be related to attachment anxiety.

1.4. Objectives

Notwithstanding the aforementioned findings, at present, the relationships between psychopathic traits and attachment styles are under researched and thus poorly understood. As was outlined previously, clarifying the attachment styles associated with psychopathic traits could be important in, firstly, furthering understanding of the aetiology of psychopathy; and secondly, providing insight into how individuals with psychopathic traits feel and behave in their close relationships. Therefore, the purpose of the current systematic review was to evaluate the current state of the evidence regarding the relationships between psychopathic traits and attachment styles. To the best of our knowledge, no such review has been published previously.

2. Methods

The Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) statement (Moher, Liberati, Tetzlaff & Altman, 2009) and PRISMA explanation and elaboration document (Liberati et al., 2009) guided the review process.

2.1. Eligibility Criteria

The current review sought to identify studies that examined the relationships between psychopathic traits and attachment styles. No publication date restrictions were imposed. The inclusion criteria for studies were: (a) used quantitative, psychometrically validated measures of psychopathic traits and attachment styles; (b) available in English language; (c) presented original data in a peer-reviewed empirical journal; (d) participants were aged 16 and over.

Studies were also required to either: (e) explore bivariate relationships between psychopathic traits and attachment styles; (f) report multivariate statistical models with attachment styles as predictors and psychopathic traits as outcome variables; (g) report multivariate statistical models with psychopathic traits as predictors and attachment styles as outcome variables. Studies were therefore excluded if they did not meet the inclusion criteria (a) to (d) and failed to report at least one of the statistical methods described in criteria (e) to (g).

Studies were also excluded on the basis of the following criteria: (a) participants with a Full Scale IQ of below 80; (b) conference abstracts, reply to article papers, dissertations, correction papers, review articles, discussion papers, theoretical papers or textbook chapters.

2.2. Information Sources

Studies were identified via searches of the electronic databases PsycINFO and Scopus. No start or end dates were inputted for the searches, in order to capture as many relevant studies for inclusion as possible. The last search was run on 15/12/2017. Reference lists of eligible articles were also scanned in order to identify further studies suitable for inclusion in this review.

2.3. Search

In order to capture relevant studies for inclusion, the following search terms were used with both databases: ‘psychopathy’ OR ‘psychopath’ OR ‘psychopathic’ AND ‘attachment’. A limit of English language was applied to both searches. The search terms were also required to appear in the abstract of articles located via PsycINFO, and in the article title, abstract or keywords of articles located via Scopus. The additional limit of ‘peer reviewed journal’ was applied to the search of PsycINFO; however, this limit was not available for Scopus and therefore the limits of ‘article’ and ‘article in press’ were applied instead.

2.4. Study Selection

The eligibility assessment was performed by one reviewer (first author of this paper) and this process was straightforward. Duplicates of the records retrieved via the databases were removed and the remaining records were screened by reading the titles and abstracts. Records that were not considered to be eligible, that is, those that did not meet the inclusion criteria

or met any exclusion criteria, were excluded. Full-text articles were reviewed for the remaining records and any studies not considered to be eligible were also excluded. Reference lists of articles considered to be eligible were hand-searched in order to identify additional articles, which were then screened and assessed for eligibility in the same manner. The remaining studies were included in the qualitative synthesis. The study selection process is summarised in the PRISMA flow diagram (Figure 1).

2.5. Data Collection Process and Data Items

A data extraction sheet (see Table 1) was developed and the following data were extracted from each of the studies: author names, location, year of publication, study design, participant characteristics (including nature of the participants, number, age, gender and ethnicity), measures of psychopathic traits and attachment styles, controlled for variables, and nature of the relationships between psychopathic traits and attachment styles variables. Authors of each of the ten included studies were contacted via email in order to obtain study information that either was not reported or was reported unclearly. Authors of four of the studies (Christian, Sellbom & Wilkinson, 2017; Conradi et al., 2016; Miller et al., 2010; Savard, Lussier, Brassard & Sabourin, 2015) replied with the necessary information and this was included in the current review.

2.6. Methodological Quality Assessment

The methodological quality of the studies was assessed by one reviewer (first author of this paper), using an adapted version of the Quality Assessment Tool for Quantitative Studies (Effective Public Health Practice Project, 1998a; see Appendix 1). The original tool contained items which were not relevant to the studies included this review. These items were concerned with other types of study design, group differences, interventions and drop-outs; therefore they were removed. Furthermore, the list of confounders was adapted such that it was relevant to the included studies. The adapted quality assessment tool was comprised of four superordinate categories: selection bias, confounders, blinding and data collection method; each of which was rated ‘strong’, ‘moderate’ or ‘weak’. In line with the accompanying guidance for the original tool (Effective Public Health Practice Project, 1998b), overall ratings were classified as ‘strong’ if none of the categories had been rated as ‘weak’; ‘moderate’ if one category had been rated as ‘weak’; and ‘weak’ if more than one category had been rated as ‘weak’.

2.7. Planned Methods of Analysis

The analysis and reporting of the data was based on the narrative synthesis approach described by Popay and collaborators (2006). This entailed: 1) identifying and tabulating results and organising them within a common statistical rubric, 2) grouping the findings from studies, 3) considering whether the size or direction of findings varies according to study characteristics or quality, 4) assessing the robustness of the synthesis using tabulation and the quality assessment tool, and reflecting critically on the synthesis process

within the discussion. Reporting was also guided by the PRISMA statement (Moher et al., 2009) and PRISMA explanation and elaboration document (Liberati et al., 2009).

The outcomes of interest were the bivariate correlations between the psychopathic traits and attachment styles variables. In accordance with Cohen's (1988; 1992) classification of r effect sizes, $r \geq .10$ was considered to be small, $r \geq .30$ was considered to be medium, and $r \geq .50$ was considered to be large. A number of studies conducted partial correlations and multiple regressions either instead of or in addition to bivariate correlations. Instances in which the relationships between psychopathic traits and attachment styles variables changed as a result of controlling for other variables were noted. Furthermore, in instances in which bivariate correlations were not reported and this data could not be obtained through contacting study authors, the results of regression analyses were reported along with the variables controlled for.

3. Results

3.1. Study Selection

A total of ten studies were identified for inclusion in this review (see Figure 1). The searches of PsycINFO and Scopus returned a total of 229 records. After duplicates were removed, 144 records remained.

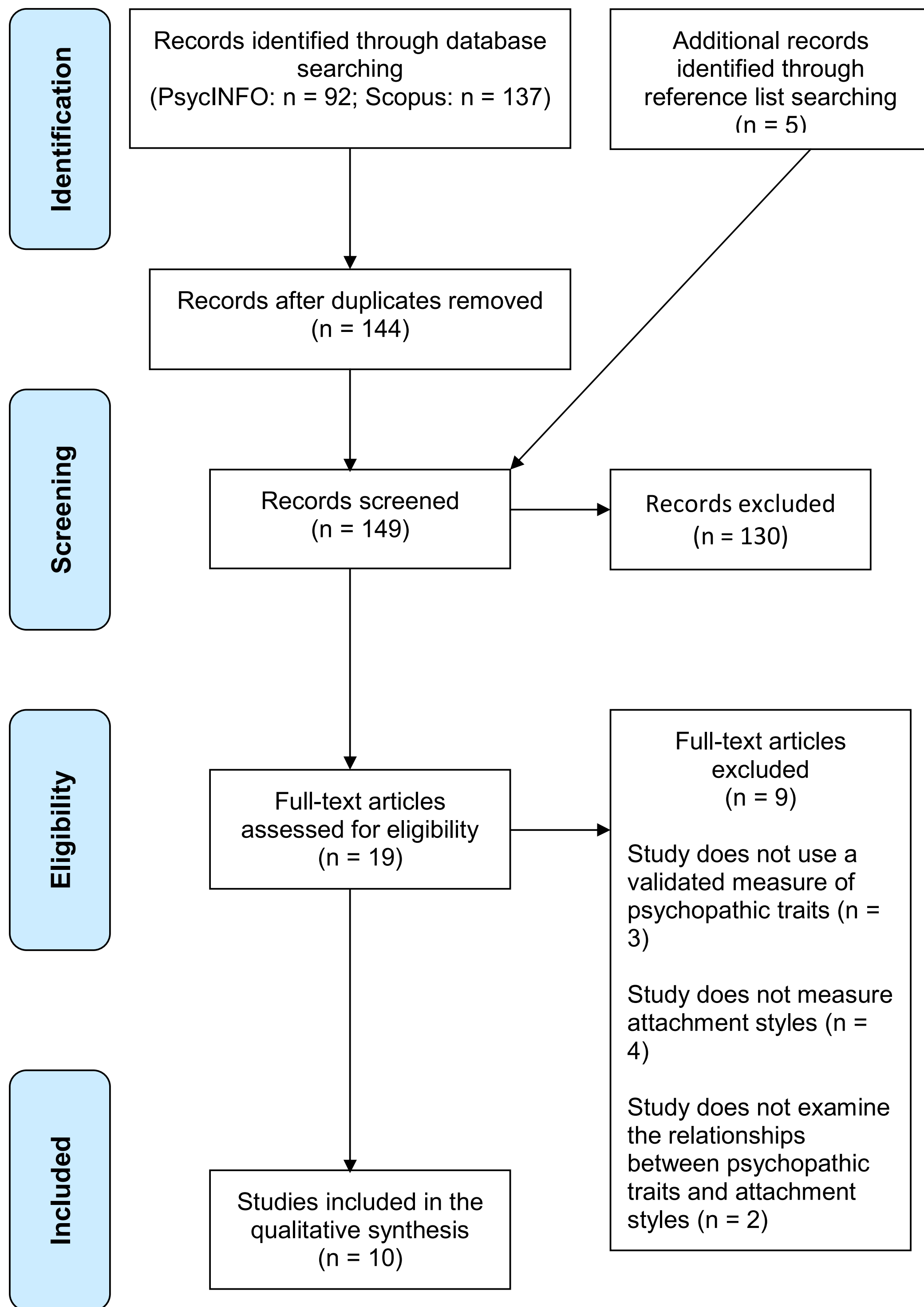

Figure 1. PRISMA flowchart detailing study selection

An additional five records were identified through reference list searching of located, relevant articles. Of these 149 records, 130 were excluded because after reading the titles and abstracts it became clear that they did not meet the inclusion criteria. The full texts of the 19 remaining records were retrieved for detailed examination and nine of these articles were subsequently excluded as they did not meet the inclusion criteria. Ten studies met the inclusion criteria and were included in this review.

3.2. Study Characteristics

Descriptive information on the ten included studies is summarised in Table 1. All studies were published between October 2010 and October 2017. Three studies were conducted in the United Kingdom, two were conducted in the United States and two were conducted in Canada. One study was conducted in the Netherlands and another in Belgium. A further study was conducted across Australia and the United States. All studies were cross-sectional in terms of design, measuring psychopathic traits and attachment styles at the same time point.

3.3. Participant Characteristics

The included studies involved 6,456 participants overall. The number of participants ranged from 209-1,553. Three studies had sample sizes of over 1,000, while the sample sizes of the other seven studies were between 200-550.

Table 1

Study Descriptive Information

Authors, Country & Date	Study Design	Participants (n)	Age in years (mean, SD, range) Gender (% Males) Ethnicity (%)	Psychopathy Measures	Attachment Measures
1. Blanchard & Lyons, UK, 2016	Cross-sectional	University students (41.1%) and community members (58.9%) (n=362)	Age: 30.52 (10.0), range not detailed Gender: Male 51.1% Ethnicity: Not detailed	SRP-III	RSQ
2. Christian et al., Australia & USA, 2017	Cross-sectional	Sample 1: Australian community members (n=249) (46% of total n)	Sample 1 Age: 37.59 (12.77), 18-60 Gender: Male 49.4% Ethnicity: White 88%, Asian 6%, Other 6%	TriPM & E-LSRP	ECR-R-GSF & ASQ
		Sample 2: USA community members (n=292) (54% of total n) (total n=541)	Sample 2 Age: 39.63 (11.89), 18-68 Gender: Male 44.9% Ethnicity: White 80.5%, African American 6.5%, Hispanic/Latino 5.5%, Other 7.5%		
3. Conradi et al., Netherlands, 2016	Cross-sectional	Undergraduate psychology university students (n=1074)	Age: 20.12 (2.41), 17-44 Gender: Male 28.8% Ethnicity: Not detailed	YPI	ECR
4. Craig et al., UK, 2013	Cross-sectional	Undergraduate (89%) and postgraduate (9%) university students, and university staff (2%) (n=214)	Age: 20.30 (1.79), range not detailed Gender: Male 28.5% Ethnicity: White-Caucasian 95%, Chinese 1.5%, Mixed race 1.5%, Arab <1%, Asian <1%, Indian <1%	TriPM	ECR

5. Gordts et al., Belgium, 2017	Cross-sectional	Community members (66.6%) and university students (33.4%) (n=1,510)	Age: Males: 33.68 (13.89), range 17-90 Females: 32.05 (13.86), range 17-85 Gender: Male 48.01% Ethnicity: Not detailed	SRP-III & SRP-SF	ECR-R
6. Jonason et al., UK, 2014	Cross-sectional	Students (43.5%) and community members (56.5%) (n=352)	Age: 25.10 (9.80), range not detailed Gender: Male 17% Ethnicity: Not detailed	SRP-III	RQ
7. Lemelin et al., Canada, 2014	Cross-sectional	High school, college and university students (n=1,553)	Age: 18.21 (2.54), range 16-20 Gender: 1,530 provided gender information. Male 30.6% Ethnicity: Not detailed	LSRP	ECR
8. Mack et al., USA, 2011	Cross-sectional	University psychology students (n=209)	Age: 21.12, SD not detailed, range 18-58 Gender: Male 35% Ethnicity: White European/American 62.2%, 23.9% Black African/American, 2.9% Asian American, 1.9% Native American, 1% Spanish American, 7% Other	LSRP	ECR-R
9. Miller et al., USA, 2010	Cross-sectional	University students (n=361)	Age: 19.1 (1.7), range 18-32 Gender: Male 37.4% Ethnicity: White 87.3%, Black 4.4%, Asian 4.2%, Hispanic 2.5%, Other 1.7%	SRP-III & LSRP	ECR-R
10. Savard et al., Canada, 2015	Cross-sectional	Community members (n=280)	Age: Males: 30.8 (5.19) Females: 28.4 (3.75) Range: 18-35 Gender: Male 50% Ethnicity: Not detailed	LSRP	ECR

Table 1

Study Descriptive Information (*continued*)

Authors, Country & Date	Analysis	Controlled for Variables	Key Findings
1. Blanchard & Lyons, UK, 2016	Bivariate Correlations		Affective-interpersonal traits were positively associated with avoidant attachment in men (*r* =.22, p<.01), and anxious attachment in women (*r*=.42, p<.01). Lifestyle-antisocial traits were positively associated with anxious attachment in women (*r* =.26, p<.01).
	Stepwise Multiple Regression	Shared variance between psychopathy and attachment variables, and parental bonding.	Affective-interpersonal traits were positively associated with avoidant attachment in men (β=.25, p<.01), and anxious (β=.27, p<.01) and avoidant (β=.15, p<.01) attachment in women.
2. Christian et al., Australia & USA, 2017	Bivariate Correlations		TriPM & ECR-GSF: Boldness was negatively associated with avoidant attachment for sample 1 (*r* =-.35, p<.01) and sample 2 (*r* =-.40, p<.01) and anxious attachment for sample 1 (*r* =-.58, p<.01) and sample 2 (*r* =-.51, p<.01). Meanness was positively associated with avoidant attachment in sample 1 (*r* =.21, p<.01) and sample 2 (*r* =.37, p<.01). Disinhibition was positively associated with avoidant attachment for sample 1 (*r* =.22, p<.01) and sample 2 (*r* =.25, p<.01) and anxious attachment for sample 1 (*r* =.32, p<.01) and sample 2 (*r* =.47, p<.01). TriPM & ASQ: Total psychopathic traits were negatively associated with anxious

		attachment in sample 1 (r =-.13, $p<.05$) and sample 2 (r =-.16, $p<.01$), and positively associated with avoidant attachment (r =.14, $p<.05$) in sample 2. Boldness was negatively associated with avoidant attachment for sample 1 (r =-.36, $p<.01$) and sample 2 (r =-.39, $p<.01$) and anxious attachment for sample 1 (r =-.63, $p<.01$) and sample 2 (r =-.68, $p<.01$). Meanness was positively associated with avoidant attachment in sample 1 (r =.28, $p<.01$) and sample 2 (r =.45, $p<.01$). Disinhibition was positively associated with avoidant attachment for sample 1 (r =.26, $p<.01$) and sample 2 (r =.31, $p<.01$) and anxious attachment for sample 1 (r =.32, $p<.01$) and sample 2 (r =.40, $p<.01$). E-LSRP & ECR-GSF: In sample 1, total psychopathic traits were positively associated with avoidant (r =.17, $p<.01$) and anxious attachment (r =.16, $p<.05$). Callousness was positively associated with avoidant attachment (r =.13, $p<.05$), while antisociality was positively associated with anxious (r =.32, $p<.01$) and avoidant attachment (r =.21, $p<.01$). E-LSRP & ASQ: In sample 1, total psychopathic traits were positively associated with avoidant (r =.24, $p<.01$) and anxious attachment (r =.13, $p<.05$). Callousness was positively associated with avoidant attachment (r =.17, $p<.01$), while antisociality was positively associated with anxious (r =.33, $p<.01$) and avoidant attachment (r =.24, $p<.01$).
Hierarchical Multiple Regression	Gender and shared variance between attachment variables	TriPM & ECR-GSF: Boldness was negatively associated with avoidant attachment for sample 1 (β =-.16, $p<.01$) and sample 2 (β =-.20, $p<.01$) and anxious attachment for sample 1 (β =-.49, $p<.01$) and sample 2 (β =-.41, $p<.01$). Meanness was positively associated with avoidant attachment in sample 1 (β =.17, $p<.05$) and sample 2 (β =.35, $p<.01$). Disinhibition was positively associated with anxious attachment for sample 1 (β =.30, $p<.01$) and

		sample 2 (β =.47, p<.01). TriPM & ASQ: In sample 2, total psychopathic traits were negatively associated with anxious attachment (β =-.29, p<.01) and positively associated with avoidant attachment (β =.29, p<.01). Boldness was negatively associated with avoidant attachment for sample 1 (β =-.12, p<.05) and anxious attachment for sample 1 (β =-.54, p<.01) and sample 2 (β =-.64, p<.01). Meanness was positively associated with avoidant attachment in sample 1 (β =.29, p<.01) and sample 2 (β =.51, p<.01). Disinhibition was positively associated with anxious attachment for sample 1 (β =.30, p<.01) and sample 2 (β =.36, p<.01). E-LSRP & ECR-GSF: In sample 1, total psychopathic traits were positively associated with anxious attachment (β =.15, p<.05). Callousness was positively associated with avoidant attachment (β =.14, p<.05), while antisociality was positively associated with anxious attachment (β =.30, p<.01). E-LSRP & ASQ: In sample 1, total psychopathic traits were positively associated with avoidant attachment (β =.16, p<.05). Callousness was positively associated with avoidant attachment (β =.30, p<.01)., while antisociality was positively associated with anxious attachment (β =.33, p<.01).
3. Conradi et al., Netherlands, 2016	Bivariate Correlations	The callous-unemotional, grandiose-manipulative and impulsive-irresponsible facets of psychopathy were all positively associated with avoidant attachment in men (*r* =.29, p<.01; *r* =.11, p<.05; *r* =.15, p<.05) and women (*r* =.30, p<.01; *r* =.13, p<.01; *r* =.21, p<.05). In women only, the grandiose-manipulative and impulsive-irresponsible facets were positively associated with anxious attachment (*r* =.10, p<.01; *r* =.10, p<.01).

4. Craig et al., UK, 2013	Bivariate Correlations		Boldness was negatively associated with anxious (*r* =-.36, p<.001) and avoidant attachment (*r* =-.20, p<.01). Meanness was positively associated with avoidant attachment (*r* =.27, p<.001). Disinhibition was positively associated with avoidant (*r* =.40, p<.001) and anxious attachment (*r* =.34, p<.001).
	Multiple Regression	Gender, shared variance between attachment variables and parental bonding.	Boldness was negatively associated with anxious attachment (β =-.30, p<.001). Disinhibition was positively associated with avoidant (β =.14, p<.05) and anxious attachment (β =.30, p<.001).
5. Gordts et al., Belgium, 2017	Bivariate Correlations		Total psychopathic traits were positively associated with avoidant attachment (SRP-III: *r* =.35, p<.001; SRP-SV: *r* =.36; p<.001). Callous affect was positively associated with avoidant (SRP-III: *r* =.22, p<.01; SRP-SV: *r* =.17; p<.05) and anxious attachment (SRP-III: *r* =.14, p<.05).
6. Jonason et al., UK, 2014	Bivariate Correlations		Total psychopathic traits, as well as affective-interpersonal and lifestyle-antisocial traits, were positively associated with avoidant attachment (*r* =.21, p<.01; *r* =.20, p<.01; *r* =.18, p<.01).
	Multiple Regression	Shared variance between psychopathy and attachment variables, and parental care.	Total psychopathic traits were positively associated with avoidant attachment (β=.12, p<.05).
7. Lemelin et al., Canada, 2014	Bivariate Correlations		Total psychopathic traits were positively associated with anxious (*r* =.29, p<.001) and avoidant attachment (*r* =.29, p<.001).
8. Mack et al., USA, 2011	Hierarchical Multiple Regression	Gender, race, shared variance between attachment variables	Affective-interpersonal traits were positively associated with anxious attachment among those high in avoidant attachment (β=.28, p=.009), and with avoidant attachment in those high in anxious attachment

		(statistics not detailed). Lifestyle-antisocial traits were positively associated with both anxious (β=.23, p=.005) and avoidant (β=.19, p=.02) attachment.
9. Miller et al., USA, 2010	Bivariate Correlations	Affective-interpersonal traits were positively associated with avoidant attachment (r =.23, p<.001). Lifestyle-antisocial traits were positively associated with anxious (r =.24, p<.001) and avoidant (r =.29, p<.001) attachment.
10. Savard et al., Canada, 2015	Bivariate Correlations	In women and men, lifestyle-antisocial traits were positively associated with avoidant (r =.35, p<.001; r =.29, p<.001) and anxious attachment (r =.34, p<.001; r =.39, p<.001). In men only, affective-interpersonal traits were positively associated with avoidant (r =.22, p<.01) and anxious attachment (r =.26, p<.01).

Samples of participants were drawn from student populations in four studies, community populations in two studies, both student and community populations in three studies, and student and staff populations in one study. All studies were conducted with participants over the age of 16 years. The mean age ranged from 18 to 39 years across studies. Gender ratios varied between studies but there was an overall majority of females (63.4%). Details regarding the ethnicity of participants could not be obtained for six studies, but in the four studies for which this information was available, the participants were described as being predominantly white.

3.4. Measurement of Psychopathic Traits

Each of the studies had used a previously validated self-report measure or measures of psychopathic traits. The measures used and dimensions of psychopathy yielded by the measures that were subsequently examined in the analyses varied considerably across studies. Five studies had considered the affective-interpersonal and lifestyle-antisocial trait dimensions of psychopathy; two of these studies had used the Levenson Self-Report Psychopathy Scale (LSRP; Levenson, Kiehl & Fitzpatrick, 1995), two studies had used the Self-Report Psychopathy Scale-III (SRP-III; Paulhus, Hemphill & Hare, 2009), and one study had used both of these measures. One study had examined the boldness, meanness and disinhibition trait dimensions of psychopathy using the Triarchic Measure of Psychopathy (TriPM; Patrick, 2010). One study had considered the callous-unemotional, grandious-manipulative and impulsive-irresponsible trait dimensions of psychopathy

using the Youth Psychopathic Inventory (YPI; Andershed, Kerr, Stattin & Levander, 2001). One study had examined four dimensions of psychopathy: interpersonal manipulation, callous affect, erratic lifestyle and criminal tendencies; using both the SRP-III and the Self-Report Psychopathy Scale-Short Version (SRP 4:SF; Paulhus, Neumann & Hare, 2016). One study had considered the callous, egocentric and antisocial trait dimensions of psychopathy yielded by the expanded version of the LSRP (E-LSRP; Christian & Sellbom, 2016), as well as the dimensions measured by the TriPM described previously. One study had considered only the total psychopathic traits score, using the LSRP.

3.5. Measurement of Attachment Styles

Each of the studies had used a previously validated self-report measure of attachment styles. As with the measures of psychopathic traits, these varied considerably across studies. All studies had examined anxious and avoidant attachment dimensions. Four studies had used the Experiences in Close Relationships Questionnaire (ECR; Brennan et al., 1998) and three studies had used the Experiences in Close Relationships Questionnaire- Revised (ECR-R; Fraley, Waller & Brennan, 2000). One study had used the Relationship Questionnaire (RQ; Bartholomew & Horowitz, 1991), one study had used the Relationship Scales Questionnaire (RSQ; Creasey & Ladd, 2005; Griffin & Bartholomew, 1994), and one study had used the Experiences in Close Relationships-Revised-General Short Form (ECR-R-GSF; Wilkinson,

2011) as well as the Attachment Style Questionnaire (ASQ; Feeney, Noller & Hanrahan, 1994).

3.6. Methodological Quality

The adapted quality assessment tool (see Appendix 1) was used to rate the methodological quality of the studies. Ratings are presented in Tables 2 and 3.

3.6.1. Selection Bias

Seven studies had used convenience sampling (Blanchard & Lyons, 2016; Conradi et al., 2016; Craig, Gray & Snowden, 2013; Jonason, Lyons & Bethell, 2014; Lemelin, Lussier, Sabourin, Brassard & Naud, 2014; Mack, Hackney & Pyle, 2011; Miller et al., 2010), one study had used a combination of convenience and snowball sampling (Gordts, Uzieblo, Neumann, Van den Bussche & Rossi, 2017), one study had used online panelling (Christian et al., 2017), and one study had used simple random sampling (Savard et al., 2015). Only one study (Savard et al., 2015) reported the response rate. Efforts were made to obtain this missing information through contacting the authors of the other studies. Response rate information was obtained in this manner for one additional study (Conradi et al., 2016), and this was the only study found to have had a response rate of over 80%. Each of the studies was judged to be of ‘moderate’ quality with regard to selection bias, apart from one study (Savard et al., 2015), which was judged to be of ‘weak’ quality in this domain.

Table 2

Methodological Quality Assessment Table

References	Representativeness of sample	Percentage of selected individuals who agreed to participate	Percentage of relevant confounders controlled for	Participants blinded to the research question	Measurement tools valid	Measurement tools reliable	Global Quality Rating
Blanchard & Lyons (2016)	Somewhat likely	Can't tell	60-79%	Yes	Yes	Yes	Strong
Christian et al. (2017)	Very likely	Not known	Less than 60%	Yes	Yes	Yes	Moderate
Conradi et al. (2016)	Somewhat likely	80-100% agreement	Less than 60%	Yes	Yes	Yes	Moderate
Craig et al. (2013)	Somewhat likely	Can't tell	Less than 60%	Can't tell	Yes	Yes	Moderate
Gordts et al. (2017)	Somewhat likely	Can't tell	Less than 60%	Can't tell	Yes	Yes	Moderate
Jonason et al. (2014)	Somewhat likely	Can't tell	Less than 60%	Yes	Yes	No	Moderate
Lemelin et al. (2014)	Somewhat likely	Can't tell	Less than 60%	Can't tell	Yes	Yes	Moderate
Mack et al. (2011)	Somewhat likely	Can't tell	60-79%	Can't tell	Yes	Yes	Strong
Miller et al. (2010)	Somewhat likely	Not known	Less than 60%	Yes	Yes	Yes	Moderate
Savard et al. (2015)	Very likely	Less than 60% agreement	Less than 60%	Yes	Yes	Yes	Weak

Table 3

Methodological Quality Assessment Ratings Table

References	Selection Bias	Confounders	Blinding	Data Collection Method	Global Quality Rating
Blanchard & Lyons (2016)	Moderate	Moderate	Strong	Strong	Strong
Christian et al. (2017)	Moderate	Weak	Strong	Strong	Moderate
Conradi et al. (2016)	Moderate	Weak	Strong	Strong	Moderate
Craig et al. (2013)	Moderate	Weak	Moderate	Strong	Moderate
Gordts et al. (2017)	Moderate	Weak	Moderate	Strong	Moderate
Jonason et al. (2014)	Moderate	Weak	Strong	Moderate	Moderate
Lemelin et al. (2014)	Moderate	Weak	Moderate	Strong	Moderate
Mack et al. (2011)	Moderate	Moderate	Moderate	Strong	Strong
Miller et al. (2010)	Moderate	Weak	Strong	Strong	Moderate
Savard et al. (2015)	Weak	Weak	Strong	Strong	Weak

3.6.2. Confounders

Only two studies (Blanchard & Lyons, 2016; Mack et al., 2011) had controlled for 60-79% of potentially confounding variables and thus were rated as being of ‘moderate’ quality in this area. The other eight studies had controlled for less than 60% of potentially confounding variables and hence were rated as ‘weak’ in this domain.

3.6.3. Blinding

Only two studies (Blanchard & Lyons, 2016; Jonason et al., 2014) specified that participants had been blinded to the research question, whereas this was not reported in the other studies. Attempts were made to contact the authors of the remaining studies regarding this missing information, and those who responded stated that participants had been unaware of the research question in their studies (Christian et al., 2017; Conradi et al., 2016; Miller et al., 2010; Savard et al., 2015). Therefore, a ‘strong’ quality rating was awarded in this domain to the six aforementioned studies; whereas the other four studies were rated as ‘moderate’.

3.6.4. Data Collection Methods

Nine of the studies had used measurement tools which were either shown, or are known, to be reliable and valid. Therefore, each of these studies was awarded a ‘strong’ quality rating in this area. The only exception to this was

the study conducted by Jonason and colleagues (2014), in which the authors used a single-item measure of attachment. As single-item measures are known to be unreliable (Loo, 2002), this study was awarded a ‘moderate’ quality rating in this domain.

3.6.5. Global Quality Ratings

Global Quality ratings were calculated in the manner described previously (see section *2.6.* and Table 3). Two studies (Blanchard & Lyons, 2016; Mack et al., 2011) received a globally ‘strong’ quality rating, seven studies (Christian et al., 2017; Conradi et al., 2016; Craig et al., 2013; Gordts et al., 2017; Jonason et al., 2014; Lemelin et al., 2014; Miller et al., 2010) received a globally ‘moderate’ quality rating, and one study (Savard et al., 2015) received a globally ‘weak’ quality rating.

3.7. Synthesis of Results

Key findings from individual studies are summarised in Table 1.

The results are grouped into five sections, below. The first of these sections (*3.7.1.*) reports the relationships found between total psychopathic traits and anxious and avoidant attachment styles. With regard to the other sections, to aid comparability of the results across studies, psychopathic traits were grouped and considered in two broad trait domains: affective-interpersonal and lifestyle-antisocial. This was completed for all but one of the included

studies (Lemelin et al., 2014) as only total psychopathic traits were considered in that study. This method of organisation was chosen because, as discussed in section *1.1.*, the two-factor model of psychopathy is the most typically employed in psychopathy research (Skeem et al., 2011). Furthermore, it was the most commonly adopted model across the included studies, with five out of the ten studies having used it. The relationships found between these two trait domains and anxious and avoidant attachment styles are reported in four sections (*3.7.2*, *3.7.3, 3.7.4.* and *3.7.5.*).

3.7.1. Total Psychopathic Traits and Attachment Styles

Four studies of moderate quality (Christian et al., 2017; Gordts et al., 2017; Jonason et al., 2014; Lemelin et al., 2014) explored the bivariate relationships between total psychopathic traits and attachment styles. Evidence regarding the relationship between total psychopathic traits and anxious attachment was mixed, with two studies reporting no relationship (Gordts et al., 2017; Jonason et al., 2014), one study reporting a significant, small positive relationship (Lemelin et al., 2014), and one study reporting significant, small positive and negative relationships depending on the measure of psychopathy utilised (Christian et al., 2017). On the other hand, all four studies reported significant, medium sized (Gordts et al., 2017) and small (Christian et al., 2017; Jonason et al., 2014; Lemelin et al., 2014) positive relationships between total psychopathic traits and avoidant attachment.

Two studies (Christian et al., 2017; Jonason et al., 2014) conducted regression analyses to further explore the relationships between total psychopathic traits and attachment styles. In the study by Jonason and colleagues (2014), the effects of parental care and shared variance between attachment variables were controlled for; whereas in the study by Christian and collaborators (2017), the effects of gender and shared variance between attachment variables were controlled for. However, controlling for these potentially confounding variables did not alter the findings described previously in either study.

3.7.2. Affective-Interpersonal Traits and Anxious Attachment

Eight studies (one strong, six moderate, and one weak in quality) examined the bivariate relationships between affective-interpersonal traits and attachment styles. Regarding the relationships between affective-interpersonal traits and anxious attachment, four studies found significant, small (Conradi et al., 2016; Gordts et al., 2017; Savard et al., 2015) and medium sized (Blanchard & Lyons, 2016) positive relationships. However, in one strong quality study this relationship was only found in women (Blanchard & Lyons, 2016), and in another moderate quality study it was found only in women and only for the grandiose-manipulative facet of psychopathy (Conradi et al., 2016). Furthermore, in one weak quality study this relationship was only found in men (Savard et al., 2015), and in one moderate quality study it was only found for the callous affect facet of psychopathy (Gordts et al., 2017). Additionally, in the study by Blanchard and Lyons (2016), the effects of

parental bonding as well as shared variance between attachment and psychopathy variables were controlled for in a regression analysis. In that study, it was reported that the relationship described previously remained significant and positive but was small in size.

Two studies of moderate quality found no relationship between affective-interpersonal traits and anxious attachment (Jonason et al., 2014; Miller et al., 2010). Furthermore, two studies of moderate quality measured boldness and found significant medium (Craig et al., 2013) and large (Christian et al., 2017) negative relationships with anxious attachment. In the study by Christian and colleagues (2017), the effects of gender and shared variance between attachment variables were controlled for in regression analyses and it was found that the relationships remained significant and negative but were medium to large in effect size. In the study by Craig and collaborators (2013), a regression analysis controlling for the effects of gender, parental bonding, and shared variance between attachment variables did not alter the relationship between boldness and anxious attachment described previously.

Another strong quality study (Mack et al., 2011) conducted no bivariate analysis. However, in a regression analysis, the effects of gender, race and shared variance between attachment variables were controlled for. In that study, a significant, small positive relationship between affective-interpersonal traits and anxious attachment, in individuals high in avoidant attachment, was reported.

3.7.3. Affective-Interpersonal Traits and Avoidant Attachment

Each of the eight studies that examined the bivariate relationships between affective-interpersonal traits and avoidant attachment reported significant, small (Blanchard & Lyons, 2016; Craig et al., 2013; Gordts et al., 2017; Jonason et al., 2014; Miller et al., 2010; Savard et al., 2015) and small to medium sized (Christian et al., 2017; Conradi et al., 2013) positive relationships. However, in one strong quality study (Blanchard & Lyons, 2016) and one weak quality study (Savard et al., 2015) this relationship was only found in men; whereas it was found in both genders in another moderate quality study (Conradi et al., 2013). In one moderate quality study the relationship between affective-interpersonal traits and avoidant attachment was only found for the meanness facet of psychopathy (Craig et al., 2013); in one moderate quality study this relationship was only found for the callous affect facet of psychopathy (Gordts et al., 2017); and in another moderate quality study it was only found for the meanness and callous affect facets of psychopathy (Christian et al., 2017). Furthermore, two moderate quality studies found significant, small (Craig et al., 2013) and medium sized (Christian et al., 2017) negative relationships between boldness and avoidant attachment.

Five studies conducted regression analyses to explore the relationships between affective-interpersonal traits and avoidant attachment. In the study by Blanchard and Lyons (2016), the effects of parental bonding as well as shared variance between attachment and psychopathy variables were

controlled for, and significant, small positive relationships between affective-interpersonal traits and avoidant attachment were identified for both men and women. In the study by Christian and colleagues (2017), the effects of gender and shared variance between attachment variables were controlled for and it was found that the relationships between avoidant attachment and boldness remained significant and negative but were small, the relationships between avoidant attachment and meanness remained significant, positive and ranged from small to large, while the relationships between avoidant attachment and callous affect did not change. In the study by Craig and collaborators (2013), the effects of gender, parental bonding, and shared variance between attachment variables were controlled for, and it was found that the relationships between affective-interpersonal traits and avoidant attachment described previously disappeared. This was also the case in the study conducted by Jonason and colleagues (2014), in which the effects of parental care and shared variance between attachment and psychopathy variables were controlled for. In the strong quality study conducted by Mack and collaborators (2011), the effects of gender, race and shared variance between attachment variables were controlled for. In that study, a positive relationship was reported between affective-interpersonal traits and avoidant attachment, in individuals high in anxious attachment; however, the statistics were not detailed.

3.7.4. Lifestyle-Antisocial Traits and Anxious Attachment

Eight studies (one strong, six moderate, and one weak in quality) examined the bivariate relationships between lifestyle-antisocial traits and attachment styles. Regarding the relationships between lifestyle-antisocial traits and anxious attachment, two moderate quality studies (Christian et al., 2017; Craig et al., 2013) and one weak quality study (Savard et al., 2015) found significant, medium sized positive relationships. Furthermore, one strong quality study (Blanchard & Lyons, 2016) and two moderate quality studies (Conradi et al., 2016; Miller et al., 2010) found significant, small positive relationships; whereas two moderate quality studies (Gordts et al., 2017; Jonason et al., 2014) found no relationship. However, in the studies by Blanchard and Lyons (2016) and Conradi and collaborators (2016) the relationships were only found in women; while Savard and colleagues (2015) found the relationship in both genders. Furthermore, in the study by Blanchard and Lyons (2016), the relationship described previously disappeared when the effects of parental bonding as well as shared variance between attachment and psychopathy variables were controlled for in a regression analysis. However, in the study by Christian and colleagues (2017), in which regression analyses controlled for the effects of gender and shared variance between attachment variables, the relationship described previously did not change. This was also the case in the study conducted by Craig and collaborators (2013), in which a regression analysis controlled for the effects of gender, parental bonding, and shared variance between attachment variables. In the strong quality study by Mack and colleagues (2011), a regression analysis controlling for the effects of gender, race and shared variance between attachment variables was also conducted. In that study, a

significant, small positive relationship was found between lifestyle-antisocial traits and anxious attachment.

3.7.5. Lifestyle-Antisocial Traits and Avoidant Attachment

Of the eight studies that examined the bivariate relationships between lifestyle-antisocial traits and avoidant attachment, one moderate quality study (Craig et al., 2013) reported a significant, medium sized positive relationship. Furthermore, one moderate quality study (Christian et al., 2017) and one weak quality study (Savard et al., 2015) reported significant, small to medium sized positive relationships. Additionally, three moderate quality studies reported significant, small positive relationships (Conradi et al., 2016; Jonason et al., 2014; Miller et al., 2010). However, one strong (Blanchard & Lyons, 2016) and one moderate quality study (Gordts et al., 2017) reported no relationship. Nonetheless, in the study by Craig and colleagues (2013), when the effects of gender, parental bonding, and shared variance between attachment variables were controlled for in a regression analysis, the relationship remained significant and positive but was small in size. In the study by Christian and collaborators (2017), in which regression analyses controlled for the effects of gender and shared variance between attachment variables, the small to medium sized positive relationships described previously disappeared. Furthermore, in the study conducted by Jonason and colleagues (2014), a regression analysis controlled for the effects of parental care and shared variance between attachment and psychopathy variables, and the relationship described previously disappeared. A regression analysis

controlling for the effects of gender, race and shared variance between attachment variables was also conducted in the strong quality study by Mack and colleagues (2011), and a significant, small positive relationship was found between lifestyle-antisocial traits and avoidant attachment.

3.8. Sub-Group Analysis

Overall, the degree of heterogeneity across studies in terms of their characteristics and findings was considerable. A table (Table 4) was constructed in order to identify whether variations in study characteristics (location, sample size, nature of participants, outcome measures) or methodological quality had moderating effects on the findings. Visual comparisons indicated that the findings do not appear to vary according to study characteristics or methodological quality rating.

Table 4

Sub-Group Analysis Table

Authors, Country & Date	Population (n)	Measures	*r* Effect Sizes						Global Quality Rating
			Total Psychopathic Traits (TPT) & Anxious Attachment	TPT & Avoidant Attachment	Affective-Interpersonal Traits (AIT) & Anxious Attachment	AIT & Avoidant Attachment	Lifestyle-Antisocial Traits (LAT) & Anxious Attachment	LAT & Avoidant Attachment	
1. Blanchard & Lyons, UK, 2016	Students (41.1%) & community (58.9%) (n=362)	SRP-III, RSQ	-	-	Medium positive (W only)	Small positive (M only)	Small positive (W only)	Negligible	Strong
2. Christian et al., Australia & USA, 2017	Australian community (46%) & USA community (54%) (n=541)	TriPM, E-LSRP, ECR-R-GSF, ASQ	Small positive & small negative	Small positive	Large negative (BO only)	Medium negative (BO only); small - medium positive (ME only); small positive (CAL only)	Medium positive	Small - medium positive	Moderate
3. Conradi et al., Netherlands, 2016	Students (n=1,074)	YPI, ECR	-	-	Small positive (GM only) (W only)	Small - medium positive	Small positive (W only)	Small positive	Moderate
4. Craig et al., UK, 2013	Students (98%) & university staff (2%)	TriPM, ECR	-	-	Medium negative (BO only)	Small negative (BO only); small positive (ME only)	Medium positive	Medium positive	Moderate

	(n=214)								
5. Gordts et al., Belgium, 2017	Community (66.6%) & students (33.4%) (n=1,510)	SRP-III, SRP-SF, ECR-R	Negligible	Medium positive	Small positive (CA only)	Small positive (CA only)	Negligible	Negligible	Moderate
6. Jonason et al., UK, 2014	Students (43.5%) & community (56.5%) (n=352)	SRP-III, RQ	Negligible	Small positive	Negligible	Small positive	Negligible	Small positive	Moderate
7. Lemelin et al., Canada, 2014	Students (n=1,553)	LSRP, ECR	Small positive	Small positive	-	-	-	-	Moderate
8. Mack et al., USA, 2011	Students (n=209)	LSRP, ECR-R	-	-	Small positive (High Avo only) *	Positive (High Anx only) **	Small positive *	Small positive *	Strong
9. Miller et al., USA, 2010	Students (n=361)	SRP-III, LSRP, ECR-R	-	-	Negligible	Small positive	Small positive	Small positive	Moderate
10. Savard et al., Canada, 2015	Community (n=280)	LSRP, ECR	-	-	Small positive (M only)	Small positive (M only)	Medium positive	Small - medium positive	Weak

Key:
TPT = total psychopathic traits; AIT = affective-interpersonal traits; LAT = lifestyle-antisocial traits; W only = effect found in women only; M only = effect found in men only; BO only = effect found for boldness only; ME only = effect found for meanness only; GM only = effect found for grandiose-manipulativeness only; CAL only = effect found for callousness only; CA only = effect found for callous affect only; High Avo only = effect found in those high in avoidant attachment only; High Anx only = effect found in those high in anxious attachment only.
* In the study by Mack and colleagues (2011), no bivariate correlations were reported. Therefore, the effect sizes detailed here are β coefficients.
** The statistics were not detailed in the report; therefore the effect size is unknown.

4. Discussion

The purpose of this systematic review was to assess the evidence for associations between psychopathic traits and attachment styles. Relevant studies were identified, study characteristics were extracted, methodological quality was assessed, and the findings from studies were synthesised. Overall, the number of included studies was small and only two studies (Blanchard & Lyons, 2016; Mack et al., 2011) were considered to be of strong methodological quality. In general, the studies did not sufficiently control for potential confounders in their analyses and there were biases in participant selection which limit the generalisability of the findings. Therefore, the findings detailed in this review should be interpreted with some caution. More strong quality studies are needed in order to establish the true nature of the relationships detailed below.

4.1. Total Psychopathic Traits and Attachment Styles

In terms of the relationship between total psychopathic traits and anxious attachment, findings from four studies (Christian et al., 2017; Gordts et al., 2017; Jonason et al., 2014; Lemelin et al., 2014) were inconsistent, with the studies reporting a mixture of positive, negative and non-significant relationships. Therefore, the nature of the relationship between total psychopathic traits and anxious attachment is unclear based on the current evidence. Further studies would be important in clarifying the quality of this association. However, a more consistent pattern emerged regarding the

association between total psychopathic traits and avoidant attachment, with these same studies demonstrating small to medium sized positive relationships. This indicates that an increased presence of psychopathic traits is associated with a more avoidant attachment style. This finding appears to reflect the literature discussed previously (De Ganck & Vanheule, 2015; Jonason & Buss, 2012), which demonstrates that individuals with psychopathic traits tend to hold negative views of others and strive to avoid entangling commitments.

4.2. Affective-Interpersonal Traits and Anxious Attachment

Regarding the relationship between affective-interpersonal traits and anxious attachment, the pattern of findings was mixed. The two studies that examined the relationship between boldness and anxious attachment (Christian et al., 2017; Craig et al., 2013) reported medium to large negative associations; that is, increased levels of boldness were related to decreased levels of attachment anxiety. However, five studies (Blanchard & Lyons, 2016; Conradi et al., 2016; Gordts et al., 2017; Mack et al., 2011; Savard et al., 2015) found small, positive associations between affective-interpersonal traits and anxious attachment; that is, an increased presence of affective-interpersonal traits was associated with a more anxious attachment style. The observation of positive associations between affective-interpersonal traits and anxious attachment is somewhat at odds with the literature described previously, which is suggestive of a negative association (Hicks & Patrick, 2006). However, of the three studies that examined the relationship between affective-interpersonal traits

and anxious attachment separately in both genders, two found that the positive association was only present in women (Blanchard & Lyons, 2016; Conradi et al., 2016), and a third study found it only in men (Savard et al., 2015). This indicates that a positive relationship between affective-interpersonal traits and anxious attachment does not reliably present in both genders. Furthermore, Conradi and collaborators (2016) found that anxious attachment was positively related to grandiose-manipulativeness, but not to callous-unemotionality; while Gordts and colleagues (2017) demonstrated that anxious attachment was positively related to callous affect, but not to interpersonal manipulation. These findings appear to indicate that affective-interpersonal traits as a whole may not be related to an anxious attachment style. Additionally, in the study by Mack and collaborators (2011), the positive relationship between affective-interpersonal traits and anxious attachment was seen only in a subset of individuals: those high in attachment avoidance.

Overall, the methodological differences between the studies, in combination with the inconsistent pattern of results, means that making strong inferences regarding the relationship between affective-interpersonal traits and anxious attachment is difficult. One possible explanation is that affective-interpersonal traits differ in their relationships with anxious attachment. For instance, while callous affect and grandiose-manipulativeness are associated with increased levels of anxious attachment, boldness is associated with decreased levels of anxious attachment. However, given that these relationships were examined by very few studies, there is insufficient evidence to form firm conclusions in this regard.

4.3. Affective-Interpersonal Traits and Avoidant Attachment

Evidence for the association between affective-interpersonal traits and avoidant attachment was more consistent; with all nine studies that examined this revealing small to medium sized positive relationships between the two factors. Therefore, an increased presence of affective-interpersonal traits seems to be associated with increased attachment avoidance. These findings appear to reflect the literature outlined previously. For instance, avoidant attachment has been related to lower levels of empathy and compassion (Mikulincer et al., 2001; Mikulincer et al., 2005), which are considered to be core features of the affective-interpersonal trait domain of psychopathy (Hare, 2003). Moreover, the affective-interpersonal features of psychopathy have been linked to lower levels of intimacy and commitment in relationships (Ali & Chamorro-Premuzic, 2010; Jonason & Buss, 2012), which are recognised features of avoidant attachment (Mikulincer & Shaver, 2007). However, in the study by Craig and colleagues (2013), the effects of gender, parental bonding and variance shared with anxious attachment were controlled for in subsequent analyses. As a result, the positive relationship between affective-interpersonal traits and avoidant attachment disappeared. This was also the case in the study conducted by Jonason and collaborators (2014), when subsequent analyses controlled for the effects of parental care and variance shared with anxious attachment and lifestyle-antisocial traits. These findings were unexpected and appear to indicate that affective-interpersonal traits and avoidant attachment are not uniquely related, rather that they are related via a

third variable such as anxious attachment. That said, three studies (Blanchard & Lyons, 2016; Christian et al., 2017; Mack et al., 2011) conducted similar analyses and found small to large positive relationships between affective-interpersonal traits and avoidant attachment. Furthermore, the measure of attachment styles used in the study by Jonason and colleagues (2014) was unreliable and thus could have impacted the findings; and the study by Craig and collaborators (2013) had a relatively small sample size and as such may have lacked power to detect effects. Therefore, there appears to be some evidence of a positive association between affective-interpersonal traits and avoidant attachment.

4.4. Lifestyle-Antisocial Traits and Anxious Attachment

In terms of the relationship between lifestyle-antisocial traits and anxious attachment, seven studies (Blanchard & Lyons, 2016; Christian et al., 2017; Conradi et al., 2016; Craig et al., 2013; Miller et al., 2010; Mack et al., 2011; Savard et al., 2015) found small to medium sized positive relationships. Therefore, increased levels of lifestyle-antisocial traits appear to be associated with a more anxious attachment style. Furthermore, the majority of studies that conducted further analyses controlling for the effects of potentially confounding variables demonstrated that the relationships did not change as a result of these analyses. Therefore, there appears to be some evidence of a positive relationship between lifestyle-antisocial traits and anxious attachment. This is in contrast to the lack of a clear association between affective-interpersonal traits and anxious attachment (see section *4.1.2.*). These

findings are consistent with those of studies described previously that have demonstrated the lifestyle-antisocial trait domain of psychopathy to be related to increased levels of anxiety and suspiciousness in relationships (Hicks & Patrick, 2006; Massar et al., 2017); features which have also been associated with an anxious attachment style (Mikulincer & Shaver, 2007).

4.5. Lifestyle-Antisocial Traits and Avoidant Attachment

Regarding the relationship between lifestyle-antisocial traits and avoidant attachment, seven studies (Christian et al., 2017; Conradi et al., 2016; Craig et al., 2013; Jonason et al., 2014; Mack et al., 2011; Miller et al., 2010; Savard et al., 2015) found small to medium sized positive relationships. This suggests that an increased presence of lifestyle-antisocial traits is associated with increased attachment avoidance. These findings do not appear to be consistent with the literature cited previously, which suggests that lifestyle-antisocial traits are related to an anxious, rather than avoidant, attachment style (Brewer et al., 2015; Massar et al., 2017). However, the majority of studies that conducted further analyses controlling for the effects of potentially confounding variables such as gender, parental bonding, parental care, and variance shared between attachment and psychopathy variables, either found that the size of the relationship was reduced (Craig et al., 2013) or that it disappeared altogether (Christian et al., 2017; Jonason et al., 204). Therefore, it may be that lifestyle-antisocial traits and avoidant attachment are not independently related to one another.

Based on these findings, it could be the case that lifestyle-antisocial traits and avoidant attachment are only related to one another through their relationships with one or more of the controlled for variables. For instance, lifestyle-antisocial traits would be expected to have some shared variance with affective-interpersonal traits, given that together they form the psychopathy construct. Furthermore, as discussed previously (see section *4.1.3.*), affective-interpersonal traits appear to be positively associated with avoidant attachment. Therefore, once the effects of affective-interpersonal traits are controlled for, the relationship between lifestyle-antisocial traits and avoidant attachment is likely to be reduced. Additionally, avoidant attachment would be expected to have some shared variance with anxious attachment, given the similarity of the two constructs. As discussed previously (see section *4.1.4.*), anxious attachment appears to be positively related to lifestyle-antisocial traits. Therefore, controlling for the effects of anxious attachment would likely reduce the size of the relationship between lifestyle-antisocial traits and avoidant attachment. However, such theories are speculative at present and further research is warranted in order to elucidate the true nature of these seemingly complex relationships. Overall, there does not appear to be sufficient evidence currently to conclude that lifestyle-antisocial traits are related to an avoidant attachment style.

4.6. Overall Relationships Patterns

The observation that total psychopathic traits are related to an avoidant, but not an anxious, attachment style is interesting given the apparent relationship

between lifestyle-antisocial traits and anxious attachment. However, it may be that the relationship between lifestyle-antisocial traits and anxious attachment is relatively weak in comparison to the relationship between affective-interpersonal traits and avoidant attachment. Indeed, this review found that all nine studies observed a positive relationship between affective-interpersonal traits and avoidant attachment, while seven studies observed a positive relationship between lifestyle-antisocial traits and anxious attachment. This may explain why, when affective-interpersonal and lifestyle-antisocial traits are combined, a positive relationship with avoidant but not anxious attachment is observed. Further research would be important in exploring the veracity of this theory.

Unfortunately, given the cross-sectional nature of the studies, it is not possible to conclude that psychopathic traits are borne out of attachment insecurities, as is suggested in the literature (Conradi et al., 2016). However, given that attachment styles develop in infancy (Bowlby, 1958), it could be that these have a role in determining the development of psychopathic traits, which, although not typically diagnosed until adulthood, recent research has shown can begin to emerge at around as young as two years of age (Kimonis et al., 2016). Moreover, it seems theoretically plausible that an avoidance of intimacy could lead to a callous and unemotional interpersonal style, and that individuals who are impulsive and suspicious in relationships could as a result behave in an anti-social manner. Further research tracking the relationships between attachment styles and psychopathic traits across the lifespan could help to clarify these conjectures.

4.7. Limitations

As noted previously, there are a number of limitations associated with the current review and as such the findings reported here should be interpreted with some caution.

With regard to the studies themselves, these were few in number and varied in quality, with only two (Blanchard & Lyons, 2016; Mack et al., 2011) out of the ten included studies having been awarded a ‘strong’ quality rating. Overall, potentially confounding variables were insufficiently controlled for, with only two studies (Blanchard & Lyons, 2016; Mack et al., 2011) controlling for more than 60% of potential confounders. A clearer and more authentic pattern of results may have emerged had there been a greater number of high-quality studies. However, the majority of the findings were consistent with regard to the directions of the relationships.

A further limitation concerns the generalisability of the findings. Research suggests that levels of psychopathic traits are likely to be low in the general population (Neumann & Hare, 2008). Therefore, it is not clear whether the findings detailed here would be generalisable to populations in which levels of psychopathic traits are likely to be high, such as in the prison population (Coid et al., 2009; Hare, 1993). Sampling from such populations in future research would be important for establishing whether or not the findings detailed here are applicable to individuals with high levels of psychopathic traits.

With regard to the synthesis of the findings, this was limited by the methodological and statistical heterogeneity of the studies. There was considerable variation between the studies in terms of the models of psychopathy under investigation, the ways in which psychopathic traits and attachment styles were measured, and the statistical analyses conducted; thus limiting their comparability. For instance, two studies (Christian et al., 2017; Craig et al., 2013) investigated the relationships between boldness and attachment styles, and found that an increase in boldness was associated with a significant decrease in attachment anxiety. However, as boldness was not specifically measured in other studies, it was not possible to further assess the reliability of this finding. In addition, that studies controlled for different confounders in their regression analyses meant that it was difficult to collate the findings.

A further issue was that the synthesis grouped psychopathic traits into broad trait domains and considered these together in relation to attachment styles. This is likely to be an oversimplification. For example, in those studies that examined individual affective-interpersonal traits, differing relationships were found with anxious attachment. Therefore, that psychopathic traits were considered together in two broad trait domains (in line with the two-factor model of psychopathy), despite the apparent variation in how individual traits within these domains relate to attachment styles, is a limitation of this review.

A further limitation of the review concerns the sub-group analysis. No specific patterns in outcomes according to study characteristics or quality were observed. However, it may be that the degree of heterogeneity between the studies precluded the identification of clear moderating variables.

4.8. Conclusions and Future Directions

The aim of the current review was to assess evidence regarding the relationships between psychopathic traits and attachment styles. Based on the findings from ten empirical studies, it appears that there is some evidence that a) the increased presence of psychopathic traits is associated with a more avoidant attachment style; b) the increased presence of affective-interpersonal psychopathic traits is associated with a more avoidant attachment style; c) the increased presence of lifestyle-antisocial psychopathic traits is associated with a more anxious attachment style. However, these findings should be interpreted with some caution given the small number of highly heterogeneous studies included in this review, which were not without their methodological shortcomings.

Notwithstanding its limitations, this review is the first of its kind and provides an important step in furthering understanding with regard to how individuals with psychopathic traits feel and behave in close relationships. In order to elucidate the true nature of the relationships between psychopathic traits and attachment styles, more high quality studies are warranted. Ideally, such studies would have a longitudinal design following participants from infancy

through to adulthood, in order to determine whether attachment has a role in the aetiology of psychopathy, and potential confounders would be adequately controlled for in the analyses. Furthermore, the studies conducted thus far have used either student or community samples. Therefore, individuals conducting research in this area should consider sampling from populations in which levels of psychopathic traits are likely to be high, in an effort to produce findings that are generalisable.

Can Psychopathic Traits and Interpersonal Values Predict Use of Impression Management Strategies?

Abstract

Evidence suggests that psychopathic traits are linked to an assertive, rather than a defensive, style of impression management. However, the way in which the affective-interpersonal and lifestyle-antisocial domains of psychopathy relate to impression management strategies is unclear. Furthermore, whether interpersonal values (agentic and communal) can explain variance in impression management strategies over and above psychopathy is not known. Therefore, the purpose of the present research was to establish the nature of these associations. Two samples of participants were recruited, 34 individuals from a medium secure mental health unit (MSU; Study One) and 236 individuals from the community (Study Two). Participants completed self-report questionnaires measuring impression management strategies, psychopathic traits, and interpersonal values. The results from both studies demonstrated that higher levels of assertive impression management strategies are related to increased levels of psychopathic traits. Among the community sample, higher levels of assertive impression management strategies were associated with increased levels of affective-interpersonal psychopathic traits; while higher levels of defensive impression management strategies were associated with increased levels of lifestyle-

antisocial psychopathic traits, decreased levels of affective-interpersonal psychopathic traits, and decreased levels of agentic values. Within the MSU sample, defensive impression management strategies were not significantly predicted by either psychopathic traits or interpersonal values. The findings from the studies are discussed in the context of the surrounding literature, and implications, limitations and future directions are considered.

1. Introduction

Impression management strategies enable individuals to present themselves in the way that they wish to be perceived by others (Goffman, 1959). Impression management involves regulating and controlling information about the self in social interactions (Piwinger & Ebert, 2001). In this way, the individual is able to create an image of the self that is valued positively by others, which is important for the success of social interactions and relationships, and enables the individual to satisfy their own needs and goals (Goffman, 1959, 1967). Impression management strategies have been associated with psychopathic traits, which include callousness, manipulativeness, impulsivity and criminal versatility (Clecky, 1941; Hare, 2003; see pp. 22 for a full description). For example, individuals with psychopathic traits have been observed to create and maintain a façade that facilitates their career success (Babiak & Hare, 2006). Furthermore, there is some evidence that impression management strategies are applied in line with one's interpersonal values, that is, one's judgement of what is important within a social context (Hartup, Brady & Newcombe, 1983). At present, there is a lack of research regarding the relationships between impression management strategies and psychopathic traits. Moreover, whether interpersonal values contribute to variance in impression management strategies over and above psychopathic traits is not known. Therefore, the purpose of the current research was to examine these relationships.

Knowledge regarding how psychopathic traits relate to impression management strategies may have important clinical implications. For example, it could improve healthcare professionals' understanding of interpersonal difficulties as they arise in the therapeutic relationship with individuals with high levels of psychopathic traits. Furthermore, advancing understanding of how psychopathic traits and interpersonal values relate to impression management behaviours may also have clinical relevance. For instance, if interpersonal values are found to have a role in predicting impression management strategies over and above psychopathy, this could lead to the development of values-focused interventions to support individuals with psychopathic traits.

1.1. Psychopathic Traits and Impression Management Strategies

Impression management strategies may be assertive, in that they are used to establish or develop one's image, or defensive, in which case they are employed to rescue one's image when he or she perceives it may be damaged (Piwinger & Ebert, 2001). According to Lee, Quigley, Nesler, Corbett and Tedeschi (1999), assertive strategies include behaviours conducive to the self being identified as powerful or dangerous ('intimidation') and persuading others that the outcomes of one's behaviour are more positive than believed ('self-enhancement'). On the other hand, defensive strategies include justifying a future anticipated negative action ('offering disclaimers') and denying responsibility for a negative event ('making excuses'; Lee et al., 1999).

Several studies have demonstrated that psychopathic traits are linked to particular forms of impression management. For instance, higher levels of psychopathic traits have been related to increased levels of threats of punishment, manipulation and ingratiation, in order to influence others when at work (Jonason et al., 2012). Furthermore, Jonason and Webster (2012) demonstrated that individuals with higher levels of psychopathic traits were more likely to report using social influence tactics such as coercion ('I criticize him/her for not doing it') and 'hardball' ('I use deception to get him/her to do it'). Moreover, Semenyna and Honey (2015) found that higher levels of psychopathic traits were associated with increased levels of ruthless self-advancement within one's peer group. In their study, individuals with higher levels of psychopathy were more likely to endorse statements such as: 'I find that sometimes it is necessary to conceal my personal agenda in order to advance my social standing' (Semenyna & Honey, 2015). Additionally, Goncalves and Campbell (2014) observed that higher levels of psychopathic traits were related to increased use of the derogation strategy of damaging the reputation of others. Therefore, these findings suggest that psychopathic traits are linked to an assertive, rather than a defensive, style of impression management.

Narcissistic traits have been associated with a similar style of impression management. The overlap between psychopathic and narcissistic traits is considerable, as both sets of traits include grandiosity, a lack of empathy, and exploitation of others for personal gain (American Psychiatric Association,

2013; Hare, 2003; Hart & Hare, 1998). Hart, Adams, Burton and Tortoriello (2017) found that individuals with increased levels of narcissism were more likely to report using assertive strategies such as intimidation (‘I intimidate others’) and blasting (‘I have to put others down in order to make myself look better’), but not defensive strategies including offering disclaimers (‘I offer explanations before doing something that others might think is wrong’) and self-handicapping (‘I put obstacles in the way of my own success’). Furthermore, Medizadeh (2010) demonstrated that individuals with higher levels of narcissism were more likely to post self-promotional content on online social-networking websites. Given the significant overlap between narcissistic and psychopathic traits (Hart & Hare, 1998), these findings further suggest that psychopathic traits may be related to assertive tactics, but not to defensive tactics.

According to Hare (1991, 2003) psychopathy is comprised of two broad trait domains, one of which is affective and interpersonal in nature (Factor 1), including traits such as a lack of empathy and grandiosity; while the other consists of lifestyle and antisocial traits (Factor 2), examples of which are irresponsibility and delinquency. Although the studies described have demonstrated some links between impression management strategies and psychopathic traits, they did not examine the affective-interpersonal and lifestyle-antisocial psychopathic trait domains separately in relation to impression management strategies. Therefore, it is not known whether affective-interpersonal and lifestyle-antisocial traits are associated with different styles of impression management. This is of relevance because the

two trait domains of psychopathy may present in isolation rather than together within an individual (Hare, 1993). However, a study by Ross and Rausch (2001) found that increased levels of the defensive strategy of self-handicapping were associated with lower levels of affective-interpersonal traits and higher levels of lifestyle-antisocial traits. While their study did not examine other forms of impression management, this finding could suggest that psychopathic trait domains may differ in their relationships with impression management strategies. Therefore, determining the nature of the associations between impression management strategies (assertive and defensive) and psychopathic traits (affective-interpersonal and lifestyle-antisocial) was one of the aims of the present research.

A further comment on the aforementioned studies is that each utilised community samples, in which the average level of psychopathic traits has been shown to be very low and far below the clinical threshold (Coid et al., 2009; Neumann & Hare, 2008). Therefore, it is not clear what the relationships between psychopathic traits and impression management strategies might be in populations in which levels of psychopathy are higher. As such, another aim of the present research was to make observations regarding how these relationships differ in a population in which levels of psychopathic traits are likely to be higher, compared to a population in which they are likely to be low.

1.2. Interpersonal Values and Impression Management Strategies

The deployment of impression management tactics has also been linked to possessing certain interpersonal values. Interpersonal values can be divided into two broad categories: agentic and communal (Locke, 2000). Agentic values refer to goals related to self-enhancement and economic achievement, examples of which are power and status; whereas communal values refer to goals related to interpersonal relationships, such as trust and harmony (Trapnell & Paulhus, 2012). Increased use of impression management strategies has been associated with valuing achievement, security, collectivism and benevolence (Bye et al., 2011; Elliot et al., 2016; Lalwani, Shrum & Chiu, 2009; Verkasalo and Lindeman, 1994). One might reasonably expect that individuals who value collectivism are more likely to use defensive strategies such as apologising and less likely to use assertive strategies such as blasting. However, the way in which values relate to assertive and defensive styles of impression management was not explored within the aforementioned studies.

Abele and collaborators (2016) demonstrated that higher levels of agency, including traits such as ambitiousness and competence, were associated with increased levels of agentic impression management, including tactics such as declaring one's competence and fearlessness. However, agency was not found to be related to communal impression management, which consists of tactics such as denying taking advantage of others or talking about them behind their back (Abele et al., 2016). Furthermore, communion, including traits such as warmth and honesty, was not found to be associated with any particular style of impression management. Overall, these findings suggest

that interpersonal values may have a role in explaining one’s style of impression management. However, it remains unclear whether interpersonal values would explain impression management strategies over and above psychopathic traits; hence clarifying this was one of the aims of the present research.

1.3. Explaining Impression Management Strategies

The empirical literature presented thus far has demonstrated that both psychopathic traits and interpersonal values appear to be related to impression management strategies. Importantly, it is not clear how psychopathic traits relate to impression management strategies, or whether interpersonal values can explain impression management strategies beyond psychopathic traits.

Research suggests that interpersonal values and psychopathic traits are related. Several studies have demonstrated that higher levels of psychopathic traits are associated with increased levels of agentic values such as dominance, power, hedonism, financial success and materialism (Foulkes, Seara-Cardoso, Neumann, Rogers & Viding, 2014; Glenn, Efferson, Iyer & Graham, 2017; Kajonius, Persson & Jonason, 2015; Lee et al., 2013; Semenyna & Honey, 2015), and decreased levels of communal values including affiliation, collectivism and communion (Dowgwillo & Pincus, 2017; Jonason, Strosser, Kroll, Duineveld & Baruffi, 2015; Sherman and Lynam, 2016). Given that psychopathic traits appear to be related to interpersonal

values, it could be that these values have a role in explaining impression management behaviours in individuals with psychopathic traits.

Research in other fields of psychology indicates that, in addition to personality traits, values can explain variance in social behaviour. For instance, personal values including benevolence and power have been shown to explain variance in ethical behaviour over and above personality traits such as empathy (Pohling, Bzdok, Eigenstetter, Stumpf & Strobel, 2016). Furthermore, pro-environmental and social values have been shown to explain variance in ecological behaviour over and above trait honesty-humility (Hilbig, Zettler, Moshagen & Heydasch, 2013; Marcus & Roy, 2017). Although these studies did not examine the variables of interest in the present research, it could be that a similar such pattern of relationships exists. Specifically, these findings suggest that interpersonal values could explain variance in impression management strategies beyond psychopathic traits.

1.4. The Present Studies

The present studies had two principle objectives. First, they aimed to investigate the impression management strategies (assertive and defensive) associated with psychopathic traits (affective-interpersonal and lifestyle-antisocial). Second, they aimed to establish whether interpersonal values (agentic and communal) can explain variance in impression management strategies over and above psychopathic traits. Based on the available literature, it was hypothesised that:

1) Higher levels of assertive impression management strategies are associated with increased levels of psychopathic traits (affective-interpersonal and lifestyle-antisocial).

2) Higher levels of defensive impression management strategies are associated with decreased levels of affective-interpersonal traits and increased levels of lifestyle-antisocial traits.

3) Interpersonal values (agentic and communal) can explain additional variance in impression management strategies (assertive and defensive) beyond psychopathic traits (affective-interpersonal and lifestyle-antisocial).

Evidence from two samples of participants is reported. In Study One, the sample was recruited from a medium secure mental health unit (MSU), in which levels of psychopathic traits, in particular lifestyle-antisocial traits, are likely to be higher (Hare, 1993; Jeandarme, Pouls, Oei & Bogearts, 2017). In Study Two, the sample was recruited from the community, in which levels of psychopathic traits are likely to be low (Coid et al., 2009; Neumann & Hare, 2008). The purpose of this was to enable some exploration regarding whether the patterns of relationships differ in a sample in which levels of psychopathic traits are likely to be higher, compared to a sample in which they are likely to be low.

2. Study One

2.1. Method

2.1.1. Participants

Demographic information relating to the participants is presented in Table 5. See Appendix 2 for examples of reported previous job titles, Appendix 3 for examples of reported medication taken, and Appendix 4 for examples of reported previous criminal convictions.

Table 5

Demographic Information Relating to the Participants from Study One and Study Two

	MSU Sample (Study One)	Community Sample (Study Two)
Number of Participants	34	236
Nature of Participants (% sample)		
Inpatients	100	
Undergraduate Students		77.10
Community Members		22.90
Gender (% sample)		
Male	100	14.40
Female		84.30
Other		0.80
Prefer Not to Say		0.40
Age (years)		
Mean (SD)	34.41 (11.18)	22.92 (9.77)
Range	20-63	18-65
Ethnicity (% sample)		
White British	41.20	53.40

Black British	26.50	2.50
Asian British	8.80	11.40
Mixed or Multiple Ethnicities	8.80	4.70
Another Black Background	5.90	0.40
Another White Background	2.90	20.30
Another Asian Background	2.90	3.80
Another Ethnic Background		3.00
Prefer Not to Say		0.40
Highest Level of Educational Qualification (% sample)		
No Formal Qualifications	23.50	0.40
GCSE or Equivalent	23.50	2.10
A Levels or Equivalent	20.60	69.50
Another Type of Qualification	11.80	2.10
Undergraduate University Degree or Equivalent	5.90	9.30
Postgraduate University Degree or Equivalent	2.90	14.40
SATs or Equivalent	2.90	1.30
Prefer Not to Say	2.90	0.40
Previously Been or Currently in Employment (% sample)		
Yes	85.30	38.10
No	11.80	61.00
Prefer Not to Say	2.90	0.80
Experienced a Mental Health Difficulty in the Last Year (% sample)		
Yes	79.40	22.50
No	14.70	73.30
Prefer Not to Say	5.90	4.20
Current or Past Year Mental Health Diagnoses (% sample)		
Schizophrenia	26.50	
Personality Disorder	20.50	0.40
Schizoaffective Disorder	8.80	
Depression	5.80	11.00
Bipolar Disorder	2.90	0.40
Post-Traumatic Stress Disorder	2.90	1.60
Psychosis	2.90	

Delusional Disorder	2.90	
Anxiety		9.70
Eating Disorder		0.80
Attention Deficit Hyperactivity Disorder		0.80
Pseudoseizures		0.40
Comorbidity (% sample)		
More than One Diagnosis	17.50	6.80
More than Two Diagnoses	5.90	1.60
Diagnoses of Axis I and Axis II Disorders	8.70	
Currently Taking Medication (% sample)		
Yes	94.10	17.40
No	5.90	81.40
Prefer Not to Say		1.30
Previously Been Convicted of a Criminal Offence (% sample)		
Yes	82.40	1.30
No	8.80	98.30
Prefer Not to Say	8.80	0.40

Ethical approval for the study with the MSU participants was granted by the Westminster NHS Research Ethics Committee (see Appendix 5) and the Health Research Authority (see Appendix 6). Participants were recruited from a 144-bedded MSU which provides treatment to individuals with mental disorders that are of such a nature or degree that they are detainable under the Mental Health Act (2007). The majority of patients within the service have been charged with or convicted of a violent criminal offence and their risk of harm to others is considered to be so severe that they cannot be managed safely within other mental health settings. Therefore, the MSU was considered to be an appropriate setting from which to recruit participants with higher

levels of psychopathic traits. Please see Appendix 7 for details of the recruitment process.

In order to calculate the necessary sample size, the tool G*Power was used. The research question regarding whether impression management strategies can be explained by interpersonal values (agentic and communal) above and beyond psychopathic traits (affective-interpersonal and lifestyle-antisocial) was used as a basis for the power analysis, as it involved the most predictor variables of any of the research questions. According to the power analysis, 40 participants were needed in order to detect a large effect size with high power (.80). A large effect size was chosen as previous research has demonstrated that psychopathic traits can explain 12.7% of the variance in impression management strategies, while the overall regression model explained 52% (Jones Bartoli, Nesbit & Watling, 2015).

2.1.2. Measures

All measures used were self-report questionnaires.

In order to measure impression management strategies, the Self Presentation Tactics Scale (SPT; Lee et al., 1999; see Appendix 8) was used. The SPT consists of 63 items and participants indicated to what extent each item represents their behaviour in a given situation on a 7-point Likert scale, ranging from ‘not at all often’ (1) to ‘very often’ (7). The items in the scale are divided into two subscales: assertive and defensive self-presentation tactics.

There are 38 items in the assertive subscale and 25 items in the defensive subscale, and multiple types of tactics within each subscale. Example items include: ‘I exaggerate the value of my accomplishments’ (assertive) and ‘I justify my behaviour to reduce negative reactions from others’ (defensive). Scores are summed for each subscale, with higher scores indicating greater use of the self-presentation tactics. Scores can then be divided by the total number of items in each subscale to give average scores for the two subscales. The highest possible score is 7 and the lowest possible score is 1. A good level of reliability for both subscales was indicated among out sample, α=.85 for the assertive subscale and α=.95 for the defensive subscale.

In order to measure psychopathic traits, the Self-Report Psychopathy Scale 4th Edition Short Form (SRP 4:SF; Paulhus et al., 2016; see Appendix 9) was used. It consists of 29 items answered on a 5-point Likert scale, ranging from ‘strongly disagree’ (1) to ‘strongly agree’ (5). Items are divided into two sub-scales: Factor 1 (hereafter referred to as affective-interpersonal) and Factor 2 (hereafter referred to as lifestyle-antisocial) psychopathic traits. There are 14 items in the affective-interpersonal subscale and 15 items in the lifestyle-antisocial subscale. Example items include: ‘I never feel guilty over hurting others’ (affective-interpersonal) and ‘I keep getting in trouble for the same things over and over’ (lifestyle-antisocial). Scores are summed for each subscale, with higher scores indicating an increased presence of psychopathic traits. For the affective-interpersonal subscale, the highest possible score is 70 and the lowest possible score is 14. For the lifestyle-antisocial subscale, the highest possible score is 75 and the lowest possible

score is 15. A good level of reliability for both subscales was indicated among out sample, α=.91 for the affective-interpersonal subscale and α=.89 for the lifestyle-antisocial subscale.

For the purpose of measuring interpersonal values, the Circumplex Scale of Interpersonal Values (CSIV-32; Locke, 2000; see Appendix 10) was used. The CSIV consists of 32 items and participants were required to indicate how important each interpersonal value is to them on a 5-point Likert scale, ranging from 'not important to me' (0) to 'extremely important to me' (4). The items used in the scale can be divided into eight subscales measuring agentic and communal values, these are: agentic, communal, unagentic, uncommunal, communal & agentic, communal & unagentic, uncommunal & agentic, uncommunal & unagentic. Scores on the eight subscales can be aggregated into two overall vector scores: agentic and communal values. Twenty-four items contribute to each overall score. Example items include: 'When I am with him/her/them, it is important that I appear confident' (agentic) and 'When I am with him/her/them, it is important that I feel connected to them' (communal). Scores are computed as follows: communal values = .414 (communal – uncommunal + .707 [communal & agentic + communal & unagentic – uncommunal & agentic − uncommunal & unagentic]); agentic values = .414 (agentic – unagentic + .707 [agentic & communal + agentic & uncommunal − unagentic & communal − unagentic & uncommunal]). The overall values scores can range from −4 to +4. For example, a participant who judged every communal item "extremely important" (4) and every uncommunal item "not at all important" (0) would obtain an overall communal

values score of +4. In contrast, a participant who expressed equally strong communal and uncommunal values would obtain an overall communal values score of zero. A good level of reliability for both subscales was indicated among out sample, α=.87 for the agentic subscale and α=.87 for the communal subscale.

2.1.3. Procedure

The study took place within the MSU. Each participant was seated in a quiet room on the ward with no one else present apart from the principle investigator. Participants were provided with the study information sheet (see Appendix 11). They were informed that their answers would be stored anonymously to protect their confidentiality, that they could withdraw from the study at any time without giving a reason, and that they were required to be honest in any answers they chose to give. Each participant was seen once for the administration of the measures. Having given informed consent (see Appendix 12 for the study consent form), all participants provided some basic demographic information (see Appendix 13 for the demographic information sheet) and completed the three self-report measures. These measures were administered by the principle investigator using pen and paper copies. The demographic information questionnaire was presented first, followed by the SPT, then the CSIV, and finally the SRP 4:SF. The measures took around 30 minutes to complete. Following the completion of the measures, participants were provided with a debrief sheet offering an explanation of the project, and the opportunity to ask questions. Participants were also entered into a prize

draw as a thank you for their time.

2.2. Results

Descriptive statistics for all of the measures are presented in Table 6.

Table 6

Study One and Study Two Descriptive Statistics for the SPT, SRP 4:SF, and the CSIV Scales.

Scale		Study One Mean (SD)	Study Two Mean (SD)	*p* value
SPT				
	Assertive Strategies	2.76 (1.06)	2.89 (0.77)	.476
	Defensive Strategies	3.60 (0.90)	4.10 (0.76)	.001
SRP 4:SF				
	Affective-Interpersonal Traits	32.41 (12.86)	25.63 (9.31)	.005
	Lifestyle-Antisocial Traits	42.56 (13.97)	25.20 (7.15)	<.001
CSIV				
	Agentic Values	0.01 (0.88)	-0.24 (0.73)	.072
	Communal Values	0.67 (0.81)	1.42 (0.87)	<.001

Note: p values denote the significance level of difference in means between the two studies for all measures

The zero-order correlations between impression management strategies (assertive and defensive), psychopathic traits (affective-interpersonal and lifestyle-antisocial) and interpersonal values (agentic and communal)

variables are presented in Table 7. The positive correlation between assertive and defensive strategies was expected as individuals who deploy impression management tactics tend to use both types (Lewis & Neighbors, 2005). However, given that the aim was to predict use of assertive and defensive strategies separately rather than use of impression management strategies overall, one was controlled for when predicting the other in the analyses.

In order to determine a) how psychopathic traits relate to impression management strategies, and, b) whether interpersonal values predict impression management strategies over and above psychopathic traits, two hierarchical multiple regressions were carried out. Two regressions were conducted because one model was designed to test associations with assertive tactics and the other with defensive tactics. Due to the size of the correlation between affective-interpersonal and lifestyle-antisocial traits, there were concerns about multicollinearity. Field (2009) recommends that a correlation of r=.80 is indicative of multicollinearity. Therefore, total psychopathic traits were entered into the analyses, rather than the subcomponents affective-interpersonal and lifestyle-antisocial traits.

In the first regression, assertive strategies was the outcome variable, defensive strategies was entered in the first step (in order to control for general use of impression management strategies), total psychopathic traits was entered in the second step, and agentic and communal values were entered together in the third step.

Table 7

Study One Zero-Order Correlations Between Impression Management, Psychopathy and Interpersonal Values Variables

	Assertive Strategies	Defensive Strategies	Affective-Interpersonal Traits	Lifestyle-Antisocial Traits	Agentic Values	Communal Values
Defensive Strategies	.688***	-				
Affective-Interpersonal Traits	.447**	.260	-			
Lifestyle-Antisocial Traits	.420*	.341*	.852***	-		
Agentic Values	.310	.129	.494**	.529**	-	
Communal Values	-.230	-.167	-.476**	-.383*	-.344*	-

Note: * = p<.05, ** = p<.01, *** = p<.001

The second regression was identical to the first apart from that defensive strategies was the outcome variable and assertive strategies was entered in the first step.

Standardized residuals were calculated for both regression models and no outliers were found. The assumption of multivariate normality was met for both regression models, as indicated by the results of Kolmogorov-Smirnov tests that were run on the standardized residuals. The assumption of no multicollinearity was met for both regression models, as demonstrated by the correlation matrices. Furthermore, the assumption of homoscedasticity was met for both regression models, as indicated by the scatter plots of residual versus predicted values.

The results of the hierarchical multiple regressions are presented in Tables 8 and 9. In the regression predicting assertive strategies, at Step 1, a positive relationship was found between assertive and defensive strategies. At Step 2, a positive relationship was found between assertive strategies and total psychopathic traits, which was approaching significance. Step 3 did not significantly improve the model, indicating that interpersonal values did not explain additional variance in assertive strategies. Step 2 was accepted as the final model as it was approaching significance and psychopathic traits were expected to be associated with assertive strategies (see sections *1.1.* and *1.4.*). This model was significantly better than chance at predicting assertive strategy use ($F(2,31)=17.73$, $p<.001$) and explained 53% of the variance in assertive strategy use. Specifically, higher levels of defensive strategies

predicted increased levels of assertive strategies, and approaching significance was the predictor of total psychopathic traits, whereby higher levels of total psychopathic traits predicted increased use of assertive strategies.

Table 8

Study One Regression Predicting Assertive Impression Management Strategies

Variable	Beta	Sig.	R^2 Change	Sig. F Change
Step 1			.473	<.001
Defensive Strategies	.688	<.001		
Step 2			.061	.053
Defensive Strategies	.606	<.001		
Total Psychopathic Traits	.260	.053		
Step 3			.012	.678
Defensive Strategies	.612	<.001		
Total Psychopathic Traits	.189	.255		
Agentic Values	.132	.386		
Communal Values	.001	.992		

In the regression predicting defensive strategies, at Step 1, a positive relationship was found between defensive and assertive strategies. Neither Step 2 nor Step 3 significantly improved the model, indicating that psychopathic traits were not significantly related to defensive strategies and

that interpersonal values did not explain any further variance in defensive strategies. Therefore, Step 1 was accepted as the final model. This model was significantly better than chance at predicting defensive strategy use (F(2,32)=28.69, p<.001) and explained 47% of the variance in defensive strategy use. Specifically, higher levels of assertive strategies predicted increased levels of defensive strategies.

Table 9

Study One Regression Predicting Defensive Impression Management Strategies

Variable	Beta	Sig.	R^2 Change	Sig. F Change
Step 1			.473	<.001
Assertive Strategies	.688	<.001		
Step 2			<.001	.968
Assertive Strategies	.685	<.001		
Total Psychopathic Traits	.006	.968		
Step 3			.011	.734
Assertive Strategies	.695	<.001		
Total Psychopathic Traits	.057	.748		
Agentic Values	-.126	.437		
Communal Values	-.025	.870		

Post-hoc power analyses using the tool G*Power revealed that the study had high power at Step 1 of both the regression predicting assertive strategy use (.99) and the regression predicting defensive strategy use (.99). However, the study was underpowered at Steps 2 (.42) and 3 (.09) of the regression predicting assertive strategy use, and at Steps 2 (.05) and 3 (.08) of the regression predicting defensive strategy use. Therefore, the study may have lacked power to detect significant effects of psychopathic traits and interpersonal values (agentic and communal) on use of impression management strategies (assertive and defensive).

2.3. Discussion

Hypothesis One predicted that higher levels of assertive impression management strategies would be associated with increased levels of psychopathic traits (affective-interpersonal and lifestyle-antisocial). Importantly, while the aim was to assess differences in predictive ability between affective-interpersonal and lifestyle-antisocial traits, due to the strong correlations between these two predictors, this was not possible. However, it was found that higher levels of total psychopathic traits were associated with increased levels of assertive strategies, although the association was below the required level of significance, possibly due to low power. These findings are in line with other research which has demonstrated that higher levels of assertive strategies are associated with increased levels of psychopathic traits (Goncalves & Campbell, 2014; Jonason et al., 2012; Jonason & Webster, 2012; Semenyna & Honey, 2015).

Hypothesis Two predicted that higher levels of defensive impression management strategies would be associated with decreased levels of affective-interpersonal psychopathic traits and increased levels of lifestyle-antisocial psychopathic traits. However, this could not be explored due to the two domains of psychopathy being collapsed together in the analyses. Nonetheless, it was found that defensive strategies were not significantly predicted by total psychopathic traits, which is consistent with Hare's (2003) theory of psychopathy. Specifically, the defensive tactic of apologising involves acknowledging responsibility as well as asserting remorse or guilt; and both 'irresponsibility' and 'lack of remorse or guilt' are items on the PCL-R.

Hypothesis Three predicted that interpersonal values (agentic and communal) would explain more of the variance in impression management strategies (assertive and defensive) beyond psychopathic traits (affective-interpersonal and lifestyle-antisocial). This hypothesis was not confirmed, as neither agentic nor communal values significantly predicted assertive or defensive strategies, with only psychopathic traits predicting assertive strategies. These findings are inconsistent with research in other fields which has indicated that values can explain variance in social behaviour over personality traits (Hilbig et al., 2013; Marcus & Roy, 2017; Pohling et al., 2016) and will be considered further in sections *4.2.* and *4.3.*

3. Study Two

The findings from the MSU sample indicated that the affective-interpersonal and lifestyle-antisocial trait domains of psychopathy were highly correlated. This was unexpected based on previous literature which has demonstrated that psychopathy is comprised of two distinguishable trait dimensions (Fowles & Dindo, 2006; Hare 1991, 2003; Harpur et al., 1989; Hicks & Patrick, 2006; Porter & Woodworth, 2006). Additionally, a considerable proportion (79.40%) of the MSU sample had mental illness diagnoses, which may have confounded the findings. It was also expected that the MSU sample would have higher levels of psychopathic traits (Coid et al., 2009; Hare, 1993; Jeandarme et al., 2017) and, as stated previously, one of the aims of the present research was to observe how the relationships between impression management strategies, interpersonal values and psychopathic traits might differ in a sample in which levels of psychopathic traits are likely to be lower. Therefore, Study Two explored the same research questions as were applied in Study One, in a community sample.

3.1. Method

3.1.1. Participants

Demographic information relating to the 236 participants is presented in Table 5. Please see Appendix 14 for examples of reported previous job titles and Appendix 15 for examples of reported medication taken. Regarding the

convictions reported, one participant reported a conviction for carrying an offensive weapon and one participant reported a conviction for football-related aggression. These participants made up 0.80% of the sample, which is slightly lower than the percentage of individuals with a prior conviction for a violent offence among the general population (3.90%; Falk et al., 2014). The participants were included in the analyses, as the aim was for the sample to be as representative of the general population as possible.

In order to recruit participants, the principle investigator advertised the study on Facebook and on an undergraduate university student research participation website. The inclusion and exclusion criteria were the same as those for Study One (see Appendix 7 for details).

The power analysis conducted for Study One (see section *2.1.1.* for details) was applied in this study. Post-hoc power analyses revealed that the study had high power (.99).

3.1.2. Measures

The same measures as in Study One were utilised (see section *2.1.2.*).

For the SPT, a good level of reliability for both subscales was indicated among the sample, α=.92 for the assertive subscale and α=.84 for the defensive subscale. Regarding the SRP 4:SF, the reliability statistics among the sample indicated good reliability (α=.86) for the affective-interpersonal

subscale and acceptable reliability (α=.78) for the lifestyle-antisocial subscale. For the CSIV, a good level of reliability for both subscales was indicated, α=.80 for the agentic subscale and α=.84 for the communal subscale.

3.1.3. Procedure

The study information, consent information, demographic questionnaire, study measures and debrief information were distributed online via Qualtrics. Links to the study were made available via Facebook and an undergraduate university student research participation website for first year psychology students involved in a research participation scheme. Having followed the link, participants were shown the participant information page and provided with the email address of the principle investigator should they have any questions about the study. As in Study One, participants were informed that their answers would be stored anonymously to protect their confidentiality, that they could withdraw from the study at any time without giving a reason, and that they were required to be honest in any answers they chose to give. Participants were then asked to give their informed consent. Following this, as in Study One, participants were asked to provide some basic demographic information (as described in section *2.2.1.*) and complete the three self-report measures (detailed in section *2.1.2.*). As in Study One, demographic information was requested first, followed by the SPT, then the CSIV, and finally the SRP 4:SF. The measures took around 20 minutes to complete. Following the completion of the measures, participants saw a debrief page offering an explanation of the project.

3.2. Results

Descriptive statistics for the sample as a whole are presented in Table 6. Descriptive statistics comparing the participants recruited via Facebook with those recruited via the undergraduate university student research participation website are presented in Table 10. No significant differences were found between the two groups in terms of their scores on the measures.

Table 10

Study Two Descriptive Statistics for the SPT, SRP 4:SF, and the CSIV Scales.

Scale	Facebook Participants Mean (SD)	Undergraduate Participants Mean (SD)	*p* value
SPT			
Assertive Strategies	2.96 (0.74)	2.87 (0.78)	.495
Defensive Strategies	4.02 (0.70)	4.11 (0.78)	.472
SRP 4:SF			
Affective-Interpersonal Traits	23.77 (9.67)	26.11 (9.19)	.121
Lifestyle-Antisocial Traits	23.92 (6.02)	25.53 (7.40)	.163
CSIV			
Agentic Values	-0.25 (0.71)	-0.24 (0.74)	.900
Communal Values	1.53 (0.87)	1.39 (0.87)	.353

Note: p values denote the significance level of difference in means between the two groups of participants for all measures

The zero-order correlations between impression management strategies (assertive and defensive), psychopathic traits (affective-interpersonal and lifestyle-antisocial) and interpersonal values (agentic and communal) variables are presented in Table 11. As in Study One, the positive correlation between assertive and defensive strategies indicated that shared variance between assertive and defensive strategies needed to be controlled for in the regression analyses.

Four cases were excluded from the regression analyses, three due small numbers in the gender categories of 'other' and 'prefer not to say' which prevented coding of dummy variables, and one due to missing data points on the assertive strategies subscale.

In order to determine a) how psychopathic traits relate to impression management strategies, and, b) whether interpersonal values predict impression management strategies over and above psychopathic traits, two hierarchical multiple regressions were carried out in a similar manner to those conducted in Study One. The only differences were that a) gender was entered in the first step to control for possible effects, and, b) affective-interpersonal and lifestyle-antisocial traits were entered in the second step instead of total psychopathic traits, so that Hypotheses One and Two could be tested. While the correlation between affective-interpersonal and lifestyle-antisocial traits was high, it was not above r=.80 and thus not indicative of multicollinearity.

Table 11

Study Two Zero-Order Correlations Between Impression Management, Psychopathy and Interpersonal Values Variables

	Assertive Strategies	Defensive Strategies	Affective-Interpersonal Traits	Lifestyle-Antisocial Traits	Agentic Values	Communal Values
Defensive Strategies	.542***	-				
Affective-Interpersonal Traits	.469***	.046	-			
Lifestyle-Antisocial Traits	.353***	.139*	.696***	-		
Agentic Values	-.003	-.386***	.337***	.176**	-	
Communal Values	-.211**	-.039	-.451***	-.372***	-.108	-

Note: * = p<.05, ** = p<.01, *** = p<.001

Standardised residuals were calculated for both regression models. No cases were found to have an absolute value of more than +/- 3 and less than 5% of the sample were found to have an absolute value of more than +/- 2. Therefore, both regression models were a good fit for the data. The assumption of multivariate normality was met for both regression models, as indicated by the results of Kolmogorov-Smirnov tests that were run on the standardised residuals. The assumption of no multicollinearity was met for both regression models, as demonstrated by the correlation matrices. Furthermore, the assumption of homoscedasticity was met for both regression models, as indicated by the scatter plots of residual versus predicted values.

In the regression predicting assertive strategies (see Table 12), at Step 1, a positive relationship was found between assertive strategies and a) defensive strategies, b) gender, indicating that males use more assertive strategies than females. At Step 2, the model was improved by adding affective-interpersonal and lifestyle-antisocial traits. A positive relationship was found between assertive strategies and affective-interpersonal traits; however, no significant relationship was found between assertive strategies and lifestyle-antisocial traits. Step 3 did not significantly improve the model, indicating that interpersonal values did not explain additional variance in assertive strategies. Therefore, Step 2 was accepted as the final model. This model was significantly better than chance at predicting assertive strategy use ($F(4,231)=57.30$, $p<.001$) and explained 50% of the variance in assertive strategy use. Specifically, higher levels of defensive strategies, male gender,

and higher levels affective-interpersonal traits predicted increased levels of assertive strategies.

Table 12

Study Two Regression Predicting Assertive Impression Management Strategies

Variable	Beta	Sig.	R^2 Change	Sig. F Change
Step 1			.353	<.001
Defensive Strategies	.544	<.001		
Gender	-.251	<.001		
Step 2			.150	<.001
Defensive Strategies	.528	<.001		
Gender	-.120	.016		
Affective-Interpersonal Traits	.443	<.001		
Lifestyle-Antisocial Traits	-.053	.427		
Step 3			.005	.352
Defensive Strategies	.560	<.001		
Gender	-.125	.013		
Affective-Interpersonal Traits	.413	<.001		
Lifestyle-Antisocial Traits	-.050	.452		
Agentic Values	.080	.151		
Communal Values	-.003	.954		

Note: N = 231; For gender, 0=male and 1=female.

In the regression predicting defensive strategies (see Table 13), at Step 1, a positive relationship was found between defensive strategies and assertive strategies; while a negative relationship was found between defensive strategies and gender, indicating that females use more defensive strategies than males. At Step 2, the model was improved by adding affective-interpersonal and lifestyle-antisocial traits. A negative relationship was found between defensive strategies and affective-interpersonal traits, whereas a positive relationship was found between defensive strategies and lifestyle-antisocial traits. At Step 3, the model was improved by adding agentic and communal values. A negative relationship was found between defensive strategies and agentic values, while no significant relationship was found between defensive strategies and communal values. This indicates that agentic values can explain variance in defensive strategies in addition to that explained by psychopathic traits. Therefore, Step 3 was accepted as the final model. This model was significantly better than chance at predicting defensive strategy use ($F(4,231)=33.27$, $p<.001$) and explained 47% of the variance in defensive strategy use. Specifically, higher levels of defensive strategies were predicted by increased levels of assertive strategies, female gender, decreased levels affective-interpersonal traits, increased levels of lifestyle-antisocial traits, and decreased levels of agentic values.

Table 13

Study Two Regression Predicting Defensive Impression Management Strategies

Variable	Beta	Sig.	R^2 Change	Sig. F Change
Step 1			.314	<.001
Assertive Strategies	.577	<.001		
Gender	.160	.005		
Step 2			.055	<.001
Assertive Strategies	.669	<.001		
Gender	.099	.079		
Affective-Interpersonal Traits	-.353	<.001		
Lifestyle-Antisocial Traits	.167	.024		
Step 3			.100	<.001
Assertive Strategies	.603	<.001		
Gender	.109	.037		
Affective-Interpersonal Traits	-.175	.033		
Lifestyle-Antisocial Traits	.135	.049		
Agentic Values	-.343	<.001		
Communal Values	.010	.855		

Note: N = 231; For gender, 0=male and 1=female.

3.3. Discussion

Hypothesis One predicted that higher levels of assertive impression management strategies would be associated with increased levels of psychopathic traits (affective-interpersonal and lifestyle-antisocial). This was partially confirmed, as the association was found for affective-interpersonal

traits, however no significant relationship was observed with lifestyle-antisocial traits. This latter finding was unexpected given that prior research has demonstrated higher levels of assertive strategies to be associated with increased levels of psychopathic traits (Goncalves & Campbell, 2014; Jonason et al., 2012; Jonason & Webster, 2012; Semenyna & Honey, 2015). However, these studies had not separated out the affective-interpersonal and lifestyle-antisocial trait domains of psychopathy. These findings are considered further in section *4.2.*

Hypothesis Two predicted that higher levels of defensive impression management strategies would be associated with decreased levels of affective-interpersonal psychopathic traits and increased levels of lifestyle-antisocial psychopathic traits. This was confirmed by the findings and is in line with the work of Ross and Rausch (2001), in which higher levels of the defensive strategy of self-handicapping were related to increased levels of lifestyle-antisocial traits and decreased levels of affective-interpersonal traits.

Hypothesis Three predicted that interpersonal values (agentic and communal) would explain additional variance in impression management strategies (assertive and defensive) over psychopathic traits (affective-interpersonal and lifestyle-antisocial). This hypothesis was not confirmed, as neither agentic nor communal values significantly predicted assertive strategies. Furthermore, communal values did not significantly predict defensive strategies. These findings were not in line with prior research which has shown values to explain variance in social behaviour over and above personality traits (Hilbig et al.,

2013; Marcus & Roy, 2017; Pohling et al., 2016). However, decreased levels of agentic values were associated with increased levels of defensive strategies, in addition to psychopathic traits. These findings are discussed further in sections *4.2.* and *4.3.*

4. General Discussion

4.1. Summary of Key Findings

Among the MSU sample, higher levels of assertive impression management strategies were associated with increased levels of psychopathic traits overall. However, total psychopathic traits did not significantly predict use of defensive impression management strategies, and interpersonal values (agentic and communal) did not significantly predict use of either assertive or defensive impression management strategies. Within the community sample, higher levels of assertive impression management strategies were associated with increased levels of affective-interpersonal psychopathic traits. However, neither lifestyle-antisocial psychopathic traits nor interpersonal values (agentic and communal) significantly predicted use of assertive impression management strategies. Higher levels of defensive impression management strategies were associated with increased levels of lifestyle-antisocial psychopathic traits and decreased levels of affective-interpersonal psychopathic traits. Decreased levels of agentic values were also associated with increased levels of defensive impression management strategies,

independently of psychopathic traits. However, communal values did not significantly predict defensive impression management strategies.

4.2. Predicting Assertive Impression Management Strategies

The findings from the MSU sample indicated that higher levels of assertive strategies were associated with increased levels of psychopathic traits. However, this finding was only a trend towards significance, possibly due to the study being underpowered. Furthermore, the findings from the community sample demonstrated that higher levels of assertive strategies were associated with increased levels of affective-interpersonal traits. Together, these findings suggest that psychopathic traits can explain some of the variance in assertive strategies. These observations have not been reported previously in the literature; however they are consistent with prior reports of assertive strategies being related to psychopathic traits in community samples (Goncalves & Campbell, 2014; Jonason et al., 2012; Jonason & Webster, 2012; Semenyna & Honey, 2015). Additionally, Hare's (2003) conceptualisation of psychopathy includes affective-interpersonal traits such as a grandiose sense of self-worth and callousness, and it seems plausible that these are conducive to assertive strategies such as self-enhancement and intimidation.

In the community sample, use of assertive strategies was not significantly predicted by lifestyle-antisocial traits. Certainly, lifestyle-antisocial traits such as a lack of behavioural control and the absence of long-term goals (Hare,

2003) are not consistent with strategies focused on establishing or developing a positive image of the self. It was surprising that the pattern of relationships found in the community sample between affective-interpersonal traits, lifestyle-antisocial traits, and assertive strategies, was not found within the MSU sample. However, in Study One, relationships with psychopathic traits were examined as a whole due to concerns regarding multicollinearity between affective-interpersonal and lifestyle-antisocial traits. It could be that affective-interpersonal and lifestyle-antisocial traits are more likely to co-occur among this group because they are linked to a higher probability of serious offending (Kosson, Lorenz & Newman, 2006). Future research could explore whether the patterns of relationships observed between assertive strategies, affective-interpersonal traits and lifestyle-antisocial traits within the community sample are seen among individuals from low secure units and Category C prisons. This is because individuals within such services are considered to present with a lower level of risk and tend to have committed crimes of a lesser severity (Crichton, 2009; Criminal Justice System, 2009; Kennedy, 2002); hence affective-interpersonal and lifestyle-antisocial traits may not co-occur among this group.

In both studies, neither agentic nor communal values were found to significantly predict use of assertive strategies when added to the model. Therefore, it appears that interpersonal values do not explain a significant amount of variance in assertive strategies beyond psychopathic traits. With regard to communal values, the findings are consistent with previous research which has demonstrated no significant relationship between assertive

strategies and communion (Abele et al., 2016). This may be because individuals who possess values such as warmth, friendship and honesty are not motivated to misrepresent themselves to others (Abele et al., 2016). Alternatively, the lack of a significant relationship between communal values and assertive strategies could be because people with these values use some assertive strategies but not others. For instance, they may use ingratiation, in order to initiate likeability from others, but not blasting, which involves putting others down.

Considering the findings regarding agentic values, Abele and collaborators (2016) linked agency to impression management strategies such as declaring one's competence and fearlessness, which are similar to the assertive strategy of enhancement (Lee et al., 1999). The difference in findings may be accounted for by the fact that, rather than exploring relationships with agency (which is a personality trait), the current research explored relationships with agentic values. It could be that individuals who value ambition and competence use more subtle forms of impression management, so as not to make their desire for self-enhancement so transparent to others or to avoid coming across as false. Conversely, those who are by nature ambitious and competent may take a less considered approach. Future research could seek to clarify these conjectures by exploring the relationships between agentic values, agency, and assertive strategies.

The relationships described above are also at odds with the literature suggesting that values can explain variance in social behaviour beyond

personality traits (Hilbig et al., 2013; Marcus & Roy, 2017; Pohling et al., 2016). It could be that this pattern of relationships only applies to certain social behaviours, personality traits and values; whereas in other instances values are less important in explaining behaviour. Certainly, from a theoretical perspective, that valuing achievement or the absence of valuing friendship does not significantly predict strategies including intimidation, beyond traits such as callousness, is perhaps unsurprising. Furthermore, perhaps, rather than interpersonal values, personality factors such as fear of negative evaluation (Lee et al., 1999) and self-esteem (Baumeister, 2006), in addition to psychopathic traits, are more important in explaining variance in assertive strategies. Future research could focus on assessing the independent contributions of these personality factors in accounting for assertive strategy use.

4.3. Predicting Defensive Impression Management Strategies

The findings from the MSU sample indicated that defensive strategies were not significantly predicted by psychopathic traits. Among the community sample, higher levels of defensive strategies were associated with increased levels of lifestyle-antisocial traits and decreased levels of affective-interpersonal traits. The findings within the community sample are consistent with other work demonstrating that higher levels of defensive strategies are associated with increased levels of lifestyle-antisocial traits and decreased levels of affective-interpersonal traits (Ross & Rausch, 2001). Moreover, it seems theoretically plausible that increased levels of affective-interpersonal

traits such as callousness and a lack of remorse or guilt would be related to decreased levels of defensive strategies such as apologising, given that apologising involves the assertion of remorse or guilt (Friedman, 2006), and offering justifications, as this implies concern regarding others' reactions (Heritage, 1984). Furthermore, lifestyle-antisocial traits include criminal versatility and juvenile delinquency (Hare, 2003), and it follows that these traits might lead to defensive strategies (the purpose of which are to rescue one's image once it has been damaged) such as making excuses and offering justifications for one's behaviour. Indeed, the tendency to make excuses and offer justifications has been reported by individuals before and after engaging in criminal acts including digital piracy (Higgins, Wolfe & Marcum, 2012), white-collar crime (Stadler & Benson, 2012), drug crime (Sandberg, 2010) and property crime (Shigihara, 2013).

Additional research is warranted in order to explore the nature of the relationships between affective-interpersonal traits, lifestyle-antisocial traits and defensive strategies, in an MSU sample. It could be that neither affective-interpersonal nor lifestyle-antisocial traits significantly predict defensive strategy use among this group. Higher levels of affective-interpersonal traits and lifestyle-antisocial traits were observed among the MSU sample compared to the community sample (see Table 6). Perhaps individuals who are higher in affective-interpersonal traits, despite lacking remorse, sometimes use defensive strategies such as apologising for the purposes of interpersonal manipulation, which is a core feature of this trait domain (Hare, 2003). Additionally, higher levels of lifestyle-antisocial traits are related to

increased rates of violent crimes such as murder and sexual assault (Yu, Geddes & Fazel, 2012), both of which were reported by participants within the MSU sample. Given the severity of such crimes, it could be that individuals with higher levels of lifestyle-antisocial traits are less motivated to offer justifications than has been observed with crimes of a lesser severity (Higgins et al., 2012; Sandberg, 2010; Shigihara, 2013; Stadler & Benson, 2012). Taken together, these conjectures may explain why defensive strategies were not significantly predicted by total psychopathic traits among the MSU sample. Moreover, psychotic disorders were reported by 44% of the MSU sample, and variance in defensive strategies may be explained by psychotic disorders (Hassan et al., 2014). Therefore, it could also be that defensive strategies were not significantly predicted by psychopathic traits among the MSU sample, as psychotic disorders had a greater effect on defensive strategy use.

In both studies, communal values did not significantly predict use of defensive strategies, suggesting that communal values do not explain a significant amount of variance in defensive strategies beyond psychopathic traits. This finding was congruent with prior research which has indicated no significant association between communion and defensive strategies (Abele et al., 2016), and, as mentioned previously, may be because those who value communion are not motivated to distort their impressions of the self. An alternative explanation could be that individuals who value their relationships with others use only some defensive strategies. For example, they may offer apologies, as apologising implies concern for others (Filippini, 2005) and may help to preserve relationships (Cavanagh, Dobash, Dobash & Lewis, 2001),

but they may not offer excuses, as this involves denial of responsibility which tends not be looked upon favourably by others (Schlenker, 1980; Shaw, Wild & Colquitt, 2003).

Among the MSU sample, agentic values did not explain a significant amount of variance in defensive strategy use in addition to that explained by psychopathic traits. However, within the community sample, increased levels of defensive strategies were associated with lower levels of agentic values, after controlling for the effects of psychopathic traits. Previous research has indicated that agency is not significantly associated with strategies such as denying a negative action towards others (Abele et al., 2016). However, low-power individuals in the workplace have been observed to apologise more than powerful individuals (Morand, 2000), more intensified apologies have been observed when addressing an individual more dominant than the speaker among university students (Afghari, 2007), and apologies are more expected from subordinates than they are from managers in the workplace (Walfisch, Dijk, & Kark, 2013). These findings suggest that lower levels of agency are indeed related to increased use of defensive strategies; and are consistent with the observation that lower levels of agentic values were associated with increased use of defensive strategies within the community sample. That this relationship was not found among the MSU sample may be because levels of affective-interpersonal traits were significantly higher in this group. Increased levels of callousness and a lack of remorse among individuals in the MSU sample may mean that they are less likely to apologise, despite not valuing power and status.

The finding that, in the community sample, higher levels of defensive strategies are associated with decreased levels of agentic values, independently of psychopathic traits, is consistent with other research demonstrating that values can explain variance in social behaviour over and above personality traits. For instance, Pohling and colleagues (2016) found that personal values can explain variance in ethical behavior over and above empathy. Furthermore, it seems plausible that when people are empathic and honest (that is, when levels of psychopathic traits are low), valuing submissiveness may explain additional variance in how apologetic one is.

4.4. Overall Findings Regarding Predictors of Impression Management Strategies

In terms of assertive impression management strategies, the findings presented in the current paper demonstrated that, within both the MSU sample and the community sample, higher levels of psychopathic traits were associated with increased use of assertive impression management strategies. Among the community sample, it was shown that this relationship concerned the affective-interpersonal trait domain of psychopathy. The role of affective-interpersonal psychopathic traits could not be examined within the MSU sample due to concerns regarding multicollinearity between the two traits domains of psychopathy, possibly because they tend to co-occur within this group. Future research could seek to clarify how psychopathic traits relate to assertive impression management among other offender populations.

Moreover, interpersonal values (agentic and communal) did not explain a significant amount of variance in use of assertive impression management strategies in either study. It could be that personality factors such as fear of negative evaluation, self-esteem and psychopathy, are more important than values in explaining assertive impression management. Therefore, future research should focus on establishing the relative contributions of the aforementioned personality factors in explaining assertive impression management strategies.

With regard to defensive impression management strategies, the picture was more complex. Among the MSU sample, neither psychopathic traits nor interpersonal values were significant predictors of defensive impression management strategies. On the other hand, within the community sample, higher levels of lifestyle-antisocial psychopathic traits, lower levels of affective-interpersonal psychopathic traits and lower levels of agentic values were associated with increased use of defensive impression management strategies. The differences in findings may have been the result of differences in levels of psychopathic traits, as the MSU sample had significantly higher levels overall. Higher levels of psychopathy may have resulted in these individuals using defensive impression management strategies less consistently and for different purposes, such as to manipulate others. Alternatively, it could be that psychotic disorders, the rates of which were also higher among the MSU sample, were more important in explaining variance in defensive impression management strategies than psychopathic traits or interpersonal values. Future research comparing individuals high and low in

psychopathic traits, and individuals with and without a diagnosis of psychotic disorder, would be important in clarifying the source, or sources, of these observed differences.

4.5. Implications

The present research has several important implications. With regard to theoretical implications, the findings could help to broaden understanding of the psychopathic personality as well as to define it, which is important given that there are a number of conflicting conceptualisations of psychopathy throughout the literature (Gao & Raine, 2010; Skeem, Polaschek, Patrick, Lilienfeld, 2011). For instance, in demonstrating how psychopathic traits relate to impression management strategies, the findings provide information about the social behaviours expected to occur in individuals with psychopathic traits. The present studies have also demonstrated that psychopathy appears to manifest in varying ways depending on the setting. Among the community sample, while a large correlation was observed between the affective-interpersonal and lifestyle-antisocial trait domains of psychopathy (see Table 11), it was not large enough to be considered indicative of multicollinearity, as was the case within the MSU sample (see Table 7). This latter finding was unexpected, given that evidence from factor analytic and correlational research suggests psychopathy is comprised of two distinguishable trait dimensions (Fowles & Dindo, 2006; Hare, 1991, 2003; Harpur et al., 1989; Hicks & Patrick, 2006; Porter & Woodworth, 2006). As discussed in section *4.2.*, one explanation could be that when the two trait domains co-occur within

an individual, that person is more likely to commit crimes of a greater severity; hence their chances of becoming incarcerated or detained in an MSU are higher. Indeed, individuals high on both affective-interpersonal and lifestyle-antisocial traits are more likely to commit serious crimes such as murder and sexual assault, than those who are high on only lifestyle-antisocial traits (Kosson et al., 2006). Further research clarifying the presentation of psychopathy and how this relates to offending behaviour is warranted in order to test this hypothesis.

The present research revealed that the way in which psychopathic traits relate to impression management strategies, particularly defensive impression management strategies, differed between the two samples. It has been suggested in the current research that these differences may at least in part be due to levels of psychopathy being higher among the MSU sample. This raises the question of whether the motives behind use of impression management strategies might differ depending on levels of psychopathy. Impression management theory states that individuals use impression management tactics in order to present themselves in the way that they wish to be viewed by others (Goffman, 1959). It could be that, among individuals who are lower in psychopathic traits, impression management strategies are used more because they want to be liked, whereas among those who are higher in psychopathic traits, impression management is used more in order to gain control or satisfy one’s own needs. Indeed, according to Hare (1993), individuals with psychopathic traits use charm in order to manipulate others and satisfy their needs, rather than because they are motivated to form

meaningful relationships. Moreover, the finding that levels of communal values were significantly lower among the MSU sample than among the community sample (see Table 6) suggests that individuals among the MSU sample may care less about interpersonal relationships. Therefore, it seems that these individuals, who were higher in psychopathic traits, are unlikely to be managing their reputations for the sake of being liked by others. Future research should focus on establishing the motives behind the use of impression management strategies in individuals high and low in psychopathic traits.

The findings also highlight that values and personality traits can jointly influence behaviour, but that this may not be the case among all individuals and may depend on the types of values, personality traits and behaviours. These findings are important because research into the roles of values and personality traits in determining behaviour has been noted to be lacking, and if better understood this could enable a more integrative view of the person (Parks & Guay, 2009; Parks-Leduc, Feldman & Bardi, 2015).

The findings could also have important clinical implications for those working with individuals with psychopathic traits. For example, knowledge of the impression management strategies associated with psychopathic traits could help to improve clinicians' understanding of difficulties as they arise in the therapeutic relationship. Furthermore, evidence of this association could lead to the development of interventions to target some of the more problematic impression management behaviours, such as intimidation and blasting.

4.6. Limitations

The present research was not without its limitations. Firstly, not all of the variance in impression management strategies could be explained by psychopathic traits and interpersonal values. The findings raise important questions regarding which other variables may be influencing impression management. Other research suggests that social anxiety, low self-esteem, psychotic disorder and depression may impact the use of impression management strategies (Baumeister, 2006; Burke & Ruppel, 2015; Hassan et al., 2014; Leary & Allen, 2011; Weary, 1988; Westerbeek et al., 2014). Psychotic disorder was reported by 44% of the MSU sample, depression was reported by 11% of the community sample and 5.8% of the MSU sample, and anxiety was reported by 9.7% of the community sample; however, the effects of these variables on impression management strategies were not explored. Therefore, future research could focus on assessing the contributions of interpersonal values and psychopathic traits, as in the present studies, but also social anxiety, self-esteem, psychotic disorder and depression, in explaining impression management.

With regard to Study One, only 34 individuals were recruited despite the power analysis indicating that 40 participants would be needed. Therefore, the study may have lacked power to detect associations. Additional research with a larger sample size is thus warranted in order to clarify the nature of the

relationships between impression management strategies, psychopathic traits, and interpersonal values, within an MSU sample.

A further issue was that a number of the participants in the MSU sample had mental illnesses for which they were receiving high doses of anti-psychotic medication, a known side effect of which is sedation (Leucht et al., 2013). This could have negatively impacted the attention and concentration of participants, thus confounding the findings.

Additional limitations concerned the impact of gender. All participants in Study One were male, thus one cannot assume that the same pattern of findings would be observed in a female MSU population. Conversely, the majority of the participants in Study Two were female, and therefore the findings may not generalise to the male community population. Hence, this field of research would benefit from the present studies being repeated with MSU and community samples that are more balanced with regard to gender in order to ensure generalisability. Furthermore, one cannot be sure that the differences in findings between the two samples are not the result of the MSU sample being entirely male and the community sample being predominantly (84.3%) female, although the effects of gender were controlled for in the analyses for the community study. Future research could focus on exploring how the relationships between impression management strategies, interpersonal values and psychopathic traits differ in females compared to males.

4.7. Conclusions

The findings from the current research have demonstrated that higher levels of psychopathic traits are associated with increased levels of assertive impression management strategies. The outcomes of the community study showed that this relationship concerned the affective-interpersonal trait domain of psychopathy; however, the extent to which this finding generalises to offender populations is unclear. Interpersonal values (agentic and communal) were not found to predict use of assertive impression management in either study. Furthermore, among the MSU sample, neither psychopathic traits nor interpersonal values predicted use of defensive impression management strategies; whereas within the community sample, higher levels of lifestyle-antisocial psychopathic traits, lower levels of affective-interpersonal psychopathic traits, and lower levels of agentic values were related to increased levels of defensive impression management strategies. It has been hypothesized that the differences in findings may be because individuals within the MSU sample had higher levels of psychopathic traits, and thus used defensive impression management strategies less consistently and for different purposes, such as to manipulate others and gain control. The MSU sample also had higher rates of psychotic disorders, which may have had a greater influence on use of defensive impression management. Future research should involve conducting a high-powered study directly comparing individuals high and low in psychopathy, and with and without a diagnosis of psychotic illness, in order to clarify the sources of the differences observed in the present studies.

Integration, Impact and Dissemination Summary

1. Integration

1.1. Integration of Findings from the Systematic Review and the Empirical Studies

The overall purpose of the thesis was to further understanding with regard to the relational precursors and outcomes of psychopathic traits; hence relationships with attachment styles and impression management strategies were explored. Attachment styles are thought to develop during the first year of life (Bowlby, 1958) and it has been theorised that they are likely to have a role in the development of psychopathic traits (Conradi et al., 2016). Furthermore, it seems plausible that psychopathic traits may influence how individuals choose to present themselves to others.

Taken together, the findings from the systematic review indicated that an avoidant attachment style is associated with affective-interpersonal psychopathic traits; which, according to the empirical studies, seem to be associated with an assertive style of impression management, at least among the community sample. In theory, it seems possible that an avoidance of intimacy could be conducive to a callous and unemotional interpersonal style, which might in turn lead to displays of intimidation and blasting. Furthermore,

the findings from the systematic review indicated that an anxious attachment style is associated with lifestyle-antisocial psychopathic traits; which, the results from the community study suggested, appear to be associated with a defensive style of impression management. It could be that individuals who have a tendency to experience suspiciousness, anger and impulsivity in relationships may have poor control over their behaviour, leading to an increased need for justifications and excuses.

Attachment styles may also be directly related to impression management strategies. For instance, research suggests that individuals with an avoidant attachment style tend to hide their vulnerabilities and flaws and inflate their self-image in the eyes of close others, in order to convince them of the avoidant person's strength and self-sufficiency (Mikulincer, 1998; Shaver & Mikulincer, 2004). These findings imply that individuals high in attachment avoidance, in an attempt to appear self-reliant, may demonstrate assertive impression management tactics such as enhancement and exemplification. It is not clear what the role of interpersonal values in these relationships would be. However, the empirical research demonstrated that decreased levels of agentic values were associated with a more defensive style of impression management among the community sample. It could be that attachment style also influences impression management via one's interpersonal values. For example, anxiously attached individuals with a more dependent interpersonal style as a result may not value power and status, leading to defensive impression management strategies such as self-handicapping.

Unfortunately, the proposed relationships outlined above are merely speculative; given that none were explored within a single study and neither the studies included in the systematic review nor the empirical research had a longitudinal design. In order to develop understanding of manner in which these factors inter-relate, future research could focus on tracking the nature of the associations from infancy, when attachment styles first develop, through to adulthood, between attachment styles, interpersonal values, psychopathic traits, and impression management strategies.

1.2. Challenges of the Systematic Review

The principle challenge of conducting the systematic review concerned the synthesis of the findings. The included studies utilised a variety of measures based on different underlying models of psychopathy. Therefore, in order to provide an overview of the findings, they were grouped together into two broad trait domains: affective-interpersonal and lifestyle-antisocial psychopathic traits. However, the disadvantage of this was that smaller trait domains appeared to differ in their relationships with attachment styles, yet this was not fully explored. The implication of this was that the overall conclusions formed regarding the relationships between psychopathic traits and attachment styles failed to capture the true complexity of these relationships. Should a similar such review be repeated in the future, more accurate conclusions could be drawn if models of psychopathy were considered separately as this would enable trait domains to be examined more precisely.

1.3. Challenges of the Empirical Studies

1.3.1. Recruitment of Participants for the MSU Study

Developing and conducting the empirical studies entailed a number of challenges. The process of recruitment of the MSU sample transpired to be particularly demanding. In order to recruit individuals into the study I needed clinicians responsible for their care to a) give approval for their involvement, b) speak with them about the study, and, c) contact me with the names of those individuals interesting in participating. This proved to be more time-consuming than was initially anticipated due to considerable time pressures on staff and several changes in staffing which occurred during the timeline of the project. Furthermore, I had to approach individuals who had expressed an interest in participating, provide them with information regarding the study, and find an appropriate time to meet with them in order for them to participate. This was also a lengthy process due to the busy nature of the wards, the various other commitments of the participants, and the impossibility of contacting participants to re-arrange appointments without attending the unit and speaking to them in person. Moreover, many of the individuals I approached had severe, enduring and complex mental health difficulties, including psychotic illnesses. As such, it was not uncommon for potential participants to experience a relapse or decline in their mental health, meaning that they were no longer able to participate in the study.

As a result of the demands and difficulties experienced with recruitment, only 34 individuals participated in the study despite the power analysis having indicated that 40 participants would be needed. The implication of this was that the study lacked power, which may have prevented the detection of significant effects. If this study were to be replicated in the future, it would be important for the researcher to be aware of the challenges involved in recruitment and factor this into the timeline of the project, such that adequate power could be obtained.

1.3.2. Absence of Service User Involvement

Service user involvement in the designing and undertaking of research within the NHS is considered to be a high priority (National Institute for Health Research, 2010). Involving service users in research is important for ensuring that the methods and outcomes are appropriate and relevant to the research participants and beneficiaries (National Institute for Health Research, 2010; Szmukler, Staley & Kabir, 2011). However, given the personal nature of the content within the measures and the fact that the term ‘psychopathic traits’ was to be substituted for ‘personality traits’ (see section *1.3.4.*), it was agreed with my field supervisor that service users within the MSU study should not be involved in the development of the research. This was unfortunate, as it would have been useful to consult with an individual without a research background, to ensure that a) the aims of the research and data collection methods were presented in a manner that was comprehensible to the participants, b) the procedure was appropriately tailored to their needs, and, c) the focus of the

research was meaningful to them. Efforts were made to consider the research from the perspective of the participants and to adapt the process of data collection accordingly. However, if a similar study were to be conducted in the future, the researcher could consider whether it might be useful to consult with an external service user organisation.

1.3.3. Concerns Regarding Accuracy of the Responses

A number of the participants within the MSU sample had been diagnosed with paranoid schizophrenia, a central feature of which is paranoia (American Psychiatric Association, 2013). This, combined with the fact that I, a stranger, was present during the administration of the self-report questionnaires, could have led to concerns regarding who might have access to their data and thus either desirable or misleading responding. These concerns may have been a particular issue when answering questions such as ‘I like to have sex with people I barely know’ on the SRP 4:SF. However, I ensured always to be seated several metres away from each participant in an effort to minimize concerns around their responses being observed. Furthermore, the participant information sheet clearly detailed the stringent methods that would be undertaken in order to protect participants’ confidentiality, for instance that their responses would be stored under a unique identity number.

A further issue concerned the impact of being detained on the responses provided by participants within the MSU sample. It seems possible that questions within the SPT in particular may have been answered differently

had they not been detained. This is because individuals within secure mental health services are required to demonstrate an absence of risk-related behaviours, co-operate with supervision, and participate in therapeutic activities as conditions of discharge (Her Majesty's Prison and Probation Service, 2017; Royal College of Psychiatrists, 2016). The result of this is that some individuals may present a version of the self that is not entirely authentic, in order to meet the aforementioned conditions. Therefore, the findings from the MSU sample may not be the same as those that would be found were the participants not detained, and may not be generalisable to other mentally unwell offender populations who are not currently detained within a secure unit.

An additional consideration regarding the accuracy of the results pertains to how aware participants in both samples were of their values, traits and behaviours. Research has demonstrated that it is not uncommon for people to lack insight into their personality traits or behaviour (Costa & McCrae, 1992; Vazire & Carlson, 2010). Moreover, individuals may possess values that they are not consciously aware of (Hayes et al., 2012). However, a lack of insight is particularly common amongst individuals with emotional and interpersonal difficulties (Carlson & Oltmanns, 2015; Costa & McCrae, 1992). Therefore, this may have been a significant confound within the MSU study, given that the majority of the participants had diagnoses of mental illnesses and personality disorders. That said, a lack of insight is not a difficulty confined to people with severe mental health concerns (Hayes et al., 2012), and as such

may also have impacted the responses provided by individuals within the community sample.

A further concern was the possibility of a lack of motivation on the part of the participants when completing the self-report measures. Lack of motivation is a symptom of both schizophrenia and depression, the former of which was reported by 26.5% of the participants among the MSU sample and the latter by 5.8% of the participants within the MSU sample and 11% of the participants within the community sample. It seems possible that lack of motivation may have led to the provision of inaccurate responses. Furthermore, the participants within the community sample were not provided with any form of remuneration for their participation and completed the study measures online, hence unobserved. Therefore, it is possible that some of the participants were not motivated to take the study seriously or to respond in a genuine manner. Motivation may also have been an issue among the MSU sample, as although they were offered the incentive of being entered into a prize draw, they were made aware that their chances of winning something were only one in eight. If similar research were to be carried out in the future, it would be important to consider offering payment to participants in exchange for their time. However, the vast majority of participants completed the measures and there were no issues observed with the data.

1.3.4. Ethical Dilemmas

There were a number of ethical dilemmas associated with the work which I found challenging to overcome on a personal level. One such example pertains to the issue of consent, which is a contentious matter within secure mental health services. In these services, clients are detained against their will and are required to demonstrate a reduction in risk as a condition of discharge (Royal College of Psychiatrists, 2016), which necessitates a degree of therapeutic engagement. This raises the question of whether clients are actually consenting to their involvement with mental health services, or are being coerced (Miles, 2016). While it was emphasised to potential participants that their involvement with the study had no bearing on either the care they were receiving or their discharge, I suspect that there may have been concerns that declining to participate would not be looked upon favourably by services. This may have compelled some individuals to participant in the study despite holding reservations. However, considerable efforts were made to reassure all individuals that their decision to participate was entirely voluntary.

A further concern was that the participants within the MSU sample were informed the study was examining ‘personality traits’ rather than ‘psychopathic traits’. While it was not my intention to deceive the participants in any way, it had been agreed with the Westminster NHS Research Ethics Committee and my supervisors that it would not be appropriate to use the term ‘psychopathic’. This is because the label ‘psychopath’ carries with it a significant degree of stigma and provocation (Blais & Forth, 2013; Chauhan, Reppucci & Burnette, 2007; Petrila & Skeem, 2003; Sheehan, Nieweglowski, & Corrigan, 2016).

Furthermore, the purpose of the study was not to diagnose people but to investigate the constituent traits of psychopathy. Nonetheless, I felt uncomfortable with being anything less than completely transparent with the individuals who had chosen to give up their time to assist me with my research.

A further challenge relating to the participants from both studies was the lack of sufficient funds available to reimburse each of them for their time. I recall feeling particularly conflicted about this, given that the outcomes of the studies were not of direct benefit to them.

2. Impact

Psychopathy is thought to occur in around 0.6% of the population in the United Kingdom (Coid et al., 2009) and around 1.2% of the population in the United States (Neumann & Hare, 2008). However, current understanding regarding the aetiology and clinical features of psychopathy is somewhat limited. Therefore, the findings detailed in this work pertaining to the attachment styles and impression management behaviours associated with psychopathic traits may be of interest to a number of parties, including individuals with psychopathic traits, their relatives, healthcare professionals, individuals involved in the development of clinical interventions, and wider society. However, the impact of this work is contingent on future research replicating the findings.

2.1. Improvement in Relationships

In settings such as prisons, secure mental health services and therapeutic communities, the prevalence of psychopathy is thought to be around 15-25% (Kiehl, 2006). Therefore, understanding and awareness of the attachment patterns and impression management strategies associated with psychopathic traits may be particularly important for healthcare professionals, including psychologists, working clinically in these settings. In particular, attachment-related problems such as difficulties tolerating separation or intimacy within the therapeutic relationship between the individual and the psychologist may lead to enactments by both parties. For instance, difficulties tolerating separation may lead to attempts for contact outside of sessions on the part of the individual, which the psychologist may be drawn into. On the other hand, difficulties tolerating intimacy may lead to episodes of aggression on the part of the individual, in order to create some distance within the relationship, which could lead to retaliation on the part of the psychologist. Increased understanding of the meaning of these enactments may lead to changes in the attitudes and behaviours of healthcare professionals, such that they are better able to manage and reflect upon the underlying difficulties with the individual. Similarly, it could be beneficial for individuals with psychopathic traits, their relatives and close others to be aware of the impression management strategies and attachment styles associated with psychopathy, such that relational difficulties can be identified, understood and worked on collaboratively when they arise.

2.2. Improvement in Clinical Interventions

Unfortunately, the success of clinical interventions for psychopathy has thus far been limited, as treatments tend to be focused on risk reduction rather than addressing the core clinical features (Wong & Olver, 2015). This lack of success is a problematic issue given the tendency of individuals with high levels of psychopathic traits to engage in violent offending (Hare, 1999). The findings regarding attachment styles in particular may be important in developing and delivering effective interventions. This is because, as suggested in the systematic review, psychopathic traits may have their roots in attachment insecurities. Therefore, targeting such insecurities could be key in treating psychopathy. If this proves to be the case, it would lead to an improvement in healthcare service provision, benefitting individuals with psychopathic traits and thus wider society.

2.3. Reduction in Stigma

This work has demonstrated that the affective-interpersonal and lifestyle-antisocial dimensions of psychopathy appear to correlate in different ways with attachment patterns, and to some extent with impression management strategies. Thus, the findings are line with the plethora of literature which purports that psychopathy is comprised of two distinct (though related) broad trait dimensions (Fowles & Dindo, 2006; Hare 1991, 2003; Harpur et al., 1989; Hicks & Patrick, 2006; Porter & Woodworth, 2006). Given these findings, one

could argue that it might be more appropriate to consider psychopathy in terms of its constituent traits rather than as a whole. If accepted, this reconceptualization would abolish the practice of assessing for the presence of psychopathy, and thus individuals with psychopathic traits would no longer experience the stigma associated with having this label. Moreover, it could lead to the designing and delivering of clinical interventions that are more appropriately tailored to the specific psychopathic traits with which the individual presents, rather than taking a ‘one size fits all’ approach.

3. Dissemination

In order to disseminate the findings from the current project within the academic community, both the systematic review and the empirical article will be submitted for publication in scientific journals. ‘Personality and Individual Differences’ is a journal that publishes research regarding the structure of personality and the factors which cause individual differences to emerge. Therefore, submissions for publication will be directed to this journal in the first instance. Personality and Individual Differences had an impact factor of 2.005 for the year of 2016 (Clarivate Analytics, 2018). An impact factor of over 2 is indicative of a wide readership and thus it is hoped that individuals involved in the development and delivery of clinical interventions for people with psychopathic traits will also be made aware of the findings through publishing the material.

The findings from the empirical research will also be disseminated to the participants involved in the studies and the healthcare professionals from the MSU (in cases in which an interest has been expressed) via an information sheet. Two information sheets will be developed. One information sheet will provide: a) brief definitions of the relevant variables, b) a summary of the associations found between impression management strategies, psychopathic traits and interpersonal values, and, c) the theoretical and clinical implications of the work. This information sheet will be disseminated to the participants from the community study and the healthcare professionals from the MSU. A further information sheet will be developed for the participants from the MSU, which will be identical to the first other than that the term 'affective-interpersonal psychopathic traits' will be replaced with 'cold-heartedness' and the term 'lifestyle-antisocial psychopathic traits' will be replaced with 'antisocial behaviour'. These substitutions capture the nature of the trait domains of psychopathy whilst also being understandable to a lay-person, and are necessitated given that, as outlined in section *1.3.4.*, participants were not informed that the study concerned psychopathic traits.

4. Conclusion

In conclusion, I enjoyed conducting both the systematic review and the empirical studies and feel that my understanding of scientific research has improved as a result. The meetings with participants within the MSU sample were a particular highlight for me as I have a specific desire to work clinically

with this population and find them to be an interesting, dynamic group of individuals. While the work was not without its challenges, I believe that it was a worthwhile endeavour. I very much hope that the findings from this project will be of interest to the academic community, useful for clinicians, and ultimately will be of benefit to the clinical population this research concerns, their families, and wider society.

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Appendix 1

Quality Assessment Tool For Quantitative Studies

Component Ratings

A) Selection Bias

(Q1) Are the individuals selected to participate in the study likely to be representative of the target population?

. 1 Very likely □

. 2 Somewhat likely □

. 3 Not likely □

. 4 Can't tell □

(Q2) What percentage of selected individuals agreed to participate?

. 1 80 - 100% agreement □

. 2 60 – 79% agreement □

. 3 less than 60% agreement □

. 4 Not applicable □

. 5 Can't tell □

Rate this section:	Strong	Moderate	Weak
	1	2	3

B) Confounders

The following are examples of confounders:

. 1 Ethnicity

. 2 Gender

. 3 Age

. 4 Shared variance with other facets of psychopathy

. 5 Shared variance with other facets of attachment

(Q1) Indicate the percentage of relevant confounders that were controlled (either in the design or analysis)?

. 1 80 – 100% (most)

. 2 60 – 79% (some)

. 3 Less than 60% (few or none)

. 4 Can't Tell

Rate this section:	Strong	Moderate	Weak
	1	2	3

C) Blinding

(Q1) Were the study participants aware of the research question?

. 1 Yes

. 2 No

. 3 Can't tell

Rate this section:	Strong	Moderate	Weak
	1	2	3

D) Data Collection Methods

(Q1) Were data collection tools shown to be valid?

. 1 Yes □

. 2 No □

. 3 Can't tell □

(Q2) Were data collection tools shown to be reliable?

. 1 Yes □

. 2 No □

. 3 Can't tell □

Rate this section:	Strong	Moderate	Weak
	1	2	3

Global Rating Component Ratings

A) Selection Bias			
	Strong	Moderate	Weak
	1	2	3
B) Confounders			
	Strong	Moderate	Weak
	1	2	3
C) Blinding			
	Strong	Moderate	Weak

	1	2	3
D)	Data Collection Method		
	Strong	Moderate	Weak
	1	2	3

Global rating for this paper (circle one):

1) Strong □ (no weak ratings)□
2) Moderate (one weak rating)□
3) Weak □ (two or more weak ratings)

Appendix 2

Previous Job Titles Reported by the MSU Sample (Study One)

Administrator

Apprentice

Electrician

Barman

Biomedical Scientist

Builder (Plasterer)

Caretaker

Cashier

Chef

Cleaner

Clerk

Deliverer of washing machines

Fitness Instructor

Gardener

Job Centre Plus Security Guard

Labourer

Loft Converter

Mathematics Teacher

Cafe Team Leader

Parking Tender

Printing Assistant

Royal Mail Sorting Operative

Sales Person

Ward Cleaner

Wing Cleaner

Worked at a fish company

Zoo Keeper

Appendix 3

Medications Reportedly Taken by the MSU Sample (Study One)

Amisulpride

Aripiprazole

Carbamazepine

Citalopram

Clopixol

Clozapine

Depakote

Haloperidol

Levothyroxine

Lithium

Melperone

Olanzapine

Procyclidine

Propranolol

Quetiapine

Risperidone

Sodium Valproate

Venlafaxine

Zopiclone

Zuclopenthixol

Appendix 4

Criminal Convictions Reported by the MSU Sample (Study One)

Actual Bodily Harm

Armed Robbery

Arson

Assault

Blades

Breach of Licence

Burglary

Burglary and Attempted Robbery with Violence

Car Offence

Criminal Damage

Deception

Drink Driving

Driving without a licence

Drugs

Exposure

Firearms

Fraud

Grievous Bodily Harm

Grievous Bodily Harm Section 18

Harassment

Indecent Exposure

Knifepoint Robbery

Manslaughter

Murder

Rape

Robbery

Sexual Offence

Possession of a bladed article

Prolific Priority Offender since age 14

Theft

Threats to kill

Trespassing

Violence

Violence against a person

Wielding an offensive weapon in a public space

Appendix 5

Letter of Ethical Approval from the Westminster NHS Research Ethics Committee for Study One

Health Research Authority

London - Westminster Research Ethics Committee
4 Minshull Street
Manchester
M1 3DZ

Telephone: 0207 104 8004

Please note: This is an acknowledgement letter from the REC only and does not allow you to start your study at NHS sites in England until you receive HRA Approval

16 August 2017

Miss Elinor Doris
Trainee Clinical Psychologist
Camden and Islington NHS Foundation Trust
Department of Clinical Psychology
Royal Holloway, University of London
Egham Hill, Egham
TW20 0EX

Scale document down

Dear Miss Doris

Study title: **The Social Values and Impression Management Strategies Associated with Psychopathic Traits**
REC reference: **17/LO/0988**
IRAS project ID: **225716**

Thank you for your letter of 11th July 2017. I can confirm the REC has received the documents listed below and that these comply with the approval conditions detailed in our letter dated 10 July 2017

Documents received

The documents received were as follows:

Document	*Version*	*Date*
Covering letter on headed paper [Covering Letter]	2	11 July 2017
Participant consent form [Participant Consent Form]	2	11 July 2017
Participant information sheet (PIS) [Participant Information Sheet]	2	11 July 2017

Approved documents

The final list of approved documentation for the study is therefore as follows:

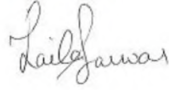
Document	*Version*	*Date*
Covering letter on headed paper [Covering Letter]		26 May 2017
Covering letter on headed paper [Covering Letter]	2	11 July 2017
Evidence of Sponsor insurance or indemnity (non NHS Sponsors only) [Indemnity of Professional Liability]		01 August 2016
IRAS Application Form [IRAS_Form_26052017]		26 May 2017
Other [Debrief Letter]	1	02 June 2017
Other [Demographic Questionnaire]	1	02 June 2017
Participant consent form [Participant Consent Form]	2	11 July 2017
Participant information sheet (PIS) [Participant Information Sheet]	2	11 July 2017
Referee's report or other scientific critique report [Response to Feedback 1]		
Referee's report or other scientific critique report [Feedback to Proposal 2 and Response 2]		30 January 2017
Referee's report or other scientific critique report [Feedback on Proposal 1]		09 December 2016
Research protocol or project proposal [Research Project Proposal]	1	02 June 2017
Summary CV for Chief Investigator (CI) [Summary CV for Chief Investigator (CI)]		
Summary CV for supervisor (student research) [Dr Dawn Watling CV]		
Summary CV for supervisor (student research) [Dr Eilidh Cage CV]		
Validated questionnaire [Self Presentation Tactics Scale]		
Validated questionnaire [Circumplex Scale of Interpersonal Values]		
Validated questionnaire [SRP-4]		

You should ensure that the sponsor has a copy of the final documentation for the study. It is the sponsor's responsibility to ensure that the documentation is made available to R&D offices at all

participating sites.

17/LO/0988	Please quote this number on all correspondence

Yours sincerely



Laila Sarwar
REC Assistant

E-mail: nrescommittee.london-westminster@nhs.net

Copy to: Mrs Annette Lock, Royal Holloway, University of London
Ms Mabel Saili, Noclor

Appendix 6

Letter of Ethical Approval from the Health Research Authority for Study One

Health Research Authority

Miss Elinor Doris
Trainee Clinical Psychologist
Camden and Islington NHS Foundation Trust
Department of Clinical Psychology
Royal Holloway, University of London
Egham Hill, Egham
TW20 0EX

Email: hra.approval@nhs.net

17 August 2017

Dear Miss Doris

Letter of HRA Approval

Study title:	**The Social Values and Impression Management Strategies Associated with Psychopathic Traits**
IRAS project ID:	**225716**
REC reference:	**17/LO/0988**
Sponsor	**Royal Holloway, University of London**

I am pleased to confirm that **HRA Approval** has been given for the above referenced study, on the basis described in the application form, protocol, supporting documentation and any clarifications noted in this letter.

Participation of NHS Organisations in England

The sponsor should now provide a copy of this letter to all participating NHS organisations in England.

Appendix B provides important information for sponsors and participating NHS organisations in England for arranging and confirming capacity and capability. **Please read *Appendix B* carefully**, in particular the following sections:

- *Participating NHS organisations in England* – this clarifies the types of participating organisations in the study and whether or not all organisations will be undertaking the same activities
- *Confirmation of capacity and capability* - this confirms whether or not each type of participating NHS organisation in England is expected to give formal confirmation of capacity and capability. Where formal confirmation is not expected, the section also provides details on the time limit given to participating organisations to opt out of the study, or request additional time, before their participation is assumed.
- *Allocation of responsibilities and rights are agreed and documented (4.1 of HRA assessment criteria)* - this provides detail on the form of agreement to be used in the study to confirm capacity and capability, where applicable.

Further information on funding, HR processes, and compliance with HRA criteria and standards is also provided.

IRAS project ID	225716

It is critical that you involve both the research management function (e.g. R&D office) supporting each organisation and the local research team (where there is one) in setting up your study. Contact details and further information about working with the research management function for each organisation can be accessed from www.hra.nhs.uk/hra-approval.

Appendices

The HRA Approval letter contains the following appendices:

- A – List of documents reviewed during HRA assessment
- B – Summary of HRA assessment

After HRA Approval

The document *"After Ethical Review – guidance for sponsors and investigators"*, issued with your REC favourable opinion, gives detailed guidance on reporting expectations for studies, including:

- Registration of research
- Notifying amendments
- Notifying the end of the study

The HRA website also provides guidance on these topics, and is updated in the light of changes in reporting expectations or procedures.

In addition to the guidance in the above, please note the following:

- HRA Approval applies for the duration of your REC favourable opinion, unless otherwise notified in writing by the HRA.
- Substantial amendments should be submitted directly to the Research Ethics Committee, as detailed in the *After Ethical Review* document. Non-substantial amendments should be

- submitted for review by the HRA using the form provided on the HRA website, and emailed to hra.amendments@nhs.net.
- The HRA will categorise amendments (substantial and non-substantial) and issue confirmation of continued HRA Approval. Further details can be found on the HRA website.

Scope

HRA Approval provides an approval for research involving patients or staff in NHS organisations in England.

If your study involves NHS organisations in other countries in the UK, please contact the relevant national coordinating functions for support and advice. Further information can be found at http://www.hra.nhs.uk/resources/applying-for-reviews/nhs-hsc-rd-review/.

If there are participating non-NHS organisations, local agreement should be obtained in accordance with the procedures of the local participating non-NHS organisation.

User Feedback

The Health Research Authority is continually striving to provide a high quality service to all applicants and sponsors. You are invited to give your view of the service you have received and the application

procedure. If you wish to make your views known please use the feedback form available on the HRA website: http://www.hra.nhs.uk/about-the-hra/governance/quality-assurance/.

HRA Training

We are pleased to welcome researchers and research management staff at our training days – see details at http://www.hra.nhs.uk/hra-training/

Your IRAS project ID is **225716**. Please quote this on all correspondence.

Yours sincerely,

Natalie Wilson
Assessor

Email: hra.approval@nhs.net

Copy to: *Mrs Annette Lock, Royal Holloway, University of London, Sponsor contact*
Ms Mabel Saili, Noclor, Lead NHS R&D contact

IRAS project ID	225716

Appendix A - List of Documents

The final document set assessed and approved by HRA Approval is listed below.

Document	*Version*	*Date*
Covering letter on headed paper [Covering Letter]		26 May 2017
Covering letter on headed paper [Covering Letter]	2	11 July 2017
Evidence of Sponsor insurance or indemnity (non NHS Sponsors only) [Indemnity of Professional Liability]		01 August 2016
HRA Schedule of Events	2	17 August 2017
HRA Statement of Activities	2	17 August 2017
IRAS Application Form [IRAS_Form_26052017]		26 May 2017
Other [Debrief Letter]	1	02 June 2017
Other [Demographic Questionnaire]	1	02 June 2017
Participant consent form [Participant Consent Form]	2	11 July 2017
Participant information sheet (PIS) [Participant Information Sheet]	2	11 July 2017
Referee's report or other scientific critique report [Response to Feedback 1]		
Referee's report or other scientific critique report [Feedback to Proposal 2 and Response 2]		30 January 2017
Referee's report or other scientific critique report [Feedback on Proposal 1]		09 December 2016
Research protocol or project proposal [Research Project Proposal]	1	02 June 2017
Summary CV for Chief Investigator (CI) [Summary CV for Chief Investigator (CI)]		
Summary CV for supervisor (student research) [Dr Dawn Watling CV]		
Summary CV for supervisor (student research) [Dr Eilidh Cage CV]		
Validated questionnaire [Self Presentation Tactics Scale]		
Validated questionnaire [Circumplex Scale of Interpersonal Values]		
Validated questionnaire [SRP-4]		

Appendix B - Summary of HRA Assessment

This appendix provides assurance to you, the sponsor and the NHS in England that the study, as reviewed for HRA Approval, is compliant with relevant standards. It also provides information and clarification, where appropriate, to participating NHS organisations in England to assist in assessing and arranging capacity and capability.

For information on how the sponsor should be working with participating NHS organisations in England, please refer to the, *participating NHS organisations, capacity and capability* and *Allocation of responsibilities and rights are agreed and documented (4.1 of HRA assessment criteria)* sections in this appendix.

The following person is the sponsor contact for the purpose of addressing participating organisation questions relating to the study:

Name: Elinor Doris

Email: elinor.doris.2015@live.rhul.ac.uk

HRA assessment criteria

Section	HRA Assessment Criteria	Compliant with Standards	Comments
1.1	IRAS application completed correctly	Yes	No comments
2.1	Participant information/consent documents and consent process	Yes	No comments
3.1	Protocol assessment	Yes	No comments
4.1	Allocation of responsibilities and rights are agreed and documented	Yes	This is a non-commercial, single site study taking place in the NHS. A Statement of Activities has been submitted. This will act as the agreement between Sponsor and participating NHS organisations. No other agreements are expected.
4.2	Insurance/indemnity arrangements assessed	Yes	It is sponsor's responsibility to ensure current insurance is in place for the research.

Section	HRA Assessment Criteria	Compliant with Standards	Comments
			Where applicable, independent contractors (e.g. General Practitioners) should ensure that the professional indemnity provided by their medical defence organisation covers the activities expected of them for this research study
4.3	Financial arrangements assessed	Yes	Sponsor is not providing funding to participating NHS organisations.
5.1	Compliance with the Data Protection Act and data security issues assessed	Yes	No comments
5.2	CTIMPS – Arrangements for compliance with the Clinical Trials Regulations assessed	Not Applicable	
5.3	Compliance with any applicable laws or regulations	Yes	No comments
6.1	NHS Research Ethics Committee favourable opinion received for applicable studies	Yes	No comments
6.2	CTIMPS – Clinical Trials Authorisation (CTA) letter received	Not Applicable	
6.3	Devices – MHRA notice of no objection received	Not Applicable	
6.4	Other regulatory approvals and authorisations received	Not Applicable	

Participating NHS Organisations in England

This provides detail on the types of participating NHS organisations in the study and a statement as to whether the activities at all organisations are the same or different.
This is a non-commercial, single site study. There is only one site-type involved in the research. Activities and procedures as detailed in the protocol will take place at participating NHS organisations.

IRAS project ID	225716

The Chief Investigator or sponsor should share relevant study documents with participating NHS organisations in England in order to put arrangements in place to deliver the study. The documents should be sent to both the local study team, where applicable, and the office providing the research management function at the participating organisation. For NIHR CRN Portfolio studies, the Local LCRN contact should also be copied into this correspondence. For further guidance on working with participating NHS organisations please see the HRA website.

If Chief Investigators, sponsors or Principal Investigators are asked to complete site level forms for participating NHS organisations in England which are not provided in IRAS or on the HRA website, the Chief Investigator, sponsor or Principal Investigator should notify the HRA immediately at hra.approval@nhs.net. The HRA will work with these organisations to achieve a consistent approach to information provision.

Confirmation of Capacity and Capability

This describes whether formal confirmation of capacity and capability is expected from participating NHS organisations in England.

Participating NHS organisations in England **will be expected to formally confirm their capacity and capability to host this research**.

- Following issue of this letter, participating NHS organisations in England may now confirm to the sponsor their capacity and capability to host this research, when ready to do so. How capacity and capacity will be confirmed is detailed in the *Allocation of responsibilities and rights are agreed and documented (4.1 of HRA assessment criteria)* section of this appendix.
- The Assessing, Arranging, and Confirming document on the HRA website provides further information for the sponsor and NHS organisations on assessing, arranging and confirming capacity and capability.

Principal Investigator Suitability

This confirms whether the sponsor position on whether a PI, LC or neither should be in place is correct for each type of participating NHS organisation in England and the minimum expectations for education, training and experience that PIs should meet (where applicable).

A Principal Investigator (PI) is expected at participating NHS organisations. Sponsor does not expect research staff to undertake any specific or additional training for the research.

GCP training is not a generic training expectation, in line with the HRA statement on training expectations.

HR Good Practice Resource Pack Expectations

This confirms the HR Good Practice Resource Pack expectations for the study and the pre-engagement checks that should and should not be undertaken

Where arrangements are not already in place, research staff not employed by the NHS host organisation undertaking any of the research activities listed in the research application would be expected to obtain a Letter of Access based on standard DBS checks and occupational health clearance.

Other Information to Aid Study Set-up

This details any other information that may be helpful to sponsors and participating NHS organisations in England to aid study set-up.
The applicant has indicated that they do not intend to apply for inclusion on the NIHR CRN Portfolio.

Appendix 7

Details of the Recruitment Process for the MSU Sample (Study One)

The principle investigator (first author of this paper) gained approval to recruit from the Head of Psychology at the MSU. The principle investigator then approached the clinical teams at the MSU and asked them to identify suitable individuals from their caseloads. The inclusion criteria were that participants be aged 18-65 years and able to understand English to the level of a 12-year-old. The exclusion criteria were lack of capacity to consent and the presence of a learning disability. The clinical teams identified potential participants for the study and approached them to see if they might be interested in participating. The principle investigator then approached those individuals who had reported an interest in participating. Individuals were provided with a participant information sheet and the opportunity to ask questions. Those who gave their informed consent were recruited into the study. 42 individuals were approached by the principle investigator; 34 agreed to take part and eight stated that they were not interested in taking part.

Appendix 8

The Self Presentation Tactics Scale (SPT; Lee et al., 1999)

On the following pages you will be asked a number of questions dealing with how you behave. Please read the questions carefully and try to answer all of the items as openly and honestly as possible. This is not a test, and there are no right or wrong answers. In responding to the items, please circle the number on the scale that most closely represents your behaviour.

Not at all often 1 2 3 4 5 6 7 Very often

		Not at all often						Very often
1.	I behave in ways that make other people afraid of me.	1	2	3	4	5	6	7
2.	I use my size and strength to influence people when I need to.	1	2	3	4	5	6	7
3.	If I harm someone, I apologize and promise not to do it again.	1	2	3	4	5	6	7
4.	I offer explanations before doing something that others might think is wrong.	1	2	3	4	5	6	7
5.	I explain my behaviour so that others will not think negatively about me.	1	2	3	4	5	6	7
6.	I tell people when I do well at tasks that others find difficult.	1	2	3	4	5	6	7
7.	I use my weaknesses to get sympathy from others.	1	2	3	4	5	6	7
8.	I ask others to help me.	1	2	3	4	5	6	7
9.	I express the same thoughts and feelings as others so that they will accept me.	1	2	3	4	5	6	7
10.	When I believe I will not perform well, I offer excuses before I do it.	1	2	3	4	5	6	7

		Not at all often						Very often
11.	I use flattery to win the favour of others.	1	2	3	4	5	6	7
12.	I get sick when I am under a lot of pressure to do well.	1	2	3	4	5	6	7
13.	I apologize when I have done something wrong.	1	2	3	4	5	6	7
14.	I lead others to believe that I cannot do something in order to get their help.	1	2	3	4	5	6	7
15.	I try to serve as a model for how a person should behave.	1	2	3	4	5	6	7
16.	I try to get the approval of others before doing something that they might perceive negatively.	1	2	3	4	5	6	7
17.	I try to make up for any harm I have done to others.	1	2	3	4	5	6	7
18.	In telling others about things that I own, I also tell them how much the things are worth.	1	2	3	4	5	6	7
19.	I point out to others why their choice of music is all wrong.	1	2	3	4	5	6	7
20.	I try to get others to imitate me by serving as a positive example.	1	2	3	4	5	6	7
21.	When telling someone about past events, I claim more credit for doing good things than I actually did.	1	2	3	4	5	6	7
22.	I tell people about my positive accomplishments.	1	2	3	4	5	6	7
23.	I try to set an example for others to follow.	1	2	3	4	5	6	7
24.	I give good reason before I behave in a way that others may not like.	1	2	3	4	5	6	7
25.	I try to get others to act in the same positive way I do.	1	2	3	4	5	6	7

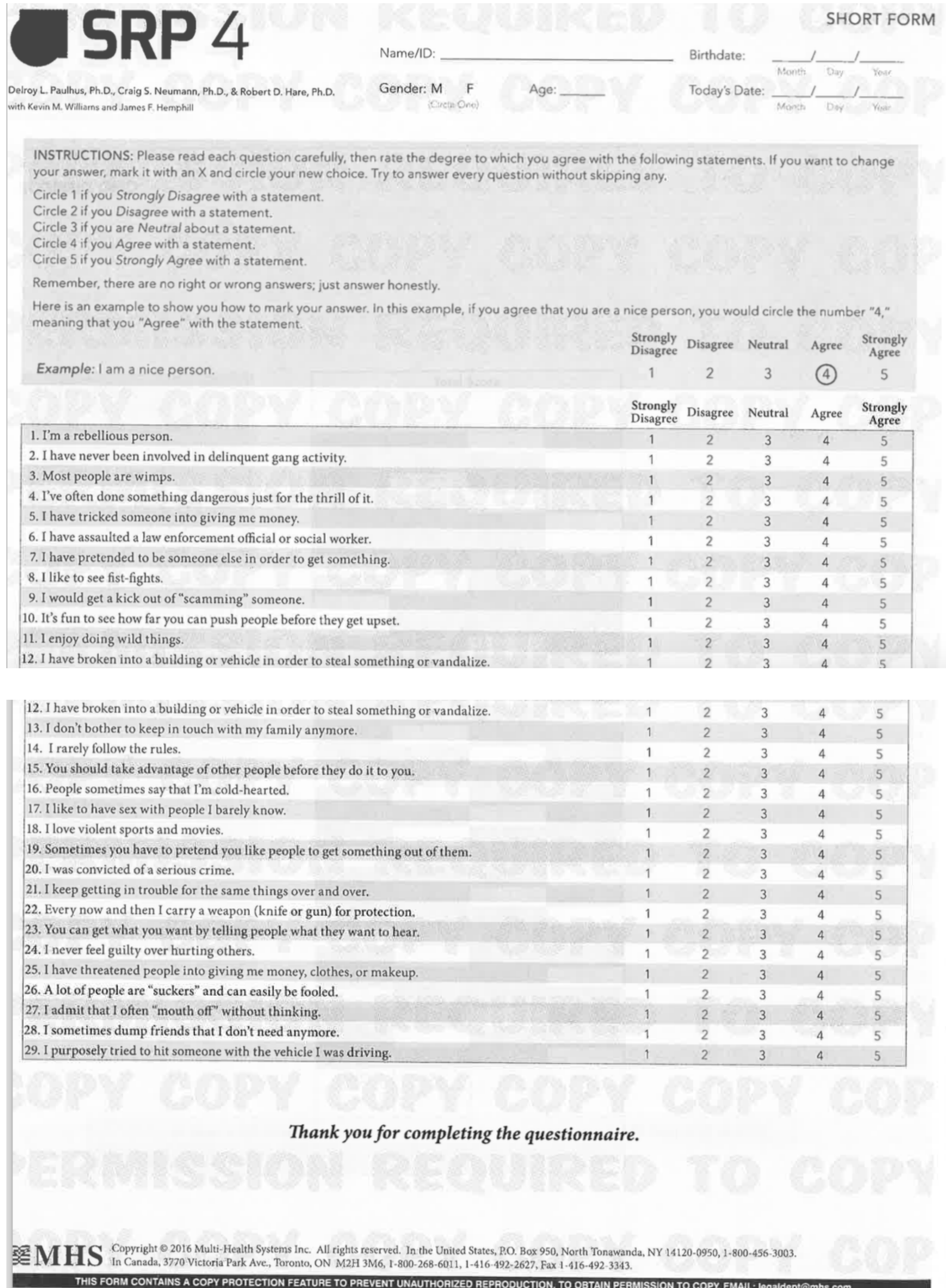
		Not at all often						Very often
26.	I have said bad things about others in order to make myself look better.	1	2	3	4	5	6	7
27.	I do favours for people in order to get them to like me.	1	2	3	4	5	6	7
28.	I accept blame for bad behaviour when it is clearly my fault.	1	2	3	4	5	6	7
29.	I exaggerate the value of things I have done.	1	2	3	4	5	6	7
30.	I hesitate and hope that others will take responsibility for participating in group tasks.	1	2	3	4	5	6	7
31.	I threaten others when I think it will help me get what I want from them.	1	2	3	4	5	6	7
32.	I express thoughts and opinions that other people will like.	1	2	3	4	5	6	7
33.	I say negative things about unpopular groups of people.	1	2	3	4	5	6	7
34.	I try to convince others that I am not responsible when bad things happen.	1	2	3	4	5	6	7
35.	When things go wrong, I explain why it was not my fault.	1	2	3	4	5	6	7
36.	I act in ways I think that others should act.	1	2	3	4	5	6	7
37.	I tell others about my positive qualities.	1	2	3	4	5	6	7
38.	When I am blamed for something, I make excuses.	1	2	3	4	5	6	7
39.	I point out the positive things I do which other people do not notice.	1	2	3	4	5	6	7
40.	I do correct people who underestimate the value of gifts that I give to them.	1	2	3	4	5	6	7

		Not at all often						Very often
41.	Poor health has been responsible for my getting mediocre grades in school.	1	2	3	4	5	6	7
42.	I help others so that they will help me.	1	2	3	4	5	6	7
43.	I explain why I am going to do something before I do it, when I believe that others might not like.	1	2	3	4	5	6	7
44.	When others think my behaviour was bad, I explain why I did what I did, so that they will understand that I had good reason to behave the way I did.	1	2	3	4	5	6	7
45.	When working on a project with a group I make my contribution seem greater than it is.	1	2	3	4	5	6	7
46.	I exaggerate the negative qualities of people who compete with me.	1	2	3	4	5	6	7
47.	I make up excuses for poor performance.	1	2	3	4	5	6	7
48.	I offer an excuse for why I might not perform well before taking a very difficult test.	1	2	3	4	5	6	7
49.	I show that I am sorry and feel guilty when I do something wrong.	1	2	3	4	5	6	7
50.	I intimidate others.	1	2	3	4	5	6	7
51.	When I want something, I try to look good.	1	2	3	4	5	6	7
52.	I do not prepare well enough for exams because I get too involved in social activities.	1	2	3	4	5	6	7
53.	I tell others they are stronger or more competent than me in order to get them to do things for me.	1	2	3	4	5	6	7
54.	I claim credit for doing things that I did not do.	1	2	3	4	5	6	7
55.	I say negative things about people who belong to rival groups.	1	2	3	4	5	6	7

		Not at all often ◄						► Very often
56.	I put obstacles in the way of my own success.	1	2	3	4	5	6	7
57.	Anxiety interferes with my performances.	1	2	3	4	5	6	7
58.	I do things to make people afraid of me so that they will do what I want.	1	2	3	4	5	6	7
59.	When I succeed at a task, I make sure that others know how important the task was.	1	2	3	4	5	6	7
60.	I offer good reasons for my behaviour no matter how bad it may seem to others.	1	2	3	4	5	6	7
61.	To avoid being blamed, I let others know that I did not intend any harm.	1	2	3	4	5	6	7
62.	I compliment people to get them on my side.	1	2	3	4	5	6	7
63.	After a negative action, I try to make others understand that if they had been in my position they would have done the same thing.	1	2	3	4	5	6	7

Appendix 9

The Self-Report Psychopathy Scale 4th Edition Short Form (SRP 4:SF; Paulhus et al., 2016)



SRP 4

SHORT FORM

Name/ID: ______________________ Birthdate: ___/___/___ (Month Day Year)

Delroy L. Paulhus, Ph.D., Craig S. Neumann, Ph.D., & Robert D. Hare, Ph.D.
with Kevin M. Williams and James F. Hemphill

Gender: M F (Circle One) Age: _____ Today's Date: ___/___/___ (Month Day Year)

INSTRUCTIONS: Please read each question carefully, then rate the degree to which you agree with the following statements. If you want to change your answer, mark it with an X and circle your new choice. Try to answer every question without skipping any.

Circle 1 if you *Strongly Disagree* with a statement.
Circle 2 if you *Disagree* with a statement.
Circle 3 if you are *Neutral* about a statement.
Circle 4 if you *Agree* with a statement.
Circle 5 if you *Strongly Agree* with a statement.

Remember, there are no right or wrong answers; just answer honestly.

Here is an example to show you how to mark your answer. In this example, if you agree that you are a nice person, you would circle the number "4," meaning that you "Agree" with the statement.

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
Example: I am a nice person.	1	2	3	(4)	5

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
1. I'm a rebellious person.	1	2	3	4	5
2. I have never been involved in delinquent gang activity.	1	2	3	4	5
3. Most people are wimps.	1	2	3	4	5
4. I've often done something dangerous just for the thrill of it.	1	2	3	4	5
5. I have tricked someone into giving me money.	1	2	3	4	5
6. I have assaulted a law enforcement official or social worker.	1	2	3	4	5
7. I have pretended to be someone else in order to get something.	1	2	3	4	5
8. I like to see fist-fights.	1	2	3	4	5
9. I would get a kick out of "scamming" someone.	1	2	3	4	5
10. It's fun to see how far you can push people before they get upset.	1	2	3	4	5
11. I enjoy doing wild things.	1	2	3	4	5
12. I have broken into a building or vehicle in order to steal something or vandalize.	1	2	3	4	5

12. I have broken into a building or vehicle in order to steal something or vandalize. 1 2 3 4 5

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
13. I don't bother to keep in touch with my family anymore.	1	2	3	4	5
14. I rarely follow the rules.	1	2	3	4	5
15. You should take advantage of other people before they do it to you.	1	2	3	4	5
16. People sometimes say that I'm cold-hearted.	1	2	3	4	5
17. I like to have sex with people I barely know.	1	2	3	4	5
18. I love violent sports and movies.	1	2	3	4	5
19. Sometimes you have to pretend you like people to get something out of them.	1	2	3	4	5
20. I was convicted of a serious crime.	1	2	3	4	5
21. I keep getting in trouble for the same things over and over.	1	2	3	4	5
22. Every now and then I carry a weapon (knife or gun) for protection.	1	2	3	4	5
23. You can get what you want by telling people what they want to hear.	1	2	3	4	5
24. I never feel guilty over hurting others.	1	2	3	4	5
25. I have threatened people into giving me money, clothes, or makeup.	1	2	3	4	5
26. A lot of people are "suckers" and can easily be fooled.	1	2	3	4	5
27. I admit that I often "mouth off" without thinking.	1	2	3	4	5
28. I sometimes dump friends that I don't need anymore.	1	2	3	4	5
29. I purposely tried to hit someone with the vehicle I was driving.	1	2	3	4	5

Thank you for completing the questionnaire.

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Appendix 10

The Circumplex Scale of Interpersonal Values (CSIV-32; Locke, 2000)

For each item below, answer the following question: "When I am in interpersonal situations (such as with close friends, with strangers, at work, at social gatherings, and so on), in general how important is it to me that I act or appear or am treated this way?" Use the following rating scale:

0	1	2	3	4
not important to me	mildly important to me	moderately important to me	very important to me	extremely important to me

Sample Item:
When I am with him/her/them, it is... 0 1 2 3 4 ...that I be well dressed

If when you are with others you generally consider it extremely important that you be well-dressed, you would circle 4. If it is not important that you be well dressed, you would circle 0. If you consider it moderately important that you be well-dressed, you would circle 2.

1. When I am around them, it is... 0 1 2 3 4 ...that I appear confident
2. When I am around them, it is... 0 1 2 3 4 ...that I not expose myself to ridicule
3. When I am around them, it is... 0 1 2 3 4 ...that I feel connected to them
4. When I am around them, it is... 0 1 2 3 4 ...that I appear forceful
5. When I am around them, it is... 0 1 2 3 4 ...that I live up to their expectations
6. When I am around them, it is... 0 1 2 3 4 ...that I express myself openly
7. When I am around them, it is... 0 1 2 3 4 ...that I keep my guard up
8. When I am around them, it is... 0 1 2 3 4 ...that I get along with them
9. When I am around them, it is... 0 1 2 3 4 ...that they acknowledge when I am right
10. When I am around them, it is... 0 1 2 3 4 ...that I appear aloof
11. When I am around them, it is... 0 1 2 3 4 ...that they support me when I am having problems
12. When I am around them, it is... 0 1 2 3 4 ...that I keep the upper hand
13. When I am around them, it is... 0 1 2 3 4 ...that I do what they want me to do
14. When I am around them, it is... 0 1 2 3 4 ...that they respect what I have to say
15. When I am around them, it is... 0 1 2 3 4 ...that they keep their distance from me
16. When I am around them, it is... 0 1 2 3 4 ...that I make them feel happy
17. When I am around them, it is... 0 1 2 3 4 ...that I not back down when disagreements arise
18. When I am around them, it is... 0 1 2 3 4 ...that I not make mistakes in front of them
19. When I am around them, it is... 0 1 2 3 4 ...that they come to me with their problems
20. When I am around them, it is... 0 1 2 3 4 ...that I am the one in charge
21. When I am around them, it is... 0 1 2 3 4 ...that I go along with what they want to do
22. When I am around them, it is... 0 1 2 3 4 ...that I have an impact on them
23. When I am around them, it is... 0 1 2 3 4 ...that I do better than them
24. When I am around them, it is... 0 1 2 3 4 ...that they approve of me
25. When I am around them, it is... 0 1 2 3 4 ...that they not tell me what to do
26. When I am around them, it is... 0 1 2 3 4 ...that I not say something stupid
27. When I am around them, it is... 0 1 2 3 4 ...that they show concern for how I am feeling
28. When I am around them, it is... 0 1 2 3 4 ...that they mind their own business
29. When I am around them, it is... 0 1 2 3 4 ...that I not make them angry
30. When I am around them, it is... 0 1 2 3 4 ...that they listen to what I have to say
31. When I am around them, it is... 0 1 2 3 4 ...that they not know what I am thinking or feeling
32. When I am around them, it is... 0 1 2 3 4 ...that they not get their feelings hurt

Appendix 11

Participant Information Sheet (Study One)

Department of Psychology
Royal Holloway, University of London
Egham, Surrey TW20 0EX
www.royalholloway.ac.uk/psychology

+44 (0) 1784 443526
PSY-enquiries@rhul.ac.uk

Dear Participant,

You are being invited to take part in a study looking at how personality traits and things that are important to you relate to the way people present themselves to others. This study will explore an area of psychology that has not been researched previously. Therefore, your participation would aid understanding in this field and potentially inform future research and clinical developments.

I am approaching everyone at the John Howard Centre whose team has given approval for them to participate in this study.

I very much hope you would like to take part. Importantly, all of your responses will be stored anonymously, your responses will only be viewed for research purposes, and only researchers who have permission will have access to your results. After reading this information sheet, you can decide whether or not you wish to take part in this study.

Who is conducting this project?

I, Eli Doris will be conducting this study as part of my doctorate. I am a trainee clinical psychologist at Royal Holloway, University of London. Dr Eilidh Cage and Dr Dawn Watling, also from Royal Holloway, and Dr Clare Bingham from the John Howard Centre, will be supervising the study.

What will happen if you decide to take part?

You will meet with me once or twice and be asked to complete three questionnaires. These will be asking about personality traits, what is important to you and how you present yourself to others. You will also be asked to provide some basic information about yourself including your age and gender. These questionnaires will take around 30 to 40 minutes to complete in total.

How will your confidentiality be protected?

All of your answers will be stored under an anonymous ID number; your name will never be used. Nobody apart from researchers who have permission will be able to see your answers, so that your confidentiality is always protected. Your data will be stored on a password protected computer and signed consent forms will be stored in a locked filing cabinet. A password protected document linking your name with your anonymous ID number will be stored electronically apart from the data. This will be destroyed at the end of data collection for the study. Your personal data will be stored securely for up to 5 years and then destroyed.

The only instance in which confidentiality would have to be broken would be if you were to disclose during our meeting that you might be at risk of harming yourself or someone else. In that case, I would inform Dr Clare Bingham who would need to discuss the concerns with your clinical team. If possible I would let you know that these people were going to be informed.

Do you have to take part?

No, it is up to you if you want to take part or not, and your decision will not affect any treatment you are receiving in any way. Taking part in this study will not affect the processes related to your continued detention. At the end of this information sheet there is a form for you to sign if you do wish to take part. Even if you sign the form, you are still free to withdraw from the study at any time without giving a reason. However, if you decide after the meeting that you have changed your mind and no longer wish to be part of the study, we will be unable to remove your results from the database as they will be stored under an anonymous ID number.

Are there any risks in taking part?

We do not believe that there are any risks involved in taking part in this study. However, if you find any of the questions intrusive or upsetting, you are not required to respond and are free to withdraw from the study if you so wish.

What can you gain from taking part?

As a thank you for taking part, you will be entered into a prize draw. There are 5 draws in the prize draw: one for £50, one for £20 and three for £10. Seeing as we need 41 people to take part in this study, your chance of winning one of the prizes is roughly 1 in 8. You will be contacted on 30/04/2018 if you have won.

What should you do next?

If you wish to take part in this study, please fill in the enclosed consent form. You are free to ask any questions about the study before you complete the consent forms. Please note that you have up to one week to decide whether or not you would like to take part. The consent form will be stored in a locked filing cabinet, separately from the anonymous information you provide for the study.

This study has been reviewed and approved by the Health Research Authority and Westminster NHS Research Ethics Committee. Should you have any queries or complaints about the study, please contact the Department of Psychology at Royal Holloway University of London on Tel: +44 (0) 1784 443526.

Thank you and best wishes,

Miss Eli Doris, Trainee Clinical Psychologist

Appendix 12

Consent Form (Study One)

CONSENT FORM

Please return this copy to Eli Doris (researcher)

Please tick Yes or No

I have read the information sheet for the study. I have had the opportunity to consider the information, ask questions and have had these answered satisfactorily. I am happy to take part in the study.	☐ Yes	☐ No
I understand that my participation is voluntary and I can withdraw at any time, without giving any reason.	☐ Yes	☐ No
I understand that all of my answers will be anonymous and confidential.	☐ Yes	☐ No
I would like to be entered into the prize draw.	☐ Yes	☐ No

Full Name:…………………………………………………..☐ Male ☐ Female

Date of birth:…………………………………

Signature:…………………………………………………………..

Today's date:………………………………...

Researcher's Full Name: …………………………………………………………

Researcher's Signature:…………………………………………………………..

Today's date:………………………………...

Appendix 13

Demographic Information Sheet

Department of Psychology
Royal Holloway, University of London
Egham, Surrey TW20 0EX
www.royalholloway.ac.uk/psychology

+44 (0) 1784 443526
PSY-enquiries@rhul.ac.uk

Please complete the following information sheet. All of the information you provide is confidential. Please do not put your name anywhere on this sheet.

What is your age in years? ....

What is your gender?

Male		Female	
Other		Prefer not to say	

What is your ethnicity?

White British		Other White Background	
Mixed/Multiple Ethnicity		Asian British	
Other Asian Background		Black British	
Other Black Background		Other Ethnic Group	
Prefer not to say			

Please indicate your highest level of educational qualification:

No formal qualifications		SATs or equivalent	

GCSEs or equivalent		A Levels or equivalent	
Undergraduate university degree or equivalent		Postgraduate university qualification or equivalent	
Other qualifications		Prefer not to say	

Have you previously been in employment?

Yes		No	
Prefer not to say			

If yes, what was your most recent job title?

…………………………………………………………………………………………..

Are you currently, or have you in the past year, experienced a mental health difficulty (for example, schizophrenia, psychosis, depression or a personality disorder)?

Yes		No	
Prefer not to say			

If yes, please could you state the diagnosis or diagnoses given (if you feel comfortable doing so)?

………………………………………………………………………………………….

Are you currently taking any medication?

Yes		No	
Prefer not to say			

If yes, please could you state the name of the medication(s) (if you feel comfortable doing so)?

……………………………………………………………………………………….

Have you ever been found to have committed a criminal act by the Magistrates' or Crown Court?

Yes		No	
Prefer not to say			

If yes, please could you state the nature of the offence(s) (if you feel comfortable doing so)?

……………………………………………………………………………………….

……………………………………………………………………………………….

Appendix 14

Previous and Current Job Titles Reported by the Community Sample (Study Two)

Account Manager

Assistant Editor

Assistant Producer

Assistant Psychologist

Associate Director

Compliance Audit Senior

Bar and Catering Staff

Bar Associate

Bar Staff

Beauty Therapist

Brand Manager

Cafe Assistant

Cashier at Nandos

Catering Assistant

Chairman

Children's SLT

Clinical Practice Lead

Clinical Psychologist

Commercial Advisor

Concierge

Court Monitor

Customer Assistant

Customer Services Co-Worker

Deaf Interpreter

Director of Finance

Doctor

English Tutor

Entertainment

Events Assistant

Exam Invigilator

Floatation Therapist

Football Coach

Foster Carer

General Practitioner

Gymnastics Coach

Head of Styling

HGV Haulage Driver

Interior Designer

Journalist

Leisure Assistant

Manufacturing Operator

Optical Assistant

Panellist with the RH100

Play Area Assistant

Playworker

Registered Mental Health Nurse

Relief Nursery Staff

Researcher

Restaurant Manager

Retail

Retail Assistant

Rides Host (Thorpe Park)

Sales Advisor

Sales Assistant

Sales Floor Assistant

Solicitor

Staff Member at McDonalds

Stock Trader

Student Ambassador

Support Worker

Temporary Nursery Worker

Therapist

Trainee Clinical Psychologist

Tutor

Waitress

Appendix 15

Medications Reportedly Taken by the Community Sample (Study Two)

Aciclovir

Alendronic Acid

An Anticholinergic

Atorvastatin

Amlodipine

B12 injections

Beta Blockers

Bisoprolol

Cerazette

Citalopram

Contraceptive Pill

Ferrous Fumarate

Fluoxetine

Flutiform

Gedarel

HRT

Inhalers

Insulin

Lansoprazole

Levothyroxine

Macrogol

Metformin

Montelukast

Oestrogen Patch

Purblocka

Quetiapine

Ramipril

Rigevidon

Roacutane

Sertraline

Venlafaxine