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**Personality-based Drivers of Offending Behaviour:
Trait Profiles and Beyond**

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Thesis submitted in partial fulfilment of the requirements for the degree of

DOCTOR OF PHILOSOPHY

December 2022

ABSTRACT

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Doctor of Philosophy (Psychology)

Personality-based Drivers of Offending Behaviour: Trait Profiles and Beyond

While personality is an important predictor of criminality, this thesis argues that a more holistic understanding of the personality-based drivers of OB is required. Using the guiding framework of interpersonal theory and building upon previous work in this area, it examines personality features that extend beyond traits, representing cognitive, emotional, and relational components. It also takes a ‘profile approach’ to its investigation of personality traits, whereby configurations of multiple traits are used to examine interactions between variables. Patterns that emerge from these profiles may be used to strengthen our understanding of the personality-based drivers of OB.

This thesis was the first to systematically review associations between personality traits and OB. Results of this critical engagement with the extant literature indicate that subclinical psychopathy is positively related to OB; high levels of neuroticism and low levels of agreeableness and conscientiousness may also be implicated, although the evidence for these associations was more mixed.

Study 1 established configurations of all the Five-Factor Model and Dark Triad traits together. Using a predominantly UK-based community sample ($n = 343$), results indicated that three distinct personality profiles emerged.

Study 2 assessed whether the same profiles emerged in a US-based community sample ($n = 210$); whether these profiles were associated with OB; and if other personality features mediated these relationships. The profiles were largely the same as in Study 1, and interpersonal functioning and vindictive interpersonal style emerged as mediators between profiles and some types of OB.

Study 3 explored whether the results of Study 2 replicated in an ex-offender sample ($n = 292$). Again, highly similar personality profiles were observed; however, unlike Study 2, irritability and domineering interpersonal style mediated relationships between profiles and some types of OB.

This thesis is the first empirical research to establish personality profiles encompassing the Five-Factor Model and Dark Triad traits together, thereby advancing our knowledge of how personality traits from these two models interact and providing a more comprehensive and holistic understanding of personality. It is also the first to wed personality profiles with other key personality features in an investigation of the drivers of OB. By including other aspects of relational, cognitive, and affective differences, it affords a more nuanced account of the personality-based drivers of OB that extends beyond individual traits or trait profiles alone.

Keywords: Five-Factor model; Dark Triad; personality; offending behaviour; interpersonal style; level of personality functioning; criminal attitudes; irritability; empathy

ACKNOWLEDGEMENTS

I want to start by thanking the institutions that have facilitated my academic career. To Maastricht University, for offering me a scholarship to pursue my Master's degree in The Netherlands; and to Edge Hill University, for funding my PhD & PGCert in Teaching in Higher Education and for giving me a job as a teaching assistant. Thank you for the incredible opportunities that you have afforded me.

To my supervisors: Dr Helen Wall, Dr Joyce Humphries, and Professor Derek Heim. Helen and Joyce, thank you for being my cheerleaders when I needed it most; Derek, thank you for keeping me grounded and teaching me about good-enough parenting. I could not have asked for a better supervisory team. Together, you've given me more than four years of guidance, insight, and feedback as I've stumbled through this project, all the while reminding me that I am the Head Bitch in Charge of this thing. I assure you, while I may be the HBIC, I could not have gotten here without you, and I will be forever grateful for your mentorship and support.

To Dr Alard Malek, for being my first academic mentor in forensic psychology. You gave me two formative pieces of advice during my undergrad: 1) that I was not ready to walk into a prison ("they'd eat you alive"); and 2) that committing to a career in forensic psychology takes a certain degree of resilience ("you will start to see the world through shit-coloured glasses"). I will never forget your words. Challenge accepted.

To Dr Sven van de Wetering, for being the person who first sparked my interest in psychology when I took Psych 101 in Winter of 2011. Thank you for encouraging me to pursue graduate studies in Europe and for commenting (facetiously, but accurately) that I might just never come back. I can't tell you how much I value the collegial friendship and mentorship that you still give me to this day.

To Professor Jane Ireland, for seeing the potential in me when I did not fully see it in myself, and for giving me opportunities that I didn't think I was worthy of. Working under your supervision at Ashworth was a dream come true.

To my mom, for your constant, enthusiastic support of my goals and ambitions, both academically and otherwise. You've always wanted more for me than you ever wanted for yourself, and because of that, I owe it all to you. I love you so much and I miss you every day.

To Jill and Britt, for the endless support, encouragement, and validation that you've given me for the past 15 years. You've known every version of my adult self, and I would not be the person I am today without your friendship. You celebrate my successes on my brightest days; you pick up the broken pieces on my darkest days; and you constantly remind me how proud you are of me. I learn so much from you and I cherish your friendships with my entire heart.

To Hannah, for seeing me through most of this project and some of the most difficult periods of my personal life. Your friendship gives me some semblance of work-life balance and a very good reason to call Liverpool home.

To Ailish, for being with me on this journey since Day 1. Thank you so much for your wonderful friendship and academic camaraderie.

To Oana, for making my move abroad so much less daunting than it could have been; for always celebrating my academic successes with me; for showing me that distance and time does not change our friendship; and for giving me a piece of home on this side of the globe.

Last but definitely not least—to Matt. Thank you for giving me something that matters so much more than this PhD.

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LIST OF ABBREVIATIONS

- AMPD – Alternative Model of Personality Disorders
- APA – American Psychiatric Association
- ASPD – Antisocial Personality Disorder
- CSA - Child sexual abuse
- CSEM - Child sexual exploitation material
- CSO - Child sex offender
- CTS - Criminal thinking style
- DSM – Diagnostic and Statistical Manual of Mental Disorders
- DT - Dark Triad
- FFM – Five-Factor Model
- ICD-11 – International Classification of Diseases
- IM – Impression management
- IS - Interpersonal style
- LPF - Level of personality functioning
- MCAR – Missing completely at random
- OB – Offending behaviour
- PD – Personality disorder
- PRISMA – Preferred Reporting Items for Systematic Reviews and Meta-Analyses
- SDE – Self-deceptive enhancement
- SO - Sex offender
- SR – Self-report
- WHO – World Health Organisation

CHAPTER 1: LITERATURE REVIEW & INTRODUCTION

1.1. Introduction

1.1.1. Background

The social, psychological and economic costs and harms of crime cannot be overstated. In England and Wales alone, between the costs in anticipation of crime, costs as a consequence of crime, and police and criminal justice system response expenditures, a single homicide is estimated to cost £3,217,740 (Heeks et al., 2018). At the same time, there are now more than 80,000 individuals housed in UK prisons (Ministry of Justice, 2022). Meanwhile, the World Health Organization estimates that 450 million people suffer from mental or behavioural disorders globally (WHO, 2001); these disorders are particularly prevalent in prison populations (Bebbington et al., 2017; Davoren et al., 2015; Hill et al., 2017; WHO, n.d.), although mentally disordered offenders (MDOs) are also commonly housed and rehabilitated in high-, medium-, and low-secure hospitals (Duke et al., 2018). The single largest contributor to this disproportionately high rate of mental disorders in prisons is believed to be insufficient access to mental health services (WHO, n.d.); thus, the mental health of institutionalised offenders must be regarded as a matter of public health. It is evidently more important than ever that research focuses on elucidating individual drivers of offending behaviour (OB) in order to inform more effective early intervention and treatment efforts in forensic settings.

This thesis argues that a more holistic understanding of the individual difference factors influencing OB is required. It begins by providing a comprehensive review of the literature examining how key personality and attitudinal variables play a role in OB (Chapter 1). Following this, Chapter 2 presents a systematic review of associations between personality traits of interest and various types of OB. Chapter 3 discusses the methodological considerations underpinning this thesis. Next, Chapters 4-6 present the findings of a series of empirical studies that investigate the personality-based drivers of

OB. Finally, Chapter 7 provides a general discussion of the results alongside those of previous studies.

Personality has been repeatedly researched in conjunction with OB (e.g., Carvalho & Nobre, 2019; Craig et al., 2006; Heaven et al., 2004; Madsen et al., 2006; O’Riordan & O’Connell, 2014), and an individual’s personality may be one of the most significant predictors of criminality (Bonta & Andrews, 2017). However, previous investigations into the associations between personality and OB have fallen short of capturing the whole story when it comes to this link. Some studies focus exclusively on the role of normative, positive traits (e.g., Dennison et al., 2001; Heaven, 1996) such as those captured by the Five-Factor Model (McCrae & Costa, 1987), while others only examine the influence of darker, more antisocial traits (e.g., Azizli et al., 2016; Wright et al., 2017). Moreover, many of these investigations have only examined individual traits, a variable-centred approach that fails to consider interactions and co-occurrences between variables (Isler, 2017). One method for exploring these interactions is to examine patterns of traits that occur together (‘trait profiles’); this is a person-centred approach that emphasises a holistic, intraindividual perspective of personality. The person-centred approach aids in understanding how traits are organised within an individual, and this is beneficial given that it is whole people, not isolated traits, who engage in dynamic transactions with their social worlds (Donnellan & Robins, 2010; Garcia & Moraga, 2017). However, many of the studies that employ the profile approach when examining links between personality and OB only include adaptive or ‘positive’ personality traits while neglecting to explore the contributions of the more unpopular or ‘darker’ ones (e.g., Asendorpf et al., 2001; Roth & von Collani, 2007), or vice versa (e.g., Chabrol et al., 2009; Garcia & MacDonald, 2017). Accordingly, in its examination of the personality traits that are associated with OB, this thesis builds and expands upon previous studies by examining profiles that emerge from models of both positive and dark traits.

As will be discussed in this chapter, previous investigations of personality and OB have yielded inconsistent and conflicting results. Such findings suggest that traits may not be the only aspects of personality that contribute to OB and that more research is required in order to explore these other elements. As such, this thesis incorporates a number of other relevant sources of individual differences: level of personality functioning, interpersonal style, empathy, irritability, and criminal thinking style. Each of these constructs has been linked to OB in the literature, but none have wed them together into a coherent picture of the degree to which each element contributes to OB when considered in conjunction with the other variables. Thus, through the guiding framework of interpersonal theory (Leary, 1957; Sullivan, 1953), this thesis aims to better understand associations between personality trait profiles and self-reported OB, while also considering how the other variables may impact these relationships. It is hoped that the findings from this thesis may contribute to more effective early intervention efforts and person-centred care within forensic psychological services, including improved therapeutic alliances between staff and offenders, therapeutic engagement and, ultimately, treatment outcomes for this challenging population.

1.2. Literature Review and Theoretical Framework

The following sections provide a comprehensive summary of current knowledge regarding some of the key drivers of OB. First, Section 1.2.1. summarises what is known about associations between personality traits and OB. Next, Section 1.2.2. discusses the advent and contributions of level of personality functioning as an important aspect of personality that extends beyond traits. Following this, Section 1.2.3. introduces interpersonal style and explains how interpersonal theory represents the central theoretical framework underpinning this thesis. Section 1.2.4. then discusses the role of empathy in OB, and Section 1.2.5. provides an overview of irritability and its associations with OB. Finally, Section 1.2.6. explains criminal thinking style and how it is related to relevant

behavioural outcomes. The chapter concludes by summarising the original contribution to knowledge provided by this research project.

1.2.1. Personality Traits and OB

1.2.1.1. Criminality and the Trait Approach

Early attempts to understand the factors that contribute to criminality represented a criminological approach that focused almost exclusively on environmental and structural influences pertaining to an individual's position in society (e.g., strain theory, Merton, 1938, 1957; differential association theory, Sutherland, 1939, 1947). Eysenck (1964) was the first researcher to explore the individual personality traits that may be associated with criminality, proposing that high levels of extraversion and neuroticism predispose individuals to OB. According to this early theory, extraverts fail to be conditioned to prosocial norms as effectively as introverts; this desire to behave in an antisocial manner was believed to be exacerbated when the individual also exhibited high levels of neuroticism, as this trait results in a strong desire to succumb to deviant inclinations (McEwan, 1983). However, in 1970, Eysenck and Eysenck amended this theory to include a third factor (psychoticism), asserting that high levels of this trait were also implicated in criminality. Over time, the 'PEN' (psychoticism, extraversion, and neuroticism) model of personality (Eysenck & Eysenck, 1970) diminished in popularity (O'Riordan & O'Connell, 2014) as it became evident that the theory was not well supported by empirical investigations (Blackburn, 1993). Nonetheless, this theory has been profoundly formative to today's acknowledgement of the importance of considering how individual-level factors can contribute to OB over and above structural, group, or environmental influences (Gudjónsson, 2016; O'Riordan & O'Connell, 2014).

1.2.1.2. The Five-Factor Model of Personality

In its examination of the personality traits that are associated with OB, this thesis builds on previous studies by exploring the roles of both 'positive' and 'dark' traits in

tandem. Adaptive traits are conceptualised through the Five-Factor Model (FFM; McCrae & Costa, 1987) of personality. Building on the foundations laid by Eysenck's (1964) and Eysenck and Eysenck's (1970) earlier works, today the FFM dominates explorations of normative personality traits. According to this model, the five higher-order traits that govern personality (sometimes referred to as the 'Big Five') are extraversion, agreeableness, neuroticism, openness to experience, and conscientiousness. Individuals who score high on extraversion tend to be energetic, outgoing, talkative, assertive, and physically expressive (McCrae & John, 1992). According to this model, those who score high on agreeableness can be described as kind, generous, sympathetic, compliant, altruistic, and forgiving. Meanwhile, a high score on conscientiousness denotes a person who is efficient, organised, reliable, responsible, ambitious, and able to set aside short-term desires in order to achieve long-term goals. Individuals who score high on neuroticism tend to be prone to negative affectivity, such as anxiety, worry, tension, hostility, depression, and emotional instability in general. Lastly, those who score high on openness to experience are often artistic, imaginative, curious, and introspective, and they place high value on intellectual pursuits.

The FFM, which is designed to parsimoniously capture the full range of aspects of 'normal' personality, has been extensively researched, validated, and applied in a broad range of settings and contexts. For example, this model has been utilised to describe associations between personality and perfectionism (Smith et al., 2019), burnout (Alarcon et al., 2009), personal values (Parks-Leduc et al., 2014), relationship satisfaction (Malouff et al., 2010), job satisfaction (Judge et al., 2002), smoking (Malouff et al., 2006), physical inactivity (Sutin et al., 2016), alcohol use (Malouff et al., 2007), emotion regulation (Barańczuk, 2019a), alexithymia (Barańczuk, 2019b), personality disorders (Ostendorf, 2000), and symptoms of clinical disorders (Malouff et al., 2005). However, in comparison

to the overall wide applications of the FFM in psychological research, relatively few studies have applied this model to investigations of OB.

Although there have been previous attempts to explore possible links between the FFM and self-reported delinquency, these studies tend to employ non-offender samples. Heaven (1996) was the first researcher to examine this relationship in a pair of studies utilising high school students and undergraduates. It was found that, in the high school students, extraversion was not associated with delinquency. Meanwhile, neuroticism, agreeableness, and conscientiousness were partially implicated in delinquent behaviour, but the strength of this association varied according to gender and type of delinquency. Conversely, some aspects of extraversion and agreeableness were linked to self-reported delinquency in the undergraduates. Evidently, these findings failed to provide any clear links between the FFM traits and OB. A more recent study of adolescents (Ljubin-Golub et al., 2017) yielded similarly conflicting results: in female participants, self-reported delinquency was associated with low levels of agreeableness and conscientiousness and high levels of neuroticism and extraversion. However, in male participants, only low agreeableness was implicated in self-reported delinquency. Thus, these studies failed to consistently and fully identify the associations between normative personality traits and self-reported OB in non-offender samples.

The results of these studies need to be interpreted with caution. Reliance on non-offender adolescent or young adult samples means that these findings cannot be regarded as fully representative of potential links between the FFM and actual OB. Furthermore, when self-report instruments are used to measure instances of antisocial or socially condemned behaviour, it is important to consider the possibility that some participants may not be completely truthful in their responses (Hare, 1985; Hart et al., 2015; King & Bruner, 2000), a notion referred to as social desirability response bias (Paulhus, 1991). Thus, to improve upon the potential shortcomings of previous studies, the present thesis will adopt a

more methodologically robust approach by utilising an ex-offender sample and incorporating scales to detect socially desirable response biases.

Despite their methodological advantage over studies that measure associations between the FFM and delinquency via self-report instruments in non-offender samples, the results of these later studies have not been entirely consistent. A meta-analysis by Miller and Lynam (2001) concluded that low levels of agreeableness and conscientiousness are implicated in OB. However, in most of the studies reviewed in this meta-analysis, the outcome variable was not OB *per se*, but antisocial personality disorder (ASPD). While ASPD is inherently linked to criminality (American Psychiatric Association, 2013), the two should not be conflated: although individuals with this disorder engage in unlawful behaviour, this does not mean that all offenders meet the criteria for an ASPD diagnosis. Meanwhile, more recently, using longitudinal data from a large ($n = 7,205$) representative sample of adult males in a National Child Development study, O’Riordan and O’Connell (2014) confirmed Miller and Lynam’s (2001) conclusion: in their study, OB was also linked to low levels of agreeableness and conscientiousness. However, these researchers also observed an association between OB and high levels of neuroticism and extraversion, while the same conclusion was not drawn in Miller and Lynam’s (2001) meta-analysis. This illustrates that the precise nature of the links between FFM traits and OB has not yet been elucidated in the extant literature. Indeed, while some studies have found a positive association between neuroticism and offending (Heaven et al., 2004; Miller et al., 2003; O’Riordan & O’Connell, 2014), others have failed to observe a statistically significant link between these variables (Heaven, 1996; Heaven & Virgen, 2001). Likewise, a link between high levels of extraversion and OB has been found in some studies (Heaven et al., 2004; John et al., 1994; O’Riordan & O’Connell, 2014) but not in others (Heaven & Virgen, 2001; ter Laak et al., 2003). Accordingly, Chapter 2 of this thesis presents a systematic

review that includes a synthesis of current knowledge regarding links between individual FFM traits and OB.

Some studies have endeavoured to advance examinations of the FFM and OB by seeking to determine whether FFM traits may be used to explain specific types of OB. However, the majority of these studies have focused on sex offending behaviour. This is perhaps a reflection of the prolific sub-area of research that attempts to explain the nuanced differences between sex offenders and general offenders (e.g., Craig et al., 2006); between sex offenders who offend against children and those who offend against adults (e.g., Hall & Hirschman, 1992; Malamuth et al., 1996); and between sex offenders who commit contact offences, those who commit online offences, and those who engage in both (e.g., Elliott et al., 2012). One such study observed high levels of self-reported neuroticism and low levels of self-reported conscientiousness among a sample of child sex offenders (Madsen et al., 2006). This negative association between conscientiousness and child sex offending aligns with what has previously been observed in studies of the FFM and general offending. However, because findings surrounding the role of neuroticism in general OB have been inconsistent, firm conclusions cannot be drawn from Madsen et al.'s (2006) observed association between this trait and sex offending, and research beyond such samples is required.

Other studies of FFM traits among sex offenders have yielded further conflicting results, with no consistent patterns having emerged from this body of research to date (see Chapter 2 for an in-depth review). This may be attributable to the studies' varying sample characteristics and research questions. For instance, FFM traits have been examined in child and adult sex offenders with and without histories of childhood trauma (Becerra-García et al., 2012); sex offenders, non-sexual offenders, and non-offender control participants (Becerra-García, García-León, Muela-Martinez, & Egan, 2013); child sex offenders who offended against immediate family members, step-family members, or

extra-familial children (Dennison et al., 2001); and convicted child and adult sex offenders alongside non-convicted sex offenders (Carvalho & Nobre, 2019). Two of these studies (Becerra-García, García-León, Muela-Martinez, & Egan, 2013; Dennison et al., 2001) observed that sex offenders scored lower on extraversion than their respective comparison groups; however, because research in this area employs such varying samples of offender groups, the ability to draw direct comparisons between studies is hindered, and this undermines any opportunity for consistent results to emerge from the data. Nonetheless, Dennison et al. (2001) found that non-offenders could be reliably distinguished from sex offender groups on the basis of their FFM scores at a rate of 91%, while these scores were only moderately accurate at differentiating between different sex offender subgroups (ranging from 53% to 73%). This finding demonstrates the potential utility of attempting to differentiate between offenders on the basis of personality traits and offence type, an assertion that has been reiterated elsewhere (Becerra-García, García-León, & Egan, 2013; Ljubin-Golub et al., 2017). The present research will test this assertion by investigating personality trait profiles alongside different types of OB.

The FFM of personality has established its position in the field of personality research as the dominant model through which to explore the role of personality traits in various types of behaviour. However, the inconsistent findings reviewed here suggest that this model falls short of capturing the full extent to which personality traits may play a role in OB. Indeed, due to the FFM's focus on 'normal' personality traits, this model appears to be intrinsically incongruent with such deviant behaviour (Wiebe, 2004). In order to address this shortcoming of the FFM and better elucidate the full range of personality traits that may be implicated in offending, this thesis also incorporates a second model of personality known as the Dark Triad (Paulhus & Williams, 2002).

1.2.1.3. The Dark Triad of Personality

Decades of inconsistent findings surrounding the role of the FFM in OB highlight a potential need for more theoretical nuance in these investigations. Accordingly, researchers have increasingly begun to consider the contributions of less popular or ‘darker’ traits.

Introduced by Paulhus and Williams in 2002, the three traits that comprise the Dark Triad are Machiavellianism, subclinical narcissism, and subclinical psychopathy.

Machiavellianism is characterised by a cold and manipulative interpersonal demeanour (Paulhus & Williams, 2002). Individuals who score high on this construct demonstrate difficulty getting along with others and expressing and receiving interpersonal warmth and affection (Dowgwillo & Pincus, 2017). They are skilled at hiding their emotions from others and tend to be interpersonally detached. Meanwhile, subclinical psychopathy is associated with impulsivity, thrill-seeking behaviour, and low levels of anxiety and affectivity (Paulhus & Williams, 2002). Individuals who score high on this trait tend to mistrust others and show an inability to care about the wants and needs of others (Dowgwillo & Pincus, 2017). Finally, subclinical narcissism refers to such attributes as entitlement, superiority, grandiosity, and interpersonal dominance (Paulhus & Williams, 2002). While these three constructs are theoretically distinct, they tend to correlate positively with one another (Glenn & Sellbom, 2015; Paulhus & Williams, 2002; Vize et al., 2018), and they share the core elements of social malevolence, affective callousness, and a distinctive lack of empathy (Jones & Figueredo, 2013).

Subclinical psychopathy is often parsed into different subcomponents. A common distinction is that between primary and secondary psychopathy (Karpman, 1941; Blackburn, 1975; Levenson et al., 1995). Individuals who fit into one of these two subtypes share many of the same characteristics. However, primary psychopathy is said to encompass the interpersonal and affective aspects of this trait, while secondary psychopathy refers more to the antisocial behavioural components (Levenson et al., 1995).

Primary psychopathy has been found to show strong overlap with Machiavellianism (McHoskey et al., 1998), while secondary psychopathy has been associated with risky decision-making among young adults in the general population (Dean et al., 2013).

Like psychopathy, subclinical narcissism is also sometimes broken down into two dimensions: grandiose narcissism and vulnerable narcissism (e.g., Dickinson & Pincus, 2003; Miller & Campbell, 2008). Within this perspective, an individual with high levels of the grandiose aspects of narcissism exhibits grandiosity, entitlement, inflated ego, and dominance while remaining oblivious to the ways their behaviour impacts other people (Dickinson & Pincus, 2003; Miller et al., 2011). Meanwhile, someone who has high levels of vulnerable narcissism is hypersensitive to criticism and may appear shy and empathic in their presentation (Dickinson & Pincus, 2003). However, grandiosity and entitlement hide beneath this façade, rendering these individuals hypersensitive to criticism. Their self-esteem is not as bulletproof as those high in grandiose narcissism, and this ego fragility can result in anxiety stemming from their interpersonal relationships.

Although DT research has proliferated since its introduction two decades ago (Miller et al., 2019), most studies involving the DT have utilised nonclinical, non-offender samples to examine self-reported instances of antisocial behaviour—a broad construct that subsumes OB, but also includes legal behaviour such as minor aggression, cheating on a school exam, etc. Indeed, a critical appraisal of the field by Miller et al. (2019) observed that of 131 DT studies published in the literature, 70% utilised college or online community samples, and only one study used an offender sample. This raises questions about the extent to which the findings of these studies can be generalised to instances of illegal behaviour. Thus, the present research attempts to circumvent these limitations by exploring the role of the DT in OB (as opposed to the broader construct of antisocial behaviour), including that which has been committed by formerly incarcerated offenders.

Previous investigations of links between DT traits and antisocial behaviour have yielded somewhat inconsistent findings, which may be attributable to the varying forms of behaviour employed as outcome variables in these studies. Associations have been observed between all three DT traits and less positive attitudes towards animals (regarded in that study as a ‘red flag’ indicator of future violent behaviour towards animals and, eventually, humans; Kavanagh et al., 2013); bullying among university students (Baughman et al., 2012); and self-reported delinquent behaviour in adolescents (Wright et al., 2017). However, because the DT traits correlate strongly with one another, in recent years DT research design has increasingly reflected the need to account for the unique variance attributable to each of the three traits. As such, research utilising this framework needs to be sensitive to the notion that these three traits are theoretically distinct and the tendency to group them together into a single ‘supertrait’ should therefore be avoided (Glenn & Sellbom, 2015; Watts et al., 2017), lest the individual contributions of each trait become lost in the process.

1.2.1.4. The Profile Approach

A trait approach to examinations of predictors of OB carries some limitations. Offenders are not a homogenous group, and the underlying risk factors driving their OB are similarly heterogeneous (Dargis & Koenigs, 2018). This thesis will address this limitation by adopting a profile or ‘typology’ approach to its investigations of personality and OB (see Chapter 3, Section 3.4.1. for more information). These profiles can hold significant theoretical and practical utility. On a conceptual level, they offer convenience by subsuming different levels of multiple relevant traits under one label (Herzberg & Hoyer, 2009). Furthermore, they can account for interactions between variables as opposed to relying solely on linear combinations of individual traits; this can be used to strengthen predictions about OB. Statistically speaking, profiles also serve to reduce within-group variance on a given variable (Herzberg & Hoyer, 2009). Meanwhile, in line with this

thesis' goal of achieving overarching practical relevance, profiles can also facilitate effective treatment by virtue of providing tailored representations of the unique drivers of an individual's OB (Dargis & Koenigs, 2018). As an illustration, while it may be useful to tailor an intervention to a person's level of narcissism, knowing how that narcissism coincides with their levels of neuroticism, agreeableness, and other traits would facilitate a more holistic, comprehensive approach to a personalised intervention for that individual. In this manner, profiles may contribute important groundwork towards enabling a more person-centred approach to treatment planning than trait-level conclusions that generalise across samples (Herzberg & Hoyer, 2009).

Several studies have elucidated personality prototypes composed of FFM traits, often yielding three primary profiles (Herzberg & Hoyer, 2009). These are commonly labelled as *resilients*, *overcontrollers*, and *undercontrollers*. The resilient profile comprises below-average scores on neuroticism, and average or above-average scores on the remaining four FFM traits. Individuals who fit this profile are characterised as well-adjusted. In contrast, overcontrollers are said to be characterised by high scores on neuroticism and low scores on extraversion, while undercontrollers demonstrate low scores on both conscientiousness and agreeableness (Asendorpf et al., 2001; Hart et al., 2005). Two additional profiles have been identified in other studies: *confident* individuals who score moderately high on extraversion and openness and average on neuroticism, agreeableness, and conscientiousness, and *reserved* individuals who demonstrate low scores on neuroticism, extraversion, and openness and moderately high scores on agreeableness and conscientiousness (Caspi et al., 2003; Herzberg & Roth, 2006; Roth & von Collani, 2007). Previous research involving these profiles, in addition to others, is discussed in depth in Chapter 4.

Some of the studies that have adopted a profile approach have examined characteristics other than FFM traits. Dargis and Koenigs (2018) analysed constellations of

scores denoting criminal histories, clinical psychopathy, depression, anxiety, post-traumatic stress, impulsivity, addiction, cognitive abilities, and general psychopathology. In a sample of 2,388 adult male prisoners with no documented history of psychosis, six profiles were observed: (1) average, (2) psychopathic-positive affect, (3) low executive functioning, (4) externalising, (5) psychopathic-negative affect, and (6) high well-being. These results illustrate that the dominant profile approach (utilising the FFM to categorise groups of resilient, overcontrolled, and undercontrolled individuals) is not the only way to elucidate offender typologies and, indeed, factors other than FFM traits may be important to this pursuit. This thesis builds on this notion by incorporating both the FFM and the DT into its investigation of offender trait profiles and by examining the additional contributions of level of personality functioning, interpersonal style, empathy, irritability, and criminal thinking style in the context of OB.

1.2.2. Level of Personality Functioning

1.2.2.1. Background

An individual's level of personality functioning (LPF) encompasses the degree to which they experience personality-related functional impairments (American Psychiatric Association, 2013). This construct has received increased attention in the fields of personality and clinical psychological research since the American Psychiatric Association (APA) incorporated it into the most recent edition of the Diagnostic and Statistical Manual of Mental Disorders (DSM-5; APA, 2013). Early investigations (Meehan et al., 2019; Morey et al., 2011; Skodol, 2018) suggest that LPF may hold greater practical and clinical utility than traits or personality disorder (PD) diagnostic labels. However, no studies to date have incorporated both trait profiles and LPF in an attempt to determine the link between personality and OB, nor have precise differences between offence types been explored in relation to this association. This thesis examines the possible contribution of LPF in explaining potential links between trait profiles and OB.

1.2.2.2. LPF in DSM-5

Among clinical practitioners, the DSM (APA, 2013) is heavily relied upon to inform diagnoses of mental disorders and PDs. In the lead-up to the publication of the 5th and most recent edition of the DSM, working groups were formulated to address potential areas for improvement upon the previous edition (DSM-IV). One of the proposed changes prior to the release of DSM-5 was that the hegemonic understanding of PDs should shift from a categorical system to a dimensional one. In DSM-IV and prior editions of the manual, PDs were diagnosed as ‘present’ if a patient demonstrated symptoms of the disorder in excess of a clearly delineated threshold. However, Widiger et al. (1994) proposed that these disorders should be conceptualised from a dimensional perspective, through which PDs could be said to represent extreme variants of otherwise normal personality traits as outlined by the FFM. These FFM-based descriptions of PDs have been supported many times over by subsequent research (e.g., Dyce & O’Connor, 1998; Lynam & Widiger, 2001) and rated by clinicians as being as useful as the existing categorical model (Glover et al., 2012). Despite these positive responses to Widiger et al.’s (1994) proposition, when the new DSM-5 was published in 2013, it retained the categorical diagnostic system (APA, 2013). However, DSM-5 appended an Alternative Model for Personality Disorders (AMPD), which represents a new way to conceptualise the severity of functional impairment that is often observed in individuals with PD diagnoses.

In contrast to the categorical diagnostic system that dominates DSM-5, in the AMPD, PDs are characterised not just by their traits but also by corresponding impairments in personality functioning. Criterion A of the AMPD encompasses severity of personality dysfunction, while Criterion B focuses on the precise maladaptive traits exhibited by the individual (APA, 2013). In Criterion A, four elements of personality functioning are divided into two domains: ‘self’ (identity, self-direction) and ‘interpersonal’ (empathy, intimacy). *Identity* refers to an individual’s ability to experience

themselves as unique; to understand boundaries between themselves and others; and to experience and regulate a range of emotions. *Self-direction* refers to the pursuit of realistic short-term goals and the ability to self-reflect. *Empathy* is characterised by an ability to appreciate others' experiences, tolerate different perspectives, and understand the effect their behaviour has on others (APA, 2013, p. 762). Finally, *intimacy* refers to the ability to be close to and connect with others on a meaningful level. According to this Alternative Model, the core of personality psychopathology lies not at the trait level, but rather in impairment to self and relational functioning (Johansen et al., 2016); it is these impairments that differentiate personality pathology from other types of psychopathology (Pincus et al., 2020; p. 2). For instance, an individual with severe impairment in all four areas would have poor boundaries and a weak self-image that is easily influenced by interactions with others (identity impairment); lack goals and internal standards for behaviour (self-direction impairment); fail to understand and consider others' experiences or perspectives (empathy impairment); and have little desire for affiliation with others (intimacy deficit) (APA, 2013). These impairments demonstrate strong alignment with the tenets of interpersonal theory, this thesis' theoretical framework (discussed further in Section 1.2.3.1.).

Incorporating severity of impairment in personality functioning facilitates several improvements upon the categorical model. For instance, for PD patients, the best predictor of therapeutic outcome is believed to be not the *type* of personality pathology present, but rather, its *severity* (Bornstein, 1998, p. 337; Hopwood et al., 2018; Weekers et al., 2018). It has also been widely acknowledged that, when it comes to PDs, comorbidity is the norm rather than the exception (Morey et al., 2011). Thus, focusing on severity of personality dysfunction may offer greater clinical and theoretical utility than a sole emphasis on diagnostic categories. Indeed, in alignment with the DSM-5, the latest edition of the World Health Organization's International Classification of Diseases (ICD-11) does away with a

categorical PD framework entirely (Sharp & Wall, 2021). Instead, it includes a severity criterion that encompasses self and interpersonal functioning, and clinicians have the option of further qualifying this rating with the inclusion of five trait domain qualifiers. In this way, the two diagnostic manuals that dominate the field of clinical psychology have adopted a radical and momentous shift in the conceptualisation of dysfunctional personality. By emphasising the dimensional nature of personality and the way it can impact an individual's relationship with themselves and others to varying degrees, this shift has tremendous potential for practical applications in clinical and forensic settings; furthermore, it opens new avenues for research examining the way LPF impacts various behaviours, including OB (see Section 1.2.2.3.3.).

1.2.2.3. Theoretical and Empirical Links

1.2.2.3.1. Interpersonal Theory. The AMPD's acknowledgement of the relevance of impairments in self and interpersonal functioning domains is congruent with a wide range of existing PD theories (Bender et al., 2011), including interpersonal theory, the theoretical framework underpinning this research (see Section 1.2.3.). Individuals with severe dysfunction in AMPD's interpersonal domain tend to have low desire for affiliation, and it is self-evident that impairments in the self domain map onto low levels of communion within the interpersonal circumplex (see Section 1.2.3.1.). In addition to Criterion A's conceptual links with interpersonal theory and the interpersonal circumplex (Pincus, 2018), empirical support has also been garnered for these relationships.

Hengartner et al. (2014) found that, in an adult sample, all DSM-IV PD dimensions were associated with interpersonal functioning deficits, including distress, conflict, and lack of social support. Meanwhile, in a study by Dowgwillo et al. (2018), all self and other LPF impairments were moderately to strongly associated with increases in interpersonal distress. Empathy, intimacy, and self-direction impairments were also linked to low communion within the interpersonal framework. Consequently, Criterion A of the AMPD

is an excellent fit for inclusion within this thesis, as LPF and the interpersonal framework appear to be fundamentally linked.

1.2.2.3.2. Personality Trait Models. In addition to its alignment with interpersonal theory, the AMPD has explicit links to the FFM. While Criterion A focuses on severity of dysfunction, Criterion B of the AMPD encompasses five trait domains that represent maladaptive variants of the FFM (APA, 2013). Furthermore, although they differ slightly from those in the AMPD, the optional trait domain qualifiers included in ICD-11 are equally aligned with the FFM (Sharp & Wall, 2021). However, despite Criterion A not being explicitly linked to the FFM in the AMPD (McCabe et al., 2021), empirical evidence indicates that levels of personality impairment under Criterion A converge with the FFM traits, with neuroticism typically showing the strongest associations (Sleep et al., 2020). However, a recent study failed to find associations between LPF and extraversion, and only observed a small association with openness to experience (McCabe et al., 2021). Nonetheless, the strong preliminary evidence for the overlap between FFM traits and both domains of the LPF (self functioning and interpersonal functioning) indicate that LPF represents a fruitful avenue through which to explore the personality-based drivers of OB in this thesis.

In addition to the FFM, one study thus far has investigated LPF in relation to the DT. Zeigler-Hill and Besser (2021) found that Machiavellianism and psychopathy were strongly associated with deficits in all four facets of LPF (identity, self-direction, empathy, and intimacy). For Machiavellianism, these correlations were typical to relatively large¹ ($r = .21$ to $r = .32$), and for psychopathy they were very large ($r = .39$ to $r = .44$).

¹ Cohen (1988) proposed that correlations of $r = .10$, $r = .30$, and $r = .50$ indicate small, moderate, and large effects, respectively. However, based on a meta-analysis of 708 correlations, Gignac and Szodorai (2016) concluded that Cohen's guidelines do not fit the norms within individual differences research. They subsequently recommend that guidelines of $r = .10$, $r = .20$, and $r = .30$ are used to indicate effects of relatively small, typical, and relatively large magnitude in the context of individual differences investigations.

Interestingly, their study found no support for a relationship between narcissism and any of the LPF facets. These trait-specific findings therefore substantiate the need for an approach that extends beyond univariate associations. The profile approach utilised in the present research facilitates an examination of how FFM and DT traits may interact in their associations with LPF.

1.2.2.3.3. Offending Behaviour. Although it has been established that PDs represent a risk factor for interpersonal violence (Logan & Johnstone, 2010), to date, few studies have examined LPF in relation to OB. Garofalo et al. (2018) compared child sex offenders, violent offenders, and community participants, observing that the violent offenders displayed more marked personality dysfunction than the other groups. In addition, when compared to the community participants, the child sex offenders in this study reported specific deficits in self-control, identity, and relational capacities. These findings highlight the potential for tailoring treatment approaches on the basis of offence type, and support the delineation of various types of OB in this thesis when exploring its association with aspects of individual difference (see Chapter 3 for more information about methodology).

1.2.2.4. Treatment Implications

LPF holds unique utility for clinicians seeking to address personality processes in treatment. According to the AMPD, “mental representations of the self and interpersonal relationships are reciprocally influential and inextricably tied, affect the nature of interaction with mental health professionals, and can have a significant impact on both treatment efficacy and outcome” (APA, 2013, p. 772). Consequently, benefits of LPF include measuring the precise extent of the psychopathology present, fostering a positive therapeutic alliance, tailoring treatment approaches, and measuring treatment effectiveness and outcomes (Bender et al., 2011). By applying this construct, clinicians can attend to the manner in which the patient’s personality traits interact with their lived experiences—their LPF (Sexton et al., 2019). The introduction of LPF into DSM-5 and ICD-11 has therefore

trailblazed a new avenue through which clinicians can attend to the nonlinear effects of traits and functioning on an individual's behaviour and interpersonal experiences. Indeed, Sexton et al. (2019) suggest that targeting LPF may be a more accessible route for fostering insight and reducing stress among PD patients. Thus, the inclusion of LPF in this thesis is predicted to contribute to our understanding of personality-based drivers of OB that extend beyond traits.

In addition, severity of personality dysfunction has been empirically associated with a slew of factors related to treatment outcomes, including dropout rates, therapeutic alliance, epistemic trust, risk of harm to self and others, and identity coherence (Bach & Simonsen, 2021). It therefore holds promise for clinicians seeking to improve treatment formulations, communication with patients, and estimates of treatment effectiveness. Research into this area is burgeoning, with one study (Rossi et al., 2021) having used Criteria A and B of the AMPD to establish personality profiles (Criterion B) of resilient, undercontrollers, and overcontrollers; these types were found to differ in their levels of personality dysfunction (Criterion A) and may therefore benefit from tailored treatment interventions. As more work is done examining LPF differences among various types of offender groups, so too can this information be used to contribute to more person-centred treatments in forensic settings. The field is on the undeniable precipice of a shift in the conceptualisation of personality dysfunction, with ample opportunity for forthcoming research to edify a new way forward for clinicians, patients, and academics alike. By exploring these constructs in ex-offender and community samples, the present research will assist in forging this path, adding population validity to existing clinical endeavours.

1.2.3. Interpersonal Style

1.2.3.1. Interpersonal Theory

As a theoretical framework, interpersonal theory is useful for the current research because of its direct relevance to LPF in the AMPD and its potential links to personality

traits encapsulated by the FFM and DT models. First conceptualised by Sullivan (1953) and Leary (1957), interpersonal theory posits that pathological behaviour can be best understood through an examination of interpersonal processes (Hopwood et al., 2013). Leary (1957) conceptualised personality as a layered construct representing patterns of overt, conscious, and private interpersonal responses exhibited by an individual, building on earlier psychodynamic approaches (e.g., Erikson, 1950; Fromm, 1947; Horney, 1945). According to Leary (1957, p. 8), anxiety is interpersonal when it derives from fear of derogation or rejection—both from other people, and from oneself. Interpersonal situations are characterised by tension, and people’s thoughts and behaviours in those interactions are intrinsically linked to their judgements of themselves and others. Thus, all interpersonal interactions are said to be driven by attempts to achieve and maintain self-esteem or to avoid anxiety (Leary, 1957; Sullivan, 1953; Wilson et al., 2017). Through continuous attempts to achieve these two goals, patterns of cognitions and behaviours within the interpersonal situation underpin the origin, development, and maintenance of one’s personality, as well as psychopathology (Pincus et al., 2010). Over time, this process engenders mental representations of the self and of others, as well as enduring ways in which the individual relates to others. Indeed, Sullivan (1953) believed that the interpersonal situation occurs not only in the overt behaviour of two people in an interaction, but also within those individuals’ minds.

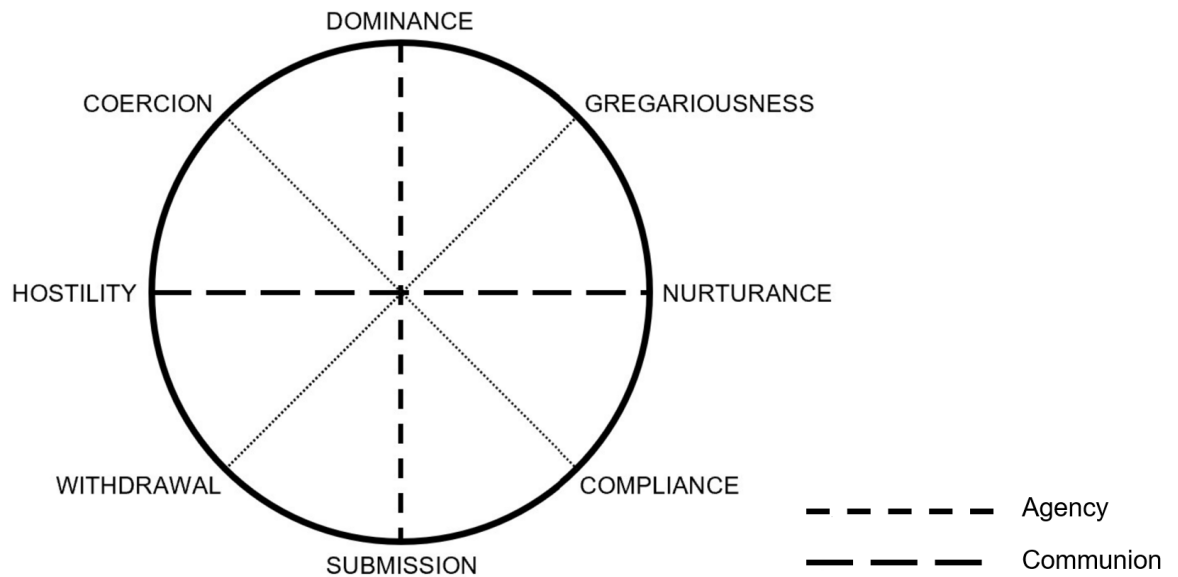
The manner in which the individual attempts to accomplish these goals of enhancing self-esteem and avoiding anxiety represents a durable set of techniques that is observable across interactions and contexts. This set of techniques is referred to as one’s *interpersonal style*, defined as “one’s characteristic approach to interpersonal situations and relationships, [including] attitudes toward, and behaviours in, and goals for relationships; cognitions about the meaning of relationships; affect and behaviour in interpersonal interactions; and interpretation of others’ interaction behaviours” (Wilson et

al., 2017, p. 679). Consequently, an individual's interpersonal style is seen to dictate their approach to all interpersonal situations regardless of whether they are transient exchanges or long-term relationships with family members, colleagues, or romantic partners. How an individual perceives others' behaviour in interpersonal interactions will also be informed by their interpersonal style. Thus, interpersonal style is hypothesised in this thesis to play an important role in bridging the gaps between personality traits and OB that have been highlighted earlier in this chapter (Section 1.2.1.) and which are examined more closely in Chapter 2.

According to this theory, interpersonal behaviours are best represented using two orthogonal dimensions: *agency* and *communion*. Hogan (1982) referred to these constructs as 'getting ahead' (agency) and 'getting along' (communion). Agency (sometimes referred to as *power* or *control*) represents a desire for power and the enhancement and protection of one's differentiation as a unique individual (Hopwood et al., 2013; Pincus et al., 2010). This dimension is anchored by dominance at one end, and by submission on the other. Meanwhile, communion (also referred to as *affiliation*) refers to intimacy, union, and a desire to be part of a greater social entity. Communion is anchored by hostility and nurturance (Blackburn, 1998). Together, these four anchors comprise the coordinates of the *interpersonal circumplex* or *interpersonal circle* (Leary, 1957; Wiggins, 1996), illustrated in Figure 1.1. The circumplex is commonly divided into eight octants (Soldz et al., 1995), which can then be used to classify, describe, or assess one's interpersonal style (Figure 1.2).

Figure 1.1

Octants of the Interpersonal Circle



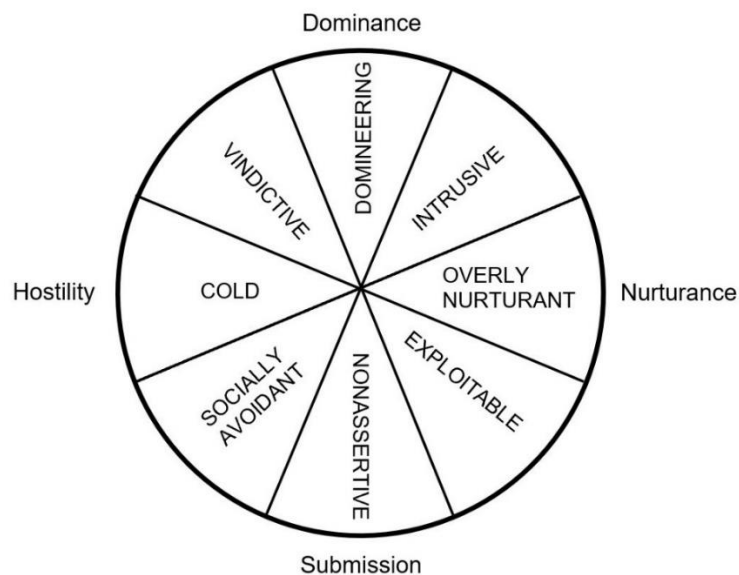
Note. Adapted from "Rating scales for measuring the interpersonal circle in forensic psychiatric patients," by R. Blackburn and S. J. Renwick, 1996, *Psychological Assessment*, 8(1), 76-84. Copyright 1996 by the American Psychological Association, Inc.

One of the central tenets of interpersonal theory is the *principle of complementarity* (Carson, 1969; Kiesler, 1987; Leary, 1957). On the dimension of communion, interpersonal behaviour pulls for a complementary response: nurturance pulls for nurturance, and hostility pulls for hostility (Daffern et al., 2012). In contrast, behaviours pull for reciprocal responses on the dimension of agency: dominance pulls for submission and submission pulls for dominance. However, although individuals seek responses from other people that complement their own interpersonal style or relational patterns, others' responses may not always align with this objective. Hence, interpersonal interactions may be characterised by one of three patterns: *complementarity*, *acomplementarity*, or *anticomplementarity* (Daffern et al., 2012; Pincus & Ansell, 2003). Interactions are complementary when both rules of complementarity are met – that is, reciprocity on agency and correspondence on communion, as well as equivalent intensity (Pincus & Ansell, 2003, p. 216). Meanwhile, *acomplementary* interactions occur when one of the two rules is met, but not both (Daffern et al., 2012). Finally, *anticomplementary* interactions are those in which neither of these patterns is present. *Acomplementary* and

anticomplementary interactions elicit discomfort, while complementary responses enable a sense of relational stability (Pincus & Ansell, 2003) and felt security (Carson, 1969) in both parties.

Figure 1.2

Interpersonal Styles and Their Positions Within the Interpersonal Circle



Note. Anchors of agency (vertical) and communion (horizontal) are indicated on the outside of the circumplex.

These interpersonal patterns are seen to lead to three potential outcomes in a given interaction (Sullivan, 1954). An interpersonal situation is said to be resolved when responses are complementary (i.e., dominance is met with submission or vice versa; nurturance is met with nurturance; or hostility leads to hostility). A complementary patterns are conceptualised as less stable, provoking tension between the two individuals. The outcome of this type of exchange is referred to as continued, as a complementarity often leads to negotiation that moves the pattern closer to, or further away from, complementarity (Pincus & Ansell, 2003). Lastly, in this model, anticomplementary interactions are the least stable. With conflict on both dimensions, a resolution is typically not found. The outcome is frustration, and it is often conceived of as resulting in avoidance and disintegration of the interaction. It has been suggested (Pincus et al., 2010) that

psychopathology may manifest in chronic deviations from complementarity. Thus, individuals with significant dysfunction in personality functioning may be prone to interpersonal interactions characterised by anticomplimentarity, leading to frequent tension and conflict in interpersonal interactions. This tendency towards interpersonal conflict may manifest in OB that is interpersonal in nature, such as violent or sexual offending. This possibility demonstrates the utility of interpersonal theory in this thesis, as the interpersonal framework holds unique potential for bridging the existing gaps in our understanding of how personality contributes to OB.

When considering interpersonal theory within the broader context of the current research, three things stand out. First, agency is noted to align closely with the DSM-5 AMPD conceptualisation of the self (Pincus, 2011). Second, communion is similar to AMPD's interpersonal domain (Hopwood et al., 2013). Third, agency and communion also align with the FFM traits of extraversion and agreeableness, respectively (Entringer et al., 2022; Hopwood et al., 2013). Interpersonal theory therefore offers theoretical parallelism (Pincus, 2011) with both the FFM and the AMPD's approach to conceptualising personality pathology (Hengartner et al., 2014), consequently holding direct relevance to the aims of this thesis.

1.2.3.2. Personality Traits

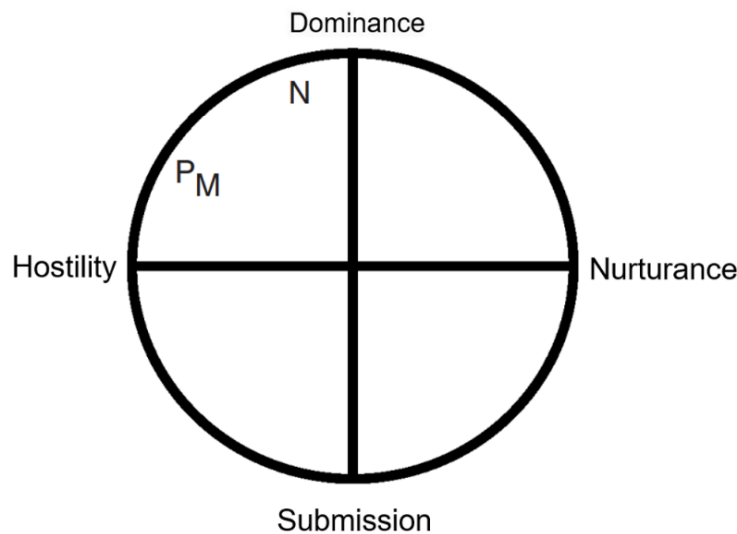
Interpersonal theorists posit that personality is best understood through repeated patterns of interpersonal behaviour (Pincus & Wiggins, 1990). Indeed, although the circumplex model was originally developed for clinical contexts, it is also complementary to the FFM (Trapnell & Wiggins, 1990). Within the FFM, all five traits impact how others perceive an individual; in this way, the traits can all be considered interpersonal in nature because they directly influence how people interact with one another (McCrae & Costa, 1989). However, according to McCrae and Costa (1989), this conceptualisation is strongest for extraversion and agreeableness, which appear to directly determine both the amount of

social stimulation an individual prefers, and the quality of their social interactions. Thus, although the other three traits can be interpersonal in nature under some circumstances, extraversion and agreeableness hold the most overt and consistent interpersonal relevance (Du et al., 2021). When compared to the interpersonal circumplex, extraversion has been conceptualised as high agency and high communion (friendly dominance), while agreeableness represents low agency and high communion (friendly submission) (Du et al., 2021; McCrae & Costa, 1989). In one examination of the FFM traits and interpersonal functioning (Du et al., 2021), neuroticism was associated with a high degree of interpersonal problems and values, while extraversion and conscientiousness were associated with fewer interpersonal problems overall, perhaps representing protective factors in this regard. Thus, it is evident that FFM traits can be captured within interpersonal theory, further helping to justify its utility as a guiding framework for the present focus on personality-based drivers of OB.

Like the FFM, the DT traits also map onto the interpersonal circumplex (Jones & Paulhus, 2011). Specifically, the three traits are positioned near the edge of the upper-left quadrant of the circle (high agency, low communion), with narcissism situated close to the Dominance anchor, while Machiavellianism and psychopathy reside closer to the Hostility anchor (Dowgwillo & Pincus, 2017; Jones & Paulhus, 2011). Thus, narcissism can be conceptualised within the circumplex as high dominance. Meanwhile, psychopathy and Machiavellianism both represent high dominance and low communion, but the association between psychopathy and dominance has been shown to be stronger than that of Machiavellianism, whose primary characterisation is that of low communion (Dowgwillo & Pincus, 2017). The mapping of these traits within the circumplex model therefore provides further support for its selection as the theoretical framework in the present research, given the strong conceptual overlap between the DT and the interpersonal circle. These positions are illustrated in Figure 1.3.

Figure 1.3

Typical Locations of Dark Triad Traits in the Interpersonal Circumplex



Note. N = narcissism; P = psychopathy; M = Machiavellianism. Adapted from "Differentiating the Dark Triad Within the Interpersonal Circumplex," by D. N. Jones and D. L. Paulhus, in L. M. Horowitz & S. Strack (Eds.), *Handbook of Interpersonal Psychology: Theory, Research, Assessment, and Therapeutic Interventions* (p. 250), 2011, New York: Wiley & Sons. Reprinted with permission.

1.2.3.3. Personality Pathology

Leary (1957), who was the first to conceptualise personality disorders as expressions of normal traits (Blackburn et al., 2005, p. 609), believed that when it comes to personality, interpersonal behaviour is the component with the most functional relevance for clinicians. Interpersonal theory is therefore intrinsically related to personality dysfunction and pathology (Lilienfeld et al., 2019). An individual's ingrained schemas, about themselves and about relationships in general, underpin their interpersonal style. These schemas are construed to lead an individual to hold certain attitudes, cognitions, and expectations surrounding social interactions and relationships. In some cases, these schemas are maladaptive, leading to dysfunctional interpersonal behaviour (Hopwood et al., 2013; Pincus et al., 2010). Furthermore, it is theorised that they can operate as self-fulfilling prophecies whereby an individual's behaviour in interpersonal interactions functions to elicit the precise responses they expect to receive (Carson, 1979; Daffern et

al., 2012; Kiesler, 1987). For instance, if an individual enters a social interaction expecting hostility from the other person, they may be predisposed to greet that person in a hostile manner before their expectation has even had a chance to come to fruition. The other person may then return that negative greeting with hostility of their own, serving to confirm the other's expectation. However, if the first individual had approached the interaction in a more positive or neutral way, hostility from the other person may never have occurred. This behavioural pattern transcends the limits of pathology, rendering the interpersonal framework applicable to clinical and non-clinical samples alike.

In some cases, an individual's subjective perception of an interpersonal situation may not align with objective reality. This distortion, or incongruence, occurs more often in individuals with personality pathology (Hopwood et al., 2013), but may also be present in those who lack any mental disorder or PD, and it can cause distress for that individual as well as salient others. The misperception is believed to typically be linked to a feared outcome such as criticism or abandonment. Feeling threatened or distressed, the individual may seek to protect themselves by behaving in a self-defensive manner, thereby responding logically, albeit maladaptively, as a result of their distress. Interpersonal theory is therefore a fruitful framework through which personality dysfunction can be understood. While existing work has tended to focus on clinical samples (e.g., Blackburn, 1998; Cookson et al., 2012; Daffern et al., 2008; Dolan & Blackburn, 2006; Doyle & Dolan, 2006; Ireland, Ireland, Jones, et al., 2019; Jalil et al., 2019; Podubinski et al., 2014, 2016; Watson et al., 2017), the focus on community and ex-offender samples in this thesis will contribute to our understanding of how these processes may occur in non-clinical (and potentially pre-clinical) populations as well.

When theorising about personality dysfunction, interpersonal theory asserts that well-adjusted individuals will adapt to the demands of different social situations, drawing on interpersonal approaches from varying segments of the circumplex (Vernham et al.,

2016). However, when an individual relies exclusively on interpersonal behaviours represented by only a narrow portion of the interpersonal circle, this represents maladaptive interpersonal functioning that leads to a dysfunctional, inflexible interpersonal style (Pincus et al., 2010). Both interpersonal theory and the DSM-5 AMPD espouse that this maladaptive approach to interpersonal interactions and relationships is indicative of the core of a disordered personality. Rather than regarding PDs as categorical entities that are incontrovertibly distinct from normal personality traits, the interpersonal circumplex and the AMPD emphasise the dimensional nature of personality, involving not only traits and behavioural patterns, but also their relative strength and rigidity (Pincus et al., 2010). In this sense, the inclusion of LPF in this thesis is expected to add depth to our current understanding of associations between personality traits and OB.

PDs are associated with various aspects of impaired interpersonal functioning (Daffern et al., 2008; Pincus & Hopwood, 2012), including relational conflicts, loneliness, relationship distress, and having few close friends (Hengartner et al., 2014). In fact, Lilienfeld et al. (2019) suggest that PDs can be conceptualised as ‘emergent interpersonal syndromes’ – patterns of symptoms that evoke adverse reactions from other people. Although rigidity of interpersonal behaviour is commonly indicative of personality pathology, some PDs may be better characterised by oscillation: that is, chronically conflicted and variable interpersonal approaches (Pincus & Hopwood, 2012). According to Kernberg (1984), oscillation may characterise individuals who failed to develop a coherent, stable sense of self. This instability is likely to contribute to interpersonal difficulties, which may in turn lead to the commission of interpersonally-rooted OB.

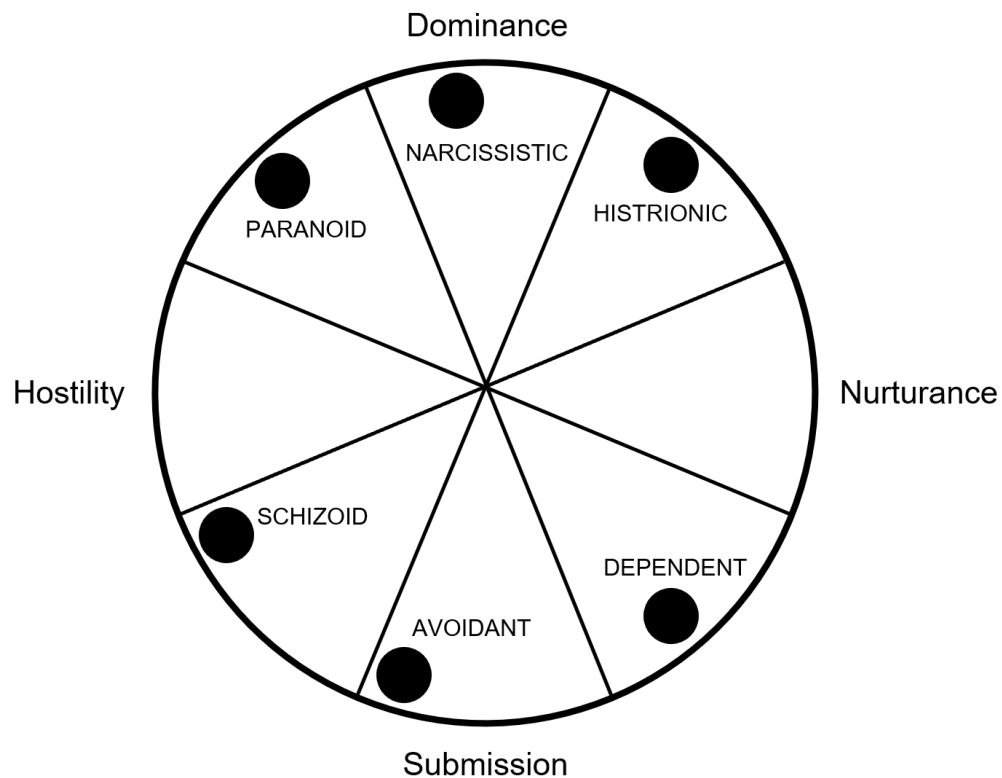
A recent meta-analysis of 127 studies lends further support to the assertion that, at its core, pathological personality can be thought of as impairments in agency (the ability to get ahead) and communion (the ability to get along) (Wilson et al., 2017, p. 723; see above). Their analysis revealed that each of the PDs has a unique profile of interpersonal

style that aligns with its categorical description of symptomology in the DSM. Meanwhile, the interpersonal circumplex has also been directly examined in conjunction with LPF. For instance, Dowgwillo et al. (2018) found that certain aspects of LPF, such as aversion to dependence and intimacy, are linked to low communion, coldness, and sensitivity to communion in others. A more recent study by Stone and Segal (2022) concluded that socially avoidant interpersonal style is associated with low communion, while high communion is linked to an intrusive interpersonal style. The LPF domains of identity and intimacy were associated with intrusive interpersonal style, and socially avoidant interpersonal style was associated with the LPF domain of empathy. The AMPD is therefore intertwined with the interpersonal framework, illustrating both constructs' suitability for inclusion in this thesis.

Some studies have investigated the placements of PDs within the interpersonal circumplex. Research (Blackburn, 1998; Pincus & Wiggins, 1990) indicates that antisocial, paranoid, and narcissistic PDs commonly fall in the hostile-dominant (i.e., upper left) quadrant of the circumplex (Podubinski et al., 2014). Meanwhile, more precise locations within the circumplex have also been derived for as many as six PD categories (Pincus et al., 2010). The placement of these disorders is shown in Figure 1.4. In the circumplex model, the further a behaviour, or disposition, is from the centre of the circle, the more extreme, intense, and pathological it is believed to be (Hopwood et al., 2013). All of the PDs depicted in Figure 1.4 are located on the outer edge of the circle, indicating severity of dysfunction. Taken together, it is evident from the body of research summarised here that personality—traits, functioning, and pathology—can be conceptualised, described, and examined through the lens of interpersonal theory, with which they are intrinsically linked.

Figure 1.4

Locations of Six Personality Disorders Within the Interpersonal Circumplex



Note. Adapted from "The Interpersonal Nexus of Personality and Psychopathology," by A. L. Pincus, M. R. Lukowitsky, and A. G. C. Wright, in T. Millon, R. F. Krueger, and E. Simonsen (Eds.), *Contemporary Directions in Psychopathology: Scientific Foundations of the DSM-V and ICD-11* (p. 532), 2010, New York: Guilford Press. Reprinted with permission.

1.2.3.4. Offending Behaviour and Clinical Implications

Although interpersonal theory has been applied extensively since its conceptualisation in the 1950s, as noted earlier, studies tend to utilise clinical and forensic samples, leaving a dearth of research that applies the interpersonal framework to community and non-clinical populations. Many of these investigations have observed significant associations between hostile-dominant interpersonal styles (high agency, low communion) and outcome measures such as criminality (Blackburn, 1998); institutional infractions (Dolan & Blackburn, 2006; Edens, 2009; Vernham et al., 2016); aggression (see Harris et al., 2014 for a review; Podubinski et al., 2016); violence (Doyle & Dolan, 2006); poor treatment engagement (Daffern et al., 2008; Edens, 2009); staff-patient dynamics and relationships

(Daffern et al., 2010); and difficulty fostering strong therapeutic alliances (Cookson et al., 2012; Watson et al., 2017). Indeed, many of the traits that differentiate offenders from non-offenders (e.g., hostility, anti-authoritarian attitudes, etc.) pertain to individuals' styles of relating to others (Blackburn, 1998). In Blackburn's (1998) study, number of previous convictions was positively associated with interpersonal dominance among forensic psychiatric patients with and without mental illness. OB may therefore represent a means by which some individuals attempt to navigate what they perceive to be a hostile social environment (Blackburn, 1998; Podubinski et al., 2016).

Together, the results of previous studies provide clear justifications for the use of interpersonal theory as a guiding framework through which to examine links between personality and OB. If interpersonal style is found to be implicated in OB, results can be used to inform improvements in the prevention of institutional aggression, treatment effectiveness and engagement, therapeutic alliances, and relationships between offenders and institutional staff (Daffern et al., 2012). It is predicted that hostile-dominant interpersonal styles will emerge as crucial in explaining associations between personality and OB. However, although several studies have established links between dimensions of the interpersonal circle and different personality disorders (e.g., Leichsenring et al., 2003; Martin-Avellan et al., 2005; Monsen et al., 2006), it remains unclear precisely how the role of hostile-dominant interpersonal styles will vary according to personality trait profile membership or offence type.

1.2.4. Empathy

With well-established links to the FFM (Costa et al., 2001; Graziano & Eisenberg, 1997), the DT (Heym et al., 2019; Schimmenti et al., 2019), aggression (Reniers et al., 2011), and OB (Jolliffe & Farrington, 2004), empathy is another key variable of relevance to this thesis. Although this construct has been theorised and investigated at length, scholars have only recently begun to reach consensus on its definition and components

(Reniers et al., 2011). It is now widely recognised that empathy involves two distinct elements: cognitive empathy and affective empathy (van Langen et al., 2014).

Cognitive empathy is conceptualised as a mental comprehension of others' experiences (Reniers et al., 2011). This element is often used interchangeably (e.g., Blair, 2005; Winter et al., 2017) with Theory of Mind (ToM; Brook & Kosson, 2013). However, Reniers et al. (2011) disagree with this conflation, arguing that while the same cognitive skills underlying ToM likely also enable cognitive empathy, the crux of cognitive empathy is the ability to recognise and attribute others' emotions—not their cognitions. Cognitive empathy requires information to be held and manipulated within one's mind, and by relying on various cues (e.g., visual, environmental), the individual forms a representation of another person's cognitive and emotional state. Thus, some researchers (e.g., Brook & Kosson, 2013; Mayer et al., 2018; Shamay-Tsoory et al., 2010) parse cognitive empathy into two subcomponents: cognitive ToM (understanding others' thoughts) and affective ToM (understanding others' emotions).

However, cognitive empathy is only half of the picture. Affective empathy refers to the ability to not just understand others' emotions, but to experience them vicariously (Reniers et al., 2011). Although this is similar to sympathy, sympathy represents an emotional awareness and behavioural response, while affective empathy involves an actual vicarious emotional reaction (Spinella, 2005) that is precluded by sensitivity to the emotional experience of another person. Although it is uncommon, affective empathy is sometimes conceptualised as comprising two elements (Dryburgh & Vachon, 2019; Vachon & Lynam, 2016): affective resonance and affective dissonance. While affective resonance refers to vicariously experiencing the same or similar emotions as another person, affective dissonance represents a tendency to experience the opposite emotion as another person – for instance, feeling disgust in response to others' happiness.

In the current research, cognitive and affective empathy are not parsed into subcomponents. Rather, cognitive empathy is operationalised as the aforementioned affective ToM (understanding others' emotions), while affective empathy in this thesis refers to Vachon and Lynam's (2016) notion of affective resonance (feeling others' emotions). The cognitive and affective processes collectively encompass the global construct of empathy, but this does not necessarily mean that individuals will be equally skilled at both. Indeed, Reniers et al. (2011) showed that although women tend to score higher than men on both components (a finding corroborated by Dryburgh & Vachon, 2019), the strength of this effect is much larger for affective empathy ($d = .83$) than cognitive empathy ($d = .41$). When measuring empathy, it is therefore critical to differentiate between the two components, as is done in this thesis. It is hoped that by examining these types of empathy separately, stronger understanding can be gleaned regarding the individual contribution of each type to OB.

1.2.4.1. Empathy and Personality

Empathy is considered to be a relatively stable personality trait (Mangione et al., 2002) and individual difference factor (Jolliffe & Farrington, 2004). Within the FFM, empathy is regarded as integral to agreeableness (Graziano & Eisenberg, 1997) – particularly the facet of tender-mindedness (Costa et al., 2001). Meanwhile, given that lack of empathy is often regarded as the core (Heym et al., 2019) of the DT traits (Paulhus & Williams, 2002), much research attention has been paid to investigating the nuances of relations between empathy and these three traits.

Machiavellianism, narcissism, and psychopathy have all been shown by Schimmenti et al. (2019) to be negatively associated with cognitive, affective, and global empathy. These findings align with those of Reniers et al. (2011) regarding Machiavellianism and psychopathy, but narcissism was not examined in their research. Nonetheless, other studies have yielded conflicting findings. For instance, Heym et al.

(2019) found all three DT traits to be negatively associated with affective empathy, but cognitive empathy was not implicated in any of the DT traits. Similarly, in other studies psychopathy (Mayer et al., 2018; Wai & Tiliopoulos, 2012) and Machiavellianism (Wai & Tiliopoulos, 2012) have been negatively associated with affective and global empathy, but not related to cognitive empathy. It is therefore evident that more research is needed in order to clarify the associations between the DT and different types of empathy.

Of the three DT traits, narcissism appears to be the least consistent in terms of the strength and direction of its relationship with empathy. This trait is typically negatively associated with affective empathy (e.g., Hepper et al., 2014; Wai & Tiliopoulos, 2012). However, while Hepper et al. (2014) found narcissism to also be negatively associated with cognitive empathy, in another study by Wai and Tiliopoulos (2012), the two constructs were positively related. Moreover, among studies that investigate empathy in all three DT traits, psychopathy consistently yields the largest effect sizes, while narcissism tends to only be weakly related to the various types of empathy.

The precise relation between narcissism and each type of empathy therefore remains in need of further clarification, while the picture is much clearer for psychopathy and Machiavellianism. It appears that these two traits are linked to affective empathy deficits, but interestingly, individuals who score high on these traits may possess unencumbered cognitive empathy skills. Indeed, the ability to accurately interpret others' cognitions, and predict their intentions, is likely a necessary component of the interpersonal manipulation ability that is inherent in these personality traits (Wai & Tiliopoulos, 2012). Meanwhile, the observed deficits in affective empathy may serve to facilitate the calloused manipulation that is characteristic of Machiavellian and psychopathic individuals. In examining empathy alongside DT and FFM personality profiles, the present research will aid in elucidating whether empathy is part of broader personality models, or if it exists as a

construct in its own right, as well as its relative contributions to OB and whether these vary according to type of empathy examined.

1.2.4.2. Empathy, Aggression, and Offending Behaviour

Extensive research has examined the role of empathy in various types of aggressive, antisocial, and OBs (see, e.g., reviews by Farrington et al., 2017; Jolliffe & Farrington, 2004; & van Langen et al., 2014). Many of these studies utilise offender samples, and clinical psychopathy is often examined in conjunction with other variables. As the diagnostic criteria for clinical psychopathy include items such as manipulation, parasitic lifestyle, callousness, and lack of remorse (Hare, 1991, 2003), it is evident that empathy deficits are intrinsic to this particular PD (Nigel et al., 2018). Lower levels of empathy are also implicated in a variety of calloused, antisocial behaviour, including aggression, violence, and criminality (Reniers et al., 2011), as well as conduct disorder in children and antisocial PD in adults (APA, 2013). These findings point to empathy's clear relevance to individual offending pathways.

Results of these studies indicate that empathy deficits are commonly associated with psychopathy and are conducive to aggressive, antisocial, or OB. It has been argued (Blake & Gannon, 2008) that empathy deficits enable an individual to engage in such behaviours because, by not having high levels of empathy, they fail to appreciate the feelings of their victims. In this way, having strong empathy can be regarded as a protective factor (Jolliffe & Farrington, 2004), inhibiting aggression and criminality while encouraging prosocial or altruistic behaviour (Blake & Gannon, 2008; Horsley & Ireland, 2010; Richardson et al., 1994). However, some conflicting results are present in the extant literature. For instance, Domes et al. (2013) found that although offender status was associated with empathy deficits in their sample, psychopathy was not. Meanwhile, another study (Mayer et al., 2018) reported that offender status was not related to empathy, but psychopathy was associated with empathy deficits. Interestingly, Brook and Kosson (2013)

reported that psychopathic participants demonstrated deficits in cognitive empathy, but this effect was specific to negatively valenced emotions (i.e., fear, sadness). Participants did not display deficits in recognition of positively valenced emotions. The authors highlight that this finding aligns with Blair's (1995, 2001) Violence Inhibition Model, which asserts that we have evolved psychological mechanisms which inhibit violence and facilitate prosocial behaviour when we are confronted with distress exhibited by other people (Brook & Kosson, 2013, p. 163). According to this model, psychopathic individuals possess faulty violence inhibition systems, resulting in insensitivity to others' fear and sadness. This may explain why psychopathic participants failed to demonstrate appropriate sensitivity to visual displays of fear and sadness in Brook and Kosson's (2013) study.

Meta-analyses that interrogate the relationships between empathy and OB are far less ambiguous: across the board, offenders are reported to score lower on empathy than non-offenders. Van Langen et al. (2014) concluded that this effect is much stronger for cognitive empathy ($d = .43$) than affective empathy ($d = .19$); the same trend was reported by Jolliffe and Farrington (2004). However, these associations may not be as straightforward as they appear. For example, Robinson and Rogers (2015) asked psychopathic offenders to respond truthfully to self-report empathy measures in one condition, and to engage in positive impression management in another condition. In the truthful condition, offenders (regardless of their level of psychopathy) exhibited intact cognitive empathy, but a lack of affective empathy. However, when instructed to engage in positive impression management, the offenders feigned sufficient cognitive and affective empathy with ease, yielding much higher scores on both scales than when asked to be truthful. This signifies the importance of incorporating scales that assess response style when conducting research with offender groups, while also highlighting that offenders may be capable of feigning empathy when necessary, potentially enabling their ability to

manipulate and transgress against others. In order to preserve data integrity, the current research therefore includes measures designed to detect such response styles.

It is worth noting that when researching empathy and OB, particular focus is often afforded to sexual offending, as this type of offence has long been theorised (e.g., Finkelhor, 1984; Malamuth, 1988; Marshall & Barbaree, 1990) to inherently involve poor empathy with one's victims. This deficit is believed to be a significant aetiological factor that contributes to, and maintains, this type of OB (Marshall et al., 1995). For instance, in child sex offenders, low levels of empathy for children may contribute to the commission of this type of abuse, while this empathy deficit also facilitates OB in adult rape offenders because their sexual arousal is believed to be unimpeded by empathy for their victim's distress (Marshall et al., 1995). Consequently, empathy skills training is often incorporated as an essential component of sex offender treatment programs (Ward & Durrant, 2013). However, Roche et al. (2011) found that although time in treatment was positively associated with level of victim empathy among a sample of incarcerated sex offenders, clinical psychopathy moderated this relationship: psychopathic sex offenders did not show an increase in victim empathy because of time in treatment. Thus, the critical role of psychopathy in relationships between empathy and OB is becoming increasingly apparent through findings such as these.

Nonetheless, when psychopathy is not present, empathy does appear to be strongly related to sexual offending behaviour. Schuler et al. (2019) compared two samples of men with paedophilia: one sample who had committed child sex offences, and another who had not acted on their paedophilic urges (non-offending paedophiles). They found that the non-offending sample possessed superior cognitive empathy compared to the offenders. Moreover, the authors conducted a longitudinal extension of this study (Schuler et al., 2021), observing that their cross-sectional findings held over time; this adds temporal weight to the notion that cognitive empathy may play an important protective role in

preventing this type of offense. Findings of these studies therefore converge to highlight the importance of: (a) considering the role of psychopathy, and (b) parsing sexual offending from other types of OB when conducting research on empathy in forensic samples. Consequently, the present research investigates empathy's contribution to sexual offending independently from other offence types.

1.2.5. Irritability

This thesis also incorporates an examination of the role of irritability in OB. Despite irritability appearing with great frequency within the literature on individual differences and aggression (Anderson, 1997; Bettencourt et al., 2006; Caprara, Barbaranelli, & Zimbardo, 1996; Caprara, Cinanni, et al., 1985; Zillman & Weaver, 2007), violence (Caprara, Alessandri, et al., 2013; Caprara, Paciello, et al., 2007; Caprara, Tisak, et al., 2014), or OB (Firestone et al., 2005; Walters, 2020), there is still a distinct lack of clarity and consensus regarding its definition (Barata et al., 2016; Toohey & DiGiuseppe, 2017). Indeed, irritability is often conflated with hostility, trait aggression, or trait anger (Deveney et al., 2019), and may be intrinsically linked with these constructs.

In 1957, Buss and Durkee introduced the Hostility Inventory, which comprises two subscales: irritability and emotional susceptibility. In this inventory, irritability is operationalised as “a readiness to explode with negative affect at the slightest provocation” (Buss & Durkee, 1957, p. 343). In an attempt to validate an Italian translation of the Hostility Inventory, Caprara (1983, as cited in Caprara, Cinanni, et al., 1985) found that only the irritability subscale yielded adequate internal consistency, suggesting that irritability is a construct in its own right, rather than a component of hostility. Caprara, Cinanni, et al. (1985) subsequently published an English-language scale to measure irritability in isolation.

In the two decades that followed Caprara, Cinanni, et al.'s (1985) work, irritability was poorly defined or differentiated from related constructs in the literature. Consequently,

on the basis of a systematic review and qualitative interviews with laypeople, Barata et al. (2016) proposed a new comprehensive definition. According to these authors, irritability is: (a) an emotional process, (b) involving proneness to experiencing negative affective states, (c) which may or may not be outwardly expressed, (d) and which may also include feeling that one's emotional response is unjustified or disproportionate, yet is difficult to control (Barata et al., 2016, p. 10). This thorough parsing of the key components of irritability has provided clarity about the construct, something that had previously been lacking in the literature and which will aid the present research's investigation of irritability's role in OB.

Another source of conflation in the existing literature is that the label of irritability has often been used interchangeably with hostility. For instance, Anderson (1997) used Caprara, Cinanni, et al.'s (1985) Irritability Scale to measure what he labelled 'trait hostility'; this is despite the fact that the Irritability Scale was created from the irritability subscale of the aforementioned Hostility Inventory (Buss & Durkee, 1957). As such, irritability is conceptualised as one component of hostility, these two constructs are inherently linked and likely to overlap significantly. The waters muddy further when aggression is considered: Caprara, Barbaranelli, and Zimbardo (1996) assert that hostility is essentially a form of interpersonal aggression (p. 147), and Buss and Perry's (1992) Aggression Questionnaire includes a hostility subscale that is said to encompass the cognitive component of aggressive behaviour. However, some empirical evidence supports the interlinking of these constructs. For instance, in a longitudinal study by Caprara, Tisak, et al. (2014), irritability and hostile rumination were found to contribute reciprocally to one another's development, and hostile rumination mediated the relationship between irritability and violence. The authors concluded that irritability represents lack of control over negative affective states, which can exacerbate the impact of situations that are conducive to eliciting reactive aggression. Similarly, in adolescents, irritability has been

found to be positively associated with physical and verbal aggression and violence (Caprara, Paciello, et al., 2007). When taken together, this evidence suggests that although not the same, hostility and irritability may overlap and interact with one another substantially.

In light of the somewhat convoluted state of the literature on this topic, the current research adopts ‘irritability’ as the preferred label, as this construct will be measured via the Irritability Scale (Caprara, Cinanni, et al., 1985). Nonetheless, studies that have investigated ‘hostility’ rather than ‘irritability’ are still deemed relevant to providing an empirical justification for the inclusion of this variable. Hostility has often been theorised (e.g., Hall & Hirschman, 1991; Marshall & Barbaree, 1990) to play a role in the aetiology of sexual offending. This proposition has been supported in the literature, with a meta-analysis by Hanson and Morton (2003) reporting a significant association between hostility and recidivism in sex offenders. Indeed, one study (Quinsey et al., 1998) reported hostility to be the best predictor of violent and sexual recidivism, with violent and sexual recidivists reporting significantly higher levels of hostility than non-recidivists. Firestone et al. (2005) also found that hostility was significantly related to having prior charges, the use of violence in the index offense, sexual recidivism, and violent recidivism among a sample of adult male sex offenders. The association between hostility and both types of recidivism remained even after controlling for risk level, further signifying its strength. Hostility has also been linked to impulsive aggression among male undergraduate students (Zillman & Weaver, 2007) and to criminal violence in adolescents (Walters, 2020). Thus, because of the nebulosity in the literature when attempting to parse irritability from hostility, it would be remiss to investigate one of these constructs without also considering the findings of research that have examined the other.

Given that irritability is considered to be a personality trait as opposed to a transient state, it may therefore hold incisive utility within this thesis’ examination of personality

traits and OB. Indeed, in an eight-year longitudinal study (Caprara, Paciello, et al., 2007), irritability was found to be highly stable; this provides support for its conceptualisation as a trait. A meta-analysis by Dill et al. (1997) further showed that individual and situational factors may both represent important determinants of aggression, and Caprara, Barbaranelli, and Zimbardo (1996) proposed aggression to be predicted by three traits: irritability, hostile rumination, and tolerance towards violence. Two studies (Caprara, Alessandri, et al., 2013; Caprara, Barbaranelli, & Zimbardo, 1996) found irritability to be positively correlated with neuroticism and negatively associated with agreeableness; consequently, aggression may be predicted by low agreeableness and high neuroticism (Caprara, Barbaranelli, & Zimbardo, 1996), as this combination of traits predisposes an individual to high levels of irritability. Meanwhile, it has been suggested (Dill et al., 1997) that people whose personalities incline them to aggression, such as those high in irritability, interpret ambiguous situations with hostility or expectations thereof. This proposition aligns with the findings of Bettencourt et al. (2006), who observed trait irritability to predict aggression under both provoking and neutral conditions. Thus, individuals who are high in trait irritability experience heightened sensitivity to provocation and susceptibility to loss of temper (Deveney et al., 2019). They may therefore navigate the world perceiving and expecting hostility in situations where others do not, subsequently leading them to aggress. This idea holds theoretical parallelism with interpersonal theory's proposition that individuals with a hostile-dominant interpersonal style are similarly prone to perceiving ambiguous interpersonal situations with hostility (Carson, 1979; Daffern et al., 2012; Kiesler, 1987) and are likely to behave accordingly when they approach such interactions (see Section 1.2.3.3.). It is therefore evident that theoretical and empirical evidence amply support the inclusion of irritability as an additional personality feature to examine in the present research.

1.2.6. Criminal Thinking Style

1.2.6.1. Background

Finally, when considering individual differences and OB, criminal attitudes also appear to be relevant. According to previous work (Simourd, 1997; Simourd & van de Ven, 1999), the decision to engage in a given behaviour is driven by two factors: the person's attitude towards the behaviour, and their awareness of the subjective norms surrounding that behaviour. Thus, within this proposition, criminal attitudes are intrinsically linked to criminal behaviour (Simourd et al., 2015). In correctional research, the term 'criminal attitudes' (e.g., Eichelsheim et al., 2015; Simourd, 1997; Simourd & van de Ven, 1999) is often used interchangeably with 'criminal thinking' (e.g., Knight et al., 2006; Walters, 2006, 2012, 2016), although both refer to attitudes, values, beliefs, and rationalisations supportive of criminal conduct (Simourd, 1997, p. 53). These elements make up a large part of antisocial cognition, one of the four factors most integral to predicting and managing recidivism risk in offenders (Andrews et al., 2006; Andrews & Bonta, 1994, 2010a; Bonta & Andrews, 2017). The inclusion of criminal attitudes may therefore complement this thesis' focus on personality traits by contributing to its model of individual differences in OB.

1.2.6.2. Empirical Links

Gendreau et al. (1992) were among the first to assess whether criminal attitudes are related to behavioural outcomes. Their meta-analysis revealed that, among six relevant domains, antisocial peers/attitudes were the strongest predictor of adult criminal behaviour. Since then, criminal attitudes have been found to be associated with self-reported antisocial behaviour (Riopka et al., 2015), juvenile delinquency (Simourd & Andrews, 1994), prison misconduct (Gendreau et al., 1997), recidivism (Andrews et al., 2006; Banse et al., 2013; Gendreau et al., 1996; Walters, 2012, 2016), and psychopathy (Tangney et al., 2012). Research further suggests that not only do offenders hold stronger pro-criminal attitudes

than non-offenders, but repeat offenders report higher levels of these attitudes than first-time prisoners (Walters, 2003). This illustrates the reciprocal way criminal attitudes and criminal behaviour impact one another and supports the importance of including this variable in the present research examining individual differences and OB.

There is some evidence to suggest that level of criminal attitudes may vary as a function of offence type. For instance, Simourd and van de Ven (1999) found that violent offenders reported lower levels of criminal attitudes than property offenders. Further, it has been found (Boduszek & Hyland, 2012; Walters, 2006) that child sex offenders and white-collar offenders may display lower levels of criminal attitudes than other types of offenders. Indeed, Witte et al. (2006) assessed criminal attitudes among sex offenders pre- and post-treatment; they found that criminal attitudes predicted non-sexual violent and nonviolent recidivism, but not sexual recidivism, after 3-year follow-up. Accordingly, this thesis considers different offence types in its examination of the individual factors related to OB.

Further support for the inclusion of criminal attitudes in this thesis comes from research investigating personality traits. Specifically, personality traits have been found to be related to criminal attitudes among offenders, with some researchers (e.g., Topalli et al., 2014) even considering them to be a component of an individual's personality. According to Mills et al. (2004), individuals with a criminal personality (i.e., antisocial personality traits) likely possess criminal attitudes, but an individual can hold criminal attitudes without demonstrating criminal personality traits. It is therefore recommended researchers and practitioners do not assume that if an individual presents with antisocial personality traits, they will also report criminal attitudes. Nonetheless, certain personality traits appear to be relevant to this construct.

Research in this area is sparse and has tended to apply Eysenck's PEN model when examining traits. One study (Boduszek et al., 2011) examined psychoticism, criminal

associates, and recidivism levels as predictors of criminal attitudes among ex-prisoners; they found that 71% of the variance in attitudes could be attributed to these three factors, with psychoticism emerging as the greatest predictor. Similarly, in a sample of male prisoners with learning difficulties, Boduszek et al. (2012) found that criminal thinking was predicted by psychoticism, extraversion, neuroticism, in-group ties, and in-group affect, with main effects observed for the roles of extraversion and psychoticism. Lastly, one study (Eichelsheim et al., 2015) investigated the roles of FFM (McCrae & Costa, 1987) traits in a large ($n = 1,612$) offender sample. Using just two subscales (Tolerance for Law Violations and Identification with Criminal Others) of a larger criminal attitudes measure (Criminal Sentiments Scale-Modified²; Simourd, 1997), they found that higher levels of tolerance for law violations were related to low neuroticism and agreeableness and high openness to experience. Meanwhile, higher levels of identification with criminal others were associated with low conscientiousness, neuroticism, agreeableness, and openness to experience. Together, these findings indicate that low agreeableness and conscientiousness may be particularly relevant to the presence of criminal attitudes, while the roles of neuroticism and openness to experience are less clear. This thesis will expand upon these findings by incorporating the FFM and criminal attitudes, among other variables, in its investigation of OB.

1.3. Original Contribution to Knowledge

This thesis represents an innovative, original contribution to knowledge in a number of important ways. First, it is the first to systematically review associations between personality traits and actual OB, rather than the broader constructs of aggressive or antisocial behaviour. Second, although studies have been undertaken to explore the relationships between personality traits and OB in the past, these studies have left

² See Chapter 5 for more information about this instrument.

significant gaps in the literature that warrant further investigation. For instance, most of the studies that examine personality traits and OB conduct their investigations solely through either the FFM (McCrae & Costa, 1987) of normative personality traits or the DT (Paulhus & Williams, 2002) model of pathological traits. Consequently, despite decades of research, no reliable patterns have been observed in regard to the traits that are implicated in OB. Hence, this thesis will build upon previous studies by exploring the contributions of both the FFM and DT models together. This approach has the potential to advance our knowledge of how the traits subsumed within these widely-applied models may interact, thereby providing a more comprehensive and holistic understanding of human personality.

Third, the vast majority of existing studies investigating the role of personality traits in OB have adopted a linear, variable-centred approach to their examinations. However, this method does not allow for analyses of interactions between the various traits. This thesis will be the first to attempt to elucidate trait profiles using both the FFM and the DT and compare these profiles between ex-offenders and community samples from the US and the UK. The profile approach is additionally advantageous in comparison to the variable approach because it has potential to inform individualised, person-centred treatment interventions to be designed that target an offender's unique trait profile and subsequent treatment needs (Dargis & Koenigs, 2018). Contributing to relevant bodies of knowledge, the current research therefore also has potential to extend beyond theory by having real-world, practical utility in forensic psychiatric hospitals and prisons.

Finally, this thesis is the first empirical research to wed personality trait profiles, level of personality functioning, interpersonal style, empathy, irritability, and criminal attitudes together in one investigation. By including other aspects of relational³, affective⁴, and cognitive⁵ differences relevant to OB, it will attempt to establish a comprehensive

³ Interpersonal style, LPF

⁴ Irritability, affective empathy

⁵ Criminal attitudes, cognitive empathy

picture of personality-based drivers of OB that extends beyond individual traits or trait profiles alone. In this manner, this thesis represents an original contribution to psychological knowledge that addresses important gaps identified in the extant literature.

CHAPTER 2: THE ASSOCIATION(S) BETWEEN FIVE FACTOR MODEL AND DARK TRIAD TRAITS AND OB IN ADULTS - A SYSTEMATIC REVIEW

2.1. Introduction

2.1.1. Background

The need for forensic psychiatric services is on the rise in many countries worldwide. Studies have shown that in the past thirty years, forensic admissions and expenditures have increased significantly in Canada (Jansman-Hart et al., 2011), the US (Jansman-Hart et al., 2011), and across Europe (Jansman-Hart et al., 2011; Salize & Dressing, 2007). Moreover, many forensic patients remain in forensic care long-term (Duke et al., 2018), and the prison population of England and Wales has nearly doubled in size since 1990 (Sturge, 2019). Illustrating the significant financial burden this poses, in England and Wales, the average annual expenditure is approximately £26,000 per prisoner (Sturge, 2019) and £175,000 per forensic psychiatric patient (Duke et al., 2018).

These increasing admission rates, considerable costs, and lengthy stays in forensic institutions highlight a clear need for an increased understanding of the key drivers of offending behaviour (OB). This heightened understanding can then be used to inform effective treatment interventions (WHO, n.d.), subsequently contributing to decreases in recidivism rates (Padfield & Maruna, 2006) and the high costs associated with crime (e.g., Easton et al., 2014; European Commission, 2011; Heeks et al., 2018; Mai & Subramanian, 2017). In health settings, there has been a growing awareness of the need for more person-centered treatment approaches (e.g., Alexiou et al., 2018; Santos & Cutcliffe, 2018).

As discussed in Chapter 1, this thesis seeks to identify trait profiles comprising both Five-Factor Model (FFM) and Dark Triad (DT) traits. The present review therefore aims to systematically investigate associations between OB and each of the personality traits included in these models, with the FFM encompassing the adaptive traits that have often been examined alongside OB, and the DT representing the more socially aversive traits

that have received much less research attention in adult offender populations. In so doing, this systematic review seeks to provide important contributions to our current understanding of key drivers of OB while simultaneously informing more individualised, person-centred treatment approaches.

2.1.2. Personality Trait Models

Personality, which refers to an individual's characteristic way of thinking, feeling, and behaving (Miller & Lynam, 2001), is considered to be one of the most significant predictors of propensity towards OB (Bonta & Andrews, 2017; Eysenck, 2008). Decades of research have examined the links between personality traits and offending (see Jones et al., 2011 for a review), yet these empirical investigations continue to yield inconsistent and conflicting results regarding the precise nature, direction, and strength of these associations. Consequently, this systematic review synthesises and evaluates the findings of previous studies that have measured potential links between Five-Factor Model (FFM; McCrae & Costa, 1987) and Dark Triad (DT; Paulhus & Williams, 2002) personality traits and OB.

2.1.2.1. The Five-Factor Model

Eysenck (1964) was the first to assert that personality traits could predispose individuals to OB. Building on the foundations laid by Eysenck's (1964) and Eysenck and Eysenck's (1970) early works (see Chapter 1, Section 1.2.1.1.), today the FFM (McCrae & Costa, 1987) is the most widely used model of personality (Soto et al., 2016). However, in comparison to the overall wide applications of the FFM in psychological research⁶, relatively few studies have applied this model to investigations of OB. In these studies, it is

⁶ For example, this model has been employed to describe associations between personality and perfectionism (Smith et al., 2019), burnout (Alarcon et al., 2009), personal values (Parks-Leduc et al., 2014), relationship satisfaction (Malouff et al., 2010), job satisfaction (Judge et al., 2002), smoking (Malouff et al., 2006), physical inactivity (Sutin et al., 2016), alcohol use (Malouff et al., 2007), emotion regulation (Barańczuk, 2019a), alexithymia (Barańczuk, 2019b), personality disorders (Ostendorf, 2000), and symptoms of clinical disorders (Malouff et al., 2005).

common for OB to be operationalised as delinquent or anti-social inclinations (see Cale, 2006; Miller & Lynam, 2001), often measured via self-report questionnaires with non-offender or community samples (e.g., Heaven, 1996). Over the years, this body of research has continued to yield contradictory results. For instance, some studies have found a positive association between neuroticism and offending (Heaven et al., 2004; Miller et al., 2003; O’Riordan & O’Connell, 2014), while others have failed to observe a statistically significant link between these variables (Heaven, 1996; Heaven & Virgen, 2001). Likewise, a positive correlation between extraversion and OB has been found in some studies (Heaven et al., 2004; John et al., 1994; O’Riordan & O’Connell, 2014) but not in others (Heaven & Virgen, 2001; ter Laak et al., 2003). Thus, existing research has failed to consistently and fully explain the associations between normal personality traits (Larstone et al., 2002) and self-reported OB in non-offender samples.

One possible reason for the inconsistent findings across studies may be the varying ways in which OB has been operationalised. Consequently, some studies have sought to determine whether FFM traits may be used to explain specific types of offending. However, the vast majority of these studies have focused exclusively on sexual offending. For instance, Madsen et al. (2006) found that child sex offender (CSO) participants self-reported high levels of neuroticism and low levels of conscientiousness. This negative association between conscientiousness and CSO offending aligns with what has previously been observed in studies of the FFM and general offending (e.g., Miller & Lynam, 2001). However, because consistency surrounding the role of neuroticism in OB has not yet been established, firm conclusions can not be drawn from Madsen et al.’s (2006) observed association between this trait and sexual offending.

Other studies of FFM traits among sex offenders have produced further conflicting results, with no consistent patterns having emerged from this body of research to date. This may be attributable to the studies’ varying sample characteristics and research questions.

For instance, FFM traits have been examined in CSOs and adult sex offenders (SOs) with and without histories of childhood trauma (Becerra-García et al., 2012); SOs, non-SO offenders, and non-offender control participants (Becerra-García, García-León, Muela-Martinez, & Egan, 2013); CSOs who offended against immediate family members, step-family members, or extra-familial children (Dennison et al., 2001); and convicted CSOs and SOs alongside non-convicted SOs (Carvalho & Nobre, 2019). Thus, because research in this area utilises such varying offender groups, direct comparisons between studies cannot always be made, nor is there an opportunity for consistent results to emerge from the data.

However, given the lack of established patterns in the existing literature regarding associations between FFM traits and OB, it is imperative that different offence types be examined to ascertain whether these discrepancies are the result of varying personality-related drivers of OB across offence types. This therefore constitutes a key aim of the present review. Furthermore, although the FFM has established its position in the field of personality research as the dominant model through which to explore the role of personality traits in various types of behaviour, the inconsistent findings discussed here illustrate that this model falls short of capturing the full extent to which personality traits may play a role in OB. Thus, in order to address this shortcoming of the FFM and better elucidate the full range of personality traits that may be implicated in offending, this review also incorporates a model of darker personality known as the Dark Triad (Paulhus & Williams, 2002).

2.1.2.2. The Dark Triad

The three traits that comprise the Dark Triad (Paulhus & Williams, 2002) are Machiavellianism, subclinical narcissism, and subclinical psychopathy. While these three constructs are theoretically distinct, they share some core elements: social malevolence, affective callousness, and a distinct lack of empathy (Jones & Figueredo, 2013). Despite its

popularity in personality research (Furnham et al., 2013), the vast majority of studies involving the DT have utilised nonclinical, non-offender samples to examine self-reported instances of antisocial behaviour, calling into question the ecological validity of the results. These studies have yielded somewhat inconsistent findings, which may be attributable to the varying forms of behaviour employed as outcome variables in these studies.

Associations have been observed between all three DT traits and less positive attitudes towards animals (operationalised as a 'red flag' indicator of future violent behaviour towards animals and, eventually, humans; Kavanagh et al., 2013); bullying among university students (Baughman et al., 2012); and self-reported delinquent behaviour in Saudi Arabian adolescents (Wright et al., 2017). In addition, subclinical psychopathy has been uniquely associated with self-reported acts of cruelty towards animals (Kavanagh et al., 2013); self-reported acts of physical aggression (Jones & Neria, 2015); self-reported cyber-bullying in adolescents (Pabian et al., 2015); rape-enabling attitudes in adults (Jonason et al., 2017); and self-reported acts of violence in the general population (Westhead & Egan, 2015). Nonetheless, there is a significant dearth of research investigating DT traits in convicted offenders or in conjunction with documented OB. This review will therefore critically examine the findings of existing studies to provide tailored recommendations for future investigations of the DT model and OB.

2.1.3. Previous Reviews

Currently, no reviews exist that examine associations between personality traits and actual OB. However, three previous reviews have been conducted on the associations between personality traits and antisocial or aggressive behaviour, which are operationalised in these reviews as proxies for offending. The first, a meta-analysis by Miller and Lynam (2001), examined the FFM, PEN, and two other personality models. The authors concluded that low levels of agreeableness and conscientiousness are implicated in antisocial behaviour. In 2006, Cale reviewed relationships between the traits of

extraversion, neuroticism, and impulsivity and antisocial behaviour. Across 52 included studies, 73% of the samples found a positive association (mean $r = .10$) between extraversion and antisocial behaviour, and 84% of the samples found a positive link (mean $r = .18$) between neuroticism and the outcome variable. Cale's (2006) review therefore concluded that there was a small positive association between both extraversion and neuroticism and antisocial behaviour. Finally, Jones et al. (2011) performed a meta-analysis on the links between FFM traits and antisocial behaviour or aggression. Their review, limited to studies published between 2000 and 2010, found that each trait was linked to one or both of the two outcome variables. For antisocial behaviour, there was a small positive effect for neuroticism and moderate negative effects for agreeableness and conscientiousness. For aggression, there were small negative associations for extraversion and openness, and small to moderate associations for neuroticism (positive), agreeableness (negative), and conscientiousness (negative).

2.1.4. Summary

Overall, the findings of previous studies and reviews suggest that conscientiousness and agreeableness are negatively linked with antisocial or aggressive behaviour, whilst neuroticism is positively associated with these outcomes. Extraversion was positively linked with antisocial behaviour in one review (Cale, 2006), but negatively associated with this outcome in another (Jones et al., 2011). Openness was only implicated, via a negative association, in one of the three previous reviews. It is furthermore noteworthy that none of these reviews incorporated Dark Triad traits in their analyses, and that few original studies have examined this model in conjunction with actual OB. Thus, although substantive, this body of previous research illustrates the need for further investigations to take a more nuanced focus on associations between various types of actual OB and traits that capture the full range of human personality.

2.1.5. Rationale

2.1.5.1. Methodological Limitations of Previous Research

The results of these previous studies need to be interpreted with caution. Reliance on non-offender adolescent or young adult samples means that many of these findings cannot be regarded as representative of potential links between FFM or DT traits and actual OB, particularly among adults. Furthermore, the use of self-report instruments to measure delinquent behaviour poses concerns regarding the validity of the results (Schwarz, 1999). To that end, when self-report instruments are used to measure instances of antisocial or socially condemned behaviour, it is imperative to account for the likelihood that some participants may not be completely truthful in their responses (Crowne & Marlowe, 1964; Hart et al., 2015). Consequently, some recent studies have begun to adopt more methodologically robust approaches by utilising offender samples and relying on official records of offence histories rather than self-report measures of criminality. To delineate the links between personality traits and OB, not only antisocial or aggressive behaviour or intent, this systematic review focuses exclusively on those studies that have researched links between FFM or DT traits and various types of actual OB among individuals over the age of 18. The quality of the included studies is also assessed and discussed.

2.1.5.2. Knowledge Gaps

Although the body of research examining associations between personality and offending is well established, the approaches taken by the different studies have varied dramatically. For instance, some studies examine prisoner samples, others utilise forensic psychiatric patients, and still others use community participants. Some of these studies compare their samples to control participants or norm data, while others do not. When operationalising their variables, some studies measure OB through the examination of official criminal justice records, while others rely on self-report questionnaires. Some

studies draw comparisons on demographic variables (e.g., age, gender, nationality), while others do not. In some studies, comparisons are made between different types (e.g., violent vs. non-violent) or frequency (e.g., recidivism rates) of OB, but many others fail to investigate these distinctions. Finally, across this body of literature, there is also a lack of consistency in the personality measures and models used to examine the links between traits and criminality. This review is therefore the first to systematically compare the results of previous studies across this diverse body of research in an effort to elucidate the inherent complexity in drivers of OB.

2.1.6. Objectives

This review aims to systematically examine the extant literature in order to (a) synthesise the results of previous studies that have researched the relationship(s) between FFM or DT personality traits and OB in adult samples, and (b) identify patterns, inconsistencies, and gaps in the literature in relation to the following research questions:

1. What trends are evident in the extant literature regarding the associations between each of the FFM traits and OB?
2. What trends are evident in the extant literature regarding the associations between each of the DT traits and OB?
3. Do the associations between FFM/DT traits and OB differ according to offence type?
4. Do the associations between FFM/DT traits and OB differ according to gender?
5. Do the associations between FFM/DT traits and OB differ according to the personality model or measurement tools used?

2.2. Method

The PRISMA (Preferred Reporting Items for Systematic Reviews and Meta-Analyses; Moher et al., 2009) guidelines were adhered to when carrying out this review.

This study is registered with Open Science Framework and can be accessed at

<https://osf.io/ch6ke/>.

2.2.1. Search Strategy

This review is based on a systematic search of PsycINFO, PsycARTICLES, SCOPUS, and relevant ProQuest databases. Abstracts, keywords, and titles were searched using the string (dark triad OR psychopat* OR Machiavell* OR narcissis* OR five factor OR big five OR big 5 OR neuroticis* OR agreeabl* OR conscientiou* OR openness OR extr*ver*) AND (offend* OR criminal*) NOT (young OR youth OR adolescen* OR juvenile\$). Publication date was not restricted.

2.2.2. Study Selection

2.2.2.1. Eligibility Criteria

To be included in the review, studies must have met the following criteria: reported in a published journal article, conference paper, or dissertation; consisting of original data (i.e., no reviews, meta-analyses, book chapters, etc.); available in full-text; and in English. Only studies that used participants aged 18 years or over were eligible for inclusion, as previous research overwhelmingly indicates that, prior to adulthood, one's personality has not yet fully formed (Costa & McCrae, 1997; McCrae & Costa, 1994). In addition, in light of the conceptual issues discussed in the introduction, if a study's sample comprised the general population rather than institutionalised or community-based offenders, the self-reported 'offending behaviour' measured in the study must have been actual criminal offending, not merely antisocial, aggressive, or delinquent behaviour (e.g., running away from home; hitting a schoolmate; cheating on a school exam, etc.). Personality must have been measured using self-report questionnaire(s) that tap into one of the following personality models: FFM (McCrae & Costa, 1987), PEN (Eysenck, 1964; Eysenck & Eysenck, 1970), HEXACO (Ashton et al., 2004), or DT (Paulhus & Williams, 2002). Finally, studies must have analysed a direct, independent link between the personality trait(s) in question and OB, even if this was not their primary objective. Studies

were excluded if the psychopathy or narcissism being measured was clinical rather than subclinical (i.e., Narcissistic Personality Disorder or clinical psychopathy).

2.2.2.2. Selection Process

Titles were screened for eligibility, yielding 516 potential studies for inclusion. Papers were exported to a citation manager software and de-duplicated. Three hundred and fifty abstracts were screened, of which 194 were excluded and 156 chosen for screening in full-text. The full-text screening resulted in 48 papers for data extraction (reasons for exclusion are summarised in Table 2.1). An additional five papers were added after searching the reference lists of eligible full-text papers for relevant articles. Thus, 53 papers (51 journal articles and two doctoral dissertations) were included in the review, spanning the years 1968 to 2019. Figure 2.1 provides a PRISMA flow diagram of the selection process.

Table 2.1

Summary of Reasons for the Exclusion of Selected Full-Text Articles

Reason for Exclusion	Number of Articles
Full-text not available	22
Did not measure direct/independent link between personality and OB	19
Used a proxy for real OB	18
Participants under the age of 18	16
Personality traits measured were not Five-Factor Model or Dark Triad traits	12
Not original data	7
Clinical psychopathy	6
Personality not measured via self-report	4
Incomplete information about statistical analyses or results	4

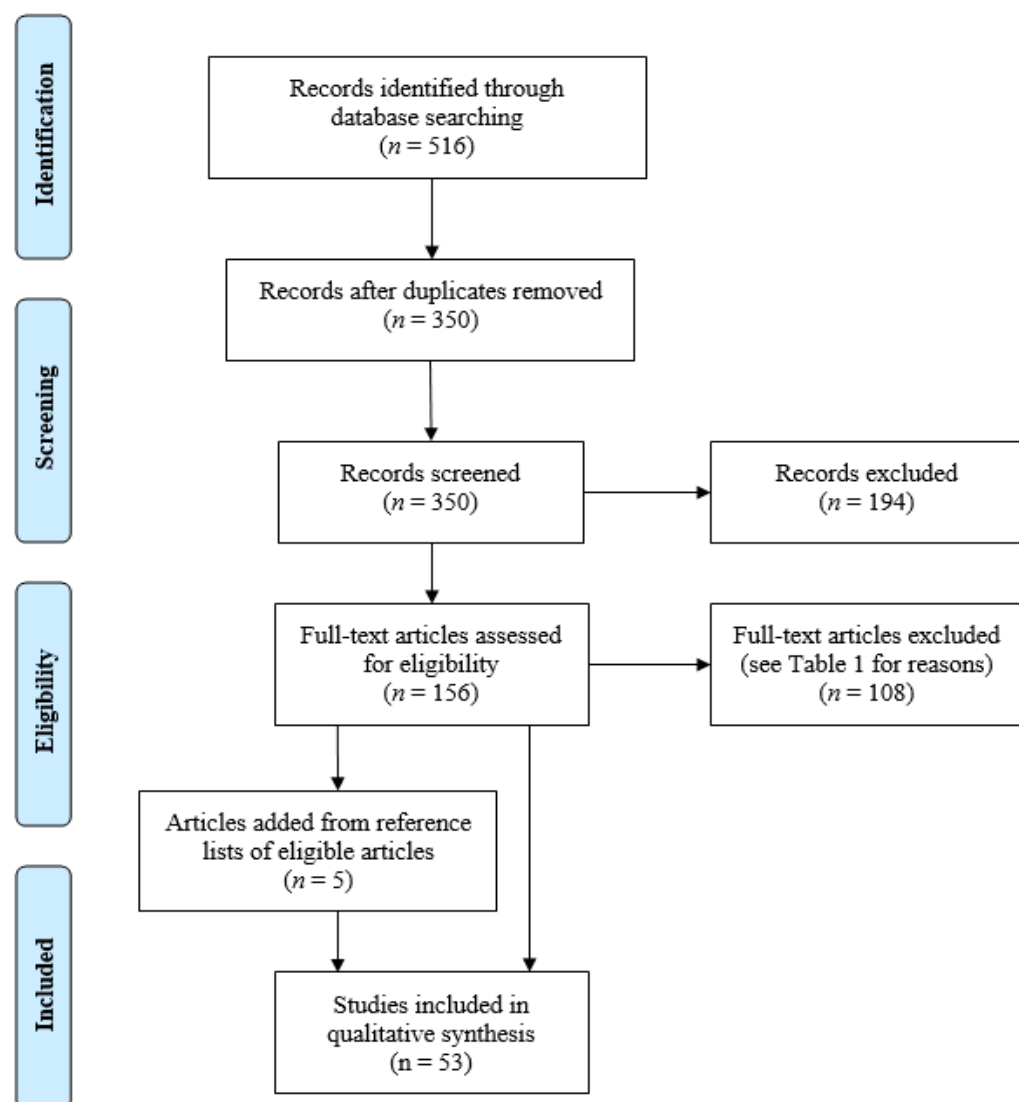
2.2.3. Quality Assessment

Quality of the included papers was assessed (Foxhall et al., 2019) using Kmet et al.'s (2004) Standard Quality Assessment Criteria. These criteria include such aspects as research questions, design, participants, measures, analyses, and conclusions (see Kmet et al., 2004 for a list of all criteria). The quality assessment criteria include 14 items, of which three were omitted because they only pertain to interventional study designs and were

therefore not applicable to any papers included in this review. The remaining 11 items were scored as 0 (No), 1 (Partial), or 2 (Yes); these were then summed to obtain a final quality score (maximum score = 22). The higher the score, the higher the assessed quality of the paper. A second rater assessed the quality of 10% of the included papers. The level of agreement between raters was highly substantial (Landis & Koch, 1977), $k = .80$.

Figure 2.1

PRISMA Flow Diagram Depicting Screening and Selection Process



2.3. Results

The characteristics of the included studies are summarised in Table 2.2 and described in more detail in Table 2.3 and Table 2.4.

Table 2.2*Summary of Descriptive Characteristics of Included Studies*

Characteristic	Number of papers
Study design	
Cross-sectional	50
Longitudinal	3
Year	
1960-1979	5
1980-1999	7
2000-2019	41
Type of sample(s)	
Prisoners	11
Prisoners + CG ^a	15
Prisoners + FP ^b patients	1
Prisoners + FP patients + CG	2
FP patients	4
FP patients + CG	1
Convicted offenders	1
Convicted offenders + CG	3
Non-convicted offenders + CG	2
Convicted + non-convicted offenders	1
Traffic offenders	2
Traffic offenders + CG	3
Representative	5
University students	2
General population	2
Gender composition	
Male	37
Female	1
Male and female	17
Ethnicity	
Majority Caucasian	11
Majority Black	2
Not reported	40
Relevant trait(s) measured	
Neuroticism	46
Extraversion	45
Conscientiousness	29
Agreeableness	28
Openness to Experience	27

Characteristic	Number of papers
Psychopathy	6
Narcissism	2
Machiavellianism	0
Personality measure used ^c	
PEN model	
Eysenck Personality Questionnaire (EPQ)	13
Eysenck Personality Inventory (EPI)	3
Maudsley Personality Inventory (MPI)	1
Five-Factor Model	
NEO-Five Factor Inventory (NEO-FFI)	10
NEO-Personality Inventory-Revised (NEO-PI-R)	8
International Personality Item Pool-50 (IPIP-50)	4
Five Factor Model Rating Form (FFMRF)	2
Hamburg Personality Inventory (HPI)	1
Big Five Inventory (BFI)	1
Ten-Item Personality Inventory-Japanese (TIPI-J)	1
Original questionnaire	
HEXACO Model	1
HEXACO-60	
Dark Triad	3
Psychopathic Personality Inventory-Revised (PPI-R)	1
Self-Report Psychopathy Scales (SRP-III)	2
Levenson Self-Report Psychopathy Scale (LSRP)	1
Narcissistic Personality Inventory (NPI)	
Original questionnaire	
Measure of OB	
Official CJS ^d records	36
Status as prisoner or FP patient	10
Self-report questionnaire	13
Quality score	
High (19-22)	11
Moderate (13-18)	33
Poor (9-12)	5
Very poor (0-8)	4

Note. Some papers utilised multiple samples or measures, so totals in each column may sum to more than the total number of included papers ($n = 53$). ^aCG = Control group. ^bFP = forensic psychiatric. ^cSome measures listed were the original version, whilst others were translated, shortened, or revised versions of the original instrument. ^dCJS = Criminal justice system.

Table 2.3*Descriptive Characteristics of Included Studies*

Study	Country	Type and size of sample(s)	Type of offences	% male ^a	Age range (years)	Ethnicity
Longitudinal studies						
Rydén-Lodi et al. (2008)	Sweden	Prisoners ($n = 92$), CG (general population, $n = 51$)	<i>nr</i>	100	30-38	<i>nr</i>
Samuels et al. (2004)	US	Representative ($n = 611$)	Violent ($n = 33$) Non-violent ($n = 46$)	38	30-87	Majority Caucasian
Vitacco et al. (2014)	US	Representative ($n = 417$)	Violent Theft Miscellaneous	100	24-26	Majority Black
Cross-sectional studies						
Bartol & Holanchock (1979)	US	Prisoners ($n = 398$), CG (Unemployed adults; $n = 187$)	Homicide ($n = 59$) Violent ($n = 67$) Rape ($n = 23$) Robbery ($n = 173$) Burglary ($n = 51$) Drug ($n = 25$)	100	<i>nr</i>	Majority Black
Beaver et al. (2017)	US	Representative ($n = 15,701$)	<i>N/A</i>	<i>nr</i>	24-32	<i>nr</i>
Becerra-García et al. (2012)	Spain	Prisoners ($n = 50$)	CSO ($n = 33$) SO ($n = 17$)	100	21-70	<i>nr</i>
Becerra-García, García-León, & Egan (2013)	Spain & UK	Prisoners ($n = 112$)	UK CSO ($n = 76$) Spain CSO ($n = 36$)	100	22-73	<i>nr</i>

Study	Country	Type and size of sample(s)	Type of offences	% male ^a	Age range (years)	Ethnicity
Blickle et al. (2006)	Germany	Prisoners ($n = 76$), CG (corporate managers; $n = 150$)	White collar crime ($n = 76$)	92, 63	<i>nr</i> ($M = 46.8$)	<i>nr</i>
Boduszek et al. (2013)	Poland	Prisoners ($n = 312$)	Violent recidivism ($n = 133$) Non-violent recidivism ($n = 179$)	100	20-66	<i>nr</i>
Boillat, Duering, et al. (2017)	Switzerland	Convicted offenders ($n = 40$), CG (general population; $n = 21$)	CSO ($n = 40$)	100	18-55	<i>nr</i>
Boillat, Schwab, et al., 2017	Switzerland	Convicted offenders ($n = 41$), CG (general population; $n = 21$)	CSO ($n = 41$)	100	18-55	<i>nr</i>
Brown et al. (2016)	Canada	Traffic offenders ($n = 91$), CG (general population; $n = 47$)	DUI ($n = 36$) Speed ($n = 28$) Mixed ($n = 27$)	100	19-39	Majority Caucasian
Carvalho & Nobre (2019)	Portugal	Convicted offenders ($n = 65$), non-convicted offenders ($n = 37$)	Convicted CSO ($n = 33$) Convicted SO ($n = 32$) SR SO ($n = 37$)	100	20-58	<i>nr</i>
Clower & Bothwell (2001)	US	Prisoners ($n = 51$)	<i>nr</i>	100	<i>nr</i>	<i>nr</i>
Dennison et al. (2001)	Australia	Prisoners ($n = 60$), CG (general population; $n = 33$)	CSO immediate family ($n = 17$) CSO step-family ($n = 11$) CSO extra-familial ($n = 32$)	100	<i>nr</i> ($M = 47$, $M = 39$)	<i>nr</i>

Study	Country	Type and size of sample(s)	Type of offences	% male ^a	Age range (years)	Ethnicity
Eriksson et al. (2017) Study 1	Sweden	Prisoners ($n = 46$), CG (general population; $n = 681$)	Serious and/or repeat ($n = 46$)	100	<i>nr</i> ($M = 34.6$, $M = 29.8$)	<i>nr</i>
Study 2	Sweden	Prisoners ($n = 46$), CG (prison guards, $n = 45$), CG (university students, $n = 32$)	Serious and/or repeat ($n = 46$)	100, 62, 22	<i>nr</i> ($M = 34.6$, $M = 37.8$, $M = 39.9$, $M = 24.8$, $M = 26.5$)	<i>nr</i>
Eysenck et al. (1977)	UK	Prisoners ($n = 156$)	Violent ($n = 37$) Property ($n = 30$) Fraud ($n = 22$) General recidivism ($n = 14$) Mixed ($n = 53$)	100	18-38	<i>nr</i>
Fix & Fix (2015)	US	University students ($n = 111$)	SR violent SR property SR drug SR status	100	<i>nr</i> ($M = 20.6$)	Majority Caucasian
Furnham & Saipe (1993)	UK	General population ($n = 73$)	Traffic	<i>nr</i>	19-61	<i>nr</i>
Garofalo et al. (2018)	The Netherlands	FP patients ($n = 138$), CG (general population, $n = 238$)	CSO ($n = 74$) Violent ($n = 64$)	100	<i>nr</i> ($M = 47.8$, $M = 37.4$)	Majority Caucasian
Gingrich & Campbell (1995)	US	FP patients ($n = 96$)	CSO ($n = 69$) Exhibitionism ($n = 20$) Rape ($n = 7$)	100	24-72	Majority Caucasian

Study	Country	Type and size of sample(s)	Type of offences	% male ^a	Age range (years)	Ethnicity
Gudjónsson et al. (1991)	Iceland	Prisoners ($n = 96$)	Violent ($n = 13$) Property ($n = 33$) SO ($n = 6$) Miscellaneous ($n = 29$)	93	<i>nr</i> ($M = 30.4$, $M = 24.8$)	<i>nr</i>
Gupta & Sethi (1974)	India	Prisoners ($n = 108$)	Murder ($n = 54$) Theft ($n = 31$) Armed robbery ($n = 10$) Miscellaneous ($n = 13$)	100	<i>nr</i> ($M = 31.6$)	<i>nr</i>
Haapasalo (1990)	UK	Prisoners ($n = 86$), CG (general population; $n = 343$)	Property Traffic	100	21-53	<i>nr</i>
Hornsveld et al. (2008)	The Netherlands	FP patients ($n = 136$), prisoners ($n = 100$)	<i>nr</i>	100	19-59	<i>nr</i>
Hubicka et al. (2010)	Sweden	Traffic offenders ($n = 162$)	DUI ($n = 162$)	88	<i>nr</i> ($M = 42$, $M = 38$)	<i>nr</i>
Iffland et al. (2014)	Germany	Convicted offenders ($n = 17$), CG (partners of convicted offenders; $n = 17$)	Extra-familial CSO ($n = 9$) Intra-familial CSO ($n = 3$) Rape ($n = 3$) Exhibitionism ($n = 2$)	100, 0	<i>nr</i> ($M = 45.4$)	<i>nr</i>
Jornet-Gibert et al. (2013)	Spain	Traffic offenders ($n = 51$), CG (general population, $n = 47$)	DUI ($n = 51$)	100	<i>nr</i> ($M = 33.7$)	Caucasian
Jung & Jamieson (2012)	Canada	Convicted offenders ($n = 25$), FP patients ($n = 15$), CG (university students; $n = 45$)	CSO ($n = 20$) SO ($n = 5$) Miscellaneous ($n = 15$)	100	18-60	<i>nr</i>

Study	Country	Type and size of sample(s)	Type of offences	% male ^a	Age range (years)	Ethnicity
Kim & Lee (2017)	South Korea	Traffic offenders ($n = 289$)	Repeat DUI ($n = 122$) First-time DUI ($n = 169$)	90	24-70	<i>nr</i>
Kumari et al. (2017)	India	Prisoners ($n = 200$)	Fraud ($n = 55$) Murder ($n = 32$) Robbery ($n = 24$) Kidnapping ($n = 24$) Drug ($n = 21$) Conspiracy ($n = 8$) Miscellaneous ($n = 36$)	100	23-35	<i>nr</i>
Leal (2017)	US	Representative ($n = \text{approx. } 14,000$)	<i>N/A</i>	<i>nr</i>	24-34	<i>nr</i>
Lev et al. (2008)	Israel	Traffic offenders ($n = 51$), CG (general population; $n = 35$)	Traffic ($n = 51$)	80, 80	<i>nr</i> ($M = 33.6$, $M = 36.9$)	<i>nr</i>
Lu & Lung (2012)	Taiwan	Prisoners ($n = 217$)	Intra-familial SO ($n = 25$) Extra-familial SO ($n = 192$)	100	<i>nr</i> ($M = 41$, $M = 26.3$)	<i>nr</i>
McKerracher & Watson (1968)	UK	FP patients ($n = 264$)	<i>nr</i>	76	<i>nr</i> ($M = 27.9$)	<i>nr</i>
Međedović & Kujačić (2017)	Serbia	Prisoners ($n = 225$)	<i>nr</i>	100	<i>nr</i> ($M = 32.7$)	<i>nr</i>
Nigel et al. (2018)	Germany	FP patients ($n = 164$)	Drug ($n = 87^b$) Violent ($n = 65$) Property ($n = 28$) Traffic ($n = 13$) SO ($n = 5$) Arson ($n = 4$)	65	18-60	<i>nr</i>

Study	Country	Type and size of sample(s)	Type of offences	% male ^a	Age range (years)	Ethnicity
O’Riordan & O’Connell (2014)	UK	Representative ($n = 8,549$)	<i>nr</i>	<i>nr</i>	42	<i>nr</i>
Pettersen et al. (2019)	Canada	Convicted offenders ($n = 95$)	CSO ($n = 28$) Miscellaneous ($n = 44$)	100	<i>nr</i> $M = 37.3$	Majority Caucasian
Ragatz (2011)	US	Prisoners ($n = 226$)	White collar ($n = 137$) Miscellaneous ($n = 89$)	100	<i>nr</i> ($M = 46.8$, $M = 44.6$, $M = 45.9$)	Majority Caucasian
Randall et al. (2011)	Ireland	Convicted offenders ($n = 103$), CG (general population; $n = 30$)	CSO ($n = 103$)	100	<i>nr</i> ($M = 54$, $M = 44$, $M = 33$)	<i>nr</i>
Rangaswami & Arunagiri (1982)	India	Prisoners ($n = 60$), FP patients ($n = 25$), CG (general population; $n = 60$)	Crimes against the person ($n = 85$)	100	<i>nr</i> ($M = 37.3$, $M = 39.7$, $M = 36.5$)	<i>nr</i>
Rolison et al. (2013)	UK	Convicted offenders ($n = 45$), CG (general population; $n = 60$)	Miscellaneous ($n = 45$)	100	19-60	<i>nr</i>
Schwartz et al. (2012)	US	Non-convicted offenders ($n = 29$), CG (university students; $n = 29$)	Animal abuse ($n = 29$)	59	<i>nr</i> ($M = 20$)	Majority Caucasian
Seigfried-Spellar (2014)	Canada ^c	Non-convicted offenders ($n = 16$), CG (general population; $n = 257$)	CSEM ($n = 16$)	75, 48	<i>nr</i> (Min = 18)	Majority Caucasian

Study	Country	Type and size of sample(s)	Type of offences	% male ^a	Age range (years)	Ethnicity
Shimotsukasa et al. (2019)	Japan	Prisoners ($n = 645$), CG (general population; $n = 4,546$)	Violent ($n = 176$) Theft ($n = 262$) Drug ($n = 207$)	78, 59	18-71	<i>nr</i>
Sikand & Reddy (2017)	India	Prisoners ($n = 20$), CG (general population; $n = 20$)	<i>nr</i>	100	29-61	<i>nr</i>
Singh et al. (1985)	India	Prisoners ($n = 257$), CG (general population; $n = 100$)	Armed robbery ($n = 67$) Murder ($n = 65$) Theft ($n = 35$) Assault ($n = 35$) Arson ($n = 30$) SO ($n = 25$)	100	30-40	<i>nr</i>
Sommer et al. (1992)	Canada	General population ($n = 452$)	SR IPV ($n = 177$)	0	18-66	Majority Caucasian
Stoll et al. (2019)	Switzerland	Prisoners ($n = 43$), CG (general population; $n = 21$)	CSO ($n = 22$) CSEM ($n = 21$)	100	18-55	<i>nr</i>
Thornton et al. (2010)	UK	University students ($n = 297$)	SR violent SR IPV Non-violent	39	18-49	<i>nr</i>
Wilson & MacLean (1974)	UK	Prisoners ($n = 100$), CG (general population; $n = 100$)	<i>nr</i>	100	<i>nr</i> ($M = 32$, $M = 29$)	<i>nr</i>

Notes. CG = control group. CSO = sexual offending against children. SO = sexual offending against adults. DUI = Driving while intoxicated. SR = self-reported. FP = forensic psychiatric. CSEM = Child Sexual Exploitation Material. IPV = Intimate partner violence.

^aMultiple values are presented where multiple samples were used in the study. Values represent the male percentage of each sample. ^b*ns* sum to greater than the total sample because some participants had multiple types of offences. ^cAlthough Seigfried-Spellar's (2014) research was conducted in Canada, its participants lived in the US (78.7%), UK (6.6%), Canada (5.5%), and Australia (3.3%).

Table 2.4*Summary of Included Studies – Traits, Measures, and Results*

Study	Relevant trait(s) measured	Personality measure used	Measure of OB	Key findings relevant to this review
Longitudinal studies				
Rydén-Lodi et al. (2008)	Extraversion Neuroticism	EPQ	Prisoner status	Offenders scored higher on E*** and N*** than controls, but offender sub-groups did not differ on either trait. E did not predict re-imprisonment at 3-year follow-up.
Samuels et al. (2004)	O/C/E/A/N	NEO-PI-R	Official CJS records	Offenders scored higher on N** and lower on A*** and C* than non-offenders. Violent and non-violent offenders did not differ on any trait.
Vitacco et al. (2014)	Psychopathy	SRP-III	Official CJS records; SR	Psychopathy*** was associated with self-reported delinquency. Psychopathy differentiated between participants with and without violent offences***, theft offences**, and serious offences**. Psychopathy total score accounted for 2.3% of the variance in violent offending and 1.1% of the variance in serious offending. It did not predict theft offending.
Cross-sectional studies				
Bartol & Holanchock (1979)	Extraversion Neuroticism	EPQ	Official CJS records	Prisoners scored higher than controls on E***. Prisoners and controls scored the same on N. Sex offenders scored lower on E*** and higher on N*** than the other prisoners. Personality was not linked to length or frequency of incarceration.
Beaver et al. (2017)	Psychopathy	Original questionnaire	SR	Males were more likely than females to be arrested*, incarcerated*, and sentenced to probation*. In both males and females, possessing psychopathic traits increased the odds of being arrested*, incarcerated*, and sentenced to probation*.
Becerra-García et al. (2012)	O/C/E/A/N	NEO-FFI (Spanish version)	Official CJS records	No differences on any FFM traits between SOs and CSOs. SOs with abuse histories were higher on N* than SOs without. CSOs with abuse histories were higher on O** than CSOs without.

Study	Relevant trait(s) measured	Personality measure used	Measure of OB	Key findings relevant to this review
Becerra-García, García-León, & Egan (2013)	O/C/E/A/N	NEO-FFI (Spanish and English versions)	Official CJS records	Spanish SOs scored higher than UK SOs on all FFM traits (O***, C***, E***, A***, N**).
Becerra-García, García-León, Muela-Martinez, & Egan (2013)	O/C/E/A/N	NEO-FFI (Spanish version)	Official CJS records	Prisoners scored higher than controls on N*. Sex offenders scored higher than controls on E*. Non-SO prisoners scored lower than controls on A*.
Blickle et al. (2006)	Conscientiousness	NEO-FFI (German version)	Official CJS records	Prisoners scored higher on C* than controls.
Boduszek et al. (2013)	Extraversion Neuroticism	EPQR-A	Prisoner status; SR	Violent offenders reported higher rates of recidivism*** and E* than non-violent offenders. E also predicted the likelihood of committing violent offences*. The two groups did not differ on N.
Boillat, Duering, et al. (2017)	O/C/E/A/N	NEO-PI-R	Official CJS records; FP status	CSOs scored higher on N and lower on C than controls. The groups did not differ on A, E, or O. CSOs who scored high on N tended to score lower on C and E than CSOs who scored low on N.
Boillat, Schwab, et al. (2017)	O/C/E/A/N	NEO-PI-R	Official CJS records; FP status	CSOs scored higher on N** and lower on C** than controls. The groups did not differ on A, E, or O. CSA and CSEM offenders did not differ on any traits. N mediated** the relationship between childhood abuse and adulthood CSO perpetration.
Brown et al. (2016)	O/C/E/A/N	NEO-FFI	SR	Mixed (i.e., DUI + moving traffic violations) traffic offenders scored lower on A than controls, DUI offenders, and speed offenders.
Carvalho & Nobre (2019)	O/C/E/A/N	NEO-FFI	Official CJS records; SR	Non-convicted offenders scored lower on N* and C* than convicted SOs and CSOs. Convicted CSOs scored lower on O* than non-convicted offenders and convicted SOs.

Study	Relevant trait(s) measured	Personality measure used	Measure of OB	Key findings relevant to this review
Clower & Bothwell (2001)	O/C/E/A/N	NEO-FFI	Official CJS records	C* and O** were both negatively associated with number of arrests. These two traits interacted to account for 13% of the variance in number of arrests**.
Dennison et al. (2001)	O/C/E/A/N	NEO-PI-R	Official CJS records	Step-family CSOs and extra-familial CSOs scored higher on N** and lower on E* than controls. Extra-familial CSOs scored lower on C* than controls. No group differences were found for A or O. FFM trait scores correctly predicted group membership 75.3% of the time.
Eriksson et al. (2017)				
Study 1	O/C/E/A/N	IPIP-50 (Swedish version)	Official CJS records	Prisoners scored lower on E***, O***, and A***, and higher on C***, than controls.
Study 2	O/C/E/A/N	IPIP-50 (Swedish version)	Official CJS records	Prisoners scored lower on E*** and A*** than prison guards and controls.
Eysenck et al. (1977)	Extraversion Neuroticism	EPQ	Official CJS records	Fraud offenders scored lower on N* than property, general, and mixed offenders.
Fix & Fix (2015)	Psychopathy	PPI-R	SR	Psychopathic traits predicted self-reported violent*, property*, and drug** offending.
Furnham & Saipe (1993)	Extraversion Neuroticism	EPQ	SR	N was positively associated with driving convictions*.
Garofalo et al. (2018)	Psychopathy	LSRP	Official CJS records	Violent offenders scored higher on psychopathy*** than CSOs and controls.
Gingrich & Campbell (1995)	Extraversion Neuroticism	EPQ	FP status	Rapists scored higher on E** than exhibitionists and CSOs. Pedophilic CSOs scored higher on N** than rapists, exhibitionists, and opportunistic CSOs.

Study	Relevant trait(s) measured	Personality measure used	Measure of OB	Key findings relevant to this review
Gudjónsson et al. (1991)	Extraversion Neuroticism	EPQ	Official CJS records	Male prisoners scored higher on N** than a community norm dataset.
Gupta & Sethi (1974)	Extraversion Neuroticism	MPI	Official CJS records	No differences on N or E were found between murderers and other kinds of offenders.
Haapasalo (1990)	Extraversion Neuroticism	EPQ	Official CJS records	Prisoners scored higher on E*** and N** than controls.
Hornsveld et al. (2008)	O/C/E/A/N	NEO-FFI	Official CJS records	FP patients scored lower on A** than community norm participants. Prisoners also scored lower on A** than a community norm dataset. FP patients and prisoners did not differ on A, but FP patients scored higher on N** than prisoners.
Hubicka et al. (2010)	O/C/E/A/N	NEO-PI-R (Swedish version)	Official CJS records	DUI offenders scored lower on O*** and C***, and higher on A*, than a community norm dataset.
Iffland et al. (2014)	O/C/E/A/N	HPI	Official CJS records	Male SOs scored lower on N** and C* than their female romantic partners. Male SOs also scored lower on O*** and N* than a community norm dataset.
Jornet-Gibert et al. (2013)	O/C/E/A/N	NEO-FFI (Spanish version)	Official CJS records	DUI offenders did not differ from controls on any traits, but after controlling for antisocial attitudes, N*** and C*** scores predicted group assignment.
Jung & Jamieson (2012)	Narcissism	NPI-16	Official CJS records	SOs scored lower on narcissism* than controls.
Kim & Lee (2017)	Extraversion Neuroticism	EPQ (Korean version)	Official CJS records	Neither N nor E predicted DUI recurrence.
Kumari et al. (2017)	O/C/E/A/N	BFI	Official CJS records	Habitual offenders scored lower on E**, A**, C**, and O**, and higher on N**, than first-time offenders.

Study	Relevant trait(s) measured	Personality measure used	Measure of OB	Key findings relevant to this review
Leal (2017)	O/C/E/A/N	Original questionnaire	SR	E was positively associated with 6 types offence types. N was positively associated with 8 offence types. O was positively associated with 5 offence types. A was negatively associated with 8 offence types. C was negatively associated with 9 offence types. E***, N***, A***, and O** were positively associated with the odds of ever having been arrested. E***, N***, and A*** were positively associated with the odds of ever having been incarcerated.
Lev et al. (2008)	C/E/A/N ^a	IPIP-50 (Hebrew version)	Official CJS records	Traffic offenders scored higher on E** than controls.
Lu & Lung (2012)	Extraversion Neuroticism	EPQ (Chinese version)	Official CJS records	Extra-familial SOs scored higher on E** than intra-familial SOs.
McKerracher & Watson (1968)	Extraversion Neuroticism	EPI	FP status	Male FP patients scored lower on N** than female FP patients.
Međedović & Kujačić (2017)	O/C/E/A/N	NEO-FFI	Official CJS records	A** and C** were negatively associated with recidivism rates.
Nigel et al. (2018)	Psychopathy O/C/E/A/N	PPI-R NEO-PI-R (German version)	Official CJS records	Females scored higher on E* than males. Psychopathy* predicted violent offences, but none of the FFM traits did.
O’Riordan & O’Connell (2014)	O/C/E/A/N	IPIP-50	SR	E*** and N** positively predicted criminal justice sanctions. A** and C* negatively predicted criminal justice sanctions.
Pettersen et al. (2019)	Narcissism	NPI	Official CJS records	CSOs scored lower on narcissism* than non-SO offenders. Narcissism* was positively associated with risk of violent recidivism in non-SO offenders. Narcissism** was positively associated with risk of sexual recidivism in CSOs.

Study	Relevant trait(s) measured	Personality measure used	Measure of OB	Key findings relevant to this review
Ragatz (2011)	Psychopathy	PPI-R	Official CJS records	No group differences were found on psychopathy total score.
Randall et al. (2011)	O/C/E/A/N	NEO-PI-R	Official CJS records	CSOs scored higher on N* and A***, and lower on E*** and O***, than controls. Cleric CSOs scored higher on C*** than non-cleric CSOs.
Rangaswami & Arunagiri (1982)	Extraversion Neuroticism	EPQ (Tamil version)	Official CJS records	Prisoners scored higher on E* and N* than controls.
Rolison et al. (2013)	O/C/E/A/N	HEXACO-60	Official CJS records	Offenders scored lower on E**, C*, and O*, and higher on N**, than controls.
Schwartz et al. (2012)	O/C/E/A/N	FFMRF	SR	Animal abuse offenders did not differ from controls on any FFM traits. Female offenders scored higher on N** than male offenders and controls.
Seigfried-Spellar (2014)	O/C/E/A/N	FFMRF	SR	Different sub-groups of CSEM users did not differ on any FFM traits.
Shimotsukasa et al. (2019)	O/C/E/A/N	TIPI-J	Official CJS records	Prisoners scored higher on E***, A***, and O*** than controls. Violent and drug offenders scored higher on E*** and O*** than theft offenders and controls. Drug and theft offenders scored higher on A*** than violent offenders and controls. Violent offenders and controls scored higher on C** than theft offenders.
Sikand & Reddy (2017)	Extraversion Neuroticism	EPQ-RS (Hindi version)	Prisoner status	Prisoners did not differ from controls on N or E.
Singh et al. (1985)	Extraversion Neuroticism	EPI (Hindi version)	Prisoner status	Prisoners scored higher on E** than controls, and SOs scored higher on E* than all other types of offenders. Prisoners scored higher on N* than controls. Among offenders, murderers scored highest on N**, followed by arsonists* and armed robbers**. SO, theft, and assault offenders did not differ on N.

Study	Relevant trait(s) measured	Personality measure used	Measure of OB	Key findings relevant to this review
Sommer et al. (1992)	Extraversion Neuroticism	EPQ-R	SR	39.1% of the sample participated in at least one form of IPV with their current partner. N*** was positively associated with IPV perpetration, but E was not.
Stoll et al. (2019)	Neuroticism	NEO-PI-R	Prisoner status	CSOs scored higher on N*** than controls.
Thornton et al. (2010)	O/C/E/A/N	IPIP-50	SR	Men reported higher rates of violent offending** and non-violent offending** than women. Women reported higher rates of IPV perpetration*** than men. In men, C** and N*** were negatively associated with non-violent offending. In women, A*** was negatively associated with violent offending, and N** was negatively associated with IPV perpetration.
Wilson & MacLean (1974)	Extraversion Neuroticism	EPI	Prisoner status	Prisoners scored higher on E* and N** than controls.

Notes. O/C/E/A/N = Openness, Conscientiousness, Extraversion, Agreeableness, and Neuroticism. SO = Sexual offending. CSO = Child sex offending. CSA = Child sexual abuse (i.e., contact offending). CSEM = Child sexual exploitation material (i.e., non-contact offending). IPV = Intimate Partner Violence. SR = self-reported. FP = forensic psychiatric. EPQ = Eysenck Personality Questionnaire. NEO-PI-R = NEO-Personality Inventory-Revised. SRP-III = Self-Report Psychopathy Scale-III. NEO-FFI = NEO-Five Factor Inventory. EPQR-A = Eysenck Personality Questionnaire-Revised Abbreviated. IPIP-50 = International Personality Item Pool-50. PPI-R = Psychopathic Personality Inventory-Revised. LSRP = Levenson Self Report Psychopathy scale. MPI = Maudsley Personality Inventory. HPI = Hamburg Personality Inventory. NPI = Narcissistic Personality Inventory (full version). NPI-16 = abbreviated version of NPI. BFI = Big Five Inventory. EPI = Eysenck Personality Inventory. FFMRF = Five-Factor Model Rating Form. TIPI-J = Ten-Item Personality Inventory (Japanese version). EPQ-RS = Eysenck Personality Questionnaire-Revised Short Form. EPQ-R = Eysenck Personality Questionnaire-Revised.

* $p \leq .05$. ** $p \leq .01$. *** $p \leq .001$.

^aOpenness to Experience was excluded from analyses in this study due to unacceptable internal reliability.

2.3.1. Study Characteristics and Methodologies

2.3.1.1. Location and Publication Date

The greatest proportion of studies were conducted in the US ($n = 10$) or the UK ($n = 9$). Several studies were from Canada ($n = 5$), India ($n = 5$), Spain ($n = 4$), Germany ($n = 3$), Sweden ($n = 3$), Switzerland ($n = 3$), and The Netherlands ($n = 2$). The following countries were represented by one study each: Australia (Dennison et al., 2001), Iceland (Gudjónsson et al., 1991), Ireland (Randall et al., 2011), Israel (Lev et al., 2008), Japan (Shimotsukasa et al., 2019), Poland (Boduszek et al., 2013), Portugal (Carvalho & Nobre, 2019), Serbia (Međedović & Kujacić, 2017), South Korea (Kim & Lee, 2017), and Taiwan (Lu & Lung, 2012). The vast majority of the included papers were published in the last 20 years ($n = 41$).

2.3.1.2. Design and Sample Type

The overwhelming majority ($n = 50$) of the included papers presented cross-sectional research; only three of the included studies were longitudinal in design. Twenty-six of the included studies compared known offenders to a control group. Of the 27 studies that did not use an original⁷ control group, 11 sampled from prisoners; four sampled from forensic psychiatric patients; two (Hubicka et al., 2010; Kim & Lee, 2017) examined traffic offenders; one (Hornsveld et al., 2008) compared prisoners and forensic psychiatric patients; one (Pettersen et al., 2019) looked only at convicted offenders living in the community; and one (Carvalho & Nobre, 2019) compared convicted offenders to non-convicted offenders (community participants who self-reported engagement in OB). Meanwhile, five studies relied on large representative datasets from their respective countries, while two (Fix & Fix, 2015; Thornton et al., 2010) used university student

⁷ Some studies compared a known offender sample to freely available norm data.

samples and two (Furnham & Saipe, 1993; Sommer et al., 1992) sampled only from the general population.

2.3.1.3. Sample Characteristics

2.3.1.3.1. Size. A total of 85 unique samples⁸ (aggregate $n = 39,207$) were used in the 53 included papers, of which 27 were control samples (aggregate $n = 7,281$). Thirty-six percent ($n = 30$) of the samples had fewer than 50 participants, while 23.5% ($n = 20$) had between 50 and 99 participants. Thirty-one samples (36.5%) had between 100 and 499 participants. Only 8% ($n = 7$) of the samples exceeded 500 participants and just 5% ($n = 4$) surpassed 1000. Samples were frequently divided further into smaller sub-samples (e.g., on the basis of offence type) for analyses.

2.3.1.3.2. Ethnicity. Three-quarters ($n = 40$) of the included studies did not report the ethnicity of the participants. Of the 13 papers that did report this information, 85% ($n = 11$) utilised samples that were majority Caucasian. The remaining two papers utilised majority Black samples.

2.3.1.3.3. Gender. Only two (2%) of the 85 samples included in this review were female (aggregate $n = 469$). Meanwhile, 63 samples were male (aggregate $n = 6,648$) and the remaining 23 comprised both males and females (aggregate $n = 32,101$).

2.3.1.4. Measurement of Personality Traits

2.3.1.4.1. Traits Measured. Twenty-seven of the included studies measured all five FFM traits. An additional 17 articles measured neuroticism and extraversion, but not the other FFM traits. One study (Lev et al., 2008) measured all FFM traits except for openness, as the translated instrument used in this study yielded insufficient internal reliability for the O scale. One study (Blickle et al., 2006) only examined

⁸ Two studies (Beaver et al., 2017; Leal, 2017) utilised the same large sample, deriving from the National Longitudinal Study of Adolescent to Adult Health in the United States. In addition, Eriksson et al., 2017 presented two studies that utilised the same offender sample, and Boillat, Duering, et al. (2017) used the same offender sample as Boillat, Schwab, et al. (2017).

conscientiousness, and one (Stoll et al., 2019) looked exclusively at neuroticism. Overall, among the 53 included papers, neuroticism was measured 46 times; extraversion was examined 45 times; conscientiousness was measured in 29 papers; agreeableness was investigated in 28 papers; and openness to experience was examined 27 times.

Regarding DT model traits, six studies assessed trait psychopathy, while two measured subclinical narcissism. None of the included studies investigated the role of the third DT trait, Machiavellianism, in OB.

2.3.1.4.2. Personality Measure Used. Studies were included in the review if they measured FFM or DT traits. However, papers were included if they measured FFM traits through use of the PEN model (Eysenck, 1964; Eysenck & Eysenck, 1970) or HEXACO model (Ashton et al., 2004) instrument, as PEN captures two of the FFM traits⁹ (Extraversion and Neuroticism), and HEXACO subsumes all five FFM traits within it¹⁰. Of the 46 papers that measured one or more FFM trait, 59% ($n = 27$) did so using a questionnaire designed to measure this model, the most popular of which were the NEO-Five Factor Inventory (NEO-FFI; $n = 10$) and the NEO-Personality Inventory-Revised (NEO-PI-R; $n = 8$). Meanwhile, 37% ($n = 17$) utilised an instrument that measured the PEN model. One study (Rolison et al., 2013) measured the HEXACO model, and one study (Leal, 2017) used an original questionnaire.

Eight studies measured DT traits. Among those that examined psychopathy ($n = 6$), half utilised the Psychopathic Personality Inventory-Revised (PPI-R). The remaining three studies used the Self-Report Psychopathy Scales (SRP-III), the Levenson Self-Report

⁹ The PEN model captures two of the FFM traits (neuroticism and extraversion). These traits correlate strongly across the two models (McCrae & Costa, 1985), with N and E trait scales from each model consistently loading onto the same two factors (Aluja et al., 2004; Draycott & Kline, 1995; Larstone et al., 2002; Zuckerman et al., 1993). Thus, studies that measured PEN model traits were included in this review, as it has been demonstrated that neuroticism and extraversion are essentially identical across the two models (McCrae & Costa, 1985).

¹⁰ Although its traits are perhaps not as interchangeable with the FFM as those of the PEN model, HEXACO has shown substantial convergence with FFM traits (Gaughan et al., 2012).

Psychopathy Scale (LSRP), or an original questionnaire. Both of the studies that measured narcissism did so using the Narcissistic Personality Inventory (NPI); however, one (Pettersen et al., 2019) used the full questionnaire and the other study (Jung & Jamieson, 2012) used an abbreviated version.

2.3.1.5. Measurement of OB

Each of the included studies measured OB in one of three ways. The most prevalent method, utilised in 36 papers, was by obtaining official criminal justice system (CJS) records of participants' offence histories. In contrast, ten papers utilised participants' incarceration as prisoners or forensic psychiatric (FP) patients as an indication of their offender status, without delving into participants' unique offending histories. Finally, 13 papers measured OB via a self-report questionnaire. There was, however, some overlap between categories: two studies (Boillat, Duering, et al., 2017; Boillat, Schwab, et al., 2017) measured OB using a combination of CJS conviction histories and participants' statuses as FP patients; two studies (Carvalho & Nobre, 2019; Vitacco et al., 2014) combined CJS records with self-report questionnaires; and one study (Boduszek et al., 2013) used both self-report and participants' statuses as prisoners.

2.3.1.5.1. Self-report Questionnaires. Of the 13 papers that relied on self-report measurement of OB, there was significant variation in the instruments used. Two studies (Beaver et al., 2017; Leal, 2017) utilised the same large sample deriving from the National Longitudinal Study of Adolescent to Adult Health. These studies also used the same process to measure OB: participants were interviewed, where they were asked if they have ever been arrested; incarcerated; or sentenced to probation. Participants also completed a 13-item questionnaire that measured engagement in various types of offending. Similarly, one study (O'Riordan & O'Connell, 2014) used a large sample from the National Child Development Study, in which participants were asked to self-report whether they have ever

been subject to a police warning; a caution; an arrest; or a guilty verdict to a criminal offence.

Two studies (Fix & Fix, 2015; Schwartz et al., 2012) measured OB using the 22-item Illegal Behaviors Checklist (IBC; McCoy, Fremouw et al., 2006). Schwartz et al. (2012) also used an adapted self-report instrument to measure engagement in animal abuse. Meanwhile, one study (Vitacco et al., 2014) utilised the Self-Reported Delinquency Scale (SRD; Elliott et al., 1985), and one study (Thornton et al., 2010) used the Nonviolent and Violent Offending Behavior Scale (NVOBS; Thornton et al., 2013). Finally, one study (Boduszek et al., 2013) measured incarceration frequency by simply asking participants to self-report the number of times they had been in prison.

Some studies only measured specific varieties of OB. Furnham and Saipie (1993) measured driving offences via an original 25-item self-report questionnaire, while Brown et al. (2016) measured the same type of offending with the Manchester Driving Behaviour Questionnaire (DBQ; Lawton et al., 1997). Meanwhile, one study (Seigfried-Spellar, 2014) used the Online Pornography Survey (Seigfried, 2007) to measure self-reported engagement in Child Sexual Exploitation Material (CSEM) OB. Finally, Carvalho and Nobre (2019) used the Sexual Experiences Survey (Perpetration Form; Koss et al., 2007) to measure male university students' engagement in severe sexual violence against women, and Sommer et al. (1992) measured female participants' intimate partner violence (IPV) perpetration using the self-report Conflict Tactics Scale (Form A; Straus, 1979).

2.3.1.6. Quality

Following the quality assessment (see Section 2.3. for procedure), 11 of the included papers were deemed 'high quality' (scores between 19 and 22). All but one of the high quality papers (Sommer et al., 1992) were published in the last twenty years. Thirty-three papers were classified as 'moderate' (scored between 13 and 18). Five papers were

scored as ‘poor’ (scored 9-12) and four were deemed to be of ‘very poor’ quality (scored 0-8). Quality scores for each study are provided in Table 2.5.

2.4. Research Questions

The following Section discusses trends in study results regarding associations between distinct personality traits and OB. Observed associations between each trait and OB are summarised in Table 2.5, alongside and key methodological limitations of each study.

2.4.1. Are FFM Traits Associated with OB?

2.4.1.1. *Is Extraversion Associated with Offending?*

Thirty-five studies assessed the potential association between extraversion and OB. Sixteen countries were represented across this pool of research, with the US ($n = 6$; 17.1%), the UK ($n = 6$; 17.1%), and India ($n = 5$; 14.3%) as the three most common countries of publication. Male-only samples were used in the majority of these studies ($n = 23$; 65.7%), and just one study used a female-only sample. The vast majority ($n = 29$; 82.9%) of these studies did not report participants’ ethnicities, but of those that did, five (14.3%) reported their samples to be all or majority Caucasian, and one utilised a majority Black sample.

Most of these studies compared known offenders to non-offender control groups ($n = 21$; 60%). Eight (22.9%) looked only at offender samples without a non-offender control group, three studies (8.6%) used nationally representative samples, two (5.7%) sampled from the general population, and one (2.9%) utilised university students. OB was measured via official criminal justice system (CJS) records in 24 studies (68.6%), while seven (20%) relied on participants to self-report their OB and four (11.4%) used participants’ status as prisoners to classify them as offenders in their studies.

The majority ($n = 22$; 62.9%) of the studies that examined the role of extraversion measured this trait with an instrument designed to measure the Five-Factor Model, the

Table 2.5

Summary of Associations Between Traits and Offending, Quality Scores, and Methodological Limitations

Study	Direction and strength ^a of association						Quality score	Main methodological limitations
	E	N	A	C	O	Psy. Nar.		
Big Five								
O’Riordan & O’Connell (2014)	+	+	-	-	<i>ns</i>		22	Offending data was self-reported and spanned 10 years, so may be susceptible to socially desirable responding and/or memory bias.
Carvalho & Nobre (2019)	<i>N/A</i>	<i>N/A</i>	<i>N/A</i>	<i>N/A</i>	<i>N/A</i>		21	Small samples. Non-convicted offender designation based entirely on self-report. Samples were not matched on demographic variables. No non-offender control group.
Samuels et al. (2004)	<i>ns</i>	+	-	-	<i>ns</i>		21	Only analysed arrests occurring in a single US state. Arrest rate was used as a proxy for all OB committed.
Brown et al. (2016)	<i>ns</i>	<i>ns</i>	-**	<i>ns</i>	<i>ns</i>		20	<i>p</i> value not reported for significant result. Self-reporting of traffic offences. DUI laws vary by jurisdiction, limiting generalisability of results.
Jornet-Gibert et al. (2013)	<i>ns</i>	<i>ns</i>	<i>ns</i>	<i>ns</i>	<i>ns</i>		19	Control group was a convenience sample. DUI participants were attending a diversion programme (not representative of DUI offenders).
Sommer et al. (1992)	<i>ns</i>	+**					19	Sample was female, but did not measure participant sexuality or victim gender. Only examined married/common-law relationships. Did not delineate which party instigated the abuse in each instance. Self-reported offending.

Study	Direction and strength ^a of association						Quality score	Main methodological limitations
	E	N	A	C	O	Psy. Nar.		
Kumari et al. (2017)	- ***	+***	- ***	-**	- ***		18	Limited age range in both samples (23-35). Homogeneous samples.
Leal (2017)	+	+	-	-	+		18	Cross-sectional analysis of longitudinal dataset. Risk of heightened type 1 error rate and false conclusions due to very large sample. Self-reported OB and engagement with the CJS. Each personality trait was assessed on the basis of responses to just four questionnaire items.
Međedović & Kujačić (2017)	<i>ns</i>	<i>ns</i>	-*	-*	<i>ns</i>		18	Not generalisable because of the unique environment in which the sample is embedded.
Nigel et al. (2018)	<i>N/A</i>	<i>N/A</i>	<i>N/A</i>	<i>N/A</i>	<i>N/A</i>		18	Sample all had history of drug abuse; no control or comparison group was used. Highly unequal <i>ns</i> between genders.
Randall et al. (2011)	-	+	+	<i>ns</i>	-		18	Groups were not matched on age or education level. A non-offender cleric control group was not used.
Shimotsukasa et al. (2019)	+*	<i>ns</i>	+*	<i>ns</i>	+ ^b		18	Used a very short measure for FFM traits. Did not control for length of incarceration.
Becerra-García, García-León, & Egan (2013)	<i>N/A</i>	<i>N/A</i>	<i>N/A</i>	<i>N/A</i>	<i>N/A</i>		17	Spanish and English versions of the NEO-FFI may not assess the exact same characteristics. Participants self-selected to take part in the study. Did not use a non-offender control group.
Becerra-García, García-León, Muela-Martinez, & Egan (2013)	-	+	-	<i>ns</i>	<i>ns</i>		17	Small sample sizes. No distinction made between violent and non-violent offenders.

Study	Direction and strength ^a of association						Quality score	Main methodological limitations
	E	N	A	C	O	Psy. Nar.		
Boduszek et al. (2013)	<i>N/A</i>	<i>N/A</i>					17	Homogeneous sample. Self-report recidivism rates. Recidivism was defined as number of re-incarcerations, but violent offenses are more likely to receive custodial sentences than non-violent ones.
Hornsveld et al. (2008)	<i>ns</i>	<i>ns</i>	-	<i>ns</i>	<i>ns</i>		17	Risk of socially desirable responding. No conclusions drawn regarding the personality trait results.
Thornton et al. (2010)	<i>ns</i>	-*	-**	-**	<i>ns</i>		17	Self-reported OB. Student sample. Did not control for any variables other than age.
Blickle et al. (2006)				+***			16	Experiment environment was not controlled (mail study). Demographic info not collected or controlled for. Convenience sample.
Boillat, Duering, et al. (2017)	<i>ns</i>	+	<i>ns</i>	-	<i>ns</i>		16	<i>p</i> values not reported for the significant results. Homogeneous sample of low-risk CSOs.
Boillat, Schwab, et al. (2017)	<i>ns</i>	+	<i>ns</i>	-	<i>ns</i>		16	Risk of socially desirable responding and false reporting of details of childhood abuse. Lack of statistical power.
Eriksson et al. (2017)								
Study 1	-**	<i>ns</i>	-**	+***	-***		16	Risk of socially desirable responding. Samples not matched on demographic variables.
Study 2	-**	<i>ns</i>	-***	<i>ns</i>	<i>ns</i>			
Lu & Lung (2012)	<i>N/A</i>	<i>N/A</i>					16	Highly unequal <i>ns</i> . Small sample of intra-familial SOs.
Rolison et al. (2013)	-**	+**	<i>ns</i>	-*	-**		16	Did not differentiate according to offence type. Low internal consistency of personality instrument used with these samples.

Study	Direction and strength ^a of association							Quality score	Main methodological limitations
	E	N	A	C	O	Psy.	Nar.		
Schwartz et al. (2012)	<i>ns</i>	<i>ns</i>	<i>ns</i>	<i>ns</i>	<i>ns</i>			16	Self-reported OB. Did not analyse whether FFM traits predicted self-reported offending. Homogeneous sample. Did not explain why they chose to use an uncommon FFM measure rather than one of the more popular, extensively validated FFM measures available.
Stoll et al. (2019)		+						16	Did not analyse other FFM traits. Did not compare CSA and CSEM offenders to one another. Small samples.
Hubicka et al. (2010)	<i>ns</i>	<i>ns</i>	+	-	-			15	Sample was limited to severe DUI offenders. Highly unequal <i>ns</i> , and very small female sample. High dropout rate.
Kim & Lee (2017)	<i>ns</i>	<i>ns</i>						15	Small samples. Unequal <i>ns</i> between genders. Large proportion of untruthful responses.
Rydén-Lodi et al. (2008)	+	+						15	Highly unequal <i>ns</i> for offender sub-groups. Did not differentiate by offence type. Issues with statistical power.
Becerra-García et al. (2012)	<i>N/A</i>	<i>N/A</i>	<i>N/A</i>	<i>N/A</i>	<i>N/A</i>			14	Small sample size. Lack of non-SO offender comparison group.
Gudjónsson et al. (1991)	<i>ns</i>	+						14	Both samples were small. Female sample was too small for meaningful comparisons to be made. Did not differentiate by offence type.
Haapasalo (1990)	-	+						14	Responses were not anonymous. Violent offenders were excluded from participation. Info missing about recruitment procedure and characteristics of the control sample. Did not differentiate by offence type.
Lev et al. (2008)	+**	<i>ns</i>	<i>ns</i>	<i>ns</i>				14	Samples were recruited differently. Unequal proportions of males and females in each sample. Openness was not

Study	Direction and strength ^a of association						Quality score	Main methodological limitations
	E	N	A	C	O	Psy. Nar.		
								measured due to poor internal consistency with the translated instrument used. Did not differentiate by offence type or frequency.
Gupta & Sethi (1974)	<i>ns</i>	<i>ns</i>					13	Small samples.
Iffland et al. (2014)	<i>ns</i>	-	<i>ns</i>	-	-		13	Very small, homogeneous sample. Study design excluded low-risk SOs. Offenders were recruited on a voluntary basis, and required both the offender and their female romantic partner to be willing to participate (limiting generalisability of findings).
Rangaswami & Arunagiri (1982)	+	+					13	Homogenous sample (first-time offenders of a specific offence type). Controls were not asked about possible offending histories.
Sikand & Reddy (2017)	<i>ns</i>	<i>ns</i>					13	Did not describe recruitment and selection of control sample. Did not control for demographic factors. Small samples.
Singh et al. (1985)	+	+					13	Did not describe recruitment and selection of control sample. Did not describe study procedure. Statistical issues with multiple testing of same dataset.
Gingrich & Campbell (1995)	<i>N/A</i>	<i>N/A</i>					12	No matched or control sample. No variables controlled for.
Seigfried-Spellar (2014)	<i>N/A</i>	<i>N/A</i>	<i>N/A</i>	<i>N/A</i>	<i>N/A</i>		12	Self-reported OB. Falsely described results as significant when <i>p</i> exceeded 0.05. Highly unequal <i>ns</i> . Did not statistically compare offender group to control group.

Study	Direction and strength ^a of association							Quality score	Main methodological limitations
	E	N	A	C	O	Psy.	Nar.		
Dennison et al. (2001)	-	+	<i>ns</i>	-	<i>ns</i>			11	Small samples. Unequal <i>ns</i> . Recruited from a single location. Only studied CSOs without comparing them to other type of offender.
Wilson & MacLean (1974)	+	+						10	Both samples comprised only individuals with extreme (high or low) scores on another personality scale, so samples are not representative of any population. Did not differentiate between offence types.
Furnham & Saipe (1993)	<i>ns</i>	+*						9	Small, non-offender sample. Self-reported, minor OB. Confounds not controlled for.
Bartol & Holanchock (1979)	+	<i>ns</i>						8	Large proportion of untruthful responses. Materials and procedure not described in sufficient detail.
McKerracher & Watson (1968)	<i>N/A</i>	<i>N/A</i>						8	Unequal <i>ns</i> . Did not collect or control for ethnicity or offence type.
Clower & Bothwell (2001)	<i>ns</i>	<i>ns</i>	<i>ns</i>	-	-			5	Small samples. No comparison or control group. Demographic info not collected or controlled for. No info about statistical power.
Eysenck et al. (1977)	<i>N/A</i>	<i>N/A</i>						4	Small samples. Sub-groups were chosen and allocated <i>a priori</i> .
Psychopathy									
Vitacco et al. (2014)						+**		22	Self-reported OB. Modest effect sizes.
Beaver et al. (2017)						+		21	All arrest, incarceration, and probation data were self-report.
Garofalo et al. (2018)						+**		19	Risk of socially desirable responding. Convenience sample (controls). Did not delineate among different types of CSO.

Study	Direction and strength ^a of association							Quality score	Main methodological limitations				
	E	N	A	C	O	Psy.	Nar.						
Ragatz (2011)								N/A	19	Sample is not representative of white collar (WC) offenders, as all participants were incarcerated (many WC offenders are diverted by the criminal justice system).			
Fix & Fix (2015)								+	18	Non-offender sample (university students). Self-reported OB. Homogeneous sample.			
Nigel et al. (2018)								N/A	18	Sample all had history of drug abuse; no control or comparison group was used. Highly unequal <i>ns</i> between genders.			
Narcissism Pettersen et al. (2019)										+	***	20	Small sample.
Jung & Jamieson (2012)										-	**	18	Small samples. Unable to control for differences in education levels. Measures were not counter-balanced. Narcissism measure used does not assess narcissism in sexual situations.

Notes. Plus sign denotes positive association; minus sign denotes negative association. *ns* denotes that no significant association was found. Blank cells indicate that the trait was not assessed in that study. *N/A* is reported for studies that did not measure a direct association between a trait and OB (e.g., compared personality traits across different types of offenders without the use of a control group).

E = Extraversion. N = Neuroticism. A = Agreeableness. C = Conscientiousness. O = Openness to Experience. Psy. = Psychopathy. Nar. = Narcissism.

^aStars denote the strength of the association, where effect sizes were reported in the study: * = small effect size, ** = medium effect size, *** = large effect size.

^bEffect size was very small.

most common of which were the NEO-PI-R and the NEO-FFI. Twelve (34.3%) studies measured extraversion using an instrument that captures Eysenck's PEN model (e.g., EPQ; EPI). One study utilised the HEXACO-60. Most of the studies that investigated extraversion and offending were of moderate quality ($n = 25$; 71.4%). Five studies (14.3%) were high quality, and five were poor or very poor quality.

Nine of the 35 studies (25.7%; combined $n = 29,256$) found extraversion to be positively associated with OB. Seven studies reported that offender participants scored higher on extraversion than control participants. Using a US representative sample of approximately 14,000 participants, Leal (2017) found that extraversion was positively associated with the odds of being arrested ($OR = 1.088, p < .001$) and incarcerated ($OR = 1.076, p < .001$). Similarly, with a UK representative sample ($n = 8,549$), O'Riordan and O'Connell (2014) noted that this trait predicted criminal justice sanctions ($\beta = .069, p < .001$). However, despite observing higher extraversion scores in offender samples, Rydén-Lodi et al. (2008) did not find support for their hypothesis that extraversion predicted re-imprisonment. Likewise, Bartol and Holanchock (1979) noted that extraversion was not associated with recidivism rates or months incarcerated in their study.

Contrary to these nine studies, a further eight studies (combined $n = 1,839$) observed the opposite trend in their data. In four studies¹¹, offenders scored lower on extraversion than control participants (university students, prison guards, and members of the general population). However, one of these studies (Rolison et al., 2013) relied on participants to self-report their offending histories, and in another (Haapasalo, 1990), prisoners' responses were not anonymous. These two caveats raise concerns about the validity of these authors' findings, given the aforementioned issues with untruthful

¹¹ Eriksson et al., 2017 (Studies 1 & 2); Haapasalo, 1990; Rolison et al., 2013.

responses (Crowne & Marlowe, 1964; Hart et al., 2015; Schwarz, 1999) when asking participants to self-report instances of socially condemned behaviour.

The remaining four studies that found extraversion to be negatively associated with OB chose to examine this relationship among different types of offenders. Dennison et al. (2001) noted that, specifically, sex offenders (SOs) who had offended against blood relatives and those who had offended against extra-familial victims both scored lower on extraversion than control participants. Likewise, SOs scored lower on this trait than controls in Becerra-García, García-León, Muela-Martinez, and Egan's (2013) study, as did child sex offenders (CSOs) in Randall et al. (2011). Finally, Kumari et al. (2017) noted that repeat offenders scored lower on extraversion than first-time offenders.

Surprisingly, the majority ($n = 18$; 51.4%; combined $n = 3,035$) of the included studies that investigated the relationship between extraversion and OB failed to find a significant association between the two variables. This may be partly attributable to the methodological limitations in these studies, particularly small, homogenous samples and considerably unequal n 's when making statistical comparisons.

2.4.1.1.2. Summary and Discussion: Extraversion. Among 35 studies that measured the association between extraversion and OB, no discernible pattern of results emerged. Just over half did not find a statistical link between these two variables. In contrast, approximately one quarter found a positive association between extraversion and OB, while the remaining quarter found the opposite. Quality was broadly comparable across the three groups of studies (positive association, negative association, or no association found).

Aggregate and median¹² sample sizes were compared across the three groups. The studies that found a positive association between extraversion and OB had the largest

¹² Two of the studies that examined FFM traits (Leal, 2017; O'Riordan & O'Connell, 2014) had sample sizes that were considerably larger than the rest of the dataset. Thus, median was selected to measure central tendency because it is less sensitive to outliers than the mean (Field, 2017).

median sample size ($n = 100$), at almost double the median sample size of the other two groups (negative association $Md = 53$; non-association $Md = 52.5$). Thus, the heightened statistical power that is characteristic of this group of studies may have contributed to their significant findings. Correspondingly, the diminished statistical power in studies that found no association for extraversion may have impeded their ability to detect significant associations, resulting in instances of Type II error (Columb & Atkinson, 2016). This highlights the urgent need for more studies that utilise samples of sufficient size in order to achieve adequate statistical power and accurately detect associations when they are present in the data.

Overall, this body of work is characterised by studies of varying methodologies, geographical locations, sample types, and sample sizes. Findings for this trait vary across studies, with the majority finding no relationship between extraversion and offending. However, the studies that have observed relationships between extraversion and offending indicate that the association appears to depend on the way in which OB was measured. Based on the results of the studies reviewed here, it can be tentatively concluded that high levels of extraversion are associated with engagement in OB in representative samples. Nonetheless, this positive association is far from unanimous, as the evidence thus far suggests that SOs and CSOs demonstrate low levels of this trait. Comparisons that differentiate between offence types may therefore yield more consistent outcomes regarding the relationship between extraversion and offending. This prospect is examined further in Section 4.4.

2.4.1.2. Is Neuroticism Associated with Offending?

The same 35 studies that assessed extraversion also measured a potential association between neuroticism and offending (see Section 4.1.1. for study characteristics). One additional article (Stoll et al., 2019) also examined this link, bringing the total number of studies in this section to 36. The majority of these studies ($n = 19$;

52.8%), with an aggregate n of 25,834 unique participants ($Md = 76.5$), found neuroticism to be positively associated with OB. Two studies (combined $n = 331$; $Md = 17$) concluded that neuroticism was negatively associated with offending, and a further fifteen studies (aggregate $n = 8,025$; $Md = 52.5$) found no association between these two variables.

Among the studies that reported a positive association between neuroticism and offending, 15¹³ found that offenders scored higher on this trait than control participants or general population norm data. When considering findings, it must be borne in mind that these studies included a range of distinct and relatively discrepant offence types which may obscure the degree to which meaningful comparisons can be made.

Briefly, these studies ($n = 5$) tended to yield positive associations between neuroticism and CSO offending. In Dennison et al. (2001), only CSOs whose victims were step-family members or extra-familial children scored higher on neuroticism than control participants. Boillat, Schwab, et al. (2017) also observed that neuroticism mediated the relationship between experiencing childhood abuse and perpetrating CSO offences in adulthood. Structural equation modelling (SEM) analyses further confirmed that childhood abuse predicted high levels of neuroticism ($z = 3.20, p < .001$), and high neuroticism scores predicted engagement in sexual assault or attack ($z = 2.06, p < .05$).

Sommer et al. (1992) found neuroticism to be positively associated with spouse abuse perpetration ($r = .29, p < .001$), and Furnham and Saipé (1993) noted that neuroticism correlated positively with driving convictions ($r = .25, p < .05$). In another study (Leal, 2017), neuroticism was positively associated with violent, theft, fraud, property, and drug-related offences, as well as the odds of ever having been arrested (OR = 1.065, $p < .001$) or incarcerated (OR = 1.067, $p < .001$). Likewise, O’Riordan and

¹³ Bartol & Holanchock, 1979; Becerra-García, García-León, Muela-Martinez, & Egan, 2013; Boillat, Duerling, et al., 2017; Boillat, Schwab, et al., 2017; Dennison et al., 2001; Gudjonsson et al., 1991; Haapasalo, 1990; Randall et al., 2011; Rangaswami & Arunagiri, 1982; Rolison et al., 2013; Rydén-Lodi et al., 2008; Samuels et al., 2004; Singh et al., 1985; Stoll et al., 2019; & Wilson & MacLean, 1974.

O'Connell (2014) noted that neuroticism predicted criminal justice sanctions ($\beta = .035$ $p < .01$), while Kumari et al. (2017) found that repeat offenders scored higher on neuroticism than first-time offenders ($p < .01$, $d = .89$). Differences as a function of offence type are discussed in more detail in Section 4.4.

Although the majority ($n = 19$) of the studies that examined neuroticism found a positive association for this trait, two studies (5.6%) reported an opposite trend. Using a self-report measurement of offending in a university student sample, Thornton et al. (2010) found that neuroticism was negatively associated with non-violent offending in male participants ($r = -.32$, $p < .001$) and intimate partner violence (IPV) perpetration in female participants ($r = -.24$, $p < .01$). Meanwhile, Iffland et al. (2014) compared male SOs to their non-offending female partners, concluding that the offenders scored lower on neuroticism than their partners ($p < .01$). These researchers also compared their offender sample to norm data, finding that SOs scored lower than norms on this trait ($p < .05$).

2.4.1.2.1. Summary and Discussion: Neuroticism. Although attempts to examine associations between neuroticism and OB are well established in the existing literature, the findings of this body of research are inconclusive at best. The group of studies discussed in this section appears to be characterised by an almost equal split between studies that found positive associations between these variables and those that found negative associations or no relationship at all.

Fifteen studies (aggregate $n = 8,025$) in this section failed to find any statistical association between neuroticism and OB. This is particularly interesting given that many of the studies that found a positive association between the two variables observed this trend across multiple different types of offenders, concluding that regardless of offence type, offenders in general appear to be characterised by high levels of neuroticism. However, although the three groups of studies were largely comparable regarding spread of quality scores (see Table 5), those that noted a positive association between neuroticism

and offending tended to benefit from larger sample sizes ($Md = 76.5$) and subsequent heightened statistical power compared to those that found a negative association ($Md = 17$) or no association ($Md = 52.5$). Thus, although variance in study quality does not aid in explaining these discrepant findings, differences in statistical power may contribute to the inconclusive results reviewed in this section.

2.4.1.3. Is Agreeableness Associated with Offending?

Twenty-three studies assessed a potential association between agreeableness and OB. Fourteen countries were represented, with the US ($n = 4$; 17.4%), the UK ($n = 3$; 13%), and Sweden ($n = 3$; 13%) as the three most common countries of publication. Male-only samples were used in the majority of these studies ($n = 15$; 65.2%), with the remaining eight studies utilising samples of men and women. As is common across the whole dataset included in this systematic review, the vast majority ($n = 19$; 82.6%) of the studies that examined agreeableness did not report participants' ethnicities, but of those that did, all ($n = 4$) reported their samples to be all or majority Caucasian.

Most of these studies compared known offenders to non-offender control groups ($n = 14$; 60.9%). Five (21.7%) looked only at offender samples without a non-offender control group, three studies (13%) used nationally representative samples, and one (4.3%) utilised university students. OB was measured via official CJS records in 18 studies (78.3%), while five (21.7%) relied on participants to self-report their engagement in offending.

The overwhelming majority ($n = 21$; 91.3%) of the studies that examined the role of agreeableness measured this trait with an instrument designed to measure the Five-Factor Model, the most common of which were the NEO-PI-R ($n = 6$; 26.1%), the NEO-FFI ($n = 6$; 26.1%), and the IPIP-50 ($n = 5$; 21.7%). One study used an original questionnaire to measure agreeableness, and one used the HEXACO-60. Most of the

studies that investigated agreeableness and offending were of moderate quality ($n = 17$; 73.9%). Four studies (17.4%) were high quality, and two were poor quality.

Nearly half of the 23 studies ($n = 11$; 47.8%) found agreeableness to be negatively associated with OB. Four studies observed that offender participants scored lower on agreeableness than control participants. Two studies noted that, while the trend was not unilateral across all their different offender sub-groups, control participants scored higher on this trait than non-SO offenders (Becerra-García, García-León, Muela-Martinez, & Egan, 2013) and traffic offenders with a mixture of DUI and speed convictions (Brown et al., 2016).

Kumari et al. (2017) found that first-time offenders scored higher on agreeableness than repeat offenders in their study ($p < .01$, $d = 1.13$). Likewise, Međedović & Kujadžić (2017) observed that, after controlling for age and education level, agreeableness correlated negatively with recidivism ($r = -.25$, $p < .01$) in their prisoner sample. In Leal (2017), agreeableness was negatively associated with violent, property, theft, fraud, and drug offending, as well as the odds of ever having been arrested ($OR = 0.965$, $p < .001$) or incarcerated ($OR = 0.961$, $p < .001$). Similarly, O’Riordan and O’Connell (2014) noted that agreeableness negatively predicted self-reported criminal justice sanctions ($\beta = -.04$, $p < .01$) in a large representative sample ($n = 8,549$). Finally, in another self-report study, Thornton et al. (2010) observed that, in female university students, low scores on agreeableness a) were associated with violent offending ($r = .31$, $p < .001$) and b) partially predicted violent offending ($\beta = .22$, $p < .01$).

Of the remaining 12 studies that did not find a negative association between agreeableness and offending, three (13%) observed the opposite trend. A Swedish study (Hubicka et al., 2010) found that their sample of traffic offenders scored higher on this trait than general population norm data, while in a recent study from Japan (Shimotsukasa et al., 2019), prisoners scored higher on agreeableness than general population participants ($p <$

.001, $\eta_p^2 = .016$). Finally, in an Irish study (Randall et al., 2011) that compared CSOs, cleric CSOs, and a general population control group, both types of CSO participants scored higher on agreeableness than controls ($F = 17.79, p < .001$). Lastly, nine studies found no statistical link between agreeableness and OB.

2.4.1.3.1. Summary and Discussion: Agreeableness. From the 23 studies that measured an association between agreeableness and OB, the largest proportion (aggregate $n = 25,237; Md = 100$) concluded that there is a negative association between these variables. These studies were of high and moderate quality, and their findings align with trends in the literature regarding negative associations between agreeableness and various kinds of socially aversive behaviour (see Section 2.1.).

In contrast, three studies (aggregate $n = 5,486; Md = 162$), all of moderate quality, found a positive association between agreeableness and offending. The results of these studies therefore contradict the theorised (e.g., Eysenck & Eysenck, 1970) negative relationship between these variables. Meanwhile, nine high, moderate, and poor quality studies (combined $n = 594; Md = 38$), did not find any association between the two variables. It is evident from these disparate median sample sizes that, much like extraversion and neuroticism, studies that did not find an association for this trait were marred by very small sample sizes. Indeed, across sixteen unique samples in these nine studies, only four samples exceeded $n = 50$, the largest of which had just $n = 60$ participants. This contributes to the mounting evidence that more studies are needed with larger samples in order to achieve adequate statistical power for detecting associations between personality traits and various types of OB.

2.4.1.4. Is Conscientiousness Associated with Offending?

The same 23 studies that assessed agreeableness also measured a potential association between conscientiousness and offending. One additional study (Blickle et al.,

2006) also examined this link, bringing the total number of studies to 24. The majority of these studies ($n = 13$; 54.2%) found conscientiousness to be negatively associated with OB.

Three studies¹⁴ compared offenders to non-offender control groups and concluded that offender participants scored lower on conscientiousness than non-offenders. This trend also emerged in studies that compared non-offenders to CSOs (Boillat, Duering, et al., 2017; Boillat, Schwab, et al., 2017; Iffland et al., 2014). However, Dennison et al. (2001) compared different sub-groups of CSO offenders to a control group, and found that among their samples, only the CSOs whose victims had been extra-familial scored significantly lower on this trait than the other groups.

Other studies examined a link between conscientiousness and offending frequency. The results of these studies indicate that conscientiousness is negatively associated with number of arrests (Clower & Bothwell, 2001) and criminal recidivism (Kumari et al., 2017; Međedović & Kujačić, 2017). Correspondingly, O’Riordan and O’Connell (2014) noted that low levels of conscientiousness predicted criminal justice sanctions in their study ($\beta = -0.025$, $p < .05$). Furthermore, in Leal (2017), this personality trait was negatively associated with nine offence varieties. Interestingly, in Thornton’s et al.’s (2010) self-report study with university students, low conscientiousness was associated with ($r = -.31$, $p < .01$) and predictive of ($\beta = -.23$, $p < .01$) non-violent offending, but only in male participants.

Two of the 24 studies that examined conscientiousness found that this personality trait was positively associated with OB. Blickle et al. (2006) compared white-collar prisoners to a non-offending corporate manager control group in Germany, finding that the offenders scored higher on conscientiousness than the managers ($r = .68$, $R^2 = .46$, $p < .05$). Meanwhile, in a pair of Swedish studies, Eriksson et al. (2017) compared male prisoners to

¹⁴ Hubicka et al., 2010; Rolison et al., 2013; Samuels et al., 2004

various control groups. In their first study, the prisoners ($n = 46$) scored higher on conscientiousness ($p < .001$, $d = .94$) than a general population sample ($n \approx 800$). However, in the second study, the same prisoners were compared to prison guards ($n = 45$) and university students ($n = 32$). Although prisoners were observed to score higher on conscientiousness than the other two groups, after controlling for impression management, age, and gender, and adjusting significance levels of number of tests, no group differences remained on this trait.

2.4.1.4.1. Summary and Discussion: Conscientiousness. Similarly to agreeableness, out of 23 studies that examined a potential link between conscientiousness and offending, the largest proportion of studies in this section concluded that the two variables are negatively associated. These studies, which ranged from high to very poor quality, encompassed a combined n of 24,396 ($Md = 55.5$). Conversely, only two studies (aggregate $n = 953$; $Md = 113$) concluded that there was a positive correlation between this trait and OB. An additional nine studies (aggregate $n = 6,148$; $Md = 49$) failed to find any statistical relationship between the two variables.

The distribution of these results is somewhat surprising. The conceptual underpinnings of conscientiousness (e.g., dutifulness, self-discipline) represent the opposite of a desire or inclination to engage in OB (Wiebe, 2004). However, because they focused exclusively on white-collar offenders, it is likely that the observed positive association between conscientiousness and offending in Blickle et al.'s (2006) study is attributable to the high degree of conscientiousness that is required to obtain such a high-ranking white-collar position that prepares and enables an individual to commit a white-collar criminal act. Unfortunately, the researchers did not collect background information from their participants (e.g., job titles, education levels, etc.), so more in-depth analyses that take these factors into account could not be conducted. Nonetheless, white collar offending may represent one offence type where the role of conscientiousness is the

inverse of its role in other types of OB. Thus, more research is needed that compares associations between conscientiousness and various offence types.

Additional methodological issues may have contributed to the unexpected findings regarding conscientiousness. Eriksson et al.'s (2017) results illustrate the importance of utilising matched samples and controlling for potential confounds, as their observed positive association for conscientiousness disappeared after age, gender, and impression management were controlled for and significance levels were adjusted for multiple tests. This also lends more support to the growing evidence that larger samples are needed in order to successfully capture significant effects where they are present in the data, as the three samples in Eriksson et al.'s (2017) second study were all less than $n = 50$ participants in size. Thus, although more comparisons across offence types are needed in the literature, these future studies must ensure their samples are large enough to sustain statistical power when multiple comparisons are made on the same dataset.

2.4.1.5. Is Openness to Experience Associated with Offending?

Twenty-two of the studies that examined agreeableness and conscientiousness also investigated a potential association between openness to experience and OB. The majority ($n = 13$; 59.1%) did not observe the emergence of any relationship between these variables. Nonetheless, seven studies found openness to be negatively associated with offending. This trend was present across general prisoner (Rolison et al., 2013), CSO (Randall et al., 2011), SO (Iffland et al., 2014), and traffic offender (Hubicka et al., 2010) samples. Meanwhile, in one study, Eriksson et al. (2017) found that their prisoner sample scored lower on openness than general population participants, but like conscientiousness, this link was not replicated when the authors compared the same prisoner sample to prison guards and university students. Finally, two studies (Clower & Bothwell, 2001; Kumari et al., 2017) concluded that openness was negatively associated with offending frequency.

In contrast, two studies found openness to experience to be positively associated with offending. Specifically, Leal (2017) found openness to be linked to five offence types and the odds of ever having been arrested ($OR = 1.024, p < .01$). However, in this study, openness was not associated with the odds of ever having been incarcerated. Meanwhile, a Japanese study (Shimotsukasa et al., 2019) found that prisoners ($n = 645$) scored higher on openness ($p < .001$) than a large general population sample ($n = 4,546$), but the strength of this effect was so negligible ($\eta_p^2 = .004$) that it did not even reach the threshold for what can be described as a ‘small’ effect ($\eta_p^2 = .010$; Cohen, 1977, 1988). Thus, the significant finding in this study is likely to be an artifact of inflated power due to the use of large samples. Correspondingly, given its sample size of approximately 14,000 participants, it is possible that Leal’s (2017) positive findings regarding openness and various types of offending may also be a consequence of heightened statistical power.

2.4.1.5.1. Summary and Discussion: Openness. Twenty-two studies measured an association between openness to experience and offending. From these, the majority (combined $n = 10,596$; $Md = 47$) did not find any statistical link. Although only four of the studies that measured openness to experience were classed as high quality, all of them were among the studies that found no relationship between this trait and OB. This suggests that openness to experience may indeed be unassociated with offending, particularly when considered in conjunction with issues of inflated statistical power in the two studies (aggregate $n = 19,191$; $Md = 4,546$) that observed a positive association on this trait. Nonetheless, seven studies reported openness to be negatively associated with offending across a variety of differing sample and offence types. Accordingly, although the relationship between openness and offending can not yet be firmly delineated, fruitful comparisons across offence types may contribute to more consistent conclusions regarding the potential role of this trait.

2.4.2. Are Dark Triad Traits Associated with OB?

2.4.2.1. Is Trait Psychopathy Associated with Offending?

Four of the studies in this review investigated associations between trait (i.e., subclinical) psychopathy and OB (aggregate $n = 16,605$; $M = 3,321$; $Md = 238$). In a longitudinal US study, Vitacco et al. (2014) measured self-reported psychopathy in adult males ($n = 417$), followed by the measurement of OB three and a half years later using a combination of self-report questionnaire and official CJS records capturing juvenile and adult charges in all 50 states. Findings indicated that psychopathy was moderately, positively associated with self-reported delinquency. Moreover, psychopathy was found to differentiate between participants with and without violent offending, theft-related offending, and serious offending charges. However, trait psychopathy captured only 2.3% of the variance in violent offending, and 1.1% of the variance in serious offending. This meagre contribution of psychopathic traits to these offence categories illustrates that other, unknown factors likely played a much larger role in variance in OB in this study.

In 2015, Fix and Fix examined trait psychopathy and self-reported offending in 111 male university students. Regression analyses indicated that psychopathy predicted self-reported violence offending, property offending, and drug offending. Next, Beaver et al. (2017) conducted a cross-sectional study on a sample of 15,701 males and females in the US, whereby OB was self-reported by participants. Across both genders, psychopathy was found to significantly increase the odds of being arrested, incarcerated, and sentenced to probation. Finally, a recent Dutch study (Garofalo et al., 2018) compared male FP outpatients ($n = 138$) to males from the general population ($n = 238$). The sample of FP patients was further subdivided into CSOs ($n = 74$) and violent offenders ($n = 64$). Offending was measured via the FP patients' official CJS records. Violent offenders were found to score higher on psychopathy than members of the general population, illustrating

a positive association between this trait and OB. However, the strength of this effect was very small ($\eta_p^2 = .090$).

2.4.2.1.1. Summary and Discussion: Psychopathy. Of the four studies that assessed a link between trait psychopathy and offending, 100% (combined $n = 16,605$) found the two variables to be positively linked. Three of these four studies were of high quality. Half measured OB solely via self-report; one used both self-report and official CJS records, and one utilised only official records to characterise offending. Meanwhile, psychopathy was measured via a different self-report questionnaire in each of the four studies (see Table 4). The samples of all four studies exceeded 100 participants, and one of them represented the single largest sample included in this systematic review ($n = 15,701$; Beaver et al., 2017). Thus, regardless of sample size, design (longitudinal or cross-sectional), measurement of OB, or questionnaire used to assess psychopathy, the results of this group of studies were unanimous: trait psychopathy is positively associated with OB. Nonetheless, all of these studies were conducted in the US or the Netherlands; this overall homogeneity in study location means that it cannot yet be gleaned whether the same trend would emerge across ethnically or geographically diverse studies. Consequently, more research is needed regarding the relationship between trait psychopathy and OB, particularly in non-Western cultures.

2.4.2.2. *Is Trait Narcissism Associated with Offending?*

Only two of the studies included in this review examined potential associations between trait (i.e., subclinical) narcissism and OB, both of which were conducted in Canada. The first (Jung & Jamieson, 2012) compared male SOs ($n = 25$), forensic psychiatric (FP) patients with no history of SO offending ($n = 15$), and university students ($n = 45$) on these variables. SOs scored lower on narcissism than the university students ($d = 0.76$). There were no differences between these two groups and the FP patients. The authors concluded that this unexpected finding may be a product of the makeup of the SO

sample, of whom 80% were CSOs. Citing previous research (Hosser & Bosold, 2006; Shine et al., 2002), they assert that CSOs tend to present with lower self-esteem and lower levels of narcissism than SOs who offend against adults.

Recently, Pettersen et al. (2019) examined the link between narcissism and offending in male CSOs ($n = 28$) and offenders with no history of sexual offending ($n = 44$). CSOs scored lower on narcissism than the non-SO offenders. Furthermore, narcissism was moderately, positively associated with both sexual recidivism risk in the CSOs and violent recidivism risk in the non-SO offenders. Thus, results indicate that high levels of narcissism may increase the odds of engagement in OB, including sexual offending.

2.4.2.2.1. Summary and Discussion: Narcissism. Two studies examined trait narcissism and OB. Although they conducted in the same country and both studies measured OB using official CJS records, Pettersen et al. (2019) represents a high quality study, with a sample approaching 100 participants in size ($n = 95$); conversely, Jung and Jamieson's (2012) study was of moderate quality and compared three samples that sum to just 85 participants. Nonetheless, although their samples were small, Jung and Jamieson (2012) noted that post-hoc power analyses indicated they were of sufficient size for adequate statistical power to be achieved. Thus, the two studies were methodologically comparable. Consequently, it can be tentatively concluded from the findings of these studies that narcissism is negatively associated with child sex offending. However, given that the non-CSO samples in these two studies were composed of offenders with heterogeneous offence histories, it is not yet clear whether narcissism is associated, and in which direction, with other offence types.

2.4.2.3. Is Machiavellianism Associated with Offending?

Of the 53 papers included in this review, not a single one measured a potential link between Machiavellianism and OB. This represents one of the most significant shortcomings of the literature reviewed thus far. Conceptually, Machiavellianism describes

individuals whose interpersonal strategies involve deceit, manipulation, and emotional detachment in the pursuit of one's own interests (Jakobwitz & Egan, 2006). People who score high on this trait hold few qualms about exploiting others for personal gain, as they possess a general disregard for ethics or morality (Muris et al., 2017). Thus, it would be expected that Machiavellianism would be associated with at least some types of OB, such as white-collar, fraud, or theft-related offences. However, it is possible that these interpersonal skills lend themselves to a heightened ability to evade detection when behaving in socially aversive ways. In this manner, individuals high on Machiavellianism trait may be exceptionally successful at evading apprehension when engaging in OB. Evidently, studies that measure associations between this trait and various offence types are urgently needed.

2.4.3. Summary: Traits and OB

The literature examining relationships between FFM and DT traits and OB varies widely in regard to methodology, geographical location, sample type, sample size, and offence type. These disparities obscure the extent to which meaningful comparisons can be made across studies. Nonetheless, some tentative conclusions can be drawn from the results reviewed in this section.

Extraversion appears to be positively associated with OB; however, it may be negatively associated with child sex offending. Findings regarding neuroticism are somewhat inconclusive, but in general, this trait seems to correspond positively with OB. Agreeableness and conscientiousness appear to correlate negatively with offending, although a positive association may characterise the relationship between conscientiousness and certain types of offending such as white-collar crime. Meanwhile, it remains unclear whether openness to experience is associated with offending, but the overall trend in the data leans in the direction of a positive association between these variables.

Meanwhile, the evidence thus far overwhelmingly suggests that psychopathy is positively associated with OB. Narcissism seems to correlate negatively with child sex offending, but the relationship between this trait and other types of OB has not yet been established. Finally, the potential link between Machiavellianism and adult offending has not yet been investigated in the literature.

The findings reviewed here may be explained to a certain degree by correlations between traits. O'Boyle et al. (2014) conducted a meta-analysis of associations between DT and FFM traits, finding that all three DT traits consistently yield negative correlations with agreeableness and conscientiousness. Meanwhile, neuroticism correlates positively with subclinical psychopathy and Machiavellianism, and negatively with subclinical narcissism. Extraversion, on the other hand, yields a positive correlation with narcissism. Openness to experience may also be positively associated with extraversion, although the strength of this association was small in O'Boyle et al.'s (2014) review.

These correlations across trait models indicate that, if the tentative conclusions drawn from the FFM studies in this section are correct, all three DT traits should correlate positively with OB. However, although the three DT traits have been investigated collectively in conjunction with a large number of behavioural outcomes since the model's inception (see Section 2.1.), it appears that none of these previous DT studies have examined associations between adult OB and the model as a whole. Likewise, despite the associations between the two trait models that have been repeatedly demonstrated in the literature (O'Boyle et al., 2014), there is a significant dearth of research that combines models of positive and dark personality traits to ascertain which traits are associated with OB, and the nature of those associations. Because findings regarding associations between individual traits and OB have been largely inconsistent, more studies are needed that explore interactions between traits and how different trait combinations, incorporating both normal and socially aversive characteristics, may differentially contribute to OB of various

types. To that end, the following section examines reported associations between FFM and DT traits and different offence categories.

2.4.4. Do the Links Between Traits and OB Differ by Offence Type?

Some of the studies included in this review examined personality traits in specific types of offenders. A portion of these further analysed whether offenders' personalities differ according to their offence type. Across the 53 included papers, studies investigated personality traits in sexual, traffic, violent, and white collar offenders. Meanwhile, some papers did not choose offender groups *a priori*, but selected an offender sample and collected information from them about their offences in order to split them into groups for analysis purposes. These studies of mixed offenders therefore compared personality traits in offenders who were grouped according to broad offence categories such as violent, drug, and property offences.

2.4.4.1. Animal Abuse

One study analysed associations between FFM traits and animal abuse. Schwartz et al. (2012) asked male and female university students to self-report engagement in animal abuse behaviours, resulting in a sample of 29 non-convicted animal abuse offenders alongside a university student control group ($n = 29$). No group differences were observed for any traits, and the researchers did not assess whether FFM traits predicted responses on a broader self-report offending questionnaire. Consequently, more research into the personality-based drivers of this specific type of offending is still needed.

2.4.4.2. White Collar Offending

Only two studies in this review looked specifically at white-collar offenders. As discussed in Section 4.1.4., Blickle et al. (2006) found that German white-collar offenders scored higher on conscientiousness than non-offending corporate managers. Meanwhile, Ragatz (2011) compared trait psychopathy scores among American white-collar prisoners ($n = 137$) and prisoners whose offences were not white-collar in nature ($n = 89$). Although

facet-level differences emerged between the groups, overall psychopathy scores were similar across these offence types. The facet-level differences indicated that Machiavellian characteristics (as subsumed by one of the factor scales in the psychopathy measure used in this study) may be more characteristic of white-collar offenders than those who engage in other types of offending. This conclusion, in conjunction with the absence of any studies in this review having investigated associations between Machiavellianism and offending, highlights an important area for future research. Likewise, given the relative paucity of studies that have investigated white-collar offenders specifically, more research with this offender group is warranted in order to delineate the individual characteristics that lead some business employees to commit white-collar offences while others do not.

2.4.4.3. Traffic Offending

Six of the studies included in this review examined personality in traffic offenders, of which two relied on participants to self-report their offences. Furnham and Saipe (1993), who measured extraversion and neuroticism, asked a general population sample ($n = 73$) from the UK about their driving behaviour, finding that neuroticism scores correlated positively with number of driving convictions. Meanwhile, a Canadian study (Brown et al., 2016) asked participants ($n = 138$) to self-report any major prior driving convictions, resulting in four groups: DUI offenders ($n = 36$), speed offenders ($n = 28$), mixed DUI/speed offenders ($n = 27$), and non-offenders ($n = 47$). Although the groups were compared on all FFM traits, only agreeableness was found to differentiate between them: mixed offenders scored lower on this trait ($\eta p^2 = .080$) than the control group.

An Israeli study (Lev et al., 2008) compared FFM traits among traffic offenders who were undertaking a driving penalty course ($n = 51$) and a non-offending control group ($n = 35$). However, due to poor internal consistency in the Hebrew translation of the instrument used (IPIP-50), openness could not be analysed in this study. Among the other four traits, only extraversion was found to be associated with traffic offending, whereby

the offender group scored higher on this trait ($d = 0.72$) than the control participants. The authors mused that high levels of extraversion may predispose an individual to engagement in risky behaviours, including risky driving.

Kim and Lee (2017) investigated whether first-time ($n = 169$) and repeat ($n = 122$) DUI offenders differed on extraversion or neuroticism. Neither trait was found to predict DUI recurrence, although the authors noted that this study was marred by a high proportion of untruthful responses, as indicated by a social desirability scale embedded in the personality instrument used. Similarly, Hubicka et al. (2010) compared FFM traits in severe DUI offenders ($n = 162$) to those of a Swedish norm dataset. While the offenders scored lower than non-offenders on openness and conscientiousness, and higher than non-offenders on agreeableness, no group differences emerged for extraversion or neuroticism. Finally, Jornet-Gibert et al. (2013) compared Spanish DUI offenders ($n = 51$) to a non-offender control group ($n = 47$) on FFM traits; after controlling for antisocial attitudes, the offenders were higher on neuroticism and lower on conscientiousness than non-offenders.

In summary, it appears that existing studies on personality traits and traffic offending have failed to present a complete or consistent picture of which traits or trait combinations are associated with this type of offence. Nonetheless, the results reviewed here indicate that, similarly to the observed trends in traits and offending in general, traffic offenders may be characterised by low conscientiousness and high levels of neuroticism and extraversion.

2.4.4.4. Sexual Offending

Sexual offending was the most commonly investigated type of offending in the included studies, with 15 articles examining this offence type. Three studies¹⁵ compared SOs to non-SO offenders. One study¹⁶ compared CSOs in the UK to those in Spain. The

¹⁵ Becerra-García, García-León, Muela-Martinez, & Egan (2013); Jung & Jamieson (2012); Pettersen et al. (2019)

¹⁶ Becerra-García, García-León, & Egan (2013)

remaining 11 papers compared different groups of SOs to one another. Neuroticism was measured in 13 studies; extraversion was measured in 12 studies; and agreeableness, conscientiousness, and openness were examined in ten studies. Two studies measured narcissism. None of the studies in this review compared SOs on trait psychopathy or Machiavellianism.

All but one of the studies that examined SOs utilised male-only samples. Studies primarily originated in Spain ($n = 3$), Switzerland ($n = 3$), and Canada ($n = 3$). Ethnicity was only reported in two studies, both of which reported their samples to be majority Caucasian. Three studies were of poor quality; two were high quality; and nine were of moderate quality.

Becerra-García, García-León, and Egan (2013) compared UK ($n = 76$) and Spanish ($n = 36$) CSOs on all FFM traits. Although the two samples were matched on such criminological factors as victim age, victim sex, victim relationship, and conviction history, it was observed that Spanish CSOs scored higher on all five traits, with effect sizes ranging from $d = 0.56$ (neuroticism) to $d = 2.26$ (conscientiousness). The authors speculated that this consistent finding may be the result of cultural differences whereby Spain is more of a collectivist nation and the UK is more of an individualist one. However, Becerra-García, García-León, and Egan (2013) also note that there may be discrepancies between the characteristics measured by the NEO-FFI, which was used with the UK sample, and the Spanish version that was administered to the Spanish sample. Results may also have been affected by the self-selective nature of the samples, which could have resulted in two samples that were prone to demonstrating high levels of socially desirable questionnaire responses.

Becerra-García, García-León, Muela-Martinez, and Egan (2013) compared Spanish CSOs ($n = 32$), SOs ($n = 26$), and non-SO offenders ($n = 31$) to a general population control group ($n = 42$) on the FFM traits. Results indicated that SOs are lower than controls

on extraversion, while non-SO offenders are lower on agreeableness than controls.

Although all offender groups were higher than control participants on neuroticism, there were no differences between the offenders on this trait, nor were there any statistically significant findings for conscientiousness or openness. Thus, in this study, neuroticism was found to characterise Spanish offenders in general, while low levels of extraversion characterised SOs and low scores on agreeableness were evident among non-SO offenders.

Several other studies also compared CSOs to SOs. In another Spanish study, Becerra-García et al. (2012) found that CSOs ($n = 33$) did not differ from SOs ($n = 17$) on any of the FFM traits. However, it was observed that SOs who had experienced childhood abuse were higher on neuroticism than SOs without an abuse history, while CSOs who had childhood abuse histories scored higher on openness to experience than CSOs who had not experienced childhood abuse. A Portuguese study (Carvalho & Nobre, 2019) compared convicted CSOs ($n = 33$), convicted SOs ($n = 32$), and non-convicted individuals who admitted via self-report questionnaire to engaging in SO behaviour ($n = 37$). After controlling for age, marital status, education, and social desirability, group differences emerged on three of the FFM traits. CSOs scored lower than SOs (Hedges's $g = .76$) and non-convicted offenders (Hedges's $g = .97$) on openness, while convicted CSOs (Hedges's $g = .50$) and SOs (Hedges's $g = .46$) scored higher on neuroticism than non-convicted offenders. In this study, conscientiousness was also higher among convicted CSOs (Hedges's $g = 1.34$) and SOs (Hedges's $g = .99$) than non-convicted offenders.

Lastly, a US study (Gingrich & Campbell, 1995) of FP patients compared CSOs ($n = 69$), exhibitionism offenders ($n = 20$), and rape offenders ($n = 7$) on extraversion and neuroticism. The study further divided CSOs into 'fixated' and 'regressed' types, whereby the former is characterised by pedophilic sexual interests and the latter is sexually attracted to adults but offend against children for other reasons such as stress or a need for acceptance (Burgess et al., 1978, as cited in Gingrich & Campbell, 1995). It was found that

rape offenders scored higher on extraversion than the other groups, and fixated CSOs scored higher on neuroticism than the other offenders. However, it is worth noting that in this study, participants were classified on the basis of their index offence only, not their entire offence histories, so some participants may have transcended group boundaries undetected.

As discussed in Section 2.4.2.2., two Canadian studies examined narcissism in sex offenders. Jung and Jamieson (2012) noted that SOs scored lower than university students, but these groups did not differ from CSOs or non-SO offenders on this trait. However, the CSOs and SOs were prisoner samples, while the non-SO offenders were FP patients, so it is not possible to ascertain whether the findings are attributable to offence type or to this potentially confounding factor. In contrast, Pettersen et al. (2019) found that CSOs scored lower on narcissism than non-SO offenders. These researchers also analysed links between narcissism and criminogenic risk; they found that in CSOs, narcissism correlated positively with sexual recidivism risk, while it also correlated positively with violent recidivism risk in the non-SO offenders. This study therefore concluded that heightened narcissism appears to be a risk factor for offending, regardless of the type of offending one tends to engage in. Meanwhile, Jung and Jamieson (2012) discuss how their results fail to lend support to a popular sexual offending theory (implicit theories theory; Ward, 2000) which proposes that narcissism perpetuates sexual offending; the authors speculate that this may be because their sex offender participants were primarily CSOs, who tend to be characterised by low self-esteem.

Seven of the studies included in this review compared different groups of CSOs to one another. In a pair of Swiss studies (Boillat, Duering, et al., 2017; Boillat, Schwab, et al., 2017), CSO ($n = 40$) and general population control participants ($n = 23$) were compared. CSOs were further sub-divided into those who had committed contact offences ($n = 22$; referred to as 'child sexual assault' or CSA) and those whose sexual offending

history was limited to online activity ($n = 21$; 'child sexual exploitation material' or CSEM). It was found that CSOs scored higher on neuroticism and lower on conscientiousness than control participants; however, there were no group differences observed for agreeableness, extraversion, or conscientiousness. Meanwhile, CSA and CSEM offenders did not differ on any FFM traits. Interestingly, Boillat, Duering, et al. (2017) performed a median split on neuroticism, finding that CSOs who scored high on this trait tended to be lower on conscientiousness and extraversion than CSOs who scored low on neuroticism. In addition, neuroticism was found to mediate the relationship between several different types of childhood abuse and later CSA perpetration. This finding is particularly interesting because it fails to mirror Becerra-García et al.'s (2012) conclusion that high levels of neuroticism characterise the SOs who have experienced childhood abuse and offended against adults, but not those who have abuse histories and subsequently offend against children. It is worth noting that Boillat, Duering, et al. (2017) and Boillat, Schwab, et al. (2017) utilised a FP patient sample, while the offenders in Becerra-García et al. (2012) were prisoners. This raises the same question of a potential confound as Jung and Jamieson's (2012) study.

Similarly Boillat, Duering, et al. (2017) and Boillat, Schwab, et al. (2017), Stoll et al. (2019) compared CSA ($n = 22$) and CSEM ($n = 21$) CSO prisoners to a general population control group ($n = 21$). Only neuroticism was analysed in this study. While the two CSO groups were found to score higher on this trait than control participants, the authors did not compare CSA and CSEM offenders to one another.

Seigfried-Spellar (2014) also examined CSEM offenders. Data was collected online from the general populations of the US (78.7%), UK (6.6%), Canada (5.5%), and Australia (3.3%). Male and female participants were asked about their engagement in child pornography and subsequently placed into one of four groups: non-convicted searchers/viewers of CSEM ($n = 10$), downloaders of CSEM ($n = 3$), exchangers of CSEM

($n = 3$), or no engagement with CSEM (control group; $n = 257$). No statistically significant FFM differences were found between the different groups of non-convicted CSEM offenders; however, the author falsely interpreted p values of 0.06 and 0.08 as significant. In addition to insufficient statistical power as a result of extremely small sample sizes, additional limitations of this study include reliance on individuals to self-report their online OB (Schwarz, 1999), which is particularly problematic given the nature of the crimes asked about, and failure to statistically compare the CSEM groups to the non-offender control group.

An Australian study (Dennison et al., 2001) compared FFM traits among a general population control group ($n = 33$) and three groups of CSO prisoners: those who had offended against immediate family members ($n = 17$), those who had offended against step-family ($n = 11$), and those whose victims were extra-familial ($n = 32$). The step-family CSOs and extra-familial CSOs scored higher on neuroticism than control participants. Meanwhile, immediate family CSOs and extra-familial CSOs scored lower on extraversion than control participants. Finally, extra-familial CSOs scored lower on conscientiousness than control participants. Thus, while some of the CSOs differed from non-offenders on three FFM traits, no differences were observed for agreeableness or openness to experience, and the three types of CSOs did not differ from one another on any FFM traits. This null finding indicates that CSOs, regardless of the type of victim they offended against, appear to have similar personalities. Despite this, discriminant analysis indicated that 75% of the time, FFM scores correctly predicted which experimental group an individual was a member of. Non-offenders were correctly classified 91% of the time. Consequently, while individual traits did not have significant utility for characterising different types of CSOs in this study, patterns of trait elevations may be relevant for achieving this aim.

Lu and Lung (2012) also compared CSO prisoners: those whose victims were intra-familial ($n = 25$) and those who had offended against an extra-familial victim ($n = 192$). Only extraversion and neuroticism were measured in this study; extraversion was observed to be higher in the extra-familial CSOs than the intra-familial ones. The offenders did not differ on neuroticism. Interestingly, these findings directly contradict that which was found by Dennison et al. (2001).

Lastly, an Irish study (Randall et al., 2011) compared cleric CSOs ($n = 30$) to non-cleric CSOs ($n = 73$) and a control group ($n = 30$). Although group differences were found on all FFM traits, the cleric CSOs and non-cleric CSOs only differed on conscientiousness, whereby cleric CSOs scored higher. The authors therefore concluded that clerical CSOs and lay CSOs are more similar than they are different.

Although sexual offending appears to be the most common offence type examined in the literature alongside personality traits, the studies reviewed here illustrate the difficulty in establishing clear patterns of associations when methodologies and sample types vary so widely that comparisons cannot be made between studies. Nevertheless, although direct evaluations cannot be made across all fifteen studies in this section, much of the evidence indicates that SOs in general tend to score high on neuroticism, with CSOs being particularly high on this trait.

2.4.4.5. Violent Offending

Four of the studies included in this review looked specifically at violent offenders. In a female-only general population sample, Sommer et al. (1992) found that neuroticism was positively associated with IPV perpetration, while extraversion was not. However, this study had several noteworthy shortcomings: (a) exclusive focus on married or common-law relationships; (b) a heteronormative perspective that led to participants not being asked about the gender of their victim(s); (c) a failure to investigate whether IPV incidents were instigated by the offender, or if the offender had acted in retaliation or self-defence; and (d)

potential psychometric issues caused by using only six items of a larger 80-item Conflict Tactics Scale (Straus, 1979). A more complex story of the contribution of personality to female IPV behaviour may emerge in future studies if these considerations are taken into account.

Three other studies looked at violent offending more generally. A longitudinal study from the US (Samuels et al., 2004) measured FFM traits in a representative sample; on the basis of official arrest records from one US state, 33 participants were classed as violent offenders and 46 were regarded as non-violent offenders. Although violent and non-violent offenders scored higher on neuroticism and lower on agreeableness and conscientiousness than non-offenders, extraversion and openness were found to be unrelated to OB; violent offenders did not differ from non-violent offenders on any trait. Nonetheless, the authors note that they were not able to collect information about arrests that took place in any other jurisdictions. Furthermore, arrest rates are not an accurate metric of OB: not only do they fail to capture offending that did not reach the attention of the CJS, but this approach also does not consider that wrongful arrests do occur, often on the basis of racial or economic profiling. Thus, arrest rates should not be regarded as an appropriate proxy for OB, nor should they be used in isolation when classifying participants as offenders or non-offenders.

A Polish study (Boduszek et al., 2013) compared extraversion and neuroticism scores in violent and non-violent prisoners. Violent offenders scored higher on extraversion, but the groups did not differ on neuroticism. Lastly, a German study (Nigel et al., 2018) compared FFM traits and psychopathy among FP patients ($n = 164$) with different offence types, seeking to determine which traits are associated specifically with violent offending in this population. Surprisingly, none of the FFM traits were found to predict violent offences in this study. Both subscales of psychopathic traits were predictive of violent offending, but in opposite directions: high scores on the *impulsive antisociality*

domain increased the likelihood of past violent offending, while high scores on the *fearless dominance* domain decreased this likelihood. Notwithstanding these results, the authors noted that their sample is not entirely representative of German FP patients, as all participants in this study had histories of drug abuse.

Taken together, it appears that much like sexual offending, studies on personality in violent offenders have not yielded consistent results. The most prevalent finding has been that violent offenders tend to score high on neuroticism; however, this is a common theme that seems to characterise many if not all types of offenders.

2.4.4.6. Mixed Offending Groups

Ten studies in this review compared different types of offenders to one another. Seven examined FFM traits, while three measured trait psychopathy. This group of studies contained both the lowest-quality and highest-quality papers included in the review.

Three studies from the 1970s examined extraversion and neuroticism in prisoners. An Indian study (Gupta & Sethi, 1974) compared four offender groups: homicide, theft, armed robbery, and miscellaneous. No significant differences were observed between the groups on either personality trait, nor did the offenders score significantly differently than Indian and British norm datasets on these traits. Next, Eysenck et al. (1977) compared five groups of UK prisoners: violent, property, fraud, general recidivists, and mixed offenders. It was found that fraud offenders scored lower on neuroticism than property, recidivist, and mixed offenders. However, it bears noting that this study achieved the lowest quality score (4/very poor) of the entire dataset included in this systematic review. Lastly, Bartol and Holanchock (1979) compared six groups of US prisoners (homicide, violent, rape, robbery, burglary, and drug offenders) to a control group of unemployed adults. Although all offender groups scored higher on extraversion than the control group, sex offenders were the only group found to differ from the other offenders – they displayed lower scores on extraversion and higher on neuroticism. However, 44% of this study's prisoner sample

needed to be removed from the dataset as a result of untruthful responses, which raises concerns about the residual validity of the final results.

In the 1980s, Singh et al. (1985) compared extraversion and neuroticism in Indian prisoners ($n = 257$) and a general population control group ($n = 100$). Prisoners were split into six groups: armed robbery, homicide, theft, assault, arson, and sexual offending. SOs were found to score higher on extraversion than the other prisoners, and all prisoners scored higher than controls on this trait. Meanwhile, homicide offenders scored higher on neuroticism than all other prisoners aside from arson offenders, and all prisoners scored higher than controls on this trait.

More recently, Thornton et al. (2010) compared FFM traits among male and female university students who self-reported violent, IPV, or non-violent OB. Conscientiousness was found to be negatively associated with, and low scores were partially predictive of, non-violent offending in men. Neuroticism was also negatively associated with non-violent offending in men and IPV perpetration in women. Agreeableness was also negatively associated with, and low scores were partially predictive of, violent offending in women. Thus, high conscientiousness was found to be a protective factor against non-violent offending in men; high neuroticism was protective against non-violent offending in men and IPV perpetration in women; and high agreeableness was protective against violent offending in women. Nevertheless, despite these significant results, this study utilised an economically homogenous sample of non-convicted individuals who self-reported their OBs, and these findings therefore cannot be assumed to generalise to convicted offender populations.

A doctoral dissertation (Leal, 2017) examined FFM traits and self-reported OB in a large representative sample of approximately 14,000 American men and women. All five traits were found to be associated with certain types of offending. Extraversion and neuroticism correlated positively with violent, theft, fraud, drug, and property offences.

Openness to experience was positively associated with violent, theft, drug, and property offences. Agreeableness and conscientiousness were negatively associated with violent, theft, fraud, drug, and property offences. Quartile splits revealed that some of these associations were unique to very high- and very low-scorers on each trait, but not those whose personality scores resided in the middle quartiles. However, the fact that this study utilised a very large sample may have artificially impacted their results, but it is not possible to determine whether or not this was the case because the author did not report standardized effect sizes. Furthermore, the five FFM traits were measured via just twenty self-report questions, which may have been insufficient for capturing nuances in participants' personality patterns.

A recent Japanese study (Shimotsukasa et al., 2019) investigated FFM traits in male and female prisoners ($n = 645$) and members of the general population ($n = 4,546$). As discussed in previous sections, the offenders in this study scored higher than the control group on extraversion, agreeableness, and openness to experience. However, different prisoner sub-groups were also compared: violent, theft, and drug offenders. These analyses yielded significant findings for four of the FFM traits. Violent and drug offenders scored higher on extraversion ($\eta_p^2 = .027$) and openness ($\eta_p^2 = .008$) than theft offenders and non-offenders. Meanwhile, drug and theft offenders scored higher on agreeableness ($\eta_p^2 = .024$) than violent offenders and control participants. Lastly, violent offenders and non-offenders scored higher on conscientiousness than theft offenders; however, while this finding was significant, the strength of the effect was negligible ($\eta_p^2 = .003$; Cohen, 1977, 1988) and therefore should not be regarded as a true effect. Overall, the results of this study indicate that low levels of agreeableness are particularly characteristic of violent offenders. However, results should be interpreted with caution, as the authors measured FFM traits via the TIPI-J (Oshio et al., 2012), a ten-item instrument that only contains two questions for each trait. This brevity may render the psychometric robustness of the instrument

insufficient for accurately capturing the scope of an individual's personality within the FFM framework.

Three studies have examined associations between psychopathy and different types of offending. In 2014, Vitacco et al. published a longitudinal study utilising a representative sample of US men ($n = 417$). Information about OB was collected via both self-report and official CJS records; the authors note that this combination of self-report and official data is the most accurate metric with which to capture engagement in real OB. In this study, not only was psychopathy associated with self-reported offending, but it also successfully differentiated between participants with and without charges for violent offending (Hedges's $g = 0.47$); theft offending (Hedges's $g = 0.44$); and serious offending (Hedges's $g = 0.43$). Thus, despite modest effect sizes, trait psychopathy appears to predict both violent and serious OB.

Another US study (Fix & Fix, 2015) examined psychopathy in conjunction with self-reported OB (violent, property, drug, and status offences) in male university students ($n = 111$). Psychopathy predicted self-reported violent, property, and drug offending. Interestingly, it was not predictive of the lower-level status offences also measured in this study. Finally, Garofalo et al. (2018) compared Dutch forensic psychiatric patients ($n = 138$) to a non-offender control sample, finding that violent offenders had higher scores on psychopathy than CSOs and non-offenders.

2.4.4.7. Summary: Personality Traits and Offence Type

The studies summarised in this section represent a wide range of methodological approaches, geographical locations, and offence types. Without belabouring the message that has emerged repeatedly throughout this review, offenders appear to be a vastly diverse group, rendering it imperative that future investigations of associations between personality traits and OB do not conceptualise offenders as a homogeneous population; doing so could result in false conclusions being drawn about the degree to which certain

personality traits are associated with OB, and in what manner. It has become evident through the course of this review that these associations depend on a great number of factors, including offence type.

2.4.5. Do the Links Between Traits and OB Differ by Gender?

Eight of the studies in this review compared male and female participants' personality traits and OB. The most common finding among these papers was that neuroticism scores differ between male and female offenders. McKerracher and Watson (1968) found that male FP patients scored lower than females on neuroticism; this finding was replicated in Schwartz et al.'s (2012) non-convicted animal abuse participants, where it was observed that female offenders scored higher on neuroticism than male offenders and non-offenders of both genders. Similarly, Furnham and Saipie (1993) noted that male DUI offenders scored lower on neuroticism than female DUI offenders. Meanwhile, Gudjónsson et al. (1991) observed the opposite trend in a prisoner sample: male prisoners scored higher than controls on this trait, while female prisoners did not differ from the general population.

Shimotsukasa et al. (2019) found that female prisoners scored higher on neuroticism and lower on openness than male prisoners, but no interaction was observed between group and gender; thus, the female prisoners did not differ from the male prisoners on FFM traits. However, in Hubicka et al.'s (2010) study of Swedish traffic offenders, female offenders were found to score higher on openness than male offenders. Finally, Nigel et al. (2018) observed that female FP patients scored higher on extraversion than male patients, but no differences were found for psychopathy or any of the other FFM traits.

Comparatively few studies have examined whether associations between traits and OB differ across genders. The scarce and inconsistent findings reviewed here highlight that more research is needed in this area, particularly in the cases of narcissism and

Machiavellianism, which were not examined in conjunction with gender and OB in any of the included papers. Furthermore, previous research has yielded strong evidence that psychopathy manifests differently in men and women (de Vogel & Lancel, 2016; Dolan & Völlm, 2009; Verona & Vitale, 2018), necessitating more studies that are designed to delineate the unique contributions this trait makes to OB in different genders.

2.4.6. Do the Links Between Traits and OB Differ by Model or Measurement Tool?

The final research question for this systematic review explores whether results differ between studies that utilised the Five-Factor Model (McCrae & Costa, 1987) and those that employed the PEN model (Eysenck & Eysenck, 1970) in their measurement of adaptive personality traits. As mentioned in Section 4.2.1., although each of the four studies in this review that measured psychopathy did so using a different questionnaire, their results were unanimous. Meanwhile, both of the studies that assessed narcissism used versions of the same questionnaire. However, there was considerable disparity across studies in the instruments used to measure FFM traits.

As illustrated in Table 2.2, 17 papers in this review measured extraversion and neuroticism via one of Eysenck's self-report questionnaires, while 28 papers used questionnaires designed to measure the FFM traits. Although it has been repeatedly demonstrated in the literature that neuroticism and extraversion are essentially indistinguishable across the two models (e.g., Aluja et al., 2004; Draycott & Kline, 1995; Larstone et al., 2002; McCrae & Costa, 1985; Zuckerman et al., 1993), this conclusion has consistently been drawn on the basis of official instruments such as the Eysenck Personality Questionnaire and the NEO-PI-R. However, many of the studies in this review utilised less common instruments, such as the Five-Factor Model Rating Form (FFMRF; Samuel & Widiger, 2004), or translated versions of original instruments, like the Ten-Item Personality Inventory-Japanese Version (TIPI-J; Oshio et al., 2012). This section compares findings across studies that used official PEN, unofficial PEN, official FFM, and unofficial

FFM questionnaires to measure associations between FFM personality traits and OB.

Results are summarised in Table 2.6.

2.4.6.1. Five-Factor Model Instruments

Some disparities emerged between results from studies that used official instruments and those that used unofficial or translated instruments to measure associations between each of the FFM traits and OB. On extraversion, studies that found a positive association tended to use unofficial instruments, while a much greater proportion of studies that used official instruments found no association between extraversion and offending than those that used unofficial ones. Meanwhile, studies that used unofficial instruments were much more likely to find no association between neuroticism and offending, while those using official instruments were more likely to report a positive association for this trait. In contrast, non-associations for agreeableness were more common among studies that used official instruments, while a positive association on this trait was found in a greater proportion of studies that used unofficial instruments. On conscientiousness, negative associations were much more common among studies using official instruments, while non-associations were more often found by studies that used unofficial instruments. Finally, positive findings for openness more commonly resulted from unofficial instruments, and non-associations on this trait were reported by a greater proportion of studies using official instruments. Taken together, these differences illustrate that the results of studies that utilised official instruments align more closely with the theorised associations between OB and low conscientiousness and high neuroticism, but the potential positive association between extraversion and offending appears to have been better detected by unofficial or translated FFM questionnaires.

Table 2.6*Associations Between FFM Traits and OB Across Instruments*

	Extraversion			Neuroticism			Agreeableness			Conscientiousness			Openness		
	+	-	<i>ns</i>	+	-	<i>ns</i>	+	-	<i>ns</i>	+	-	<i>ns</i>	+	-	<i>ns</i>
FFM															
Official	1	4	10	9	2	5	1	7	7	0	11	4	0	5	10
(%)	(6.7)	(26.7)	(66.7)	(56.3)	(12.5)	(31.3)	(6.7)	(46.7)	(46.7)	(0)	(73.3)	(26.7)	(0)	(33.3)	(66.6)
Unofficial	3	3	2	2	0	6	2	4	2	2	2	5	2	2	3
(%)	(37.5)	(37.5)	(25)	(25)	(0)	(75)	(25)	(50)	(25)	(22.2)	(22.2)	(55.6)	(28.6)	(28.6)	(42.9)
PEN Model															
Official	3	1	4	6	0	2									
(%)	(37.5)	(12.5)	(50)	(75)	(0)	(25)									
Unofficial	2	0	2	2	0	2									
(%)	(50)	(0)	(50)	(50)	(0)	(25)									

Note. Values represent the number of studies in each category (i.e., those that used official or widely validated instruments, and those that used translated versions or original questionnaires) that found a positive, negative, or absence of association between each FFM trait and OB. *ns* = non-significant.

2.4.6.2. *PEN Model Instruments*

According to Eysenck (1964), high extraversion and neuroticism are both implicated in propensity towards OB. Thus, it may be proposed that official PEN model instruments will best capture these positive associations. However, this was unfounded; while a greater proportion of official instruments resulted in a positive association between neuroticism and offending, unofficial instruments were more likely to find a positive association for extraversion. For both traits, equal proportions of studies from each group failed to observe any statistical link with OB.

2.4.6.3. *Five-Factor Model vs. PEN Model*

When broadly comparing studies that measured extraversion and neuroticism with PEN model questionnaires and those that utilised FFM instruments, it is evident that results differed somewhat across the two models. On extraversion, a much greater proportion of studies that used PEN questionnaires observed a positive association, while a negative association was more commonly found through the use of FFM instruments. A roughly equal proportion of studies from each group found no association for extraversion. Meanwhile, a positive association for neuroticism was observed with greater frequency in PEN model studies. Finally, negative associations and non-significant results were yielded by greater proportions of FFM studies than PEN studies when examining neuroticism.

2.5. General Discussion

This systematic review aimed to examine and synthesise the results of previous studies that have measured associations between Five-Factor Model or Dark Triad traits and adult OB. Across 53 included papers, studies varied drastically in terms of methodological approaches, sample types, sample sizes, geographical locations, traits measured, and operationalisation of the outcome variable. Consequently, the only reliable pattern to emerge from this qualitative analysis pertained to the role of trait psychopathy,

which was found to be positively associated with various types of OB in every study that measured this trait.

In spite of the inconsistencies across the results of the reviewed studies, some very tentative conclusions can be drawn regarding associations between OB and the other personality traits. Low levels of conscientiousness and agreeableness may be associated with engagement in OB, and offenders appear to be characterised by high levels of neuroticism; this is particularly the case for child sex offenders. Results have been mixed regarding potential associations between extraversion and OB, and no conclusions can yet be drawn about the roles of openness to experience, subclinical narcissism, or Machiavellianism.

The predominant theme that has been emphasised repeatedly over the course of this review is that, as illustrated by the wildly divergent findings across studies, offenders are not a homogeneous group and they should not be regarded or researched as such. More research is needed that compares personality traits in conjunction with different offence categories. However, it is apparent that research in this area is marred by considerable issues with sample sizes and adequate statistical power. The majority of the studies reviewed here utilised small samples ($n < 100$), which may have limited the researchers' ability to detect significant results in their data. This becomes even more problematic when samples are broken down into sub-samples for offence-based comparisons, which can lead to a dilution of statistical effects when power is insufficient.

This review has also highlighted inadequacies when attempting to explain OB on the basis of independent personality traits. Previous research has demonstrated that associations between personality traits and behavioural outcomes can shift when traits are examined in combination. For instance, in a study examining personality traits and smoking behaviour (Weston & Jackson, 2015), it was found that conscientiousness and neuroticism both contributed, independently, to smoking. However, when examined

collectively, the combination of high conscientiousness and high neuroticism was shown to result in the lowest levels of smoking among participants. The importance of considering trait patterns (known as ‘personality profiles’; Herzberg & Hoyer, 2009) collectively in their relation to behavioural outcomes was also alluded to in one of the studies included in this review, whereby Boillat, Duering, et al. (2017) observed that high scores on neuroticism were associated with different levels of the other FFM traits than were low scores on this trait.

Personality profiles can hold significant theoretical and practical utility. On a conceptual level, they offer convenience by subsuming multiple relevant traits under one label (Herzberg & Hoyer, 2009). Furthermore, they can account for interactions between variables as opposed to relying solely on linear combinations of individual traits; this can be used to strengthen predictions about OB. Statistically speaking, profiles also serve to reduce within-group variance regarding levels of an independent variable. Meanwhile, profiles also facilitate effective treatment by virtue of providing tailored representations of the unique drivers of an individual’s OB (Dargis & Koenigs, 2018). In this manner, profiles can enable a more person-centred approach to treatment planning than trait-level conclusions that generalise across samples (Herzberg & Hoyer, 2009). However, previous investigations that have utilised personality profiles to examine OB (e.g., Dargis & Koenigs, 2018; Herzberg & Hoyer, 2009) have only included FFM traits in their profiles, overlooking the potential importance of incorporating darker traits into holistic examinations of personality differences in OB. This review has highlighted the important role that at least one DT trait (psychopathy) may play in OB; thus, future endeavours should aim to examine how normal and socially aversive trait profiles may vary in conjunction with different types of offending.

2.5.1. Limitations

This review had some limitations. Eligible studies were restricted to those published in the English language and which could be obtained by the researcher in full-text. In addition, a quantitative synthesis (i.e., meta-analysis) was not conducted, as study methodologies and outcome variables were considered too heterogeneous for meaningful comparisons to be drawn quantitatively. Lastly, due to time constraints, the gray literature was not searched. Consequently, a ‘file drawer problem’ (Rosenthal, 1979) may be present whereby useful information from null results has been overlooked as a consequence of publication bias.

2.5.2. Recommendations and Conclusions

This systematic review has highlighted several areas where researchers may improve upon previous studies. First, it is imperative that future studies utilise matched samples, and/or control for demographic variables such as age, gender, ethnicity, and education. Second, the possibility for untruthful responses on self-report questionnaires must not be overlooked; accordingly, future studies should employ impression management or lie detection scales alongside their questionnaires. Likewise, when measuring OB, the most accurate metric is a combination of self-report and official CJS records (Vitacco et al., 2014); this combination therefore represents a best practice approach to the measurement of OB. Third, more research is needed that compares personality across offenders of different races, ethnicities, and cultural backgrounds. Fourth, in order to mitigate power concerns, it is recommended that researchers collaborate across data collection sites in the future (Button et al., 2013). Relatedly, in light of the inflated statistical power inherent in very large samples, researchers should report effect sizes to enable accurate appraisals of the strength of observed effects. Finally, this review has highlighted that future studies should adopt a personality profile approach to their investigations of personality and OB. It is hoped that the recommendations emerging from

this review will enable future researchers to improve upon past shortcomings and breathe new life into this well-established area of scholarship.

CHAPTER 3: METHODOLOGICAL CONSIDERATIONS

3.1. Introduction

The overarching aim of this thesis is to better understand associations between personality trait profiles and self-reported OB, while also considering how other personality features (level of personality functioning, interpersonal style, irritability, empathy, and criminal thinking style) may impact these relationships. This chapter details key features of the methodological approaches taken in this thesis, including those pertaining to design, data collection, and data analysis. At each stage of the process, careful decisions were made in light of scientific principles, norms in the field, ethical considerations, and practical limitations. The choices made when designing and undertaking this research were deemed the most appropriate ways to address the research aims, which are outlined for each study in Chapters 2, 4, 5, and 6.

3.2. Research Design

First, to assess and synthesise current knowledge regarding associations between the FFM and DT personality traits and OB, a systematic review was undertaken (see Chapter 2). This research area has a relatively long history in the field of psychology, necessitating a systematic approach to ensure a comprehensive critical summary of the extant literature was used to inform the subsequent empirical studies in this thesis. Consequently, although the links between each variable of interest and OB were summarised in Chapter 1's literature review, a more methodical approach was taken when focusing in on associations between individual personality traits and OB. The review presented in Chapter 2 followed PRISMA (Moher et al., 2009) guidelines, as these represent a best practice approach to conducting systematic reviews in the social sciences (Siddaway et al., 2019). By following the PRISMA protocol, a series of research questions was systematically addressed, and it could be confidently concluded that the subsequent

empirical studies were informed by a comprehensive, thorough, and current understanding of our knowledge surrounding the roles of FFM and DT traits in OB.

Next, a quantitative, cross-sectional approach was taken to empirically investigate the remaining research questions, partly in recognition that quantitative methods are the norm within the areas of personality psychology and individual differences research (Maltby et al., 2017). Moreover, the FFM and DT models both conceptualise traits in a quantitative manner (McCrae & Costa, 1987, 2008; Paulhus & Williams, 2002), and since their inception these traits have typically been measured quantitatively (see, e.g., Furnham et al., 2014; Widiger, 2015). The other variables of interest in this thesis (i.e., level of personality functioning, interpersonal style, criminal thinking style, empathy, and irritability) are also traditionally measured quantitatively (see Chapters 4 and 5 for descriptions of the scales used to measure these constructs). It therefore made sense to take a quantitative approach in this research, too. Meanwhile, the research questions pertain to individual differences at one point in time, and to differences between groups, as opposed to differences within the same group over time. Thus, a cross-sectional design was the appropriate fit for this research rather than a longitudinal approach, although future longitudinal studies are recommended to build on existing findings in this thesis and indeed the field more widely.

Although the primary focus of this thesis is to ascertain the personality-based drivers of OB, it also seeks to establish the first known set of personality profiles that encompass both the FFM and DT traits together. These traits, along with all of the personality constructs examined in this thesis, exist on continuums within all people – not only offenders. Hence, Study 1 begins by establishing personality profiles in the general population, with a view to assessing whether these profiles may generalise to other samples, including ex-offenders. This aim represents another reason why a quantitative

approach was the best fit for this thesis, as it lends itself to generalisation more than qualitative approaches do (Maltby et al., 2017).

The second empirical study in this thesis builds on the first by examining whether the same profiles emerge in a different general population sample, as well as whether these profiles are related to OB and if other personality-based constructs mediate (see Section 3.4.2.) these relationships. Finally, the third study mirrors the second, except it uses an ex-offender sample. In so doing, the findings of Studies 1 and 2 can be assessed for generalisability in a different type of sample, and it can be determined the extent to which ex-offenders may be quantitatively different from the non-offending general population.

3.2.1. Measurement of Dark Triad Traits

There were many instruments that could have been used to measure the Dark Triad traits in this thesis, and the Short Dark Triad (SD3; Jones & Paulhus, 2014) was ultimately chosen for this purpose. Sometimes, the DT is measured with three separate instruments (one for each trait). When this approach is taken, Machiavellianism is commonly measured using the MACH-IV (Christie & Geis, 1970); narcissism with the Narcissistic Personality Inventory-40 (NPI-40; Raskin & Terry, 1998) or the Narcissistic Personality Inventory-16 (NPI-16; Ames et al., 2006); and psychopathy with the Levenson Self-Report Psychopathy Scale (LSRP; Levenson et al., 1995), Self-Report Psychopathy Scale-III (SRP-III; Williams et al., 2003), or Self-Report Psychopathy Scale 4 (SRP 4; Paulhus et al., 2017). However, this project was initially designed to be conducted with a clinical population, and as such, a key aim in the methodological design was to burden the participants as little as possible. Consequently, it was decided to use a single global instrument to measure the DT traits together, rather than multiple longer instruments.

The SD3 is not the only brief measure of DT traits; another popular option is the Dirty Dozen (DD; Jonason & Webster, 2010). With 12 items, the DD is briefer than the SD3 (27 items). Both instruments were considered when planning this research. However,

research comparing the two measures strongly indicated the SD3 outperformed the DD in several ways. The SD3 subscales correlate more strongly than the DD with longer measures of the DT traits and demonstrates greater convergent validity with those measures (Jones & Paulhus, 2014). Furthermore, the SD3 shows greater incremental validity (Maples et al., 2014) and test-retest reliability (Dragostinov & Mõttus) than the DD. Consequently, the SD3 was selected for use in this research.

3.2.2. Measurement of OB

When designing this research, a great deal of consideration was given to the measurement of OB. Previous studies have tended to measure OB via self-report measures of juvenile delinquent or antisocial behaviour (see reviews by Jones et al., 2011; Miller & Lynam, 2001). This represents a potential shortcoming of many previous studies: as posited by Gomes et al. (2018), “criminological knowledge can only be as accurate as the measure of crime itself” (p. 26). These authors point out that criminality is inherently hard to measure and that many existing measures are flawed in this endeavour. The generalisation of findings from non-offenders to offenders is limited, particularly when the behaviour in question is antisocial behaviour—a construct which is qualitatively different, broader, and less severe than actual criminal acts. However, using official records to measure OB brings another issue to the fore, which is the ‘dark figure of crime’, or the widely accepted notion that official records only capture a fraction of all committed offences (Gomes et al., 2018). Thus, as highlighted in Chapter 2, a best practice approach to quantifying OB is to use a combination of official records and self-report measures (Farrington, 1973). This approach was intended to be taken in this thesis, as the research was originally designed to involve the use of an institutionalised offender sample at a high secure hospital. However, ethical approval was obtained in March 2020, just as the COVID-19 pandemic began, and the resulting delays in gaining access to the target sample necessitated a re-design of the project. In order to regain momentum, it was decided to use

an ex-offender sample instead, who would have access to the internet and be able to participate remotely. Unfortunately, a consequence of the change in sample meant that official records of participants' offence histories could no longer be accessed, which is why this research has had to rely entirely on self-report measurement of OB. Fortunately, there is some documented evidence of the predictive validity of this approach (see Gomes et al., 2018, for a summary).

Many established instruments were considered for this purpose, but most were deemed unsuitable by nature of their use of antisocial or delinquent behaviour as proxies for OB. For instance, the Australian Self-reported Delinquency Scale (Curcio et al., 2015; Mak, 1993) is widely used, but it includes minor offences such as illegally obtaining or consuming cigarettes, and such subscales as cheating and fighting (behaviours that are not always criminal in nature). Likewise, as it is a measure of delinquency, this scale fails to capture more severe examples of OB. The same issues are present in the D45 (Youngs & Canter, 2014), another popular self-report instrument used to measure delinquency. However, Teague et al. (2008) presented a self-report measure of adult offending that was adapted from the National Youth Survey, a longitudinal study with over 1700 Australian adolescents that examined juvenile delinquency. The adaptation resulted in a questionnaire that includes more severe behaviours and omits lower-level behaviours such as skipping school or fighting with a classmate, and was specifically designed for use with adults. There are four subscales, measuring violent, property, sexual, and drug offending, and the measure shows strong internal consistency (Teague et al., 2008). Thus, of the available options, this instrument was deemed the most appropriate for measuring OB in this thesis.

3.2.3. Socially Desirable Responding

It has long been acknowledged in the fields of psychometrics and personality research that individuals may display response biases when filling out self-report questionnaires (King & Bruner, 2000; Paulhus, 1991; Van de Mortel, 2008). One of the

most prominent types of these biases is known as socially desirable responding (SDR), or the tendency to respond to questions in a way that makes the person look good, or more socially desirable. Often, this means misrepresenting one's true qualities. This issue is of central concern to personality research (Paulhus, 1991), where the participants may, whether intentionally or due to a lack of insight into their own traits, misrepresent themselves on personality questionnaires such as those used in this research. However, the problem of SDR is also of critical importance when self-report instruments are used to measure instances of antisocial or socially condemned behaviour (Crowne & Marlowe, 1964; Hart et al., 2015). To that end, another important research design consideration in this thesis was the incorporation of a tool to detect socially desirable response biases. These checks are relevant to the ex-offender and non-offender samples alike, both of whom may be tempted to engage in misrepresentation when asked about their traits or history of OB.

Thus, the Balanced Inventory of Desirable Responding Short Form (BIDR-16; Hart et al., 2015) is embedded within the personality questionnaires in Studies 1, 2, and 3. This measure has two scales: impression management (IM) and self-deceptive enhancement (SDE). These scales reflect the two-factor nature of SDR, whereby this response bias may be conscious (other-deception) or unconscious (self-deception) (Paulhus, 2002). Thus, participants may consciously engage in IM, or they may unconsciously display SDE in their responses. For example, one of the items on the IM scale is 'I sometimes tell lies if I have to'. Disagreement on this item is indicative of engagement in IM. Meanwhile, an example of an SDE item on the BIDR-16 is 'I never regret my decisions'. The SDE items require a greater degree of personal insight in order to respond truthfully, and if a participant responds to these items in a way that reflects SDE, they may be unaware that they are deceiving themselves as well as misrepresenting their true nature on the questionnaire. According to Paulhus (2002), unlike IM, SDE represents discordance from

reality. But this tendency is not necessarily maladaptive, as it may facilitate enhanced self-esteem and positive first impressions (Paulhus, 2002). Indeed, Paulhus (1991) argues that SDE represents self-deceptive positivity, which is intrinsic to some personality constructs including those involving self-esteem or positive self-image. Consequently, controlling SDE when measuring these constructs will lead to a reduction in predictive validity of the measure (Paulhus, 1991, p. 23). Some of the traits measured in this thesis, most notably narcissism, involve a degree of this self-deceptive positivity. Thus, if SDE outliers are observed in the datasets, they will not be initially removed; rather, analyses will be run with and without BIDR-16 scores controlled for, to assess whether this changes the outcomes of the analyses. If the outcomes change when BIDR-16 scores are controlled for, then decisions will be made about the removal of outliers. Meanwhile, outliers will also be looked for on the IM scale, with the expectation that they will skew the results of analyses, as very high scores on this scale indicate conscious lying by participants and evidence shows people can willingly engage in IM when instructed to do so (e.g., Robinson & Rogers, 2015). However, the procedure for IM will be the same as SDE: outliers will not be initially removed, but decisions will be made about their removal if analytic outcomes are affected by their retention in the dataset.

3.2.4. Offence Type

Another major consideration in this thesis' design was the delineation of offence type in statistical analyses. When discussing OB, theoretical distinctions are often made between various subgroups of offenders (e.g., Bonta & Andrews, 2017; Ireland, Ireland, & Birch, 2019). These typically pertain to offenders with and without mental disorders, but sometimes differentiations are made between offence categories. This reflects a belief that for some offenders, offence choice holds direct relevance to the theoretical or clinical characterisation of the drivers of their OB (Bonta & Andrews, 2017). For instance, the following offence types have been highlighted as representing unique offender groups with

contrasting motivations, characteristics, or therapeutic needs: sexual offences, fire-setting offences, intimate partner violence, stalking, terrorism, and violent offences such as grievous bodily harm (Ireland, Ireland, & Birch, 2019). Meanwhile, personality features may also be related to differences in offence type: in a study by Garofalo et al. (2018), differences in psychopathic traits and level of personality functioning were observed between violent offenders and child sex offenders. However, despite these apparent variations in key personal attributes among different types of offenders, it appears that no studies have systematically investigated the role of offence type in motivations for OB. By heightening our understanding of the differences between offender groups, therapeutic treatment approaches and conceptualisations of etiological pathways to offending may also be improved (Garofalo et al., 2018; Seto, 2008). Thus, a final component of this thesis' design involves the examination of potential differences between types of offence (i.e., violent, sexual, property, and drug offending).

3.3. Data Collection

3.3.1. Male Samples

As mentioned in Section 3.2.1., this thesis was originally envisioned with forensic psychiatric patients as an offender sample in the final study, but access delays resulting from the COVID-19 pandemic necessitated a re-design of the research. Because the patients that would have been used in the original studies came from a forensic hospital that only houses male offenders, it was planned to also restrict the general population samples to men only—this was in order to facilitate demographic matching across studies. When the time came to revamp the research to ensure it could continue during the pandemic, Study 1 had already been completed. Thus, as Study 1 had used an all-male general population sample, it was decided that the newly designed Studies 2 and 3 would follow suit. Gender comparisons are beyond the scope of this thesis' aims and its analytic strategy, given the number of variables already included in the project's design. Although

this demographic homogeneity is not ideal, it enables comparisons across the three studies, and eliminates gender as a possible confound when discussing the generalisation of results from one sample to the next. Moreover, there is meta-analytic evidence that in psychology research and specifically personality research, differences between men and women are small (see Zell et al., 2015, for a comprehensive metasynthesis of these effects). Such a robust finding supports the use of male-only samples in this thesis, and suggests that results may still be generalisable to other gender groups.

3.3.2. Data Quality Issues

An issue with data quality emerged during the data collection phase of Study 1. The study took place on Qualtrics, and participants were recruited via social media platforms, word-of-mouth, and hard-copy advertisements on the university campus. Unfortunately, despite having utilised Qualtrics' survey protection tools including an IP check and reCAPTCHA, it became apparent that some groups of individuals were completing the survey *en masse*, with a different IP address each time. This resulted in a large volume of invalid responses. Given that this survey offered a £5 reward to each participant, it was decided to suspend data collection for a short time. A solution was sought through the use of Qualtrics' participant recruitment service, which allowed data collection to resume and resulted in a high-quality dataset.

Owing to pricing restrictions with Qualtrics' recruitment service, the new participants were all based in the UK. However, some of the original participants were retained in the final sample, having examined the dataset and determined that their data were likely to be genuine. This led to a final sample of 343 participants, of whom 85.8% were based in the UK and the rest in other countries. In a perfect world, the entire sample would have represented a single country in order to eliminate this aspect as a potential confound. However, it was not wished to reduce the sample size any more than necessary, and the vast majority of the sample are UK-based. Hence, Study 1's sample is framed as

predominantly UK-based, which to an extent allows for cross-national comparisons against the wholly US-based sample used in Study 2.

3.4. Data Analysis

This section discusses data analysis considerations. Each of the three empirical studies in this thesis begins by investigating personality profiles, comprising the FFM and DT traits, by running a Latent Profile Analysis (LPA) in Mplus (Muthén & Muthén, 1998-2017). In each study, once a profile solution has been derived, a MANOVA tests whether participants in each profile group differ significantly from the other groups on each trait. Next, a MANCOVA is conducted to check whether the BIDR-16 scores alter the outcome of the MANOVA.

In Studies 2 and 3, more analyses follow. First, a MANOVA is run to test whether levels of each type of OB vary based on trait profile membership. Then, for each potential mediator (level of personality functioning, interpersonal style, empathy, irritability, and criminal thinking style), MANOVAs are run to assess whether levels of these variables differ based on profile membership, and Pearson's correlations assess whether these variables are associated with each type of OB. When significance is found in the relationships between profile and the potential mediator, and between the potential mediator and OB, mediation analyses are conducted. These analyses assess whether each of the variables mediates the relationships between personality profile and OB.

The following sections explain why these analytic techniques were chosen to address the research questions.

3.4.1. Latent Profile Analysis

As reviewed in Chapter 2, the majority of existing studies investigating the roles of personality traits in OB have adopted a linear, trait-centred (sometimes referred to as variable-centred) approach. However, the trait-centred approach does not allow for analyses of how these traits cluster within a given individual or how interactions between

traits may manifest differently than isolated traits at the individual level. With this in mind, this thesis is the first to elucidate trait profiles using both the FFM and the DT, and to compare these profiles among ex-offender and general population samples. The profile approach is additionally advantageous in comparison to the trait approach because it has the potential to aid the development of individualised, person-centred treatment interventions that target the patient's unique trait profile and subsequent treatment needs (Dargis & Koenigs, 2018). Thus, the results of this thesis can extend beyond theory by having real-world utility for clinical practice, both with offender and non-offender populations.

LPA is one such person-centred statistical approach that can be used to categorise individuals into homogenous groups based on their unique combinations of continuous and categorical latent variables (Wall et al., 2019). Essentially, LPA is based on the premise that subgroups can be identified in populations, and that membership to these subgroups can be explained by patterns of scores on a collection of continuous variables¹⁷ (Weller et al., 2020). In LPA, these subgroups are referred to as latent profiles. Each participant is assigned to a profile on the basis of the statistical probability that they fit within that subgroup, given their pattern of scores on the included variables. In the current research, those variables are the five traits in the FFM and the three traits in the DT.

When conducting LPA, a sequence of models is tested. First, a one-profile model is run; this is used as a baseline (Nylund-Gibson & Choi, 2018). The one-profile solution is then compared to a model with two profiles to assess which is a better model for the dataset. The two-profile solution is then compared to a three-profile solution, and so on, until the best model is found. Typically, model fit improves with each profile that is added, until it peaks and begins to deteriorate. The peak is indicative of the best model fit.

¹⁷ When the variables are categorical rather than continuous, it is called Latent Class Analysis. However, the two approaches are conceptually the same (Nylund-Gibson & Choi, 2018).

However, this process is not entirely straightforward, as determining which model is the best fit does not depend on just one statistical indicator, but on several criteria which must be balanced with one another. These typically comprise the Bayesian information criterion (BIC) and adjusted BIC; the entropy value; the Vuong-LC-Mendell-Rubin Likelihood Ratio Test (VLMR); and the Parametric Bootstrapped Likelihood Ratio Test (PBLR).

The BIC is considered by some to be the most reliable statistical indicator of model fit (Weller et al., 2020). This indicator refers to parsimony, and a lower value indicates a better fit. Meanwhile, the entropy value is a measure of uncertainty, and values closer to 1 are indicative of a better model fit (Wall et al., 2019). The VLMR and PBLR both yield p values, whereby significance indicates the model is a significantly better fit than the previous model it is being compared to (Nylund-Gibson & Choi, 2018). Unfortunately, these criteria do not always converge on a single model where all indicators clearly show a better fit than the other models tested. For this reason, the indicators need to be examined in conjunction with one another, striking the optimal balance between them, and conceptual and theoretical utility need to be considered alongside these metrics. To illustrate, perhaps all indicators show that a two-profile solution is better than the baseline (a one-profile solution), but the three-profile solution shows improvement to the two-profile solution on some of these indicators but not others. The researcher must exert some discretion in their selection of the best model fit. For example, if only 2% of the sample are allocated into the third profile, does the three-profile solution really hold practical improvement upon the two-profile solution? Such questions must be considered when determining which solution is considered best (Nylund-Gibson & Choi, 2018).

In this thesis, BIC, adjusted BIC, entropy, VLMR, and PBLR were examined alongside one another for all tested models in the three empirical studies. These values are reported in the results section of Chapters 4-6.

3.4.2. Mediation Analyses

Mediation was chosen as the appropriate fit for the research questions, which ask whether various personality features mediate the relationships between personality profiles and OB. Thus, in Studies 2 and 3 a series of mediation analyses was conducted using the PROCESS macro in SPSS (version 4.0; Hayes, 2022).

Moderation was also considered. However, as shown in Chapter 2, associations between the included personality traits and OB have been observed many times over, but have yet to be fully explained. Furthermore, these associations are not consistent in their strength or direction, with contradictions appearing throughout the literature. Thus, mediation was selected as a more appropriate way to conceptualise the potential roles of the other personality features included in this thesis. To investigate whether these variables moderate the relationships between trait profiles and OB may serve to only muddy the waters further. In contrast, by examining their roles as potential mediators, more clarity may be gleaned regarding why the associations between personality traits and OB are frequently observed, but rarely consistent.

3.4.3. Power Analyses

In this thesis, sample sizes were restricted by institutional budgets for participant payment. Nonetheless, power analyses were conducted to ascertain the sample sizes needed to achieve adequate statistical power for each LPA and *F* test undertaken. According to Weller et al. (2020), the conversation around appropriate sample size for LPA is still evolving in the literature, with the current consensus indicating “more is better, but it depends” (p. 290). Nylund-Gibson and Choi (2018) indicate that 300 or more participants is ideal, but the simpler the model and the more separated the profiles are, the smaller the sample can be. Relatively speaking, with eight indicators and three profiles in each study, the models tested in this thesis can be considered simple relative to other studies, which may have more than 20 indicators (Weller et al., 2020) and upwards of six

profiles or classes (Dziak et al., 2014). Ultimately, the benchmarks provided by Dziak et al. (2014) were used to assess power for the LPAs in this thesis. In each study, the LPA used eight indicators (the five FFM traits and three DT traits), and the analysis yielded a three-profile solution. Dziak et al.'s (2014) recommendations that, for an LPA with eight indicators and three profiles, 106 participants are needed to detect a large effect size, while 293 are required to detect a medium effect size and 2,640 are needed to detect a small effect size.

Because power is partly dependent on the number of the classes in the model, in each study power was checked after the LPA was conducted and a model was selected. Next, power sensitivity analyses for all *F* tests were done using G*Power (Faul et al., 2007), with alpha set to .05 and power set to .80. The results of these analyses are shown in Table 3.1, which reports the effect sizes that were detectable in each LPA and *F* test per study. Cohen's (1988) recommendations were used when interpreting the effect sizes in all G*Power analyses.

3.5. Conclusion

This chapter has shown that the empirical parts of this thesis are shaped by carefully considering the balance between methodological and statistical robustness and logistical constraints. Some of the limitations that have emerged over the course of the research include budget concerns that have impacted sample sizes in each study; demographic homogeneity; participant bots; and the COVID-19 pandemic. Each of these aspects has presented challenges that have needed to be overcome. Although their methodological approaches are not always perfect, this thesis has been designed to reflect best-practice approaches and scientific rigour.

Table 3.1*Effect Sizes Detectable in Each Analysis*

Analysis	Study 1 (<i>n</i> = 332)	Study 2 (<i>n</i> = 210)	Study 3 (<i>n</i> = 292)
Latent Profile Analysis (8 indicators, 3 profiles)	Small-to-medium	Medium-to-large	Medium
MANOVAs (IV = profile, DV = traits)	$f^2(V) = 0.03$	$f^2(V) = 0.05$	$f^2(V) = 0.03$
MANCOVA (IV = profile, DV = traits; covariates = SDR, 2 levels)	$f^2(V) = 0.03$	$f^2(V) = 0.05$	$f^2(V) = 0.04$
MANOVA (IV = profile, DV = OB, 4 levels)	--	$f^2(V) = 0.04$	$f^2(V) = 0.03$
MANOVA (IV = profile; DV = LPF, 2 levels)	--	$f^2(V) = 0.03$	$f^2(V) = 0.02$
MANOVA (IV = profile, DV = IS, 8 levels)	--	$f^2(V) = 0.05$	$f^2(V) = 0.03$
MANOVA (IV = profile, DV = empathy, 2 levels)	--	$f^2(V) = 0.03$	$f^2(V) = 0.02$
ANOVA (IV = profile, DV = criminal thinking style)	--	$f^2(V) = 0.22$	$f^2(V) = 0.18$
ANOVA (IV = profile, DV = irritability)	--	$f^2(V) = 0.22$	$f^2(V) = 0.18$

Note. Effect size interpretations are based on Dziak et al. (2014) and Cohen (1988). For LPA, small effect is $w = 0.1$; medium effect is $w = 0.3$; large effect is $w = 0.5$. For F tests, alpha was set to 0.05 and power was set to 0.80. For F tests, small effect is $f^2(V) = .02$; medium effect is $f^2(V) = .15$; large effect is $f^2(V) = .35$. In all analyses, the profile variable had three levels. Traits had eight levels. SDR = socially desirable responding. OB = offending behaviour. LPF = level of personality functioning. IS = interpersonal style.

First, a thorough review of the literature identified which personality constructs may be key to explaining the relationships between personality traits and OB, thereby informing the variables included in the subsequent studies and the research questions these studies would be seeking to answer. Next, a systematic review was undertaken to ensure the empirical studies that followed were grounded in a current and comprehensive understanding of our knowledge surrounding the roles of FFM and DT traits in OB.

Meanwhile, the three empirical studies in this thesis were carefully designed, with thoughtful decisions made regarding the measurement of OB, the inclusion of a measure to detect SDR, the delineation of offence type, and the best ways to analyse the data. The following chapters present three empirical studies which converge in their attempt to answer the thesis' overarching research question: how are personality traits related to OB, and how do other personality features contribute to these relationships?

CHAPTER 4: PERSONALITY TRAIT PROFILES IN A MALE COMMUNITY SAMPLE

4.1. Introduction

Chapter 1 underscored the important role that personality traits play in individual propensity to offending behaviour (OB). However, despite the extensive body of research that has established links between these constructs, these investigations continually emphasise the Five-Factor Model (FFM; McCrae & Costa, 1987) of personality while other trait models, such as the Dark Triad (DT; Paulhus & Williams, 2002), tend to be overlooked. Likewise, studies that explore the role of the DT generally fail to incorporate adaptive trait models alongside these darker traits.

The systematic review presented in Chapter 2 synthesised the results of these previous studies. What emerged from this review was the conclusion that personality and OB is an area of scholarship marred by widely divergent methodological approaches; sample types; sample sizes; geographical locations; traits measured; and operationalisations of OB. The only consistent finding across the 53 included papers was that subclinical psychopathy was positively associated with OB in all studies that included this trait. The results of the systematic review led to the tentative conclusion that low levels of agreeableness and conscientiousness may be implicated in OB, and that this may also be the case for high levels of neuroticism—particularly for child sex offenders. Results were mixed regarding the role of extraversion, and no conclusive inferences could be drawn for the roles of openness to experience, subclinical narcissism, or Machiavellianism. These inconsistent and contradictory findings demonstrate a need for more studies that take a holistic approach, balancing both positive and dark traits and examining them collectively rather than in isolation.

Furthermore, the systematic review highlighted that personality traits have thus far been inadequate when attempting to comprehensively explain drivers of OB. The variable-

centred or trait approach is concerned with individual differences on discrete dimensions, and can account for the isolated or additive influences of separate traits in the prediction of behaviour (Merz & Roesch, 2011). However, this method does not capture potential interactive or multiplicative effects among covarying traits such as those comprising the FFM (Digman, 1997; McCrae & Costa, 1987). Accordingly, examining traits in combination, in the form of personality profiles (Herzberg & Hoyer, 2009), is a fruitful avenue for researchers to explore. This person-centred approach accounts for interactions between individual variables, providing explanatory value that extends beyond the limits of the variable-centred approach (Herzberg & Roth, 2006). Indeed, person-centred methods have been observed to facilitate predictions of behavioural outcomes such as antisocial behaviour (Chabrol et al., 2015), interpersonal behaviour (Herzberg & Hoyer, 2009), and impulsivity and risk propensity (Kerber et al., 2021).

Moreover, a prominent finding emerging from the systematic review was the importance of appreciating the diverse nature of offender populations. As illustrated in Table 2.3 (Chapter 2), many empirical endeavours operationalise offenders as a homogeneous group that can be differentiated from non-offenders most effectively by virtue of their status with the criminal justice system. In fact, like non-offenders, offenders are characterised by their varied personal characteristics, backgrounds, and motivations (see Chapter 2). Consequently, the person-centred approach is better suited to capture a dynamic, holistic understanding of the personality-based drivers of a given offender's OB, and to subsequently target those drivers in treatment interventions tailored to the individual. Furthermore, another strength of the person-centred approach is its ability to complement, rather than compete with, variable-centred explorations (Decuyper et al., 2013). In this way, the two approaches can also be employed in tandem in efforts to capture a comprehensive understanding of an individual's personality configuration.

4.1.1. Five- Factor Model (FFM) Personality Profiles

Block (1971) was one of the first to empirically identify distinct personality types deriving from combinations of trait scores. In Block's (1971) longitudinal study with 84 men, five personality types were identified, of which three were found to be stable over time. These were subsequently labelled *ego resilient*s, *unsettled undercontrollers*, and *vulnerable overcontrollers*. From this investigation, Block and Block (1980) formulated a theory of ego control and ego resiliency. According to this model, ego control refers to the ability to exert control over one's impulses. An individual who is high in ego control can contain their motivational and emotional impulses as needed, but can also express them when appropriate. Meanwhile, ego resiliency refers to the ability to be flexible and adaptive in the face of shifting environmental conditions and demands, particularly stressful ones (Isler et al., 2016). According to Block and Block (1980), individuals who are very low in ego control will possess low ego resiliency, but so will those who are very high in ego control. As discussed in Chapter 1, interpersonal theory (Leary, 1957; Sullivan, 1953) and the DSM-5 AMPD (APA, 2013) converge in their assertion that an inflexible approach to interpersonal interactions and relationships represent the core of a disordered personality. Block and Block's (1980) model of ego control and ego resiliency offers further support to this idea, contending that the inability to adapt to different environmental situations and demands is indicative of low resiliency and is therefore a manifestation of dysfunctional personality.

Over time, Block's (1971) personality profiles have been subject to additional empirical investigations, with Robins et al. (1996) being one of the first to implement this framework with a sample of American boys aged 12-13. They identified three personality profiles that aligned with those of Block (1971), and subsequently labelled them *resilient*s, *overcontrollers*, and *undercontrollers* (Robins et al., 1996). Resilient, who resembled Block's (1971) ego resilient, were characterised by high levels of all FFM traits aside

from neuroticism, on which they had low scores. Within Block and Block's (1980) ego control model, individuals with this personality profile have high degrees of ego resiliency; as a result, this profile is said to characterise healthy, well-adjusted individuals.

Meanwhile, overcontrollers aligned with Block's (1971) profile of vulnerable overcontrollers, and were characterised by low scores on extraversion and high scores on agreeableness and neuroticism. These individuals are conceptualised as possessing very strong ego control, through which they contain their motivational and emotional impulses to such a degree that it is detrimental to their own well-being (Asendorpf et al., 2001).

Overcontrollers are inhibited in their behaviour and their emotional expression, and tend towards internalising behaviour. Finally, undercontrollers, like Block's (1971) unsettled undercontrollers, referred to participants with high scores on extraversion, but low scores on agreeableness and conscientiousness. Accordingly, undercontrollers are said to have very low ego control, as evidenced by difficulty containing and controlling their impulses and emotions. They have the tendency to exhibit externalising behaviour (Asendorpf et al., 2001), and may have deficits in their abilities to delay gratification or refrain from risky behaviour.

Since Robins et al.'s (1996) study, these three profiles (resilients, overcontrollers, and undercontrollers) have been empirically validated and replicated in a number of other investigations. Indeed, an early review by Caspi (1998) observed high similarity among the profiles across eight studies, and this three-profile framework (referred to as 'ARC' types¹⁸; Daljeet et al., 2017; Gerlach et al., 2018) still dominates investigations involving personality prototypes today. They have been observed in child (Asendorpf & van Aken, 1999; Hart et al., 1997), youth (Akse et al., 2007; Dubas et al., 2002), and adult (Steca et

¹⁸ The name 'ARC' types refers to the first authors of three seminal studies in this domain: Asendorpf et al. (2001), Robins et al. (1996), and Caspi & Silva (1995).

al., 2010) populations, and found to be associated with, and predictive of, myriad psychosocial outcomes.

Resilients are said to comprise approximately half the population (Asendorpf et al., 2001), with undercontrollers and overcontrollers each representing approximately one quarter. Of the three types, the resilient type has been repeatedly and consistently associated with the most positive outcomes, including IQ, school performance, and self-esteem (Donnellan & Robins, 2010); fluid intelligence (Claes et al., 2014); internal locus of control; patience; physical and mental health; and subjective well-being (Kerber et al., 2021). The resilient profile is also negatively associated with aggression and externalising, internalising, and rule-breaking behaviours (Favini et al., 2018).

In contrast, both the undercontroller and overcontroller profiles have been linked to negative outcomes. The overcontroller type is associated with lower self-esteem (Asendorpf et al., 2001) and higher levels of loneliness, anxiety, and depression (Asendorpf et al., 2001; Hart et al., 2005; Huey & Weisz, 1997; Isler et al., 2016) than the other types. Individuals with this profile have lower overall sociability and fewer relationships (Asendorpf et al., 2001). Nonetheless, while overcontrollers tend to report poor cognitive and affective well-being, this profile is positively associated with physical health (Kerber et al., 2021). In contrast, undercontrollers engage in more impulsive and risky behaviours (Block et al., 1988; Kerber et al., 2021), and this profile is associated with hyperactivity, poor school performance and conduct, poor physical health, aggression, and delinquency (Donnellan & Robins, 2010; Hart et al., 2005; Huey & Weisz, 1997; Isler et al., 2016; Kerber et al., 2021). These individuals tend to display more interpersonal difficulties and poorer attachment (Asendorpf et al., 2001). Finally, despite their differences, both undercontroller and overcontroller types have been found to demonstrate a tendency towards hostile attribution bias (Hart et al., 2005), which refers to the tendency to interpret ambiguous behaviour as having hostile intent (Nasby et al., 1980). Empirical

investigations have consistently yielded an association between this bias and aggressive behaviour (Tuente et al., 2019), adding further support to the assertion that undercontroller and overcontroller personality types are maladaptive in nature.

On the surface, it would appear that the structure and correlates of these three personality profiles have received consistent, mounting empirical support in the past two decades. However, upon closer inspection, this is not exactly the case. First, there is a lack of consistency across studies regarding number of profiles. A review of the literature yields a series of 2-profile (e.g., Claes et al., 2014; Da Rosa et al., 2020), 3-profile (e.g., Decuyper et al., 2013; Ferguson & Hull, 2018; Merz & Roesch, 2011; Udayar et al., 2020), 4-profile (e.g., Favini et al., 2018; Gerlach et al., 2018), and 5-profile (Conte et al., 2017; Herzberg & Roth, 2006; Kerber et al., 2021) solutions, as well as some studies for which more than one solution was viable – for instance, Roth and Herzberg (2007) identified 3-profile and 5-profile solutions, and Isler et al. (2016) discussed both 3-profile and 4-profile solutions in their datasets. These variations suggest that the stability of the ARC framework may not be sufficiently robust.

Second, perhaps even more troubling than this disagreement is the inconsistent manner in which Block's (1971) framework is applied when defining and describing profiles. There are many examples of studies where one or more of Robins et al.'s (1996) resilient, undercontroller, and overcontroller profiles emerge, but rather than aligning their profile labels with this established typology, some researchers assign unique labels to these profiles. For instance, the resilient profile, characterised by low neuroticism and above-average scores on the remaining four FFM traits (openness to experience, agreeableness, extraversion, and conscientiousness), has been identified and labelled as “well-adjusted” (Ferguson & Hull, 2018; Merz & Roesch, 2011), “resilient/emotionally stable” (Claes et al., 2014), and “role model” (Gerlach et al., 2018). Similarly, the undercontroller profile (high extraversion, low agreeableness, low conscientiousness) has been identified and

referred to as “self-centred” (Gerlach et al., 2018) and “maladjusted” (Daljeet et al., 2017). These profile labels may adequately describe the cores of the given personality types, but there is no evidence to suggest that the original labels of resilient and undercontroller are not already sufficient at capturing this. When researchers choose to create new profile names rather than applying these well-established labels, this only contributes to the fractured, convoluted state of the literature and our knowledge surrounding FFM personality types; this is known as the ‘jangle fallacy’, and it has been noted as a widespread issue in personality research (Kuper et al., 2021), as it impedes researchers from achieving consensus about a given construct.

Third, in addition to assigning unique labels to established profiles, some researchers have applied the widely-used resilient, undercontroller, and overcontroller labels to profiles that do not match the original ‘ARC’ typology. This is known as the ‘jingle fallacy’, and it contributes to the same lack of integration in personality research as the jangle fallacy (Kuper et al., 2021). To illustrate, in Robins et al.’s (1996) study, the overcontroller profile was characterised by low levels of extraversion combined with high scores on agreeableness and neuroticism. However, this label has been used to refer to profiles encompassing: low extraversion, high neuroticism, and moderately low agreeableness, conscientiousness, and openness (Herzberg & Roth, 2006); average extraversion, slightly above-average agreeableness and conscientiousness, and low neuroticism and openness (Roth & Herzberg, 2007); high neuroticism and low extraversion, agreeableness, and openness (Conte et al., 2017); and low extraversion and openness, high neuroticism, and average agreeableness and conscientiousness (Kerber et al., 2021). A similar degree of variation has been observed for use of the resilient and undercontroller labels (see Table 4.1 for a summary).

Table 4.1*Different Profiles by the Same Name: A Comparison of ARC Profiles with Other Profiles Using the Same Labels*

Profile Label	Extraversion	Agreeableness	Conscientiousness	Neuroticism	Openness to Experience
Resilient					
ARC profile ¹	High	High	High	Low	High
Barbaranelli (2002)	Above average	Average	High	Low	Average
Schnabel et al. (2002)	Average	Average	High	Low	Average
Herzberg & Roth (2006)	High	High	High	Low	Above average
Roth & Herzberg (2007)	High	Above average	High	Low	Above average
Grumm & von Collani (2009)	High	Average	Average	Low	Average
Conte et al. (2017)	Average	High	High	Low	Average
Da Rosa et al. (2020)	High	High	Low	Low	Low
Udayar et al. (2020)	Above average	Average	Above average	Below average	Average
Overcontroller					
ARC profile	Low	High	Average	High	Average
Barbaranelli (2002)	Low	Low	Low	High	Low
Schnabel et al. (2002)	Low	Average	Average	High	Average
Rammstedt et al. (2004)	Low	Average	Average	High	Low
Herzberg & Roth (2006)	Low	Below average	Below average	High	Below average
Roth & Herzberg (2007)	Above average	Above average	Above average	Low	Low
Steca et al. (2010)	Low	Low	Below average	High	Low
Klimstra et al. (2011)	Low	Average	Average	High	Average

Profile Label	Extraversion	Agreeableness	Conscientiousness	Neuroticism	Openness to Experience
Specht et al. (2014) ²	Low	Above average	Above average	High	Low
Specht et al. (2014) ³	Average	Above average	Above average	High	High
Conte et al. (2017)	Low	Low	Average	High	Low
Kerber et al. (2021)	Low	Average	Average	High	Low
Undercontroller					
ARC profile	High	Low	Low	Average	Average
Barbaranelli (2002)	Above average	High	Low	Average	High
Schnabel et al. (2002)	Average	Average	Low	Average	Average
Rammstedt et al. (2004)	High	Low	Low	High	Average
Herzberg & Roth (2006)	Average	Low	Low	High	Average
Roth & Herzberg (2007)	Below average	Average	Below average	High	Average
Steca et al. (2010)	Above average	Below average	Low	Above average	Above average
Klimstra et al. (2011)	Average	Low	Low	Average	Low
Decuyper et al. (2013)	Average	Low	Low	Average	Low
Specht et al. (2014) ²	Average	Low	Low	Average	Average
Specht et al. (2014) ³	Average	Low	Low	High	Average
Conte et al. (2017)	High	Low	Low	High	Average
Favini et al. (2018)	High	Average	Low	Above average	High
Kerber et al. (2021)	Average	Low	Low	Average	Average

Note. 1. ‘ARC profiles’ are those presented in Asendorpf et al. (2001), Caspi & Silva (1995), and Robins et al. (1996). 2. German sample. 3. Australian sample.

Finally, it is important to note that a number of unique FFM personality profiles have been identified and labelled outside of the ARC framework. For instance, Roth and Herzberg (2007) observed a 5-profile solution that included “non-desirable”, “confident”, and “reserved” profiles in German adults, while Decuyper et al. (2013) identified profiles in Belgian adolescent offenders which they named “emotionally labile, close-minded and goal-oriented” and “emotionally labile-careless”. Meanwhile, Conte et al. (2017) observed “amiable” and “conscientious/disagreeable” profiles in US Army recruits, and profiles referred to as “excitable” and “reserved”¹⁹ have been identified in US high school students (Ferguson & Hull, 2018). This is just a small sampling of the various FFM profiles that have emerged from different samples and datasets, a large proportion of which fail to map directly onto the ARC framework. Interestingly, several investigations have identified a profile that represents the inverse of the resilient type (i.e., high neuroticism paired with low scores on the remaining FFM traits); accordingly, this profile has been labelled “non-resilient” by Da Rosa et al. (2020), but has also been referred to in other studies as “undercontrolled/emotionally dysregulated/aggressive” (Claes et al., 2014); “brittle” (Isler et al., 2016); and “vulnerable” (Favini et al., 2018). Lastly, in some studies a profile is identified that comprises average scores on all five traits, fittingly referred to as “average” (Gerlach et al., 2018; Udayar et al., 2020) or “moderate” (Favini et al., 2018), and which does not fit within the original ARC framework.

Collectively, these disagreements and inconsistencies contribute greatly to the false perception that the ARC typology has obtained consistent support among studies that have examined personality profiles derived from the FFM. In reality, the reliability and validity of this framework have not been firmly established, as evidenced by the many profiles

¹⁹ The “Reserved” type is characterised by low scores on all FFM traits in Ferguson & Hull (2018), but Roth & Herzberg’s profile of the same name comprises very low openness, low neuroticism, and moderate scores on the remaining traits. Thus, whilst the label is the same across the two studies, the profiles differ markedly.

reviewed here that do not fit within the ARC typology. Accordingly, it is important to give credence to the prospect that different frameworks may emerge with different samples, and there may be no ‘one-size-fits-all’ framework that is applicable regardless of individual differences on other factors such as age, gender, culture, etc. Indeed, in the context of personality profiles and OB, it may be particularly prudent to consider the inclusion of less adaptive traits such as those represented by the DT framework.

4.1.2. Dark Personality Profiles

Although the FFM is the dominant model through which personality profiles are often conceptualised, a small number of studies have investigated profiles deriving from the DT (Paulhus & Williams, 2002) and Dark Tetrad (Chabrol et al., 2009) models of personality. Briefly²⁰, the three traits that comprise the DT are Machiavellianism, subclinical narcissism, and subclinical psychopathy. Machiavellianism is characterised by a cold and manipulative interpersonal demeanor; subclinical psychopathy is associated with impulsivity, thrill-seeking behaviour, and low levels of anxiety and affectivity; and subclinical narcissism refers to such attributes as entitlement, superiority, grandiosity, and interpersonal dominance. The Dark Tetrad (Chabrol et al., 2009) adds a fourth trait, sadism, which is characterised by cruel and demeaning attitudes and behaviours towards others. Individuals high on this trait are said to receive enjoyment from inflicting harm on others.

Using the DT with a sample exceeding 18,000 adults, Garcia and MacDonald (2017) observed a 3-profile solution. The first profile, labelled “high malevolent”, characterised participants who had high scores on all three traits, while a “benevolent” profile described those who scored low on all traits. The remaining profile contained

²⁰ The Dark Triad is described more comprehensively in Chapter 1.

moderate scores on all traits and was therefore labelled “intermediate malevolent” in light of the negative valence that is associated with this triad.

Meanwhile, Chabrol et al. (2015) identified a 4-profile solution of Dark Tetrad traits in a sample of 615 French adolescents. Similarly to Garcia and MacDonald (2017), the first profile was characterised by high scores (at least one standard deviation above the mean) on all included traits; this profile was subsequently labelled “dark tetrad”. The second profile, “low traits”, included participants who scored significantly below the mean on all four traits. The third profile (“sadistic-Machiavellian”) characterised participants who scored low on all traits except Machiavellianism, and the final profile (“psychopathic-narcissistic”) included participants who had above-average scores on these two traits.

The groupings observed in these two studies are not wholly surprising, given that the DT traits tend to yield small-to-medium Pearson’s r correlations with one another (Glenn & Sellbom, 2015; Paulhus & Williams, 2002), and sadism has been found to correlate with each of the other dark traits (Chabrol et al., 2009). Nonetheless, Glenn and Sellbom (2015) caution against the amalgamation of these three traits into a unitary construct, arguing that this approach lacks theoretical justification. Instead, the model should maintain its three-trait structure, but these traits may be best positioned within a more comprehensive model that captures the full range of human personality traits. Consequently, the present study incorporates both FFM and DT traits in a holistic attempt to elucidate the existence and structure of personality profiles in a community sample.

4.1.3. The Current Study

By examining configurations of multiple traits, interactions between variables can be better accounted for, and the patterns that emerge in these profiles can be used to both aid our understanding of the nature of offending, and strengthen predictions about engagement in OB. Consequently, the empirical investigations presented in this thesis build on the findings of the systematic review (Chapter 2) by investigating the role of

personality profiles, in conjunction with other personality and attitudinal variables²¹, in OB. In order to examine these relationships, Study 1 first seeks to establish the constellations of FFM and DT traits that emerge in a community-based non-offender sample. Specifically, this study aims to explore whether distinct profiles emerge when both FFM and DT traits are included, while Studies 2 and 3 will assess whether the same profiles emerge in different samples, as well as the roles that the other personality and attitudinal variables may play in associations between these trait profiles and OB. Because Study 1 is exploratory in nature, no *a priori* hypotheses are presented.

4.2. Method

4.2.1. Participants

A total of 343 adult respondents participated in this study. Inclusion criteria required participants to be male gender and aged 18 years or above (see Chapter 3 for an explanation of methodological considerations). Eleven participants were removed prior to analysis due to a high proportion of missing responses. The final sample therefore comprised 332 adult male participants, ranging in age from 18 to 85 years ($M = 47.25$, $SD = 17.23$). The majority of respondents (85.8%) were from the United Kingdom. Ten (3%) undergraduate participants were awarded psychology course credit for their participation, while the remaining 322 were remunerated £5 for taking part.

4.2.2. Materials

Short Dark Triad (SD3; Jones & Paulhus, 2014). DT traits were measured using the 27-item Short Dark Triad (Appendix D). The measure is split into three sub-scales, each with nine items, measuring Machiavellianism (e.g., “It’s not wise to tell your secrets”, ω ²²

²¹ Level of personality functioning; interpersonal style; irritability; empathy; and criminal thinking style

²² According to Peters (2014) and Deng & Chan (2017), alpha is unrelated to a scale’s internal consistency. When tau-equivalence is achieved, alpha and omega perform equally at estimating reliability, but when tau-equivalence is not present, omega estimates true scale reliability more accurately, while alpha tends to under-estimate it. Thus, omega is the more sensible metric, and was used instead of alpha when assessing scale reliability in this thesis.

= 0.80); subclinical narcissism (e.g., “People see me as a natural leader”, $\omega = 0.68$); and subclinical psychopathy (e.g., “I’ll say anything to get what I want”, $\omega = 0.79$). Participants were asked to indicate how much they agree with each statement, and responses were measured using a Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree). Five items were reverse-scored, with higher scores on this instrument representing higher levels of each trait. The SD3 demonstrates strong convergent validity with longer measures of the same constructs, as well as robust incremental and discriminant validity (Maples et al., 2014).

International Personality Item Pool-Five Factor Model (IPIP-FFM, Goldberg, 1999). The International Personality Item Pool (Appendix E) contains a total of 3000 items. For this study, the 50-item IPIP-FFM was used to measure FFM traits. This collection of 50 items from the larger IPIP bank demonstrates strong internal consistency ($\alpha = 0.79-0.87$; International Personality Item Pool, n.d.) and concurrent validity (Gow et al., 2005) with the NEO-Five Factor Inventory (NEO-FFI; Costa & McCrae, 1992). Items are split into five sub-scales, each with ten questions, measuring extraversion (e.g., “I am the life of the party”, $\omega = 0.85$); neuroticism (e.g., “I get upset easily”, $\omega = 0.88$); agreeableness (e.g., “I take time out for others”, $\omega = .80$); conscientiousness (e.g., “I am always prepared”, $\omega = 0.73$); and openness to experience (e.g., “I am full of ideas”, $\omega = 0.76$). Higher scores reflect higher levels of each trait, and 18 items are reverse-scored.

Balanced Inventory of Desirable Responding Short Form (BIDR-16; Hart et al., 2015). The BIDR-16 (Appendix F) was used to aid in the detection of socially desirable responding. With 16 items, this measure is an abbreviated version of the 40-item Balanced Inventory of Desirable Responding (BIDR; Paulhus, 1988, 1998). The BIDR-16 has two scales, each with eight items: impression management (IM; e.g., “I never cover up my mistakes”) and self-deceptive enhancement (SDE; e.g., “I always know why I like things”). Responses were measured on a 5-point Likert scale ranging from ‘strongly disagree’ to

‘strongly agree’, with higher scores reflecting higher levels of each construct. Eight items are reverse-scored. An initial validation of the BIDR-16 demonstrated its strong construct validity and test-retest reliability ($r = .77$ across a two-week interval; Hart et al., 2015). In this study, ω 's of 0.72 (IM) and 0.62 (SDE) indicated sufficient scale reliability.

4.2.3. Procedure

Ethical approval was obtained from the researcher's Departmental Research Ethics Committee (Reference RM/08-2019/075). Participants were then recruited to participate in a study about personality and OB via social media, word-of-mouth, flyers posted on campus, and Qualtrics recruitment services. Prospective participants were directed to complete the questionnaires online on the Qualtrics survey platform. After reading the participant information sheet²³, they were asked to give their informed consent and some demographic information (i.e., gender, age, and nationality). Next, they completed the questionnaires and navigated to a debrief page. The three measures were presented together, with question order randomised. Standard quality checks were embedded into the questionnaire in an effort to ensure high-quality responses. Median completion time was 12.7 minutes.

4.3. Results

First, the data were examined for extreme instances of socially desirable responding. The two sub-scales of the BIDR-16 were scored using the dichotomous scoring procedure recommended by Paulhus (1994) and subsequently examined for outliers. No outliers were found for the IM sub-scale, whereas 32 participants were identified as outliers on the SDE sub-scale, indicating a high degree of social desirability bias in these respondents. However, according to Paulhus (1991), controlling this variable has the potential to reduce the predictive validity of measures involving elements of self-

²³ Study 1 forms (Participant Information Sheet, Consent Form, and Debrief Page) are provided in Appendix A.

deceptive positivity. As the DT framework represents such traits (Paulhus & Williams, 2002), no SDE outliers were removed from analyses. Shapiro-Wilk tests indicated that both subscales were normally distributed (IM $p = .96$; SDE $p = .64$).

Next, a missing value analysis was conducted to determine the nature of missing responses in the dataset. According to a multiple imputation analysis, 0.82% of the total data were missing. Little's MCAR test results indicated that responses were missing completely at random (MCAR), $\chi^2 = 669.36$, $df = 748$, $p = .98$. Thus, the expectation maximisation technique was used in SPSS (version 26) to replace missing responses in the dataset.

Means and standard deviations for each of the personality variables are provided in Table 4.2. Meanwhile, Table 4.3 depicts intercorrelations between socially desirable response variables, FFM traits, and DT traits. Impression management was positively associated with agreeableness and conscientiousness, and negatively associated with all three DT traits. Conversely, self-deceptive enhancement was positively associated with extraversion, conscientiousness, and narcissism, but negatively correlated with neuroticism. The two BIDR-16 subscales were also positively correlated with one another. There was no evidence of multicollinearity, as assessed by Pearson correlation ($|r| < 0.9$).

Table 4.2

Means (M) and Standard Deviations (SD) for FFM and DT Personality Traits

Personality variable	<i>M</i>	<i>SD</i>
Extraversion	29.33	6.97
Agreeableness	36.44	5.87
Conscientiousness	34.81	5.53
Openness to experience	35.45	5.60
Neuroticism	28.86	7.87
Machiavellianism	28.50	5.67
Psychopathy	21.84	6.09
Narcissism	24.38	5.08

4.3.1. Personality Profiles

A latent profile analysis (LPA) was conducted to examine whether profiles emerged representing combinations of the FFM and DT traits (see Chapter 3 for an explanation of this process). Table 4.4 summarises model fit indices for 2-5 profile solutions. Results indicated that the 3-profile solution was the best fit for the data, and a visual inspection of the profiles confirmed that the 3-profile solution was practically meaningful.

Figure 4.1 displays standardised mean personality trait scores for each profile. Profile 1 characterises individuals ($n = 110$, 33.1%) with below-average scores on all traits except neuroticism, which is slightly elevated in this group. Narcissism and extraversion are particularly low in this profile, which can be referred to as *Reserved*. Profile 2 characterises individuals ($n = 117$, 35.2%) with elevated scores on all traits except Machiavellianism, psychopathy, and neuroticism, which are below the mean in this group; accordingly, this profile is labelled *Confident*. Finally, Profile 3 represents participants ($n = 105$, 31.6%) with average scores on openness to experience, below-average scores on agreeableness and conscientiousness, and elevated scores on all remaining traits. Participants in this profile group scored particularly high on all three DT traits; it was subsequently labelled *Socially Malevolent*.

4.3.2. Comparisons Among Profiles

A one-way multivariate analysis of variance (MANOVA) was performed to assess whether participants in each profile group differed significantly from the other groups on each personality trait variable. Because sample sizes were unequal and the assumption of equality of covariance was violated, as indicated by Box's M $p < .001$, Pillai's trace was used when interpreting the MANOVA (Field, 2017). Significant profile differences were found in the personality trait variables, $F(16, 646) = 60.58$, $p < .001$; Pillai's trace = 1.20; $\eta^2 = .600$. Next, a MANCOVA was performed with the BIDR-16 subscales, impression

Table 4.3*Correlations Between Personality Traits and Socially Desirable Response Variables*

Variable	1	2	3	4	5	6	7	8	9	10
1. Extraversion	-									
2. Agreeableness	.28**	-								
3. Conscientiousness	.11*	.14**	-							
4. Openness to experience	.37**	.32**	.15**	-						
5. Neuroticism	-.18**	-.12*	-.47**	.04	-					
6. Machiavellianism	.02	-.37**	-.09	.10	.28**	-				
7. Psychopathy	.15**	-.49**	-.25**	.01	.36**	.57**	-			
8. Narcissism	.62**	-.07	.06	.28**	.01	.38**	.53**	-		
9. Impression management	-.10	.29**	.29**	-.06	-.26**	-.41**	-.47**	-.23**	-	
10. Self-deceptive enhancement	.16**	-.01	.28**	.02	-.24**	.05	-.02	.24**	.22**	-

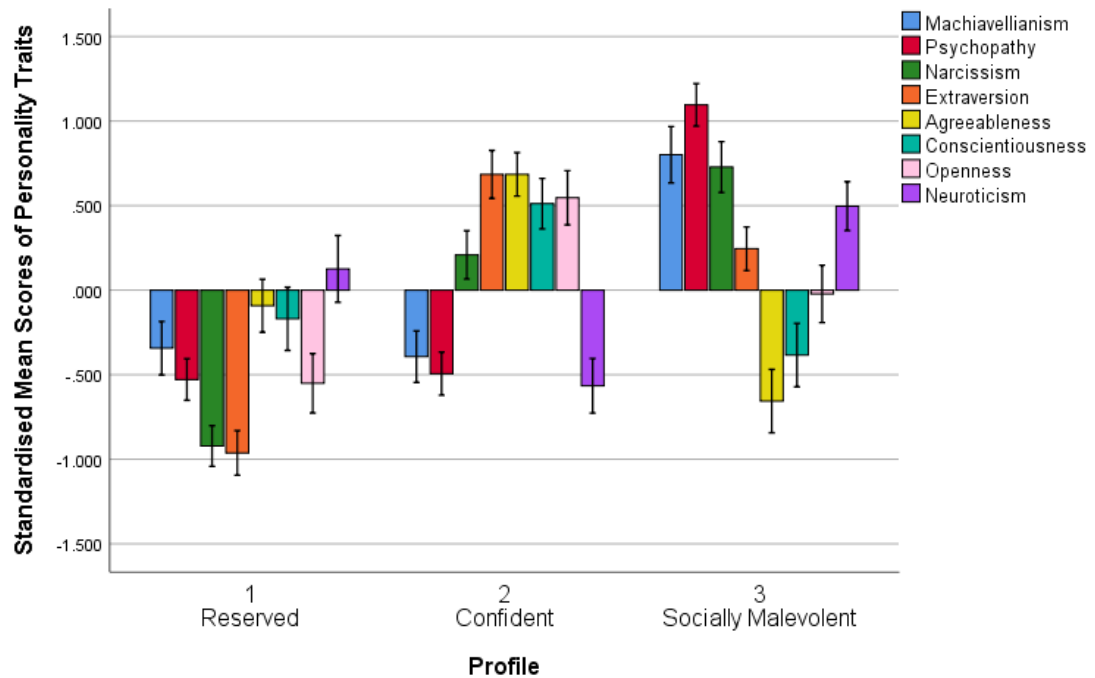
** $p \leq .01$ * $p \leq .05$ **Table 4.4***Model Fit Indices For 2-5 Profile Solutions*

Profiles	BIC	Adj BIC	Entropy	VLMR	BLRT
2	7387.41	7308.11	0.77	< 0.001	< 0.001
3	7239.22	7131.38	0.77	0.001	< 0.001
4	7223.73	7087.33	0.78	0.422	< 0.001
5	7199.40	7034.45	0.78	0.163	< 0.001

Note. $N = 332$. Best model fit is indicated by the highest number of profiles with a) the lowest BIC and adjusted BIC, b) an entropy value closest to 1, and c) significant p values for VLMR and BLRT. For this dataset, the 3-profile solution was the best model fit.

Figure 4.1

Standardised Mean Scores of Traits Across Three Personality Profiles



Note. Error bars represent 95% confidence intervals.

management and self-deceptive enhancement, as covariates. The MANCOVA confirmed that, with these two variables held constant, the significant differences in personality traits across profiles remained, $F(16, 642) = 49.66, p < .001$; Pillai's trace = 1.11; $\eta^2 = .550$. In both the MANOVA and MANCOVA, effect size was very large. These results indicate that the emergent personality profiles observed in this dataset represent distinct categories that differ significantly from one another.

Post-hoc comparison tests indicated that participants differed on all eight personality trait variables across profiles. Where the assumption of homogeneity of variances was violated (as evidenced by Levene's test $p < .05$), Games Howell was used for post-hoc comparisons, while Bonferroni was used when homogeneity of variances was present (Levene's test $p > .05$). The results of the post-hoc tests are summarised in Table 4.5. Compared to the Confident and Socially Malevolent profiles, Reserved participants were significantly lower on narcissism, extraversion, and openness to experience. They were also significantly lower on Machiavellianism, psychopathy, and narcissism, and

higher on agreeableness, than Socially Malevolent participants. Meanwhile, they were significantly lower on agreeableness and conscientiousness, and higher on neuroticism, than participants in the Confident group.

Table 4.5

Means, Standard Errors, and Mean Differences Across Observed Personality Profiles

Variable	Profile 1	Profile 2	Profile 3	Univariate	η^2
	<i>Reserved</i>	<i>Confident</i>	<i>Socially Malevolent</i>		
	(<i>n</i> = 110)	(<i>n</i> = 117)	(<i>n</i> = 105)	<i>F</i> (2, 329)	
Extraversion	22.63 ^a (.46)	34.09 ^b (.50)	31.03 ^c (.45)	158.84***	.49
Agreeableness	35.88 ^a (.46)	40.44 ^b (.38)	32.57 ^c (.56)	72.37***	.31
Conscientiousness	33.86 ^a (.52)	37.63 ^b (.42)	32.67 ^a (.52)	28.74***	.15
Openness to experience	32.35 ^a (.50)	38.49 ^b (.45)	35.31 ^c (.48)	42.78***	.21
Neuroticism	29.85 ^a (.78)	24.42 ^b (.64)	32.77 ^c (.57)	40.13***	.20
Machiavellianism	26.55 ^a (.45)	26.27 ^a (.44)	33.03 ^b (.48)	69.30***	.30
Psychopathy	18.64 ^a (.38)	18.85 ^a (.39)	28.53 ^b (.39)	209.04***	.56
Narcissism	19.72 ^a (.31)	25.45 ^b (.37)	38.09 ^c (.39)	142.92***	.47

Note. Different superscripts in each row indicate that means are significantly different, $p < .05$.
*** $p \leq .001$

Next, compared to Reserved and Socially Malevolent profiles, the Confident group was significantly lower on neuroticism, and higher on extraversion, agreeableness, conscientiousness, and openness to experience. Participants in this group were also significantly higher on narcissism than the Reserved group, and significantly lower on Machiavellianism, narcissism, and psychopathy than the Socially Malevolent group. Finally, compared to Reserved and Confident profile groups, the Socially Malevolent group was significantly lower on agreeableness, and higher on Machiavellianism, narcissism, psychopathy, and neuroticism. They were also significantly higher on extraversion and openness to experience than the Reserved group, and significantly lower on extraversion, conscientiousness, and openness to experience than the Confident group.

These post-hoc test results lend further support to the results of the MANOVA and MANCOVA, signifying that each profile is indeed distinct from the others.

4.4. Discussion

The present study used LPA to identify distinct profiles of personality traits represented by the FFM (McCrae & Costa, 1987) and DT (Paulhus & Williams, 2002) frameworks in an adult male sample. As this study was exploratory, no hypotheses were formulated regarding the number of profiles that would emerge or how they would differ from one another. However, the LPA resulted in three discrete profiles that differed significantly from one another on all eight FFM and DT traits. Effect sizes for these differences were notably large for every trait, ranging from $\eta^2 = .150$ for conscientiousness to $\eta^2 = .560$ for psychopathy. The unanimous statistical significance and strengths of effect for these trait differences demonstrate that the three profiles that emerged in this study are distinctly different from one another and can be effectively used to classify an individual on the basis of the distribution of their FFM and DT personality traits.

Based on their configurations of FFM and DT traits, the three profiles were labelled *Reserved*, *Confident*, and *Socially Malevolent*. Reserved individuals showed below-average scores on all traits except neuroticism, with particularly low scores on narcissism and extraversion. The Confident profile characterises individuals with above-average scores on all traits except Machiavellianism, psychopathy, and neuroticism. Lastly, Socially Malevolent individuals showed high scores on Machiavellianism, psychopathy, narcissism, and neuroticism, combined with below average scores on agreeableness and conscientiousness and average scores on openness to experience. In the context of how personality may be associated with OB, the Socially Malevolent profile is of particular interest, as individuals in this group scored significantly higher on all DT traits and

neuroticism than individuals in the other two groups, and evidence suggests (see Chapters 1 and 2) that these traits may be relevant to explanations of OB.

Although this study is the first to generate profiles deriving from both the FFM and DT models together, the results show some similarities with those of previous studies that have explored typologies generated from one of these two models. The distribution of FFM traits in the Confident profile mirrors what was originally referred to by Block (1971) as ego resilient, and what is labelled resilient in the ARC typology. However, neither the Reserved profile nor Socially Malevolent profile in this study align with the ARC profiles of overcontrollers or undercontrollers. Meanwhile, the Socially Malevolent profile lines up most closely with Garcia and MacDonald's (2017) high malevolent profile and Chabrol et al.'s (2015) dark tetrad profile, in that elevated scores on Machiavellianism, psychopathy, and narcissism are present in all three of these profiles. The distribution of DT traits in this study's Reserved profile is most similar to Garcia and MacDonald's (2017) benevolent profile, with low scores on all three DT traits being seen in both of these profiles. However, Chabrol et al. (2015) included sadism as a fourth trait in their analysis, and identified two profiles with a combination of high scores on some dark tetrad traits and low scores on others—but this pattern was not observed in the current study. Instead, all DT traits were low in the Reserved and Confident groups, while all three traits were high in the Socially Malevolent profile.

Given these variations, it is evident that there are distinct differences between this study's FFM and DT profiles and the FFM-only and DT or dark tetrad-only profiles reported in other studies. This divergence clearly demonstrates that an individual's constellation of traits may look different when a more holistic approach is taken with the incorporation of a wider range of personality traits. Likewise, profile distributions may differ as a consequence of the sample used. For instance, the differences between Chabrol et al.'s (2015) dark tetrad profiles and Garcia and MacDonald's (2017) DT profiles may

not necessarily be driven by the inclusion of sadism in Chabrol et al.'s (2015) study, but rather the fact that they used an adolescent sample as opposed to an adult one, unlike Garcia and MacDonald (2017). It is also possible that the differences were impacted by cultural variations, as Chabrol et al. (2015) used a French sample, while Garcia and MacDonald (2017) used a cross-national sample with large representation from the US, UK, Canada, and Australia. Consequently, as this study utilised a predominantly UK-based sample, Study 2 will build on its findings by exploring whether the profiles identified here are replicated when using a US-based sample.

4.4.1. Limitations and Conclusions

It is important to acknowledge this study's limitations. First, while this study was not explicitly aimed at a UK population, the nature of the data collection approach (social media, word-of-mouth, flyers posted on university campus, and Qualtrics recruitment services) resulted in a sample with 85.8% of participants residing in the UK. Nonetheless, this led to an opportunity to target participant recruitment at a different population in the following study; in so doing, similarities and differences between the profile distributions in the two studies can be discussed in relation to geographical variations, and the generalisability of the profiles found in this study can be better ascertained.

Second, due to methodological decisions made in the early stages of this research (see Chapter 3), only individuals who identify as male were eligible for participation in this study. Although this demographic homogeneity does not allow for the examination of gender differences, recent evidence indicates that gender is unlikely to influence individual differences in personality. A meta-synthesis by Zell et al. (2015) found that, across 106 meta-analyses, the differences between men and women in psychological research is small on average, with the majority of effects being classed as small or very small. This synthesis reported the ten domains in which gender differences are most pronounced, and personality is not among them. This compelling evidence supports the use of a male-only sample in

this series of studies, and indicates that the results may still be generalisable to female and mixed-gender groups.

Finally, this study was exploratory in nature, with the aim of establishing FFM- and DT-based personality profiles in a single community sample. The utility of these profiles is limited in the absence of any other variables with which to apply profile differences to. Thus, Study 2 will build on the results of this study by investigating whether the same trait distributions occur in a different community sample, and whether personality profiles are related to variations in attitudinal, cognitive, and behavioural factors including self-reported OB.

CHAPTER 5: BEYOND TRAITS - PERSONALITY FEATURES AND OFFENDING BEHAVIOUR IN A US MALE COMMUNITY SAMPLE

5.1. Introduction

Chapter 2 showed that personality traits have been examined extensively in relation to offending behaviour (OB). However, the lack of convergence in these investigations (see Chapter 1) calls for more exploration of the attitudinal and cognitive attributes that may impact relationships between traits and OB. In this way, research and clinical endeavours may be emboldened to look beyond traits or trait profiles in isolation, broadening their view to incorporate consideration of how these characteristics interact with other elements of individual difference that are associated with OB. Moreover, Chapters 1 and 2 highlighted the importance of parsing OB into different offence types, which may have different antecedents. Thus, Study 2 investigates the potential roles of level of personality functioning (LPF), interpersonal style (IS), empathy, irritability, and criminal thinking style (CTS) in mediating the relationships between personality trait profiles and different types of OB.

5.1.1. Level of Personality Functioning

Chapter 1 discussed LPF's empirical and theoretical links to personality traits and OB (see Section 1.2.2.). Having been introduced in DSM-5 (APA, 2013), this construct is still in its relative infancy, and the current study is the first to incorporate both trait profiles and LPF in an investigation of associations between personality and OB. LPF comprises self functioning (identity and self-direction) and interpersonal functioning (empathy and intimacy), and impairment in these areas has been linked to high scores on neuroticism (Sleep et al., 2020), Machiavellianism, and subclinical psychopathy (Zeigler-Hill & Besser, 2021). In addition, lower levels of personality functioning have been observed in violent offenders and child sex offenders relative to the general population (Garofalo et al., 2018). LPF also holds theoretical relevance to this thesis (see Chapter 1, Section 1.2.3.), as

this construct shows promising congruence with low levels of agency (self functioning) and communion (interpersonal functioning) within the interpersonal circumplex (Bender et al., 2011; Pincus, 2018). This illustrates its utility for inclusion as a potential mediator between personality profiles and OB in the present study.

5.1.2. Interpersonal Style

The interpersonal circumplex and its role within interpersonal theory was explained at length in Chapter 1 (Section 1.2.3.; see Figure 1.1 for a visual depiction). Interpersonal styles are central to this framework, as they are said to dictate how a person approaches all types of interpersonal interactions and relationships. Although there are eight interpersonal styles in this model, those which are positioned in the hostile-dominant quadrant of the interpersonal circle (Domineering, Vindictive, and Cold interpersonal styles) appear to be the most relevant to this thesis' investigation of personality and OB (see Chapter 1, Figure 1.2). This quadrant represents high agency and low communion, and the DT traits are also believed to reside in this location of the circumplex (Jones & Paulhus, 2011). This quadrant has been linked to a number of maladaptive behavioural outcomes, including criminality (Blackburn, 1998); institutional infractions (Dolan & Blackburn, 2006; Edens, 2009; Vernham et al., 2016); aggression (see Harris et al., 2014 for a review; Podubinski et al., 2016); and violence (Doyle & Dolan, 2006). However, the precise relationships between the interpersonal styles in this quadrant, personality profiles, and different types of OB has not yet been established. Given their strong links to OB (see Chapter 1), it is predicted that hostile-dominant interpersonal styles will be crucial to explaining the relationships between traits and OB. For this reason, the present study will focus specifically on Domineering, Vindictive, and Cold interpersonal styles as potential mediators of the relationship between personality profiles and OB.

5.1.3. Empathy

Empathy has critical links to this thesis' focus on the personality-based drivers of OB (see Chapter 1, Section 1.2.4 for a more detailed overview of this construct). Mangione et al. (2002) regard empathy as a stable personality trait in and of itself, and it is said to be integral to agreeableness within the FFM (Costa et al., 2001; Graziano & Eisenberg, 1997). A lack of empathy may represent the core of the DT traits (Heym et al., 2019), operating as the construct which weds these three traits together into one model. Moreover, empathy deficits have been implicated in a range of antisocial behavioural outcomes, including aggression, violence, and criminality (Reniers et al., 2011). Meta-analytic evidence unanimously suggests that empathy is lower in offenders than non-offenders (Jolliffe & Farrington, 2004; van Langen et al., 2014), and may be particularly integral to sexual offending (Schuler et al., 2019, 2021). As such, the present study will assess whether affective and cognitive empathy mediate relationships between personality profiles and different types of OB.

5.1.4. Irritability

Irritability is another individual difference factor that is frequently examined in relation to aggression, violence, and OB (see Chapter 1, Section 1.2.5. for a summary). This factor is believed to represent a stable component of personality (Bettencourt et al., 2006; Deveney et al., 2019). Empirical evidence suggests that irritability corresponds to high neuroticism and low agreeableness (Caprara, Alessandri, et al., 2013; Caprara, Barbaranelli, & Zimbardo, 1996), and as shown in Chapter 2, this combination of trait levels appears to be implicated in OB. Furthermore, irritability offers theoretical parallelism with the interpersonal framework, as it may play a key role in the way individuals with hostile-dominant interpersonal styles navigate their social world (see Chapter 1, Section 1.2.3.4.). For example, the tendency to anticipate hostility from others in interpersonal interactions and relationships, as theorised to occur in individuals with

hostile-dominant interpersonal styles, may be exacerbated when they also possess high levels of irritability. Thus, irritability may emerge as a fundamental mediator between personality traits and OB—particularly in offence types that involve interpersonal dynamics, such as violent and sexual offending.

5.1.5. Criminal Thinking Style

CTS represents attitudes, values, and beliefs that support criminal behaviour (Simourd, 1997), therefore holding important relevance to the present study's focus on the personality-based drivers of OB. This construct has been empirically linked to antisocial behaviour (Riopka et al., 2015); juvenile delinquency (Simourd & Andrews, 1994); prison misconduct (Gendreau et al., 1997); and recidivism (Andrews et al., 2006; Banse et al., 2013; Gendreau et al., 1996; Walters, 2012, 2016). Some evidence suggests that CTS is higher in violent offenders than property offenders (Simourd & van de Ven, 1999), and it may be lower in CSOs than other types of offenders (Boduszek & Hyland, 2012; Walters, 2006). Accordingly, in this study's examination of personality profiles and OB, the mediating role of CTS will be explored across different offence types. This construct is reviewed in more detail in Chapter 1, Section 1.2.6.

5.1.6. Personality Profiles

Based on a systematic review of the literature, Chapter 2 emphasised that researchers should adopt a profile approach to future investigations of personality traits and OB (see Sections 2.5. and 4.1.). Consequently, reflecting the best-practice recommendations set forth in Chapter 2, Study 1 (Chapter 4) elucidated personality trait profiles, comprising FFM and DT traits, in a predominantly UK-based male community sample. However, as summarised in Chapter 4, the literature on personality profiles shows a lack of convergence about which profiles emerge consistently across different samples (see Table 4.1). Moreover, as Study 1 was the first empirical endeavour to establish profiles comprising both the FFM and DT models together, their external validity has yet

to be determined. To that end, the present study will assess whether those profiles also emerge in a different sample.

5.1.6. The Current Study

This study will build and expand upon the findings of Study 1 (Chapter 4). First, it aims to ascertain whether the personality profiles that emerged in Study 1's UK-based community sample will also be observed in a US-based community sample. Second, this study aims to determine whether these personality profiles are related to scores on four types of OB: property, drug, sexual, and violent offending. Third, if those associations are found to be significant, LPF, IS, empathy, irritability, and CTS will be examined as potential mediators between profiles and each type of OB.

The following hypotheses were formulated on the basis of Chapter 1's comprehensive review of the literature:

- H₁: Levels of property, drug, sexual, and violent OB will differ based on trait profile membership (PM). If a darker profile emerges from the dataset, it will be positively associated with OB.
- H₂: Self functioning, interpersonal functioning, Domineering IS, Vindictive IS, Cold IS, affective empathy, cognitive empathy, irritability, and CTS will be associated with PM.
- H₃: Self functioning, interpersonal functioning, affective empathy, and cognitive empathy will be negatively associated with OB.
- H₄: Cold, Vindictive, and Domineering interpersonal styles; irritability; and CTS will be positively associated with OB.
- H₅: Self functioning, interpersonal functioning, Domineering IS, Vindictive IS, Cold IS, affective empathy, cognitive empathy, irritability, and CTS will mediate the relationships between PM and each type of OB.

5.2. Methods

5.2.1. Participants

A total of 210 adult males participated in this study. Inclusion criteria required participants to be male gender and aged 18 years or older. Participants ranged in age from

18 to 87 ($M = 45.73$, $SD = 17.07$). One hundred and ninety-seven participants (94.3%) were from the United States, whilst the remaining 13 were born elsewhere but were living in the US at the time of their participation.

5.2.2. Materials

Short Dark Triad (SD3; Jones & Paulhus, 2014). See Chapter 4 for a description of the SD3. Omega (ω) was used to assess the internal consistency of each subscale: Machiavellianism, $\omega = 0.76$; subclinical narcissism, $\omega = 0.79$; and subclinical psychopathy, $\omega = 0.72$.

International Personality Item Pool-Five Factor Model (IPIP-FFM; Goldberg, 1999). See Chapter 4 for a description of the IPIP-FFM. Internal consistency for each subscale were as follows: extraversion, $\omega = 0.75$; neuroticism, $\omega = 0.84$; agreeableness, $\omega = .76$; conscientiousness, $\omega = 0.56$; and openness to experience, $\omega = 0.75$.

Balanced Inventory of Desirable Responding Short Form (BIDR-16; Hart et al., 2015). The BIDR-16 is described in full in Chapter 4. In this study, ω 's of 0.62 for Impression Management (IM) and 0.61 for Self-Deceptive Enhancement (SDE) indicated sufficient scale reliability.

Level of Personality Functioning Scale-Brief Form (LPFS-BF; Hutsebaut et al., 2016). Level of Personality Functioning (LPF; Appendix G) was measured via the English language version of the LPFS-BF 2.0. This instrument contains 12 items that measure the four facets of LPF: *identity* (e.g., "I often do not know who I really am"), *self-direction* (e.g., "I have clear aims in my life and succeed in achieving those"), *empathy* ("I often have difficulty understanding the thoughts and feelings of others"), and *intimacy* (e.g., "There is almost no one who is really close to me"). These facets are grouped into two higher order domains: self functioning (identity and self-direction) and interpersonal functioning (empathy and intimacy). Respondents rate each item as 1 (yes, applies to me) or 2 (no, does not apply to me). Higher scores on this instrument indicate higher levels of

personality functioning. An initial validation of this scale by Hutsebaut et al. (2016) yielded adequate content validity and internal consistency, with Cronbach's α 's of .69 for the total scale, .57 for self functioning, and .65 for interpersonal functioning. In this study, internal consistency was assessed using omega and found to be sufficient: total scale, $\omega = .82$; self functioning, $\omega = .66$; interpersonal functioning, $\omega = .75$.

Inventory of Interpersonal Problems-Short Circumplex Form (IIP-SC; Soldz et al., 1995). Participants' self-reported interpersonal styles were measured using the IIP-SC (Appendix H), an abbreviated version of the IIP-C. This 32-item self-report instrument has demonstrated excellent internal consistency and test-retest reliability, as well as strong convergent validity with its longer counterparts (Soldz et al., 1995). The IIP-SC is divided into eight subscales, each representing an interpersonal style: 1) Domineering; 2) Vindictive; 3) Cold; 4) Socially avoidant; 5) Non-assertive; 6) Exploitable; 7) Overly nurturant; and 8) Intrusive. In the current study, omega's for the subscales ranged from $\omega = .74$ (Exploitable, Overly Nurturant) to $\omega = .87$ (Socially Avoidant). Responses are measured on a Likert scale ranging from strongly disagree to strongly agree, with higher scores reflecting higher levels of each interpersonal style.

Irritability Scale (Caprara, Cinanni, et al., 1985). The 30-item Irritability Scale (Appendix I) was used to measure irritability. Responses to statements such as "When I am tired I easily lose control" are measured on a Likert scale from strongly disagree to strongly agree, with higher scores indicating a greater proneness to react strongly to slight provocations. Ten items are reverse-scored (e.g., "I think I have a lot of patience"). The Irritability Scale has a test-retest reliability of .83 (Caprara, Cinanni, et al., 1985), and strong reliability ($\omega = .82$) in the current dataset.

Questionnaire of Cognitive and Affective Empathy (QCAE; Reniers et al., 2011). The QCAE (Appendix J) was used to measure empathy. With 31 items in total, this instrument contains five factors, which are split between two subscales that differentiate

between cognitive empathy (19 items) and affective empathy (12 items). Cognitive empathy (e.g., “I am good at predicting how someone will feel”) comprises perspective taking and online simulation, while affective empathy (e.g., “I get very upset when I see someone cry”) entails emotion contagion, proximal responsivity, and peripheral responsivity. Responses are measured on a Likert scale ranging from strongly disagree to strongly agree, with higher scores indicating higher levels of each type of empathy. Scores on the two subscales are further summed to provide a cumulative total empathy score. The QCAE has strong psychometric properties, including construct validity (Reniers et al., 2011); incremental validity (Reniers et al., 2011); convergent validity with Jolliffe and Farrington’s (2006) Basic Empathy Scale (cognitive empathy $r = .62$; affective empathy $r = .76$); and high reliability in the current study (cognitive empathy $\omega = .92$; affective empathy $\omega = .70$; total scale $\omega = .91$).

Criminal Sentiments Scale-Modified (Simourd, 1997). This 41-item scale (Appendix K) uses a 3-point Likert scale (disagree—neither agree nor disagree—agree) to measure attitudes toward the police (e.g., “Life would be better with fewer cops”), courts (e.g., “You cannot get justice in court”), and the law (e.g., “The law does not help the average person”), as well as tolerance for law violations (TLV; e.g., “A hungry man has the right to steal”) and identification with criminal others (ICO; e.g., “I have very little in common with people who never break the law”). Together, the Law, Court, and Police subscales assess general respect for the law and criminal justice system (Simourd, 1997). Meanwhile, the TLV subscale aligns with Sykes and Matza’s (1957) theory of neutralization, measuring justifications for illegal behaviour. Finally, the ICO subscale reflects evaluative judgements about individuals who break the law. These scaled are summed to provide a composite score of criminal sentiments or attitudes, with higher scores indicating higher levels of this construct. The CSS-M has good construct validity (Simourd, 1997), convergent validity (Skilling & Sorge, 2014), internal consistency

(Simourd & Olver, 2002), and predictive validity (Skilling & Sorge, 2014; Simourd & van de Ven, 1999). In the present study, the instrument exhibited strong reliability, with ω 's ranging from .63 (ICO) to .90 (total scale).

Self-Report Measure of Adult Offending (Teague et al., 2008). Self-reported adult offending histories were measured using an adapted version of the National Youth Survey (NYS; Elliott & Ageton, 1980; Elliott et al., 1985). The NYS was originally used to assess delinquency over a five-year period (1976-1980) in a national probability sample of more than 1700 Australian adolescents (Elliott & Ageton, 1980). Since then, it has been widely employed in studies that assess delinquent behaviour among adolescents and young adults (e.g., Brauer, 2009; McIntosh Fuller, 2012). The version of the NYS that was used in the present research (Appendix L) was adapted for use with adult offenders by Teague et al. (2008). The measure comprises 19 items across four subscales: violent (4 items), property (11 items), sexual (2 items), and drug offending (2 items). Respondents are asked to indicate how many times, from age 18 onwards, they have engaged in each instance of offending behaviour. Responses are measured on a 5-point Likert scale ranging from "never" to "20+ times". Reliability analyses conducted by Teague et al. (2008) indicated strong overall internal consistency ($\alpha = .88$ for the total scale). This instrument demonstrated very high reliability in the present study: total scale, $\omega = .97$; property, $\omega = .96$; violent, $\omega = .84$; drug, $\alpha = .85$; sexual, $\alpha = .78$.

5.2.3. Procedure

Ethical approval was obtained from the researcher's Departmental Research Ethics Committee (Reference RM/08-2019/075). Participants were then recruited to participate in a study about personality and offending behaviour using Qualtrics' recruitment service. Prospective participants were directed to complete the questionnaires online on Qualtrics. After providing informed consent and some demographic information (i.e., gender, age,

and nationality), they completed the questionnaires and navigated to a debriefing page²⁴. The SD3, IPIP-FFM, and BIDR-16 were presented together, with question order randomised; the remaining questionnaires were subsequently presented in random order. As in Study 1, standard quality checks were embedded into the questionnaire in an effort to ensure high-quality responses. Median completion time was 26.28 minutes.

5.3. Results

Before conducting analyses, the data were screened for integrity concerns. First, they were examined for extreme instances of socially desirable responding (see Chapter 3, Section 3.2.2.). The two sub-scales of the BIDR-16 were scored using the dichotomous scoring procedure recommended by Paulhus (1994) and examined for outliers. No outliers were found for the IM sub-scale, whereas 23 participants were identified as outliers on the SDE sub-scale. However, according to Paulhus (1991), controlling this variable has the potential to reduce the predictive validity of measures involving elements of self-deceptive positivity. As the DT represents such traits (Paulhus & Williams, 2002), no SDE outliers were removed from analyses. In addition, Shapiro-Wilk tests indicated that both subscales were non-normally distributed (p 's < 0.001). Given the nature of the variables and sample, it was expected that skewness and kurtosis would be present; however, the statistical tests chosen for this dataset are known to be robust against such violations of normality (Bray & Maxwell, 1985; Field, 2017; Preacher & Hayes, 2004, 2008; Weinfurt, 1995). For these reasons, despite skewness and kurtosis also being observed in some of the other measures (z -scores > ± 1.00), no adjustments were made prior to proceeding with the analyses.

Next, a missing value analysis was conducted to determine the nature of missing responses in the dataset. According to a multiple imputation analysis, 0.26% of the total data were missing. Little's MCAR test results indicated that responses were missing

²⁴ Study 2 forms (Participant Information Sheet, Consent Form, and Debrief Page) are provided in Appendix B.

completely at random (MCAR), $\chi^2 = 7328.4$, $df = 15541$, $p = 1.00$. Thus, the expectation maximization technique was used in SPSS (version 26) to replace missing responses in the dataset.

Means and standard deviations for each of the personality variables are provided in Table 5.1. Table 5.2 depicts intercorrelations between socially desirable response variables, FFM traits, and DT traits.

Table 5.1

Means (M) and Standard Deviations (SD) for FFM and DT Personality Traits

Personality variable	<i>M</i>	<i>SD</i>
Extraversion	29.36	6.59
Agreeableness	37.20	6.25
Conscientiousness	36.67	5.36
Openness to experience	36.72	6.07
Neuroticism	28.23	7.62
Machiavellianism	30.49	5.90
Psychopathy	23.40	6.02
Narcissism	28.35	6.44

IM was positively associated with agreeableness, conscientiousness, openness to experience, and narcissism, and was negatively associated with neuroticism, psychopathy, and Machiavellianism (all p 's $\leq .05$). Conversely, SDE was positively associated with extraversion, agreeableness, conscientiousness, openness to experience, and narcissism, but was negatively correlated with neuroticism (all p 's $\leq .01$). The two BIDR-16 subscales were also positively correlated with one another ($p < .01$). There was no evidence of multicollinearity, as assessed by Pearson correlation ($|r| < 0.9$).

5.3.1. Personality Profiles

A latent profile analysis (LPA) was conducted to examine whether profiles emerged representing combinations of the FFM and DT traits. Table 5.3 summarises model fit indices for 2-5 profile solutions. Results indicated that the 3-profile solution was the

Table 5.2*Correlations Between Personality Traits and Socially Desirable Response Variables*

Variable	1	2	3	4	5	6	7	8	9	10
1. Extraversion	-									
2. Agreeableness	.43**	-								
3. Conscientiousness	.26**	.35**	-							
4. Openness to experience	.43**	.52**	.37**	-						
5. Neuroticism	-.08	-.03	-.39**	-.02	-					
6. Machiavellianism	.14*	.09	.08	.17**	.46**	-				
7. Psychopathy	.16*	-.13	-.19**	.04	.53**	.60**	-			
8. Narcissism	.63**	.44**	.31**	.47**	.18**	.45**	.29**	-		
9. Impression management	.10	.41**	.37**	.16*	-.33**	-.24**	-.39**	.21**	-	
10. Self-deceptive enhancement	.23**	.32**	.40**	.27**	-.23**	.06	-.08	.39**	.37**	-

* $p \leq .05$ ** $p \leq .01$ **Table 5.3***Model Fit Indices For 2-5 Profile Solutions*

Profiles	BIC	Adj BIC	Entropy	VLMR	BLRT
2	4677.93	4598.71	0.80	0.006	< 0.001
3	4572.39	4464.65	0.78	0.017	< 0.001
4	4549.37	4413.12	0.80	0.368	< 0.001
5	4525.48	4360.71	0.82	0.271	< 0.001

Note. $N = 210$. Best model fit is indicated by the highest number of profiles with a) the lowest BIC and adjusted BIC, b) an entropy value closest to 1, and c) significant p values for VLMR and BLRT. For this dataset, the 3-profile solution was the best model fit.

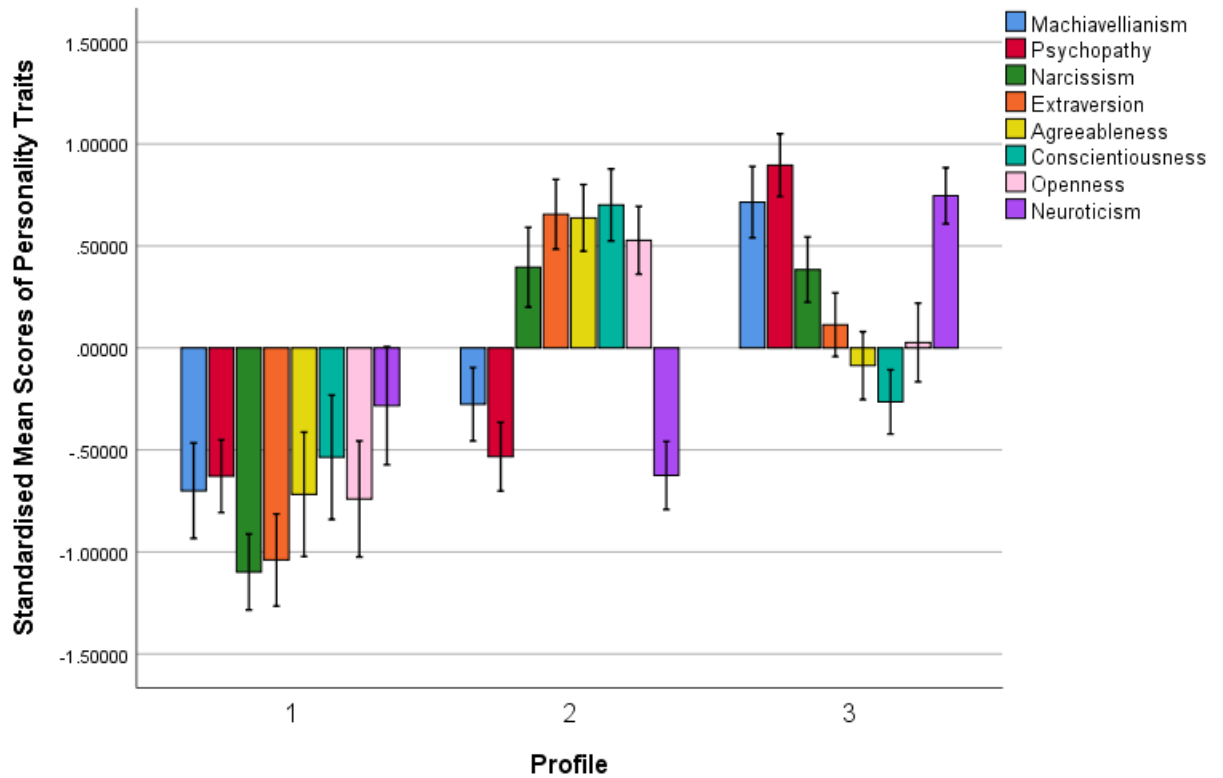
best fit for the data, and a visual inspection of the profiles confirmed that the 3-profile solution was not only practically meaningful, but also corresponded very closely to the 3-profile solution discovered in Study 1 (see Chapter 4). Figure 5.1 displays standardised mean personality trait scores for each profile. Profile 1 describes individuals ($n = 55$, 26.2%) with below-average scores on all traits. Mirroring Profile 1 in Study 1, narcissism and extraversion are particularly low in this group. Profile 2 characterises individuals ($n = 73$, 34.8%) with elevated scores on all traits except Machiavellianism, psychopathy, and neuroticism, which are below the mean in this group. Finally, Profile 3 describes participants ($n = 82$, 39%) who exhibited roughly average scores on openness to experience, agreeableness, and extraversion, below-average scores on conscientiousness, and elevated scores on all remaining traits. Participants in this group scored particularly high on all three DT traits and neuroticism.

5.3.2. Profile Comparisons

A one-way multivariate analysis of variance (MANOVA) was performed to assess whether participants in each profile group differed significantly from the other groups on each personality trait variable. Because sample sizes were unequal and the assumption of equality of covariance was violated (as indicated by Box's M $p < .001$), Pillai's trace was used when interpreting the MANOVA. Significant profile differences were found in the personality trait variables, $F(16, 402) = 37.38$, $p < .001$; Pillai's trace = 1.20; $\eta^2 = .600$. Next, a MANCOVA was performed with the BIDR-16 subscales, IM and SDE, as covariates. The MANCOVA confirmed that, with these two variables held constant, the significant differences in personality traits across profiles remained, $F(16, 398) = 32.80$, $p < .001$; Pillai's trace = 1.14; $\eta^2 = .600$. In both the MANOVA and MANCOVA, effect size was very large.

Figure 5.1

Standardised Mean Scores of Traits Across Three Personality Profiles



Note. Error bars represent 95% confidence intervals.

Post-hoc comparison tests demonstrated that participants differed in all eight personality trait variables across profiles. These results are summarised in Table 5.4. For all post-hoc tests, Games Howell was used when the assumption of homogeneity of variances was violated (as evidenced by Levene's test $p < .05$), while Bonferroni was used when homogeneity of variances was present (Levene's test $p > .05$). Compared to Profiles 2 and 3, individuals in Profile 1 were significantly lower on Machiavellianism, narcissism, extraversion, agreeableness, and openness to experience. They were also significantly lower on conscientiousness than individuals in Profile 2, and lower on psychopathy and neuroticism than participants in Profile 3. Next, compared to Profiles 1 and 3, participants in Profile 2 were significantly higher on extraversion, agreeableness, conscientiousness, and openness to experience. Moreover, they were significantly higher than participants in

Table 5.4*Means, Standard Errors, and Mean Differences Across Observed Personality Profiles*

Variable	Profile 1	Profile 2	Profile 3	Univariate	
	<i>Reserved</i>	<i>Confident</i>	<i>Socially Malevolent</i>		
	(<i>n</i> = 55)	(<i>n</i> = 73)	(<i>n</i> = 82)	<i>F</i> (2, 205)	η^2
Extraversion	22.51 ^a (.74)	33.68 ^b (.57)	30.11 ^c (.52)	74.23***	.42
Agreeableness	32.71 ^a (.95)	41.18 ^b (.51)	36.65 ^c (.52)	27.00***	.22
Conscientiousness	33.80 ^a (.82)	40.43 ^b (.48)	35.25 ^a (.42)	25.35***	.20
Openness to experience	32.23 ^a (.86)	39.92 ^b (.50)	36.89 ^c (.59)	26.70***	.21
Neuroticism	26.07 ^a (1.1)	23.47 ^a (.64)	33.92 ^b (.53)	52.05***	.34
Machiavellianism	26.36 ^a (.69)	28.86 ^b (.53)	34.71 ^c (.52)	49.38***	.33
Psychopathy	19.62 ^a (.54)	20.19 ^a (.51)	28.80 ^b (.47)	95.48***	.48
Narcissism	21.28 ^a (.60)	30.90 ^b (.63)	30.83 ^b (.52)	74.23***	.42

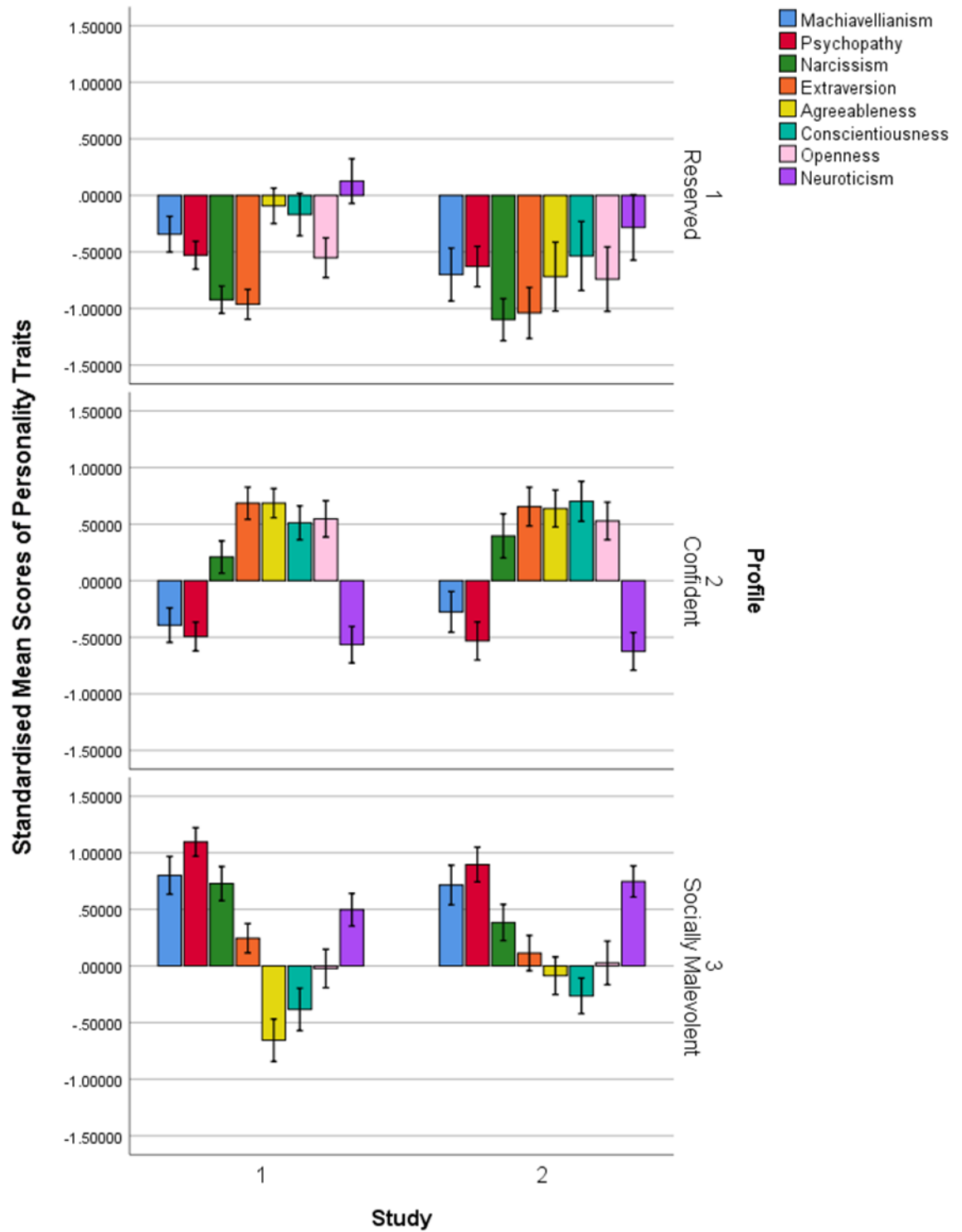
Note. Different superscripts in each row indicate that means are significantly different, $p < .05$.
*** $p \leq .001$

Profile 1 on Machiavellianism and narcissism. However, individuals in Profile 2 were significantly lower on Machiavellianism, psychopathy, and neuroticism than those in Profile 3. Finally, compared to Profiles 1 and 2, participants in Profile 3 were significantly higher on Machiavellianism, psychopathy, and neuroticism. They were also significantly higher on narcissism, extraversion, agreeableness, and openness to experience than individuals in Profile 1, and significantly lower on extraversion, agreeableness, conscientiousness, and openness to experience than participants in Profile 2.

After establishing the three profiles that emerged in this dataset, a visual inspection of the profiles indicated that Profiles 1, 2, and 3 appear to be highly similar across the two studies (see Figure 5.2 for a side-by-side comparison). Consequently, three Hotelling's T^2 analyses were conducted to compare the profiles of Study 2 with those of Study 1. The

Figure 5.2

Side-by-side Comparison of Profiles in Studies 1 and 2



Note. Error bars represent 95% confidence intervals.

independent variable in each analysis was study (Study 1 vs Study 2), while the dependent variables were standardised scores (z -scores) on each of the eight personality traits that make up the profiles. To control for Type 1 error across multiple tests, Bonferroni adjustment was applied whereby the typical significance level of .05 was divided by the number of dependent variables in the analysis. This resulted in significance being set to $p \leq .00625$, with 99.375% confidence interval.

First, Profile 1 was compared across the two studies (Study 1 $n = 110$; Study 2 $n = 55$). There was homogeneity of variance-covariance matrices, as assessed by Box's test of equality of covariance matrices ($p = .822$). The analysis revealed that there was a statistically significant difference in the combined personality traits across the two studies, $F(8, 156) = 4.93, p < .001$; Wilks' $\Lambda = .798$; $\eta_p^2 = .202$. Pairwise comparisons showed that Profile 1 in Studies 1 and 2 differed significantly in agreeableness ($p < .001$), with this z -scores of this trait being higher in Study 1 than Study 2. However, Profile 1 in the two studies did not differ on any of the other traits (p 's all $\geq .012$). Because of the strong similarity in this profile across the two studies, Profile 1 was subsequently given the same label as in Study 1 (*Reserved*).

Next, Profile 2 was compared across the two studies (Study 1 $n = 117$; Study 2 $n = 73$). The assumption of homogeneity of variance-covariance matrices was violated, as assessed by Box's M ($p = .021$). Pillai's trace was therefore selected for interpretation of the analysis. There was no difference in the combined personality traits across the two studies, $F(8, 181) = 0.697, p = .694$; Pillai's trace = .030; $\eta_p^2 = .030$. Pairwise comparisons showed that Profile 2 in the two studies did not differ on any of the traits (p 's all $\geq .111$). Accordingly, Profile 2 was given the same label as in Study 1 (*Confident*).

Finally, Profile 3 was compared across studies (Study 1 $n = 105$; Study 2 $n = 82$). Again Pillai's trace was used for interpretation due to a significant Box's M result ($p = .028$). There was a statistically significant difference in the combined personality traits of

Profile 3 across the two studies, $F(8, 178) = 4.60, p < .001$; Pillai's trace = .171; $\eta^2 = .171$. Pairwise comparisons revealed that Profile 3 in Studies 1 and 2 differed significantly in narcissism ($p = .002$), which was higher in Study 1 than Study 2, and in agreeableness ($p < .001$), which was lower in Study 1 than Study 2. Although Profile 3 is not identical across these two studies, it is highly similar, with six of the eight included traits showing no difference. Thus, Profile 3 was given the same label in this study as in Study 1 (*Socially Malevolent*).

5.3.3. Relationships Between Personality Profiles and Offending Behaviour

Next, a MANOVA was undertaken with this study's sample to assess whether there were differences in OB on the basis of profile membership (H_1). The independent variable was personality profile (Reserved, Confident, or Socially Malevolent), and the dependent variables were property, drug, sexual, and violent offending. Descriptive statistics are presented in Table 5.5. Box's M test indicated that the assumption of equality of covariance matrices was violated ($p < .001$). The results of the MANOVA showed that there was a significant difference in OB on the basis of profile, $F(8, 410) = 5.04, p < .001$, Pillai's trace = .179, $\eta^2 = .090$. Follow-up univariate ANOVAs revealed that scores on all four types of OB differed according to profile: property offending, $F(2, 207) = 21.15, p < .001, \eta^2 = .170$; drug offending, $F(2, 207) = 8.26, p < .001, \eta^2 = .074$; sexual offending, $F(2, 207) = 11.26, p < .001, \eta^2 = .098$; violent offending, $F(2, 207) = 12.45, p < .001, \eta^2 = .107$.

Games Howell²⁵ post-hoc tests were examined to assess the nature of these differences. Property offending was higher in Reserved participants than Confident ones ($p = .044$), and it was higher in the Socially Malevolent group than both the Reserved group ($p < .001$) and the Confident group ($p < .001$). Drug offending was higher in the Socially

²⁵ Games Howell was used instead of Bonferroni due to a significant result for Levene's test on all four DVs (Field, 2017).

Table 5.5*Means (M) and Standard Deviations (SD) for OB per Profile*

Profile	Property offending (Range: 11-55)		Drug offending (Range: 2-10)		Sexual offending (Range: 2-10)		Violent offending (Range: 4-20)	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Reserved (<i>n</i> = 55)	13.84	4.78	2.67	1.69	2.27	0.73	5.10	2.04
Confident (<i>n</i> = 73)	12.17	1.91	2.26	0.82	2.14	0.45	4.70	1.16
Socially Malevolent (<i>n</i> = 82)	19.08	10.13	3.38	2.29	2.94	1.63	6.60	3.44
Total (<i>n</i> = 210)	15.30	7.52	2.81	1.80	2.49	1.17	5.55	2.62

Malevolent group than the Confident group ($p < .001$), but there were no differences between the Confident and Reserved groups ($p = .224$) or between the Socially Malevolent and Reserved groups ($p = .096$). Sexual offending was higher in the Socially Malevolent group than the Reserved group ($p = .004$) and the Confident group ($p < .001$), but the Confident and Reserved groups did not differ ($p = .461$). Violent offending was also higher in the Socially Malevolent group than the Reserved group ($p = .005$) and the Confident group ($p < .001$), but did not differ between the Confident and Reserved groups ($p = .397$).

Descriptive analyses were also run to assess the proportion of participants who reported never having engaged in any OB compared to those who had reported engaging in at least one instance of OB at some point in their lives. Results showed that 29.5% of the sample ($n = 62$) had never engaged in any OB, while 70.5% of the sample ($n = 148$) had. Next, a chi-square was conducted to test whether personality profiles differed significantly between the two groups (no offending vs. some offending). The results showed that the two groups differed significantly on profile, $p = .025$. The proportion of participants with the Socially Malevolent profile was higher among the some offending group (43.2%) than

the no offending group (29%). There was also a higher proportion of Confident profiles among the no offending group (48.4%) than the some offending group (29.1%).

5.3.4. Relationships Between Profiles, Potential Mediators, and Offending Behaviour

Having established that OB differed significantly based on profile membership, a series of mediation analyses were undertaken to ascertain whether these relationships were mediated by level of personality functioning (self functioning and interpersonal functioning); interpersonal style (Cold, Domineering, and Vindictive interpersonal styles); empathy (affective and cognitive empathy); irritability; or criminal thinking style (H₅). Descriptive statistics for each of these variables are presented in Table 5.6. However, before running mediation analyses, a series of MANOVAs and ANOVAs was conducted to test whether profile membership was significantly related to the potential mediators (H₂), and correlation analyses were run to check that the potential mediators were significantly related to each type of OB (H₃ and H₄). Mediation analyses only included potential mediators for which both of these conditions were satisfied (Baron & Kenny, 1986). A correlation comatrix for all potential mediators and OB is provided in Table 5.7.

Table 5.6

Means (M) and Standard Deviations (SD) for All Potential Mediators per Profile

Variable	Profile							
	<i>Reserved</i> (<i>n</i> = 55)		<i>Confident</i> (<i>n</i> = 73)		<i>Socially Malevolent</i> (<i>n</i> = 82)		Total sample (<i>n</i> = 210)	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Self functioning	9.76	1.62	10.89	1.24	9.43	1.60	10.03	1.62
Interpersonal functioning	9.78	1.83	11.15	1.22	9.55	1.93	10.17	1.83
Cognitive empathy	59.89	13.62	74.06	9.15	73.23	9.21	70.02	12.10
Affective empathy	36.14	6.93	39.47	5.43	40.52	5.18	39.01	6.01
Domineering interpersonal style	8.62	3.06	7.54	2.73	11.64	3.67	9.42	3.68
Cold interpersonal style	12.02	3.62	8.26	3.00	12.27	3.47	10.81	3.83
Vindictive interpersonal style	9.95	2.83	7.51	2.65	12.27	3.57	10.01	3.69
Irritability	81.81	13.23	77.00	12.42	95.88	9.71	85.63	14.35
Criminal thinking style	11.50	4.98	12.73	4.92	11.45	5.97	11.91	5.38

Table 5.7

Correlations Between All Potential Mediators and OB

Variable	Offending Behaviour			
	Property offending	Drug offending	Sexual offending	Violent offending
Self functioning	-.385**	-.249**	-.335**	-.334**
Interpersonal functioning	-.433**	-.365**	-.345**	-.381**
Cognitive empathy	.006	-.011	.004	-.007
Affective empathy	-.001	-.101	.020	-.026
Domineering interpersonal style	.456**	.279**	.405**	.362**
Cold interpersonal style	.351**	.260**	.335**	.276**
Vindictive interpersonal style	.508**	.337**	.396**	.425**
Irritability	.424**	.291**	.332**	.355**
Criminal thinking style	-.091	-.110	-.010	-.057

** $p \leq .01$

* $p \leq .05$

5.3.4.1. Level of Personality Functioning

First, results of a MANOVA showed that there was a significant difference in level of personality functioning based on personality profile, $F(4, 414) = 11.11, p < .001$, Pillai's trace = .194, $\eta^2 = .097$. Follow-up univariate ANOVAs confirmed that this difference was significant for both self functioning, $F(2, 207) = 19.58, p < .001, \eta^2 = .159$, and interpersonal functioning $F(2, 207) = 19.35, p < .001, \eta^2 = .158$. Thus, H_2 was supported. Games Howell post-hoc tests revealed that both self functioning and interpersonal functioning were higher in the Confident group than the Reserved group (p 's $< .001$) and the Socially Malevolent group (p 's $< .001$). No differences were present on either variable between the Reserved group and the Socially Malevolent group.

Next, relationships between these variables and OB were assessed. As shown in Table 5.7, self and interpersonal functioning were both negatively correlated with all types of OB (p 's $\leq .01$), supporting H_3 . Thus, self and interpersonal functioning were both included as mediators in the mediation analyses.

5.3.4.2. Empathy

A MANOVA was conducted to assess whether empathy differed according to profile. There was a significant difference in empathy, $F(4, 414) = 15.67, p < .001$, Pillai's trace = .263, $\eta^2 = .131$. Follow-up ANOVAs showed that this difference was significant for both types of empathy: affective, $F(2, 207) = 9.83, p < .001, \eta^2 = .087$; cognitive, $F(2, 207) = 34.67, p < .001, \eta^2 = .251$. These results supported H₂. Post-hoc tests revealed that affective empathy was significantly lower in the Reserved group than the Confident group ($p = .01$) and the Socially Malevolent group ($p < .001$). Cognitive empathy was also significantly lower in the Reserved group than the Confident group ($p < .001$) and the Socially Malevolent group ($p < .001$). There were no differences between the Confident and Socially Malevolent group on either variable.

Despite the significant relationship between both types of empathy and personality profile, there was no relationship between cognitive or affective empathy and any type of OB (see Table 5.7). Thus, H₃ was not supported, and empathy was not included in the mediation analyses.

5.3.4.3. Interpersonal Style

Results of a MANOVA showed that there was a significant difference in interpersonal style (IS) based on profile, $F(16, 402) = 13.45, p < .001$, Pillai's trace = .697, $\eta^2 = .349$. Follow-up univariate ANOVAs confirmed that this difference was significant for all eight interpersonal styles (all p 's $< .001$). However, following a review of the literature (see Chapter 1), it was decided that only the interpersonal styles positioned in the upper-left quadrant of the interpersonal circle (i.e., Domineering, Vindictive, and Cold interpersonal styles) would be explored, as they represent the hostile-dominant area of the interpersonal circumplex and are of most direct relevance to this research. The ANOVA results were as follows, supporting H₂: Domineering, $F(2, 207) = 33.78, p < .001, \eta^2 = .246$; Vindictive, $F(2, 207) = 46.07, p < .001, \eta^2 = .308$; Cold, $F(2, 207) = 32.41, p < .001, \eta^2 = .238$. Bonferroni post-hoc tests showed that the Socially Malevolent group was

significantly higher on Domineering IS than the Confident ($p < .001$) and Reserved ($p < .001$) group, but these two groups did not differ on this style. Meanwhile, all groups differed from one another on Vindictive IS (all p 's $< .001$), with the Socially Malevolent group scoring the highest, followed by Reserved, and the Confident group scoring lowest on this style. Finally, Cold IS was significantly higher in Socially Malevolent ($p < .001$) and Reserved ($p < .001$) than Confident participants, and significantly higher in Reserved than Confident participants ($p < .001$), but the Socially Malevolent and Reserved groups did not differ on this variable. Pearson's correlations also showed significant positive relationships between these three interpersonal styles and all types of OB (all p 's $\leq .01$; see Table 5.7), supporting H₄. Domineering, Vindictive, and Cold interpersonal styles were therefore included in all mediation analyses.

5.3.4.4. Irritability

A one-way ANOVA showed that levels of irritability differed by profile, $F(2, 207) = 54.54$, $p < .001$, $\eta^2 = .345$, thereby supporting H₂. Bonferroni post-hoc tests showed that irritability was significantly higher in the Socially Malevolent group than the Confident group ($p < .001$) and the Reserved group ($p < .001$), but there was no difference between the Confident and Reserved groups. As Pearson's correlations also showed that irritability was significantly positively correlated with each type of OB (see Table 5.7), H₄ was supported and this variable was included in all mediation analyses.

5.3.4.5. Criminal Thinking Style

Lastly, results of an ANOVA showed that criminal thinking style did not differ on the basis of profile membership, $F(2, 207) = 1.31$, $p = .271$. In addition, Pearson's correlations showed that there was no relationship between criminal thinking style and any type of OB. H₂ and H₄ were therefore not supported. Given these null findings, no further analyses were undertaken with this variable.

5.3.4.6. Mediation Analyses

Following the results of the MANOVAs, ANOVAs, and Pearson's correlations, mediation analyses were run using Model 4 of the PROCESS macro for SPSS (version 4.0; Hayes, 2022) to test H₅. Profile was the independent variable (X), and the mediators were self functioning (M₁), interpersonal functioning (M₂), Domineering IS (M₃), Vindictive IS (M₄), Cold IS (M₅), and irritability (M₆). The dependent variables were property offending (Y₁), drug offending (Y₂), sexual offending (Y₃), and violent offending (Y₄), which resulted in four mediation models being tested, as the PROCESS macro could only accommodate one dependent variable per analysis.

Indicator coding was used for all analyses, with the Socially Malevolent profile chosen as the reference group because post-hoc tests following the ANOVAs consistently showed that this profile was most different from the other two. Thus, the pairwise comparisons in the mediation analyses were Socially Malevolent vs Confident and Socially Malevolent vs Reserved. For all analyses, bootstrapping was performed with 5000 re-samples, and a 95% confidence interval was used. Regression coefficients are reported in unstandardised form (Hayes, 2022). Mediation is said to have occurred when CIs for the indirect effect do not contain zero (Preacher & Hayes, 2004); however, the results of each mediation analysis were also confirmed with a Sobel test.

5.3.4.6.1. Property offending. Results of the mediation analysis suggested that the difference in property offending between the Socially Malevolent and Confident profile groups was mediated by interpersonal functioning, $b = -1.15$, $SE = .55$, 95% CI [-2.28, -0.12], Sobel = 2.06, $p = .039$, and Vindictive IS, $b = -2.76$, $SE = 1.00$, 95% CI [-4.83, -0.90], Sobel = 2.61, $p = .009$. The difference in property offending between the Socially Malevolent and Reserved profile groups was also mediated by Vindictive IS, $b = -1.35$, $SE = .57$, 95% CI [-2.59, -0.37], Sobel = 2.30, $p = .022$. Self functioning, Domineering IS and Cold IS, and irritability did not mediate any differences in this type of offending. These results partially supported H₅ for property offending.

Although the analysis was conducted with all mediators in one model, for ease of interpretation, these results have been presented in three separate diagrams: level of personality functioning (Figure 5.3), interpersonal style (Figure 5.4), and irritability (Figure 5.5). In all mediation diagrams, for paths *a* and *b*, dotted lines denote non-significance and unbroken lines indicate significant pathways.

5.3.4.6.2. Drug offending. The difference in drug offending between the Socially Malevolent and Confident profiles was mediated by interpersonal functioning, $b = -0.42$, $SE = .18$, 95% CI [-0.79, -0.07], Sobel = 2.67, $p = .007$. No other significant mediations were present in this model. H₅ was therefore partially supported for drug offending. These results are presented in Figure 5.6 (level of personality functioning), Figure 5.7 (interpersonal style), and Figure 5.8 (irritability).

5.3.4.6.3. Sexual offending. Results indicated that the differences in sexual offending were not mediated by any of the potential mediators included in this model (see Figures 5.9, 5.10, and 5.11), indicating that H₅ was not supported for this offence type.

5.3.4.6.4. Violent offending. The differences in violent offending between the Socially Malevolent and Confident profiles were mediated by interpersonal functioning, $b = -0.41$, $SE = .18$, 95% CI [-0.78, -0.06], Sobel = 1.95, $p = .051$, and Vindictive IS, $b = -0.99$, $SE = .38$, 95% CI [-1.78, -0.29], Sobel = 2.51, $p = .012$. The differences in violent offending between the Socially Malevolent group and the Reserved group were also mediated by Vindictive IS, $b = -0.48$, $SE = .21$, 95% CI [-0.94, -0.12], Sobel = 2.28, $p = .026$. No other significant mediations were detected in the model. H₅ was therefore partially supported for violent offending. These results are shown in Figures 5.12, 5.13, and 5.14.

Figure 5.3

Mediation Results for Profile (X), LPF (M), and Property Offending (Y)

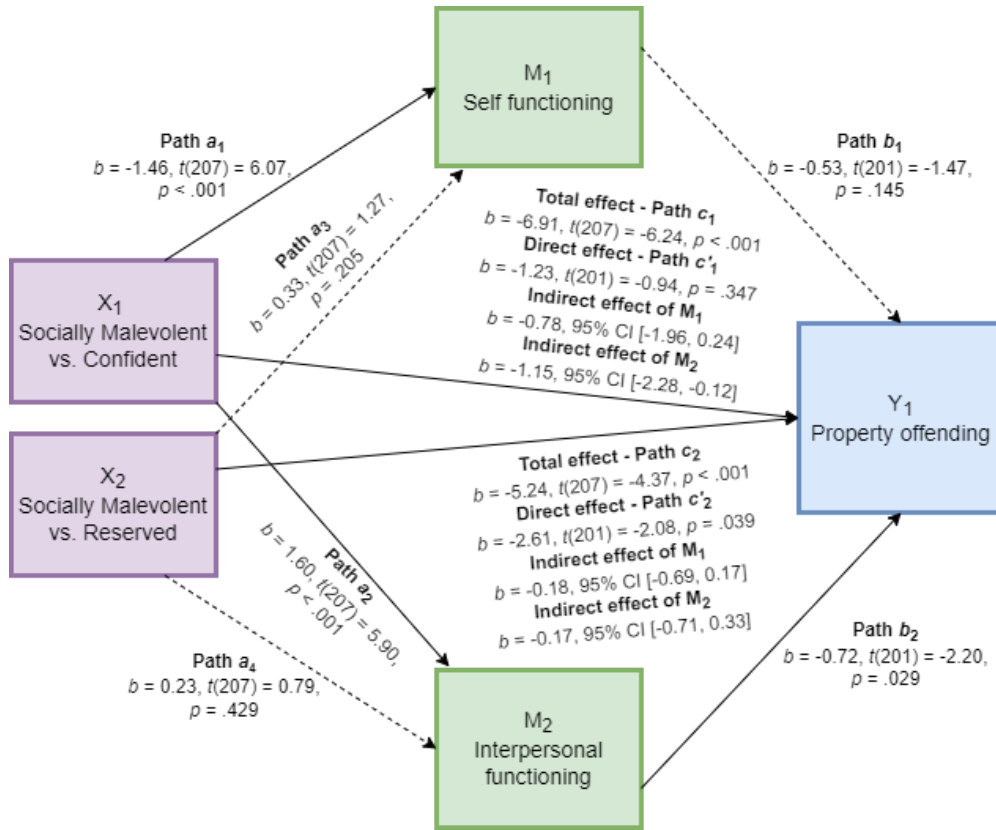


Figure 5.4

Mediation Results for Profile (X), IS (M), and Property Offending (Y)

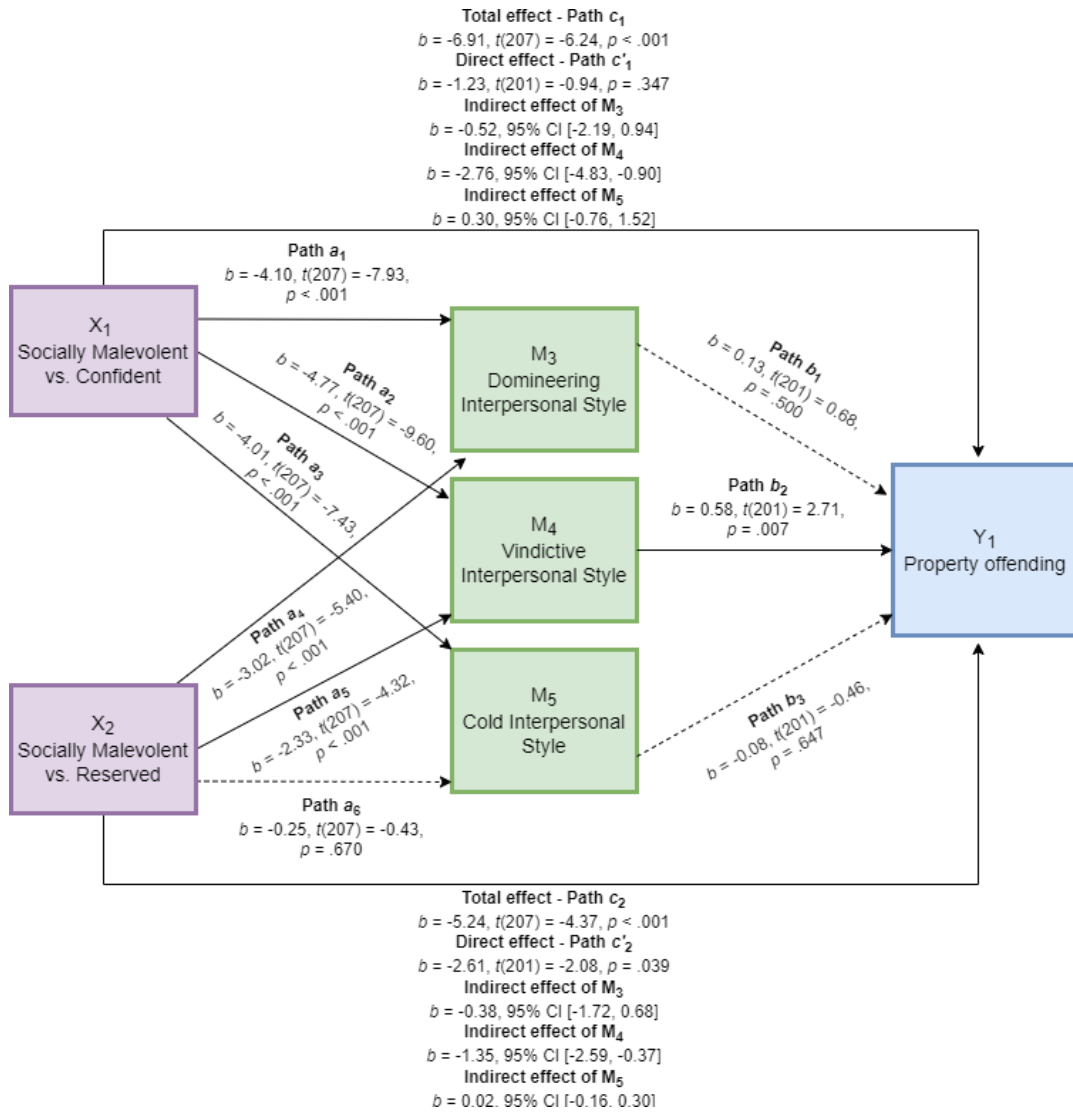


Figure 5.5

Mediation Results for Profile (X), Irritability (M), and Property Offending (Y)

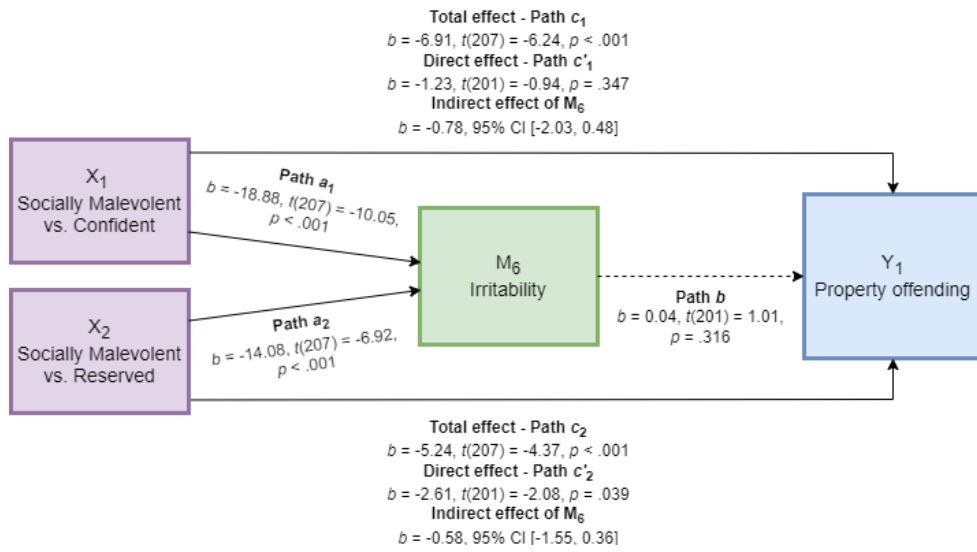


Figure 5.6

Mediation Results for Profile (X), LPF (M), and Drug Offending (Y)

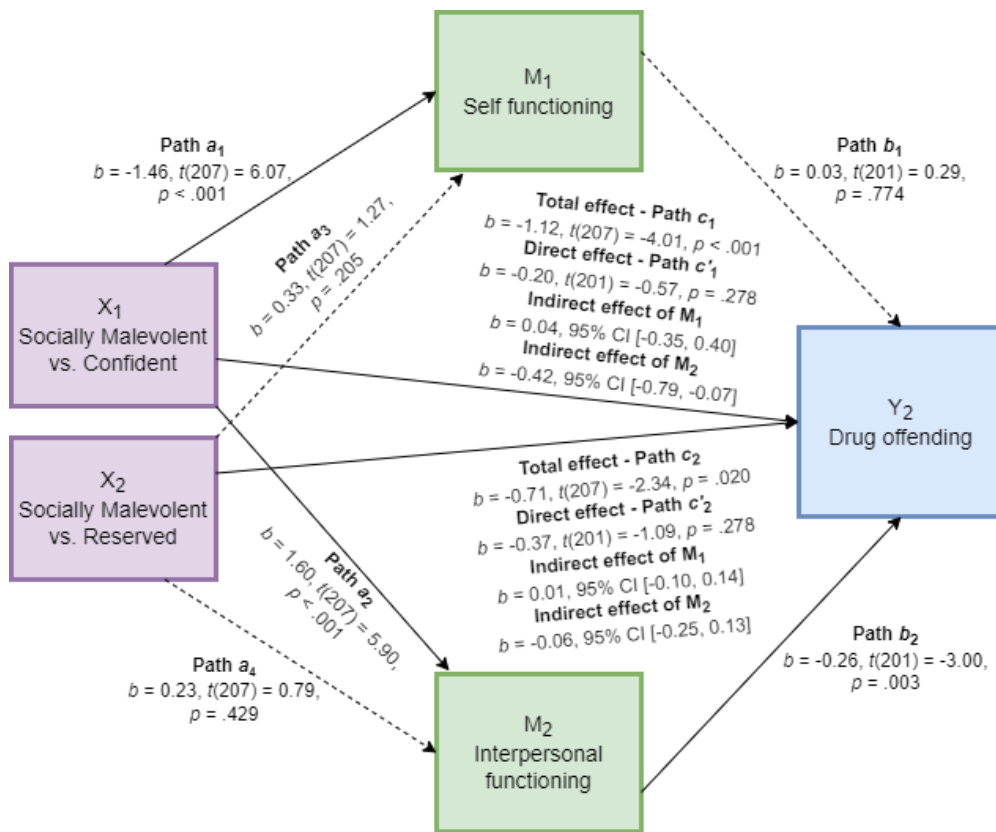


Figure 5.7

Mediation Results for Profile (X), IS (M), and Drug Offending (Y)

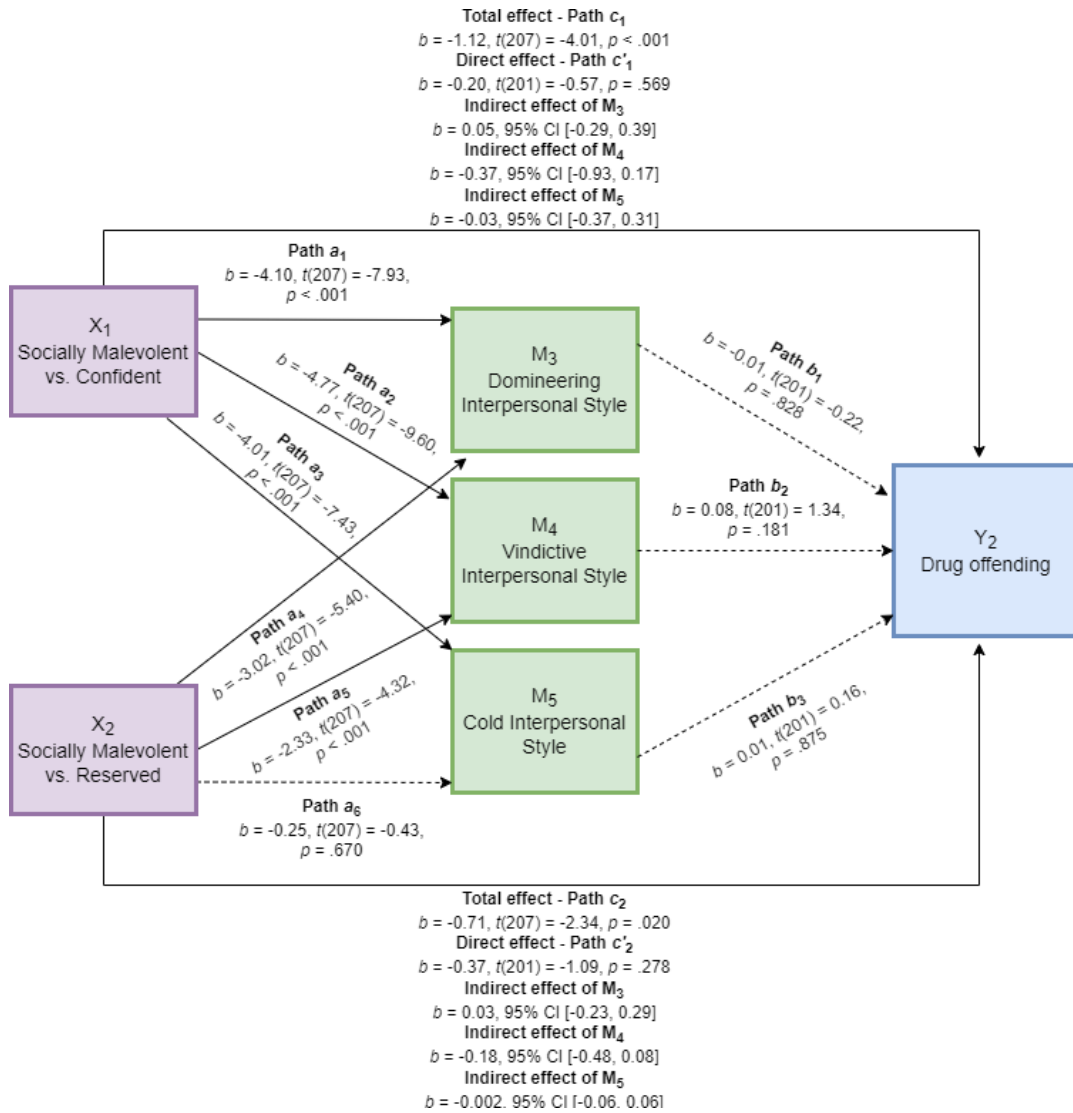


Figure 5.8

Mediation Results for Profile (X), Irritability (M), and Drug Offending (Y)

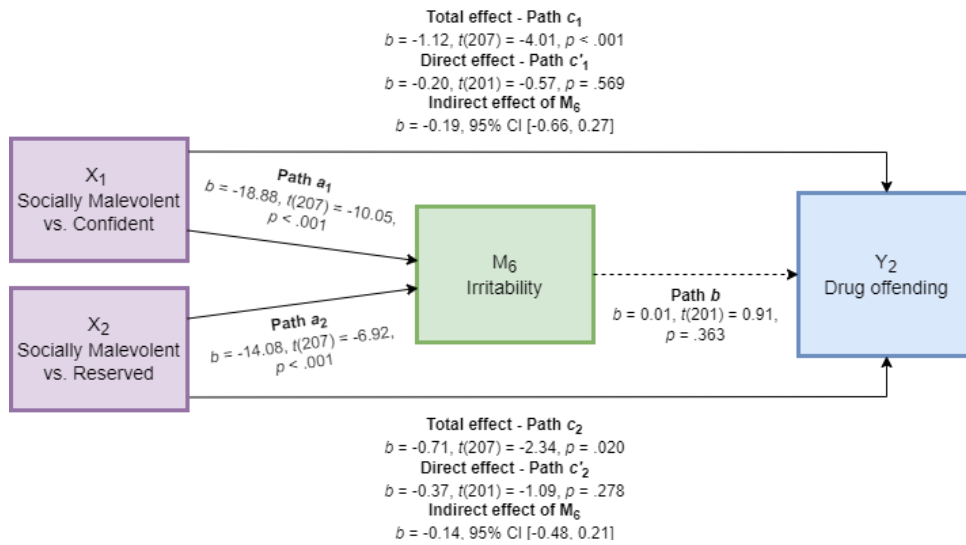


Figure 5.9

Mediation Results for Profile (X), LPF (M), and Sexual Offending (Y)

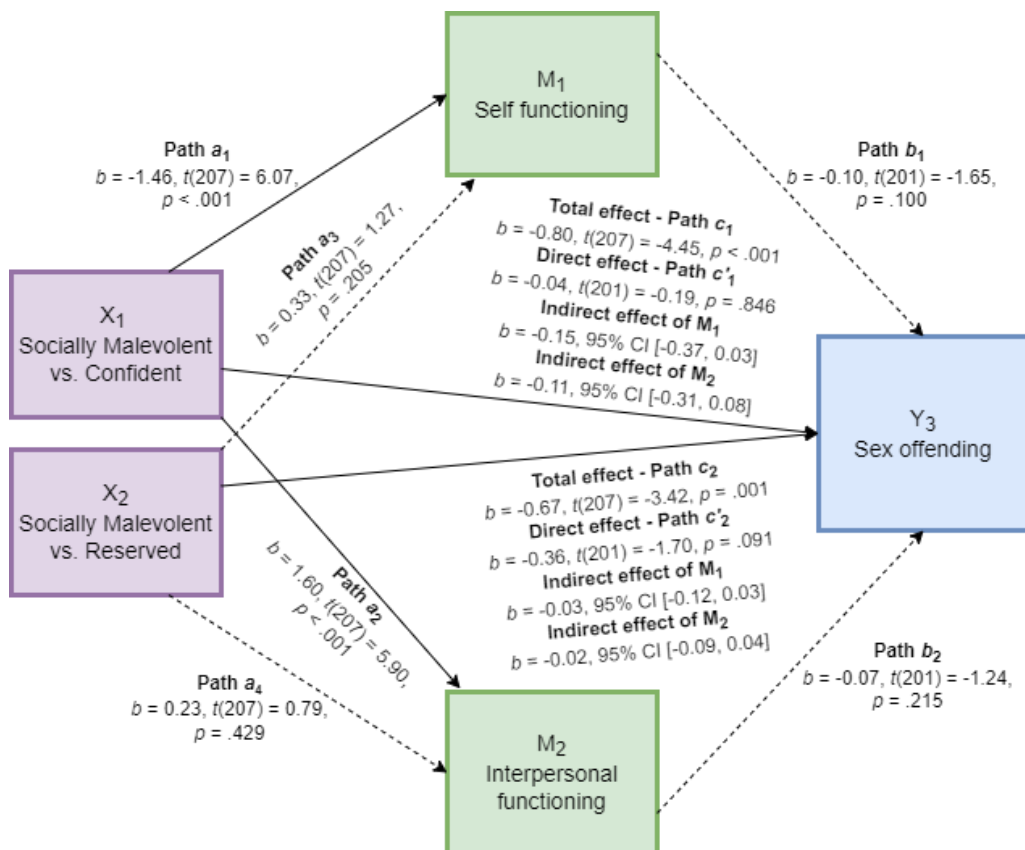


Figure 5.10

Mediation Results for Profile (X), IS (M), and Sexual Offending (Y)

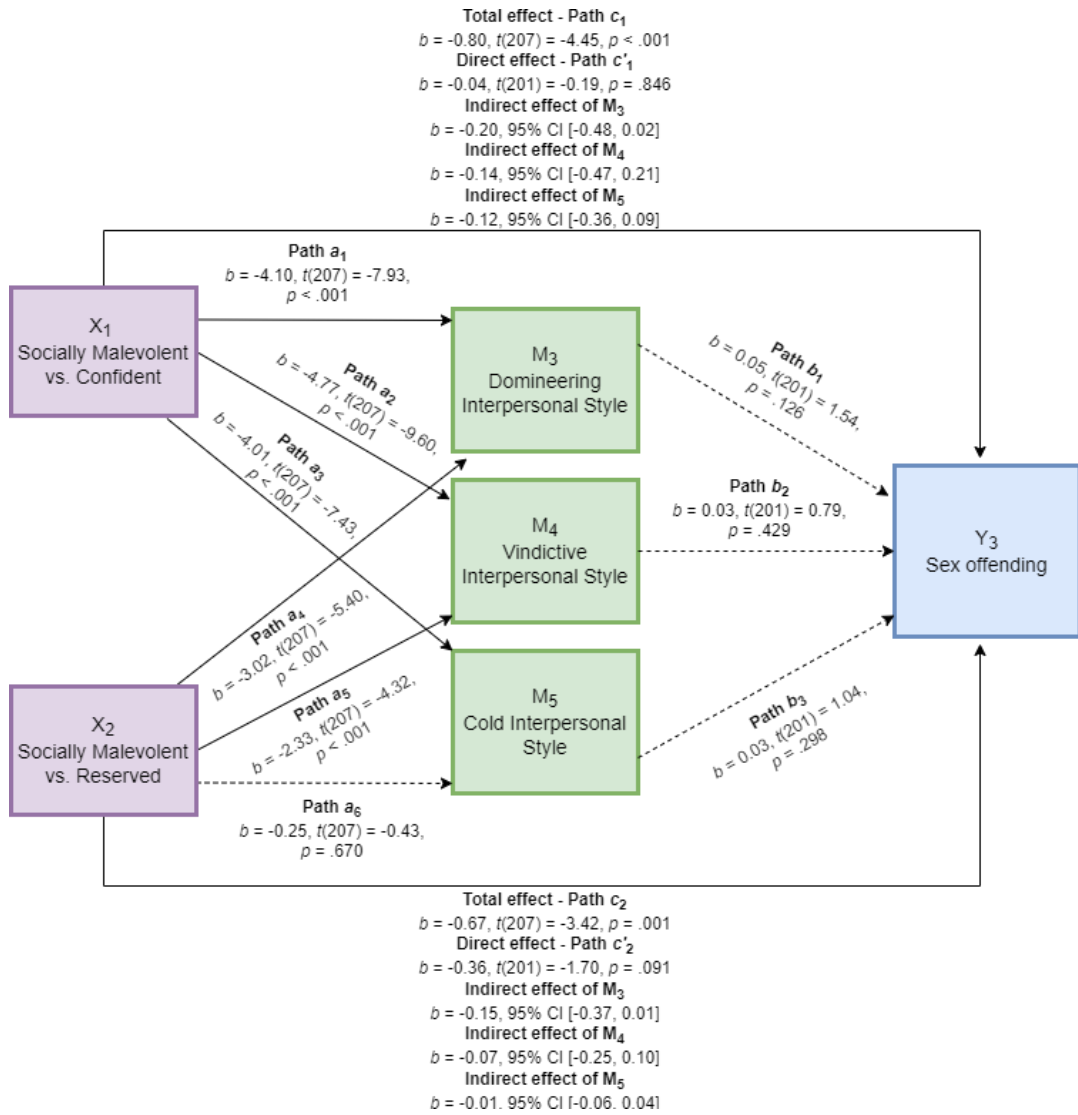


Figure 5.11

Mediation Results for Profile (X), Irritability (M), and Sexual Offending (Y)

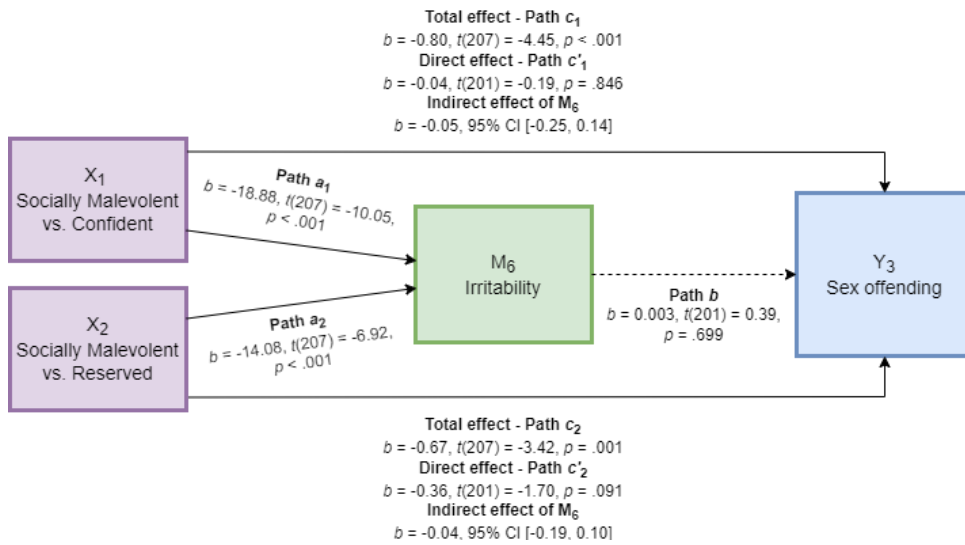


Figure 5.12

Mediation Results for Profile (X), LPF (M), and Violent Offending (Y)

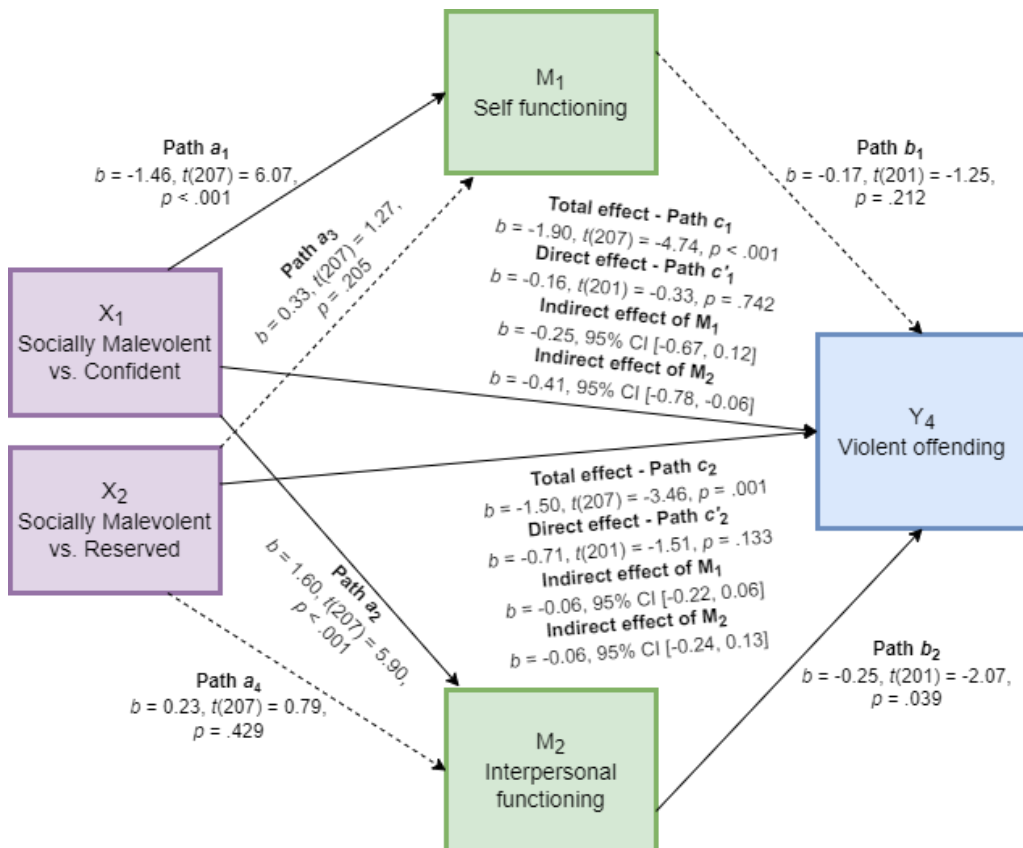


Figure 5.13

Mediation Results for Profile (X), IS (M), and Violent Offending (Y)

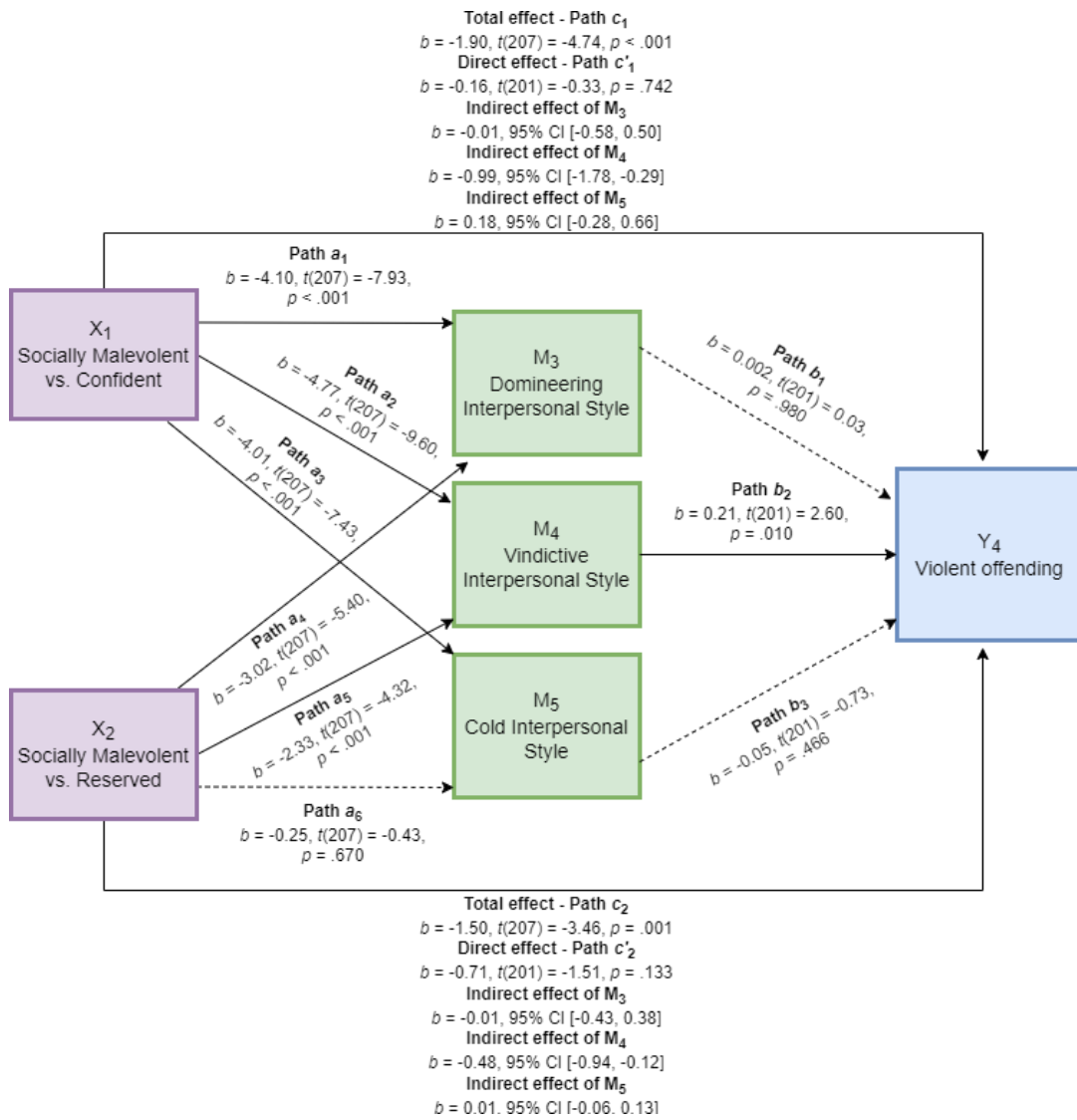
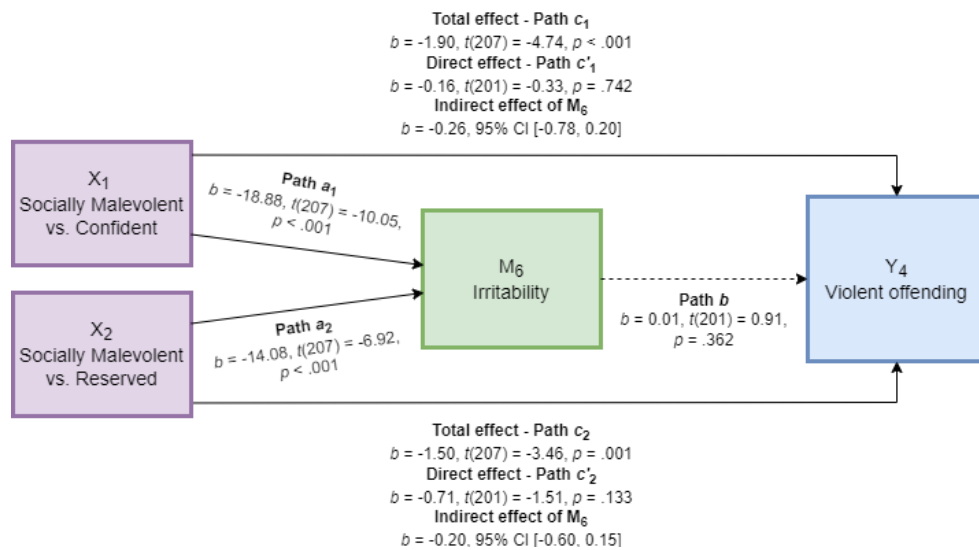


Figure 5.14

Mediation Results for Profile (X), Irritability (M), and Violent Offending (Y)



5.3.5. Results Summary

The first hypothesis stated that levels of each type of OB would differ based on profile membership; this prediction was supported, with all types of OB differing based on profile membership. It was also predicted that, if a darker profile emerged from the data, it would be positively associated with OB. Indeed, the Socially Malevolent group scored the highest on all types of OB, showing significantly higher levels of OB than the other profile groups on all types of OB except for drug offending (where there was no significant difference between the Socially Malevolent and Reserved groups).

The second hypothesis predicted that self functioning, interpersonal functioning, Domineering IS, Vindictive IS, Cold IS, affective empathy, cognitive empathy, irritability, and CTS would be associated with personality profile. This hypothesis was supported for all variables except for CTS, which was not related to profile group.

The third hypothesis stated that self functioning, interpersonal functioning, affective empathy, and cognitive empathy would be negatively associated with OB. This was partially supported: while self and interpersonal functioning were indeed negatively

associated with all four types of OB, no significant relationships were found between either type of empathy and any type of OB.

The fourth hypothesis predicted that Domineering IS, Vindictive IS, Cold IS, irritability, and CTS would all be positively associated with OB. This prediction was supported for the three interpersonal styles and irritability, which were all positively related to the four types of OB. However, no significant associations were observed between CTS and OB, and this variable was consequently omitted from mediation analyses.

Finally, the fifth hypothesis was that self functioning, interpersonal functioning, Domineering IS, Vindictive IS, Cold IS, affective empathy, cognitive empathy, irritability, and CTS would mediate the relationships between profile membership and each type of OB. For property offending, the difference between the Socially Malevolent and Confident groups was mediated by interpersonal functioning and Vindictive IS, while the difference between the Socially Malevolent and Reserved groups was also mediated by Vindictive IS. Thus, Vindictive IS fully mediated the relationship between personality profile and property offending, while interpersonal functioning also partially mediated this relationship. The other variables were not found to play a role. Meanwhile, the relationship between profile and drug offending was partially mediated by interpersonal functioning, whereby this variable mediated the difference in drug offending between the Socially Malevolent and Confident groups; however, no other significant mediations were observed for this type of offending. Similarly, the relationship between profile and sexual offending was not found to be mediated by any of the variables. Finally, the mediation results for violent offending mirrored those of property offending: the difference between the Socially Malevolent and Confident groups was mediated by interpersonal functioning and Vindictive IS, and Vindictive IS also mediated the difference in violent offending between the Socially Malevolent and Reserved groups. No other mediations were present.

5.4. Discussion

The present study had three aims. First, it sought to examine whether the profiles that were found in Study 1's UK-based community sample would also emerge in a US-based community sample. Second, it aimed to assess whether levels of property, drug, sexual, and violent offending would differ based on these profiles. Third, it examined whether LPF, IS, empathy, irritability, and CTS mediated the relationships between profile and each type of OB.

Ample empirical investigations have elucidated distinct sets of personality profiles based on the FFM model, and a handful of studies have done the same with the DT model. However, as shown in Chapter 4, although this approach has been taken numerous times with the same personality models, there is a lack of consensus in the literature whereby the profiles that emerge from different datasets often do not align with those of other studies (see Chapter 4, Section 4.1.). Study 1 aimed to establish personality profiles based on the combined FFM (McCrae & Costa, 1987) and DT (Paulhus & Williams, 2002) models, but it remained unclear whether those profiles would be replicable in other samples. While Study 1 used a male community sample that was predominantly UK-based, this study used the same analytic technique to derive profiles from a US-based male community sample. The results showed that, although not identical, the profiles found in these two studies are visually and quantitatively similar to such a degree that they can be regarded as largely the same. Thus, the profiles found in Study 1 appear to be generalisable across geographical areas. This finding holds promise for the future of personality profile research, as it shows that although many empirical investigations fail to replicate profiles found in other studies²⁶, it is possible for the same profiles to emerge in different samples. As this thesis is the first to establish personality profiles comprising the FFM and DT traits together, this

²⁶ see Chapter 4, Sections 4.1. and 4.2. for a review

replicability supports the external validity of the profiles derived in Study 1 and suggests that they were not sample-specific. However, as both Study 1 and Study 2 utilised general population samples, Study 3 will seek to build on this potential by examining if the same profiles are observed in a male ex-offender sample.

The results of this study also showed that personality profiles can be consistently linked to behavioural outcomes, and supports the long-standing notion that personality is strongly related to OB (Bonta & Andrews, 2017; Eysenck, 1964; Westhead & Egan, 2015). Participants in the Socially Malevolent profile group, which includes elevated scores on all three DT traits and neuroticism, scored significantly higher on all types of OB than the other groups (aside from drug offending, on which they did not differ from the Reserved group). This finding lends support to the tentative conclusion drawn in the systematic review (Chapter 2) that neuroticism is positively associated with OB, and with the growing number of studies that have found positive associations between DT traits and OB (e.g., Beaver et al., 2017; Fix & Fix, 2015; Garofalo et al., 2018; Pettersen et al., 2019; Vitacco et al., 2014). Although associations between each of these traits in isolation and OB have been previously investigated (see Chapter 2), it is possible that the *combination* of high scores on neuroticism and the DT traits may hold more explanatory power when attempting to identify the personality traits that lead to OB. Each of the FFM traits has six underlying facets, and neuroticism's facets are anxiety, angry hostility, depression, self-consciousness, impulsiveness, and vulnerability (Costa & McCrae, 1995). Thus, high scores on neuroticism may predispose an individual to such attributes as feeling vulnerable in the face of perceived threat; interpersonal reactivity; emotional volatility; brittleness; and feelings of inadequacy (Costa & McCrae, 1995). In individuals who score high on neuroticism as well as DT traits, such as in the Socially Malevolent profile, this cluster of personality features may interact with one another to produce a uniquely volatile cocktail of traits. This particular combination of darker personality features may therefore hold

stronger associations with OB than any of those traits individually. Future research should endeavour to explore this notion further, particularly as there remains a lack of consensus in the literature regarding the role of neuroticism in OB on its own (see Chapter 2, Section 2.4.1.2.), and no studies to date have explored Machiavellianism's associations with OB in isolation from the other DT traits (see Chapter 2, Section 2.4.2.3.)

As summarised above, although it was hypothesised that all potential mediators would be significantly related to both profile and OB, and that each of them would mediate the relationships between these two variables, the results of this study did not unanimously support those predictions. These findings are discussed below.

5.4.2. Level of Personality Functioning

LPF is an intrinsic component of one's personality; as such, it was no surprise that self functioning and interpersonal functioning were both strongly related to profile membership ($\eta^2 = .160$). Confident participants scored higher on these variables than the other two groups, evidencing that the positive traits possessed by this group appear in tandem with a high degree of personality functioning. However, although both types of functioning showed strong negative associations with all types of OB, self functioning did not mediate the relationships between profile and any type of OB, and interpersonal functioning only partially mediated these relationships for property, drug, and violent offending. As sexual and violent offending typically involve at least one victim, it can be argued that they represent inherently interpersonal acts. Accordingly, it is surprising that interpersonal functioning did not play a role for sexual offending and only partially mediated the relationship between profile and violent offending (only mediating the relationship between profile and violent offending for Socially Malevolent vs. Confident profiles). This may be because the Confident group scored the lowest on violent offending, while the Socially Malevolent group scored the highest. Thus, the difference in violent offending between the Socially Malevolent and Reserved groups may simply have been

too negligible for any significant mediation effect to be detected. Meanwhile, in the case of sexual offending, it is possible that this was the result of a floor effect, as the mean score on sexual offending was very low across the entire sample and within each profile group. Nonetheless, this study utilised a community sample, so it is intuitive that participants would report very low levels of such a severe offence type. Study 3 will use an ex-offender sample, and this may lend itself to different outcomes regarding the role of LPF.

5.4.3. Empathy

Although both types of empathy showed significant relations to personality profile, the strength of this effect was particularly striking for cognitive empathy ($\eta^2 = .250$). Research by Dryburgh and Vachon (2019) and Reniers et al. (2011) suggests that although women score higher on both types of empathy than men, this effect is almost twice as strong for affective than cognitive empathy. This may explain why the difference in affective empathy between profile groups was not quite as strong as the difference in cognitive empathy, as this study used a male-only sample.

Both types of empathy were found to be significantly lower in the Reserved group than the Confident or Socially Malevolent groups, who did not differ from one another. This is very surprising, given the previous empirical evidence (Reniers et al., 2011; Schimmenti et al., 2019) for strong negative relations between empathy and the high scores on DT traits seen in the Socially Malevolent profile, as well as way these traits are theorised to converge on empathy deficits (Heym et al., 2019; Paulhus & Williams, 2002). However, there is some disagreement in the literature regarding these associations, as Heym et al. (2019) observed negative relationships between the DT traits and affective empathy, but not cognitive empathy, while other studies (Mayer et al., 2018; Wai & Tiliopoulos, 2012) have found negative relationships between affective empathy for psychopathy and Machiavellianism, but not narcissism. It is possible that this study's null finding was driven by the research design, in that high scores on DT traits were only

examined in conjunction with varying levels of the FFM traits in the form of personality profiles. Investigating relations between empathy levels and DT trait profiles on their own may reveal significant negative relationships between these variables.

Another possibility is that agreeableness may be playing a key role in these results. Reserved individuals scored significantly lower on empathy than the other profile groups, and although DT traits were low in this profile, so were levels of agreeableness. As mentioned in Chapter 1 (Section 1.2.4.1.), empathy is believed to be an integral component of agreeableness (Costa et al., 2001; Graziano & Eisenberg, 1997); thus, the low levels of this trait seen in the Reserved profile may explain its association with low levels of cognitive and affective empathy. This would also explain why the other two profile groups scored significantly higher on both types of empathy than the Reserved group, as agreeableness is elevated in the Confident profile and is at mean levels in the Socially Malevolent profile. Perhaps empathy has been subsumed by agreeableness in this study, thereby reducing its associations with the other variables.

Meanwhile, another unexpected finding was the lack of relationship between either type of empathy and any type of OB. Empathy deficits have been repeatedly linked to antisocial, aggressive, and OB in the literature (see, e.g., reviews by Jolliffe & Farrington, 2004; Farrington et al., 2017; & van Langen et al., 2014). However, it is possible that the null result in this study was also driven by floor effects for OB as a consequence of the type of sample used in this study, and that a different result will emerge in Study 3 when an ex-offender sample is used.

5.4.4. Interpersonal Style

According to some of the predominant interpersonal circumplex theorists, the circumplex model is complementary to the FFM (Trapnell & Wiggins, 1990); leading researchers in the realm of the FFM also emphasise that all FFM traits can be regarded as interpersonal in nature because they have a direct impact on how people interact with and

perceive one another (McCrae & Costa, 1989). Likewise, DT theorists posit that all three traits map directly onto the interpersonal circumplex (Dowgwillo & Pincus, 2017; Jones & Paulhus, 2011). This study adds empirical support to these notions, as it was found that all eight IS's differed based on profile membership. This evidences the way that one's personality and their characteristic approach to interpersonal interactions and relationships are fundamentally linked.

Of particular interest is the hostile-dominant quadrant of the interpersonal circumplex, where Domineering, Vindictive, and Cold IS's reside. These IS's are characterised by low communion and high agency, an orientation which appears intuitively conducive to a tendency towards interpersonal transgressions such as those seen in violent and sexual offending. Unsurprisingly given its constellation of high-DT traits, the Socially Malevolent group scored higher on all three of these IS's than the other groups.

Although hostile-dominant IS's have been subject to many empirical investigations (see Chapter 1, Section 1.2.3.), these studies tend to use clinical or forensic samples; thus, this study's examination of a community sample represents a relatively novel approach to studying associations between IS and OB. In clinical and forensic samples, there is ample evidence of associations between these IS's and aggression (Harris et al., 2014) and violence (Doyle & Dolan, 2006). In line with these trends, the current study found that all three hostile-dominant IS's were positively associated with all types of OB. As discussed in Chapter 1, Section 1.2.3., interpersonal style is intrinsically related to personality dysfunction (Lilienfeld et al., 2019), including the formation of maladaptive interpersonal schemas (Hopwood et al., 2013; Pincus et al., 2010). For example, antisocial, paranoid, and narcissistic personality disorders typically fit within the hostile-dominant quadrant of the interpersonal circle (Podubinski et al., 2014), demonstrating the maladaptive nature of the interpersonal styles that also reside in this quadrant (i.e., Domineering, Vindictive, and Cold IS's). Thus, the associations between hostile-dominant IS's and OB observed in this

study support the notion that OB is related to dysfunctional personality and maladaptive interpersonal approaches. These results add to our scant knowledge about how these IS's may play a role in OB in non-clinical samples, demonstrating support for the generalisability of previous empirical research using clinical and forensic samples.

Nonetheless, Domineering IS and Cold IS were not found to mediate the relationships between profile and any type of OB. This may be due to their relative positions within the interpersonal circumplex (see Chapter 1, Figure 1.2): Cold IS represents low communion but moderate agency, while Domineering IS is characterised by high agency and moderate communion. The fact that agency is only moderate in Cold IS (see Chapter 1, Figure 1.2) may mean that individuals scoring high on this IS lack the activity necessary to initiate commission of criminal acts. Meanwhile, the placement of Narcissistic PD within the interpersonal circumplex aligns with that of Domineering IS and, as discussed in Chapter 2, the strength and nature of the relationship between narcissism and OB is not yet clear. However, the placement of Vindictive IS within the circumplex represents the strongest combination of high agency and low communion that is found in this model, and this may explain why it played the strongest role in this study's investigation of how IS may mediate the relationship between personality profiles and OB.

5.4.5. Irritability

Irritability has been conceptualised as a personality trait (see Chapter 1); accordingly, this study's results indicate that it is significantly related to personality profile membership. The Socially Malevolent group scored highest on this construct, and although there is a lack of investigations linking irritability to DT traits, empirical evidence (Caprara, Alessandri, et al., 2013; Caprara, Barbaranelli, & Zimbardo, 1996) suggests that it is associated with high neuroticism, as is seen in this profile group. Meanwhile, previous studies have repeatedly positioned irritability alongside such outcomes as aggression (Anderson, 1997; Bettencourt et al., 2006; Caprara, Barbaranelli, & Zimbardo, 1996;

Caprara, Cinanni, et al., 1985; Zillman & Weaver, 2007), violence (Caprara, Alessandri, et al., 2013; Caprara, Paciello, et al., 2007; Caprara, Tisak, et al., 2014), and OB (Firestone et al., 2005; Walters, 2020). The current study found that irritability was strongly and significantly related to all types of OB, adding further support to these trends in the literature.

Nonetheless, irritability was not found to mediate the relationship between profile and any type of OB in this study. This finding was unexpected, given its strong theoretical complementariness to such characteristics as heightened sensitivity to provocation and susceptibility to loss of temper, with which it has been empirically linked (Deveney et al., 2019). It is possible that the magnitude of the associations between irritability and personality profile, and between irritability and OB, are so substantial that it operates in isolation as a strong predictor of both factors but does not aid in explaining their relationship with one another. Likewise, as irritability is one of the underpinnings of neuroticism (Costa & McCrae, 1995), this overlap may have masked the unique variances in OB attributable to the profiles and irritability separately in the mediation analyses. Finally, perhaps this finding was influenced by low levels of irritability or floor effects in OB, given this study's use of a community sample. It will be interesting to see if the role of irritability differs when an ex-offender sample is used in Study 3.

5.4.6. Criminal Thinking Style

Perhaps the most unexpected results from this study were the null relationships between CTS and profile and between CTS and all types of OB. As reviewed in Chapter 1 (Section 1.2.6.), this construct has intrinsic theoretical links with OB, and empirical evidence repeatedly supports this notion (see, e.g., Banse et al., 2013; Gendreau et al., 1997; Walters, 2012; 2016). CTS has also been examined alongside FFM traits, but the only clear finding so far is that CTS may be linked to low agreeableness and conscientiousness in offenders (Eichelsheim et al., 2015). Again, it is possible that

associations between CTS and personality traits have been curtailed in this study by virtue of its profile approach whereby associations are only examined between CTS and overall constellations of traits, rather than separate traits operating in isolation. As with irritability, it is also possible that this study's community sample contributed to the null findings, as Eichelsheim et al.'s (2015) study utilised an offender sample who may score higher on CTS in general.

5.4.7. Limitations and Conclusions

This study had some limitations. For example, although part of the focus of this study was to examine whether personality profile could predict OB in a community sample, it is important to note that 29.5% of the participants had never engaged in any OB. The relatively low offence rates in this sample may have impacted the ability to predict OB. Furthermore, like Study 1, it used a male-only sample; consequently, until future research attempts to replicate their findings in female or mixed-gender samples, the results presented here cannot be said to generalise to other genders. In addition, this study relied on self-report. As discussed in Chapter 3 (Section 3.2.2.), self-report data are known to be vulnerable to response biases from participants (Paulhus, 1991; Van de Mortel, 2008), particularly when the questions are socially sensitive (King & Bruner, 2000). However, this limitation was foreseen during the project planning stage, and mitigation was built into the research design. By incorporating a measure to detect socially desirable responding (BIDR-16, Hart et al., 2015) and including its subscales as covariates, it was possible to minimise the influence of this response bias on the study results.

A critical strength of this study is that, alongside Study 1, it has shown that discrete personality profiles encompassing the FFM and DT models can indeed be detected in a community sample and largely replicated in another community sample from a different geographic region. However, it remains to be seen whether these profiles would also be found in other types of samples. Accordingly, Study 3 will seek to answer this question by

taking the same methodological approach with a male ex-offender sample. This replication study will be vital to establishing whether some of the null findings observed in this study are due to floor effects in levels of OB (Urban et al., 2017), given its use of a community sample. Hence, Study 3 will investigate whether the potential mediators used in this study mediate the relationships between personality profiles and OB in the same manner as this study's community sample, or if their mechanisms differ when the sample comprises individuals with offending histories.

CHAPTER 6: PERSONALITY-BASED DRIVERS OF OFFENDING BEHAVIOUR AMONG MALE EX-OFFENDERS

6.1. Introduction

The final empirical chapter of this thesis sets out to examine the extent to which Study 1 and Study 2 findings replicate in a sample of ex-offenders. The introduction to this chapter therefore briefly reiterates the main theoretical drivers for this final investigation in relation to the earlier study outcomes, before ending with its aims and hypotheses.

Study 1 examined the extent to which it was possible to establish personality profiles, comprising Five-Factor Model (FFM; McCrae & Costa, 1987) and Dark Triad (DT; Paulhus & Williams, 2002) traits, in a predominantly UK-based male community sample. Through Latent Profile Analysis (LPA), three discrete profiles were observed; based on the configurations of personality traits present in these profiles, they were labelled *Reserved*, *Confident*, and *Socially Malevolent*. Study 2 found that largely similar profiles were present in a US-based male community sample and examined the relationships between these profiles and four types of offending behaviour (OB; property, drug, sexual, and violent). Study 2 also investigated whether these relationships were mediated by level of personality functioning (LPF), interpersonal style (IS), empathy, irritability, and/or criminal thinking style (CTS). This chapter reports the results of the final study in this thesis, which mirrors the approach of Study 2; however, by using an ex-offender sample, it seeks to determine the extent to which findings in the preceding two studies may differ as a consequence of sample type.

The results of Study 2 indicated that there was a significant relationship between personality profile and each type of OB. The results suggested that the relationships between profile and property offending, and between profile and violent offending, were fully mediated by Vindictive IS and partially mediated by interpersonal functioning. Interpersonal functioning also appeared to partially mediate the relationship between

profile and drug offending. However, no other mediation effects were observed. These findings were largely contrary to predictions, as it was anticipated that all potential mediators would play a role in the relationships between personality profiles and OB. However, as Study 2 utilised a community sample, it is possible that the null findings were related to floor effects regarding rates of self-reported OB (Urban et al., 2017). To address this potential limitation, the present study uses a sample of individuals who have been previously incarcerated but now reside in the community; as such, they represent an ex-offender sample. It is anticipated that that rates of OB will be higher among this group, which may enable more dynamic findings to emerge in relation to the interplay between OB, profiles, and other personality-based variables of interest.

6.1.2. The Current Study

As the final study in this thesis, Study 3 will build upon the findings of Studies 1 and 2 (Chapters 4 and 5). First, it aims to determine whether the personality profiles that emerged in Study 1's UK-based community sample and largely replicated in Study 2's US-based community sample will also be found in an ex-offender sample, or if different profiles emerge in this sample. Second, it aims to establish whether there are significant associations between personality profiles and self-reported property, drug, sexual, and violent offending. Third, if those relationships are indeed significant, this study will investigate whether they are mediated by LPF, IS, empathy, irritability, or CTS.

As in Study 2, the hypotheses for Study 3 are based on the comprehensive review of the literature presented in Chapters 1 and 2. Decades of previous research on the roles of personality traits in OB has shown that, although these constructs are linked, a clear and consistent conclusion regarding precisely which personality traits are implicated in OB, and the strengths and directions of those relationships, has yet to be achieved (see Chapter 2). Accordingly, a profile approach may assist in elucidating the ways in which these traits interact in relation to OB (see Chapters 3 and 4).

Moreover, as shown in Chapters 1 and 2, focusing on traits alone may hinder the ability to fully explain the personality-based drivers of OB. Indeed, many empirical investigations have established associations between other personality features and various types of OB (see Chapter 1). This thesis is underpinned by interpersonal theory (see Chapter 1, Section 1.2.3.), which argues that one's interpersonal style is integral to explaining their behaviour, including engagement in OB (see Chapter 1, Section 1.2.3.4.). This framework has strong links to the FFM and DT models (see Chapter 1, Section 1.2.3.2.), and to OB (Chapter 1, Section 1.2.3.4.), further supporting its inclusion in this research. Meanwhile, the literature review presented in Chapter 1 also highlighted the established links between OB and level of personality functioning (LPF; Section 1.2.2.), interpersonal style (IS; Section 1.2.3.), empathy (Section 1.2.4.), irritability (Section 1.2.5.), and criminal thinking style (CTS; Section 1.2.6.). Collectively, this body of literature has informed the hypotheses for the current study:

- H₁: Levels of property, drug, sexual, and violent OB will differ based on trait profile membership (PM). If a darker profile emerges from the dataset, it will be positively associated with OB.
- H₂: Self functioning, interpersonal functioning, Domineering IS, Vindictive IS, Cold IS, affective empathy, cognitive empathy, irritability, and CTS will be associated with PM.
- H₃: Self functioning, interpersonal functioning, affective empathy, and cognitive empathy will be negatively associated with OB.
- H₄: Cold, Vindictive, and Domineering interpersonal styles; irritability; and CTS will be positively associated with OB.
- H₅: Self functioning, interpersonal functioning, Domineering IS, Vindictive IS, Cold IS, affective empathy, cognitive empathy, irritability, and CTS will mediate the relationships between PM and each type of OB.

6.2. Method

6.2.1. Participants

A total of 301 adult male ex-offenders participated in this study, and were remunerated £5 for taking part. Inclusion criteria required participants to be male gender; aged 18 years or older; and to have previously served time in a correctional institution. After checking the data for instances of socially desirable responding, nine participants were excluded from analyses due to extremely high scores on impression management. This resulted in a final sample of $n = 292$. Participants ranged in age from 18 to 74 ($M = 37.91$, $SD = 12.12$). The majority were from the United States ($n = 122$; 41.8%) and the United Kingdom ($n = 82$; 28.1%), while the remainder were from a range of countries across Europe, Asia, North America, South America, Africa, and Australia.

6.2.2. Materials

The measures used in this study are described in Chapters 4 and 5. Table 6.1 reports a summary of the instruments used in this study, variables measured, and scale reliabilities yielded in the current dataset.

6.2.3. Procedure

Ethical approval was obtained from the researcher's Departmental Research Ethics Committee (Reference RM/08-2019/075). Participants were then recruited via Prolific to participate in a study about personality and offending behaviour. Prospective participants were directed to complete the questionnaires online on Qualtrics. After providing informed consent and some demographic information (gender, age, and nationality), they completed the questionnaires and navigated to a debriefing page²⁷. The SD3, IPIP-FFM, and BIDR-16 were presented together, with question order randomised; the remaining questionnaires were also

²⁷ Study 3 forms (Participant Information Sheet, Consent Form, and Debrief Page) are provided in Appendix C.

Table 6.1*Scale Reliability for Measures used in Study 3*

Variable	Measure	Reliability
Five-Factor Model traits	International Personality Item Pool-Five Factor Model (IPIP-FFM; Goldberg, 1999)	Extraversion: $\omega = .90$ Neuroticism: $\omega = .87$ Agreeableness: $\omega = .83$ Conscientiousness: $\omega = .80$ Openness to experience: $\omega = .78$
Dark Triad traits	Short Dark Triad (SD3; Jones & Paulhus, 2014)	Machiavellianism: $\omega = .73$ Narcissism: $\omega = .73$ Psychopathy: $\omega = .64$
Socially desirable responding	Balanced Inventory of Desirable Responding Short Form (BIDR-16; Hart et al., 2015)	Impression management: $\omega = .69$ Self-deceptive enhancement: $\omega = .64$
Level of personality functioning	Level of Personality Functioning Scale-Brief Form (LPFS-BF; Hutsebaut et al., 2016)	Total scale: $\omega = .79$ Interpersonal functioning: $\omega = .71$ Self functioning: $\omega = .70$
Interpersonal style	Inventory of Interpersonal Problems-Short Circumplex Form (IIP-SC; Soldz et al., 1995)	Socially avoidant: $\omega = .87$ Nonassertive: $\omega = .81$ Cold: $\omega = .80$ Overly nurturant: $\omega = .79$ Intrusive: $\omega = .77$ Domineering: $\omega = .72$ Exploitable: $\omega = .72$ Vindictive: $\omega = .66$
Irritability	Irritability Scale (Caprara, Cinanni, et al., 1985)	$\omega = .86$
Empathy	Questionnaire of Cognitive and Affective Empathy (QCAE; Reniers et al., 2011)	Total scale: $\omega = .87$ Cognitive: $\omega = .88$ Affective: $\omega = .77$
Criminal attitudes	Criminal Sentiments Scale-Modified (Simourd, 1997)	Total scale: $\omega = .94$ Law: $\omega = .86$ Police: $\omega = .86$ Tolerance for Law Violations: $\omega = .82$ Courts: $\omega = .80$ Identification with criminal others: $\omega = .66$
Prior offending behaviour	Self-Report Measure of Adult Offending (Teague et al., 2008)	Total scale: $\omega = .90$ Property: $\omega = .90$ Violent: $\omega = .84$ Drug: $\alpha = .81$ Sexual: $\alpha = .70$

presented in random order. Standard quality checks were embedded into the questionnaire in an effort to ensure high-quality responses. Median completion time was 25.41 minutes.

6.3. Results

First, the data were screened for integrity concerns. After removing the aforementioned (Section 6.2.1.) nine participants due to extreme instances of socially desirable responding, a missing value analysis was conducted to determine the nature of missing responses in the dataset. Little's MCAR test results indicated that responses were missing completely at random (MCAR), $\chi^2 = 19176.15$, $df = 19095$, $p = .34$. Thus, missing responses were replaced using the expectation maximisation technique in SPSS (version 26). Finally, data were assessed for skewness and kurtosis, one or both of which were present in the majority of the variables. However, as with Study 2, this finding was not unexpected and the statistical tests used in this study are robust against such violations of normality (Bray & Maxwell, 1985; Field, 2017; Preacher & Hayes, 2004, 2008; Weinfurt, 1995).

Next, as the majority of the sample originated from the US US ($n = 122$) and the UK ($n = 82$), an independent samples t -test was conducted to examine whether the two groups differed in age. The results indicated that the two groups did differ significantly, $t(202) = -4.41$, $p < .001$. The UK participants were significantly older ($M = 44.95$, $SD = 12.55$) than the US participants ($M = 37.92$, $SD = 10.13$).

Means and standard deviations for each of the personality variables are provided in Table 6.2. Table 6.3 depicts intercorrelations between socially desirable response variables, FFM traits, and DT traits. Resembling the significant trends seen in Study 2, impression management was positively associated with agreeableness and conscientiousness, and was negatively associated with neuroticism, psychopathy, and Machiavellianism. Conversely, self-deceptive enhancement was positively associated with extraversion, agreeableness, conscientiousness, openness to experience, Machiavellianism, and narcissism, but was

negatively correlated with neuroticism. The two BIDR-16 subscales were also positively correlated with one another.

Table 6.2

Means (M) and Standard Deviations (SD) for FFM and DT Personality Traits

Personality variable	<i>M</i>	<i>SD</i>
Extraversion	29.45	7.97
Agreeableness	36.14	6.52
Conscientiousness	34.64	6.08
Openness to experience	38.23	5.41
Neuroticism	29.42	7.56
Machiavellianism	30.23	5.15
Psychopathy	25.56	5.20
Narcissism	26.06	5.37

6.3.1. Personality Profiles

A latent profile analysis (LPA) was conducted to examine whether profiles emerged representing combinations of the FFM and DT traits. Table 6.4 summarises model fit indices for 2-5 profile solutions. Results indicated that the 3-profile solution was the best fit for the data. Figure 6.1 displays standardised mean personality trait scores for each profile. Profile 1 describes individuals ($n = 114$, 39%) with elevated scores on all three DT traits and roughly average scores on all FFM traits. Profile 2 characterises individuals ($n = 98$, 33.6%) with below-average scores on almost all traits, with narcissism and extraversion particularly low in this group. Neuroticism is the only trait that is elevated in this profile. Finally, Profile 3 describes participants ($n = 80$, 27.4%) who exhibited markedly low scores on Machiavellianism, psychopathy, and neuroticism, but who had above-average scores on all the remaining traits, especially extraversion, agreeableness, and neuroticism.

Table 6.3*Correlations Between Personality Traits and Socially Desirable Response Variables*

Variable	1	2	3	4	5	6	7	8	9	10
1. Extraversion	-									
2. Agreeableness	.32**	-								
3. Conscientiousness	.11	.14*	-							
4. Openness to experience	.28**	.25**	.22**	-						
5. Neuroticism	-.34**	-.26**	-.37**	-.18**	-					
6. Machiavellianism	.04	-.35**	-.07	.02	.18**	-				
7. Psychopathy	.14*	-.40**	-.20**	.05	.27**	.57**	-			
8. Narcissism	.65**	.12*	.14*	.33**	-.22**	.29**	.29**	-		
9. Impression management	.04	.24**	.26**	-.03	-.25**	-.36**	-.41**	-.03	-	
10. Self-deceptive enhancement	.12*	.12*	.34**	.26**	-.24**	.16**	-.06	.23**	.15*	-

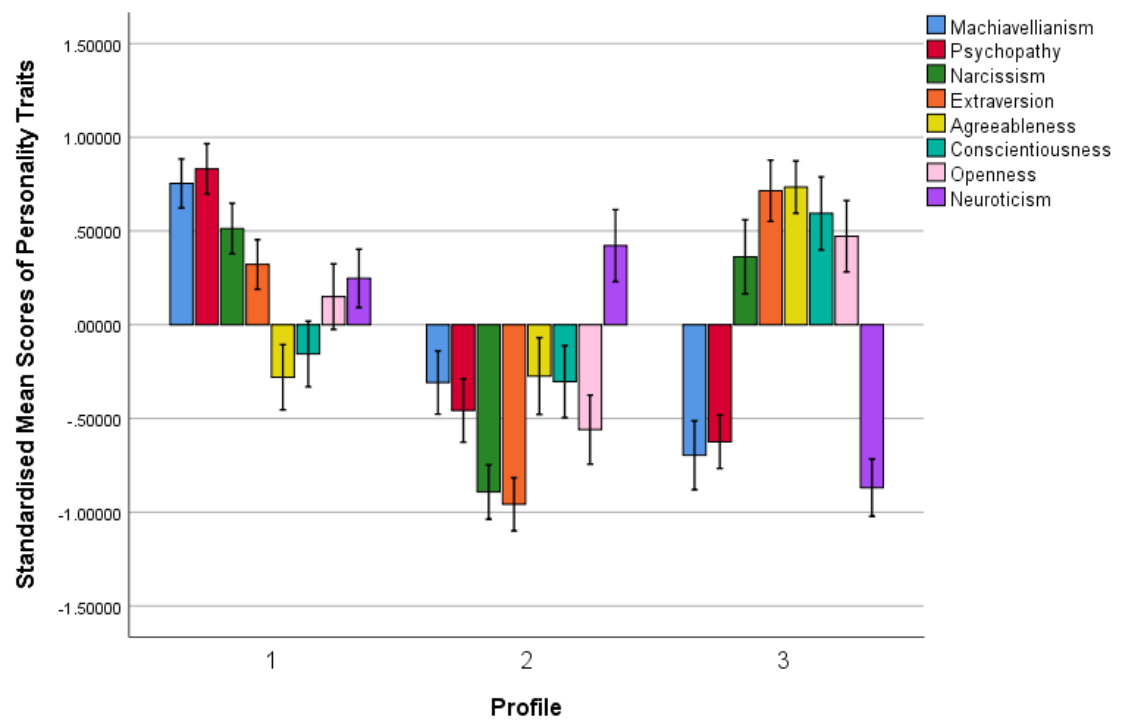
** $p \leq .01$ * $p \leq .05$ **Table 6.4***Model Fit Indices For 2-5 Profile Solutions*

Profiles	BIC	Adj BIC	Entropy	VLMR	BLRT
2	6557.43	6478.15	0.71	0.102	< 0.001
3	6437.53	6329.71	0.73	0.032	< 0.001
4	6396.06	6259.69	0.79	0.089	< 0.001
5	6374.85	6209.94	0.80	0.295	< 0.001

Note. $N = 292$. Best model fit is indicated by the highest number of profiles with a) the lowest BIC and adjusted BIC, b) an entropy value closest to 1, and c) significant p values for VLMR and BLRT. As it was the only model to reach VLMR significance, the 3-profile solution was the best model fit for this dataset.

Figure 6.1

Standardised Mean Scores of Traits Across Three Personality Profiles



Note. Error bars represent 95% confidence intervals.

6.3.2. Profile Comparisons

A one-way multivariate analysis of variance (MANOVA) was performed to assess whether participants in each Profile group differed significantly from other groups on each personality trait variable. As in Study 2, because sample sizes were unequal and the assumption of equality of covariance was violated (as indicated by Box's M $p < .001$), Pillai's trace was used when interpreting the MANOVA. Significant profile differences were found in the personality trait variables, $F(16, 556) = 50.08$, $p < .001$; Pillai's trace = 1.17; $\eta p^2 = .590$. Next, a MANCOVA was performed with the BIDR-16 subscales, Impression Management and Self-Deceptive Enhancement, as covariates. The MANCOVA confirmed that, with these two variables held constant, the significant differences in personality traits across profiles remained, $F(16, 562) = 42.51$, $p < .001$;

Pillai's trace = 1.10; $\eta p^2 = .550$. In both the MANOVA and MANCOVA, effect size was very large (Cohen, 1977, 1988).

Post-hoc comparison tests demonstrated that participants differed in all eight personality trait variables across Profiles. These results are summarised in Table 6.5. For all post-hoc tests, Games Howell was used when the assumption of homogeneity of variances was violated (as evidenced by Levene's test $p < .05$), while Bonferroni was used when homogeneity of variances was present (Levene's test $p > .05$). Compared to Profiles 2 and 3, individuals in Profile 1 were significantly higher on Machiavellianism and psychopathy. They scored significantly higher on narcissism, extraversion, and openness to experience than those in the Profile 2 group; they were also lower on openness to experience, agreeableness, and conscientiousness than those in Profile 3. On neuroticism, they scored lower on than individuals in Profile 2 and higher than those in Profile 3. Next, compared to Profiles 1 and 3, participants in Profile 2 were significantly lower on openness to experience and narcissism, and significantly higher on neuroticism. They also scored significantly lower on extraversion, agreeableness, and conscientiousness than participants in Profile 3, and significantly lower on Machiavellianism and psychopathy compared to Profile 1. However, they were higher on Machiavellianism than individuals in Profile 3. Finally, compared to Profiles 1 and 2, participants in Profile 3 were significantly higher on extraversion, agreeableness, conscientiousness, and openness to experience; they were also significantly lower on neuroticism and Machiavellianism than the other two profiles. However, they scored significantly lower on psychopathy than individuals in Profile 1, and significantly higher on narcissism than participants in Profile 2.

After establishing the three profiles that emerged in this dataset, three MANOVAs were conducted to compare the profiles of Study 3 with those of Studies 1 and 2. The independent variable in each analysis was study (Study 1 vs Study 2 vs Study 3), and the

Table 6.5*Means, Standard Errors, and Mean Differences Across Observed Personality Profiles*

Variable	Profile 1	Profile 2	Profile 3	Univariate <i>F</i> (2, 289)	ηp^2
	<i>Socially Malevolent</i> (<i>n</i> = 114)	<i>Reserved</i> (<i>n</i> = 98)	<i>Confident</i> (<i>n</i> = 80)		
Extraversion	32.02 ^a (.53)	21.82 ^a (.57)	35.15 ^b (.66)	37.09***	.20
Agreeableness	34.32 ^a (.57)	34.36 ^a (.67)	40.93 ^b (.46)	23.05***	.14
Conscientiousness	33.69 ^a (.54)	32.80 ^a (.59)	38.25 ^b (.60)	59.48***	.29
Openness to experience	39.04 ^a (.48)	35.20 ^b (.50)	40.79 ^c (.52)	30.76***	.18
Neuroticism	31.29 ^a (.60)	32.61 ^b (.73)	22.85 ^c (.58)	138.86***	.49
Machiavellianism	34.11 ^a (.34)	28.64 ^b (.44)	26.64 ^c (.47)	91.59***	.39
Psychopathy	29.98 ^a (.35)	23.18 ^b (.44)	22.31 ^b (.37)	117.60***	.45
Narcissism	28.81 ^a (.37)	21.27 ^b (.39)	28.00 ^a (.53)	99.34***	.41

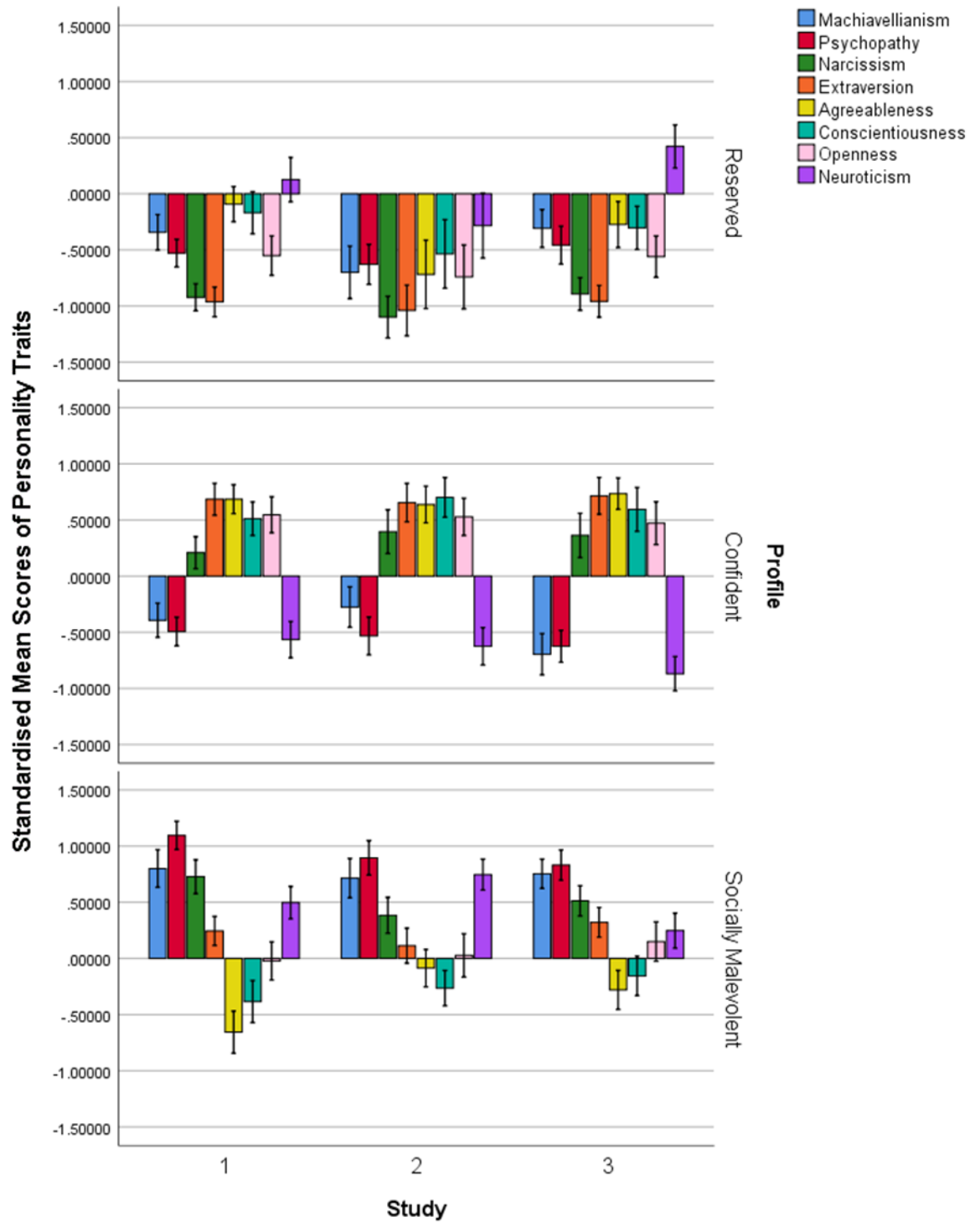
Note. Different superscripts in each row indicate that means are significantly different, $p < .05$.
*** $p \leq .001$

dependent variables were standardised scores (z -scores) on each of the eight personality traits that make up the profiles. As in Study 2, to control for Type 1 error across multiple tests, Bonferroni adjustment was applied whereby the typical significance level of .05 was divided by the number of dependent variables in the analysis. Thus, significance was set to $p \leq .00625$, with 99.375% confidence interval.

A visual inspection of the profiles in this study alongside those of Studies 1 and 2 indicated that Profile 1 most closely resembles the Socially Malevolent profile of Studies 1 and 2 (see Figure 6.2). Meanwhile, Profile 2 looks the most similar to the Reserved profile of the previous studies, and Profile 3 is most similar to the Confident profile of Studies 1 and 2. Thus, these were the statistical comparisons that were made in this study, with the three profiles being re-numbered to facilitate these comparisons.

Figure 6.2

Comparison of Personality Profiles Across Three Studies



Note. Error bars represent 95% confidence intervals.

First, Profile 2 was compared with Profile 1 (Reserved) of Studies 1 and 2 (Study 1 $n = 110$; Study 2 $n = 55$; Study 3 $n = 98$). There was homogeneity of variance-covariance

matrices, as assessed by Box's test of equality of covariance matrices ($p = .273$). The analysis revealed that there was a statistically significant difference in the combined personality traits across the three studies, $F(16, 506) = 3.55, p < .001$; Wilks' $\Lambda = .808$; $\eta^2 = .101$. Tests of between-subjects effects showed that the three profiles differed significantly in agreeableness, $F(2, 260) = 7.64, p = .001, \eta^2 = .056$, and in neuroticism, $F(2, 260) = 8.81, p < .001, \eta^2 = .061$. However, there were no differences in any of the other traits in these profiles (p 's all $\geq .015$). Post-hoc tests confirmed that agreeableness was higher in Study 1 than in Study 2, but there were no differences observed between Study 1 and the current study ($p = .344$), or between Study 2 and the current study ($p = .046$). Meanwhile, the post-hoc tests showed that neuroticism was higher in the current study than in Study 2 ($p < .001$), but there were no differences between Study 1 and Study 2 ($p = .047$) or between Study 1 and the current study ($p = .113$). Thus, it was concluded that Profile 2 in the current study is indeed highly similar to Profile 1 in Studies 1 and 2, and it was subsequently labelled *Reserved*.

Next, Profile 3 was compared with Profile 2 (Confident) of Studies 1 and 2 (Study 1 $n = 117$; Study 2 $n = 73$; Study 3 $n = 80$). The assumption of homogeneity of variance-covariance matrices was violated, as assessed by Box's M ($p = .022$). Pillai's trace was therefore selected for interpretation of the analysis (Field, 2017). There was no difference in the combined personality traits across the three studies, $F(16, 522) = 1.50, p = .096$; Pillai's trace = .088; $\eta^2 = .044$. It was therefore concluded that Profile 3 in the current study is statistically indistinguishable from Profile 2 in Studies 1 and 2, and was labelled *Confident* accordingly.

Finally, Profile 1 was compared with Profile 3 (Socially Malevolent) of Studies 1 and 2 (Study 1 $n = 105$; Study 2 $n = 82$; Study 3 $n = 114$). Pillai's trace was used for interpretation due to a significant Box's M result ($p > .001$). The analysis showed a statistically significant difference in the combined personality traits across the three

studies, $F(16, 584) = 3.55, p < .001$; Pillai's trace = .192; $\eta p^2 = .096$. Tests of between-subjects effects showed that the three profiles differed significantly in narcissism, $F(2, 298) = 5.16, p = .006, \eta p^2 = .033$; in agreeableness, $F(2, 298) = 9.83, p < .001, \eta p^2 = .062$; and in neuroticism, $F(2, 298) = 10.54, p > .001, \eta p^2 = .066$. There were no differences in any of the remaining six traits in these profiles (p 's all $\geq .016$). Post-hoc tests confirmed that narcissism was higher in Study 1 than in Study 2, but there were no differences observed between Study 1 and the current study ($p = .101$), or between Study 2 and the current study ($p = .702$). As discovered in Study 2, it was also confirmed that agreeableness was lower in this profile in Study 1 than Study 2 ($p < .001$); however, there were no differences between Study 1 and the current study ($p = .007$) or between Study 2 and the current study ($p = .421$). Lastly, neuroticism was higher in Study 2 than the current study ($p < .001$), but there were no differences in between Study 1 and the current study ($p = .045$). Thus, although there were some minor deviations across studies, it was concluded that Profile 1 in the current study is very similar to Profile 3 in Studies 1 and 2, rendering it appropriate to assign this profile the same label as the other studies (*Socially Malevolent*). Figure 6.2 provides a visual comparison of these profiles alongside those of Studies 1 and 2.

6.3.3. Relationships Between Personality Profiles and Offending Behaviour

A MANOVA was conducted to examine whether OB differed by profile group (H_1). As in Study 2, the independent variable was personality profile (Reserved, Confident, or Socially Malevolent), and the dependent variables were property, drug, sexual, and violent offending. Descriptive statistics are shown in Table 6.6. The assumption of equality of covariances matrices was violated, as per Box's M test ($p < .001$)²⁸. The results of the MANOVA showed that OB differed significantly by profile, $F(8, 574) = 4.71, p < .001$,

²⁸ For all MANOVAs, when Box's M test was not significant, results were interpreted using Wilks' Λ , but when Box's M was significant, Pillai's trace was used instead (Field, 2017).

Pillai's trace = .123, $\eta^2 = .062$. Follow-up univariate ANOVAs confirmed that scores on three of the four types of OB differed according to profile: property offending, $F(2, 289) = 12.25, p < .001, \eta^2 = .078$; sexual offending, $F(2, 289) = 7.66, p = .001, \eta^2 = .050$; violent offending, $F(2, 289) = 14.74, p < .001, \eta^2 = .093$. Drug offending did not differ by profile group, $F(2, 289) = 2.42, p = .091$. Descriptive analyses were also run to assess the proportion of participants who reported never having engaged in any OB compared to those who had reported engaging in at least one instance of OB at some point in their lives. Results showed that 5.1% of the sample ($n = 15$) had never engaged in any OB, while 94.9% of the sample ($n = 277$) had. Next, Fisher's exact test was conducted to test whether personality profiles differed significantly between the two groups (no offending vs. some offending). The results showed that the two groups differed significantly on profile, $p = .027$. The proportion of participants with the Socially Malevolent profile was higher among the some offending group (40.4%) than the no offending group (13.3%). There was also a higher proportion of Confident profiles among the no offending group (46.7%) than the some offending group (26.4%).

Table 6.6

Means (M) and Standard Deviations (SD) for OB per Profile

Profile	Property offending (Range: 11-55)		Drug offending (Range: 2-10)		Sexual offending (Range: 2-10)		Violent offending (Range: 4-20)	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
	Reserved ($n = 98$)	18.13	7.85	3.98	2.82	2.41	1.03	6.05
Confident ($n = 80$)	17.26	7.28	3.86	2.89	2.07	0.24	5.95	2.54
Socially Malevolent ($n = 114$)	22.66	9.47	4.70	3.11	2.66	1.35	8.06	3.86
Total ($n = 292$)	19.66	8.70	4.23	2.97	2.41	1.07	6.81	3.30

Post-hoc tests²⁹ were examined to assess the nature of these differences. Property offending was higher in the Socially Malevolent group than the Confident group ($p < .001$) and the Reserved group ($p = .001$), but there were no differences between the Confident and Reserved groups ($p = .724$). Sexual offending was higher in the Socially Malevolent group ($p < .001$) and the Reserved group ($p = .005$) than the Confident group, but there were no differences between the Socially Malevolent and Reserved groups ($p = .276$). Finally, violent offending was higher in the Socially Malevolent group than both the other groups (p 's $< .001$) but the Confident and Reserved groups did not differ on this variable ($p = .964$).

6.3.4. Relationships Between Profiles, Potential Mediators, and Offending Behaviour

The MANOVA and follow-up ANOVAs showed that property, sexual, and violent offending differed based on profile membership, supporting the first hypothesis. Thus, to test H₂ through H₅ and following the approach taken in Study 2, a series of mediation analyses were performed to assess whether these relationships are mediated by LPF (self functioning and interpersonal functioning); IS (Domineering, Vindictive, and Cold IS's); empathy (affective and cognitive empathy); irritability; or CTS. Descriptive statistics for these variables are presented in Table 6.7.

²⁹ For all ANOVAs and MANOVAs, when Levene's test of equality of error variances was not significant, Bonferroni was used for post-hoc examinations. When Levene's was significant, post-hoc results were interpreted using Games Howell (Field, 2017).

Table 6.7*Means (M) and Standard Deviations (SD) for All Potential Mediators per Profile*

Variable	Profile							
	<i>Reserved</i> (n = 98)		<i>Confident</i> (n = 80)		<i>Socially Malevolent</i> (n = 114)		Total sample (n = 292)	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Self functioning	8.79	1.80	10.55	1.33	9.07	1.73	9.38	1.80
Interpersonal functioning	9.83	1.76	11.46	0.78	9.96	1.75	10.33	1.70
Cognitive empathy	65.47	10.61	74.97	7.88	70.49	8.32	70.03	9.75
Affective empathy	38.17	6.44	39.14	6.44	38.67	6.89	38.63	6.61
Domineering interpersonal style	8.91	2.98	7.08	1.95	10.41	3.08	9.00	3.08
Cold interpersonal style	12.65	3.43	8.23	2.58	11.61	3.58	11.03	3.73
Vindictive interpersonal style	10.84	2.87	7.51	1.79	11.48	2.83	10.18	3.08
Irritability	88.24	14.27	79.06	10.97	98.82	12.64	89.85	15.07
Criminal thinking style	9.05	5.48	8.92	4.56	6.29	5.22	7.94	5.29

Table 6.8*Correlations Between All Potential Mediators and OB*

Variable	Offending Behaviour		
	Property offending	Sexual offending	Violent offending
Self functioning	-.202**	-.123*	-.173**
Interpersonal functioning	-.260**	-.254**	-.248**
Cognitive empathy	.005	-.174**	.012
Affective empathy	.007	.036	-.085
Domineering interpersonal style	.316**	.414**	.331**
Cold interpersonal style	.215**	.260**	.215**
Vindictive interpersonal style	.224**	.314**	.277**
Irritability	.350**	.148*	.395**
Criminal thinking style	-.178**	-.024	-.165**

** $p \leq .01$ * $p \leq .05$

6.3.4.1. Level of Personality Functioning

First, a MANOVA showed a significant difference in LPF based on personality profile, supporting H₂: $F(4, 578) = 18.13, p < .001$, Pillai's trace = .223, $\eta p^2 = .111$. Follow-up univariate ANOVAs confirmed that there were significant differences in both self functioning, $F(2, 207) = 27.99, p < .001, \eta p^2 = .162$, and interpersonal functioning $F(2, 289) = 29.49, p < .001, \eta p^2 = .170$. Games Howell post-hoc tests showed that both self functioning and interpersonal functioning are higher in the Confident group than the Reserved group (p 's $< .001$) and the Socially Malevolent group (p 's $< .001$). No differences were present on either variable between the Reserved and Socially Malevolent groups.

Correlations were explored between self and interpersonal functioning and OB. As shown in Table 6.8, these variables were negatively associated with property (p 's $\leq .01$), sexual (p 's $\leq .05$), and violent offending (p 's $\leq .01$). These results supported H₃. Consequently, self and interpersonal functioning were included as mediators in all mediation models tested.

6.3.4.2. Empathy

A MANOVA was conducted to examine whether empathy differed according to profile. There was a significant difference in empathy, $F(4, 578) = 12.03, p < .001$, Pillai's trace = .154, $\eta p^2 = .077$. Follow-up ANOVAs showed that this difference was significant for cognitive empathy, $F(2, 289) = 24.54, p < .001, \eta p^2 = .145$, but not for affective empathy ($p = .624$). H₂ was therefore partially supported. Post-hoc tests revealed that cognitive empathy was significantly higher in the Confident group than the Reserved group ($p < .001$) and the Socially Malevolent group ($p = .001$). It was also higher in the Socially Malevolent group than the Reserved group ($p = .001$).

Correlation analyses showed that cognitive empathy was negatively associated with sexual offending, but not property or violent offending. Affective empathy was not related to any type of OB (see Table 6.8). Thus, H₃ was also partially supported, and cognitive empathy was only included in the mediation model for sexual offending. Affective empathy was not included in any mediation models.

6.3.4.3. Interpersonal Style

Results of a MANOVA showed that there was a significant difference in IS based on profile, $F(16, 566) = 16.09, p < .001$, Pillai's trace = .625, $\eta^2 = .313$. Follow-up univariate ANOVAs confirmed that this difference was significant for all IS's (all p 's < .001) aside from Overly Nurturant IS. However, as in Study 2, only Domineering, Vindictive, and Cold IS's were explored further due to their relevance to this research. The ANOVA results were as follows: Domineering, $F(2, 289) = 33.90, p < .001, \eta^2 = .190$; Vindictive, $F(2, 289) = 59.41, p < .001, \eta^2 = .291$; Cold, $F(2, 289) = 42.96, p < .001, \eta^2 = .229$. These findings supported H₂. Games Howell post-hoc tests showed that the Socially Malevolent group was significantly higher on Domineering IS than the Reserved ($p = .001$) and Confident ($p < .001$) groups, and the Reserved group was significantly higher on this IS than the Confident group ($p < .001$). Meanwhile, the Socially Malevolent and Reserved groups did not differ on Vindictive IS ($p = .230$) or Cold IS ($p = .081$), but these two groups were both significantly higher on Vindictive and Cold IS's than the Confident group (p 's < .001). Pearson's correlations also showed significant positive relationships between these three IS's and property, sexual, and violent offending (see Table 6.8); thus, H₄ was supported, and Domineering, Vindictive, and Cold IS were included in all mediation analyses.

6.3.4.4. Irritability

A one-way ANOVA showed that levels of irritability differed by profile, $F(2, 289) = 57.24, p < .001, \eta^2 = .284$. Games Howell post-hoc tests showed that irritability was

significantly higher in the Socially Malevolent group than the Reserved group ($p < .001$) and the Confident group ($p < .001$), and that the Reserved group was also significantly higher than the Confident group ($p < .001$). As Pearson's correlations also showed that irritability was significantly positively correlated with property, sexual, and violent offending (see Table 6.8), H_2 and H_4 were supported and this variable was included in all mediation analyses.

6.3.4.5. Criminal Thinking Style

Finally, results of an ANOVA showed that CTS differed based on profile, $F(2, 289) = 9.60, p < .001, \eta p^2 = .062$, thereby supporting H_2 . Bonferroni post-hoc tests indicated that the Socially Malevolent group scored significantly higher than the Reserved ($p < .001$) and Confident ($p = .002$) groups, but the Reserved and Confident groups did not differ on this variable ($p = 1.00$). As shown in Table 6.8, Pearson's correlations showed that there was a significant negative relationship between CTS and property and violent offending. This result was in the opposite direction as proposed in H_4 ; however, because the relationships were significant, CTS was included in mediation models for these two types of OB.

6.3.4.6. Mediation Analyses

As in Study 2, mediation analyses were run using Model 4 of the PROCESS macro for SPSS (version 4.0; Hayes, 2022) to test the fifth hypothesis. Indicator coding was used for all analyses. For analyses where property or violent offending were the outcome variables, the Socially Malevolent profile was the reference group because the analyses presented in Section 6.3.3. indicated that this group differed significantly from the other two groups on these variables; thus, the pairwise comparisons in these analyses were Socially Malevolent vs Reserved and Socially Malevolent vs Confident. However, for the mediation model with sexual offending as the outcome variable, the Confident group was the reference group because of its significant differences to the other two groups on this variable; the pairwise comparisons for these analyses were Confident vs Reserved and

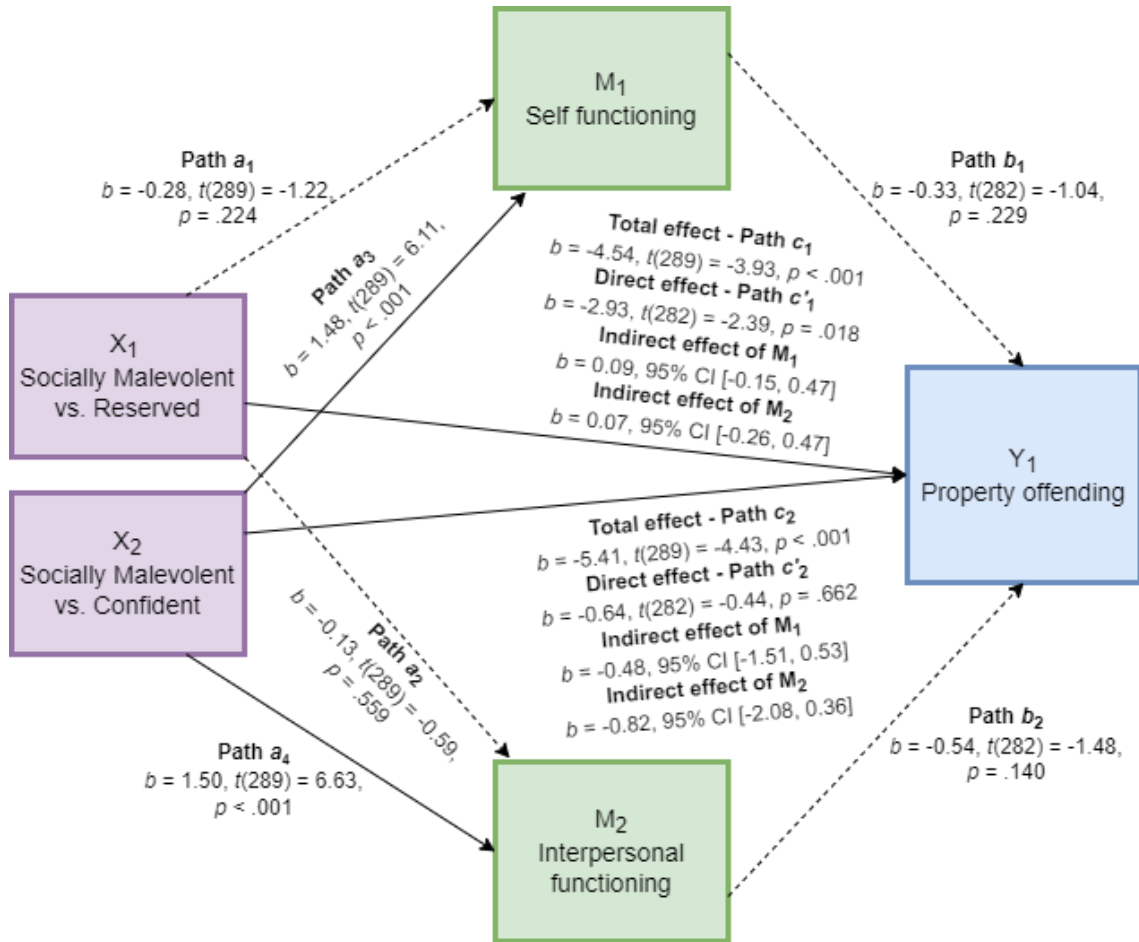
Confident vs Socially Malevolent. The process for mediation analyses otherwise mirrored that of Study 2 (see Chapter 5, Section 5.3.4.6. for a description).

6.3.4.6.1. Property offending. Results of the mediation analysis suggested that irritability mediated the difference in property offending between the Socially Malevolent and Reserved groups, $b = -1.09$, $SE = .52$, 95% CI [-2.24, -0.20], Sobel = 2.25, $p = .024$, and between the Socially Malevolent and Confident groups, $b = -2.03$, $SE = .89$, 95% CI [-3.78, -0.39], Sobel = 2.37, $p = .018$. However, no other significant mediations were found for property offending. Thus, the results for property offending partially supported H₅. As in Study 2, these results are presented in three separate diagrams: LPF (Figure 6.3), IS (Figure 6.4), and irritability and CTS (Figure 6.5). In all mediation diagrams, for paths a and b, dotted lines denote non-significance while unbroken lines indicate significant pathways.

6.3.4.6.2. Sexual offending. The difference in sexual offending between the Confident and Reserved groups was found to be mediated by Domineering IS, $b = 0.23$, $SE = .08$, 95% CI [0.10, 0.41], Sobel = 3.33, $p = .001$, and by irritability, $b = -0.13$, $SE = .05$, 95% CI [-0.25, -0.04], Sobel = 2.38, $p = .017$. The difference between the Confident and Socially Malevolent groups was also mediated by Domineering IS, $b = 0.43$, $SE = .12$, 95% CI [0.21, 0.69], Sobel = 4.35, $p < .001$, and irritability, $b = -0.28$, $SE = .10$, 95% CI [-0.49, -0.10], Sobel = 2.66, $p = .008$. No other significant mediations were present. These results partially support H₅, and are presented in Figures 6.6 (LPF), 6.7 (IS), and 6.8 (irritability and cognitive empathy).

Figure 6.3

Mediation Results for Profile (X), LPF (M), and Property Offending (Y)



6.3.4.6.3. Violent offending. Irritability was the only variable found to mediate the differences in violent offending between the Socially Malevolent and Reserved groups, $b = -0.54, SE = .20, 95\% CI [-0.98, -0.18], Sobel = 2.83, p = .005$, and between the Socially Malevolent and Confident groups, $b = -1.00, SE = .34, 95\% CI [-1.69, -0.37], Sobel = 3.07, p = .002$. These results partially support H₅ and are presented in Figures 6.9 (LPF), 6.10 (IS), and 6.11 (irritability and CTS).

Figure 6.4

Mediation Results for Profile (X), IS (M), and Property Offending (Y)

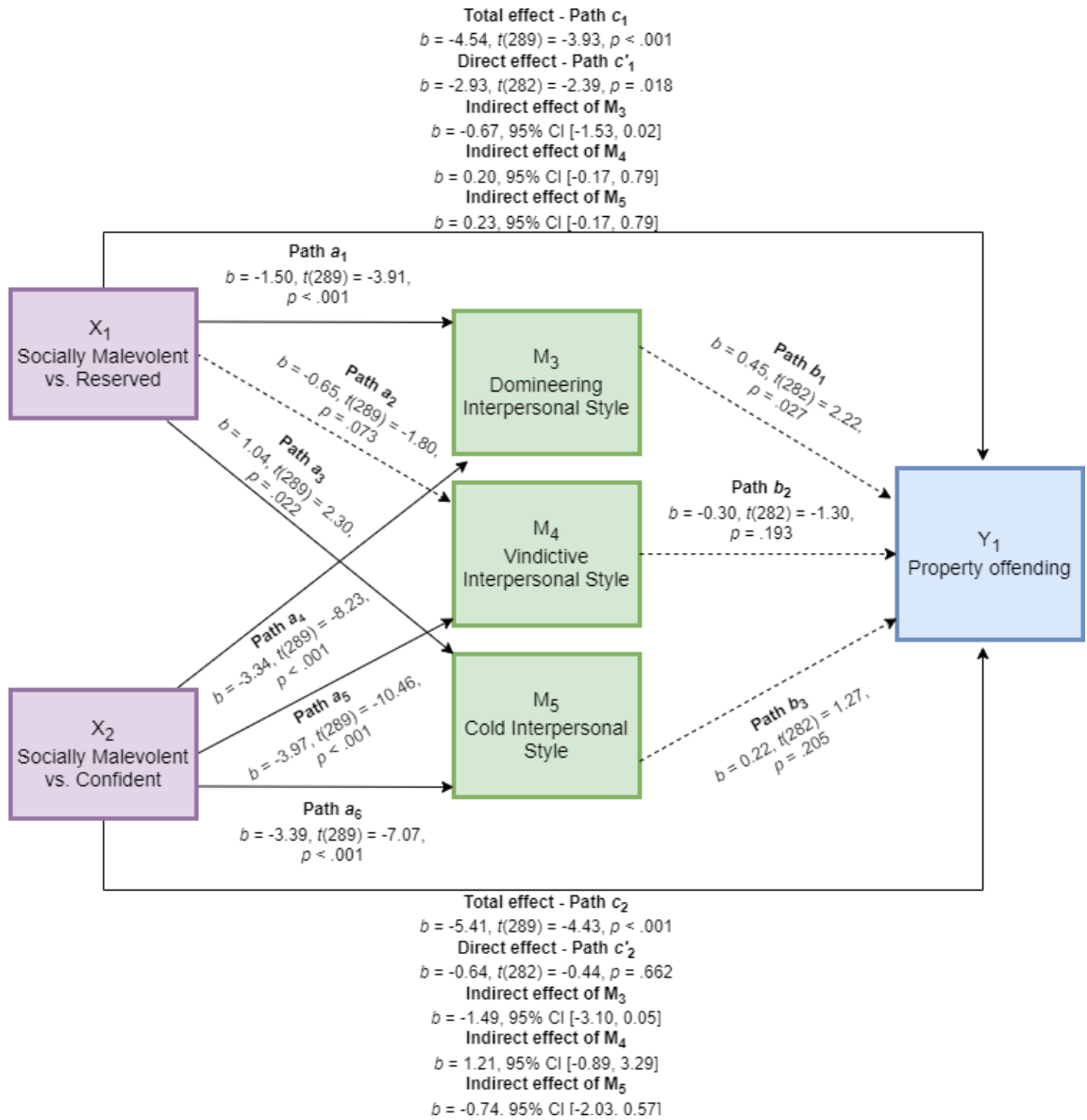


Figure 6.5

Mediation Results for Profile (X), Irritability (M), CTS (M), and Property Offending (Y)

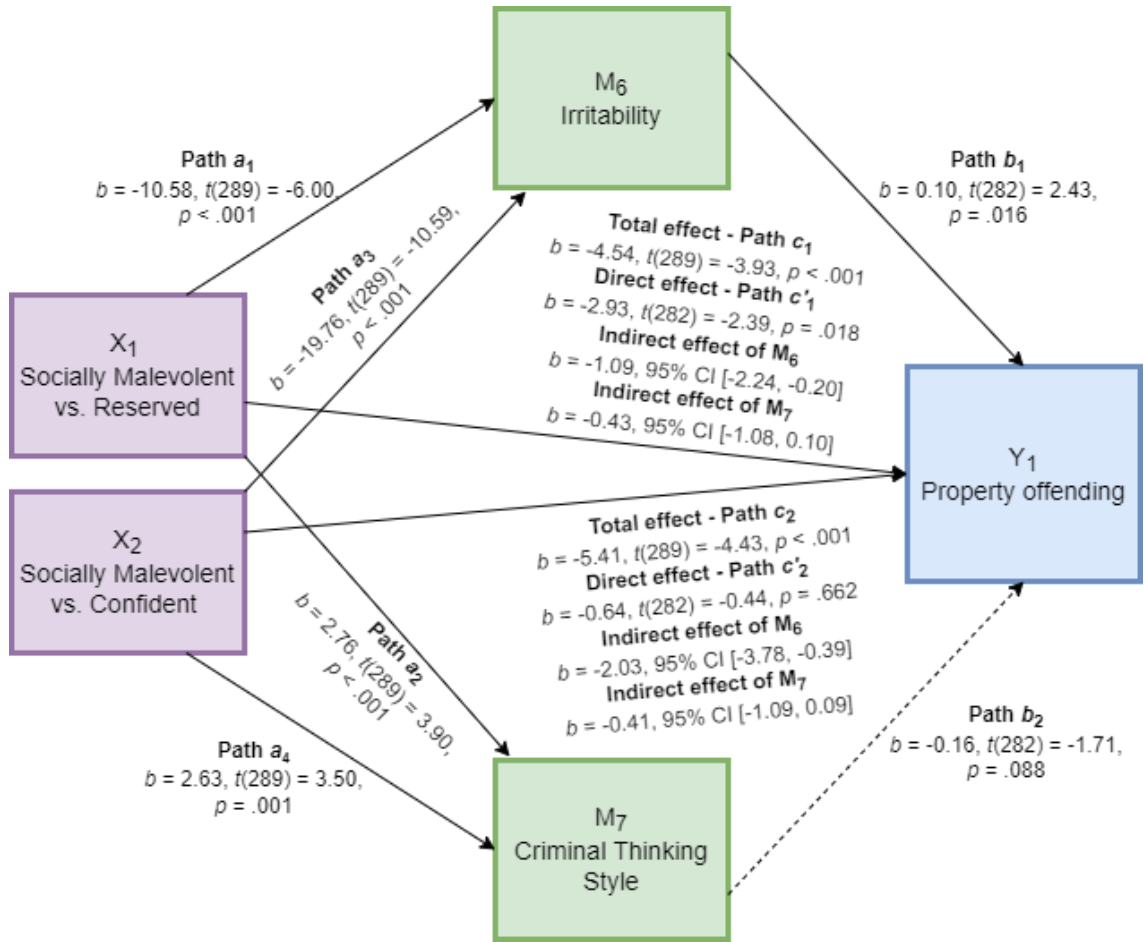


Figure 6.6

Mediation Results for Profile (X), LPF (M), and Sexual Offending (Y)

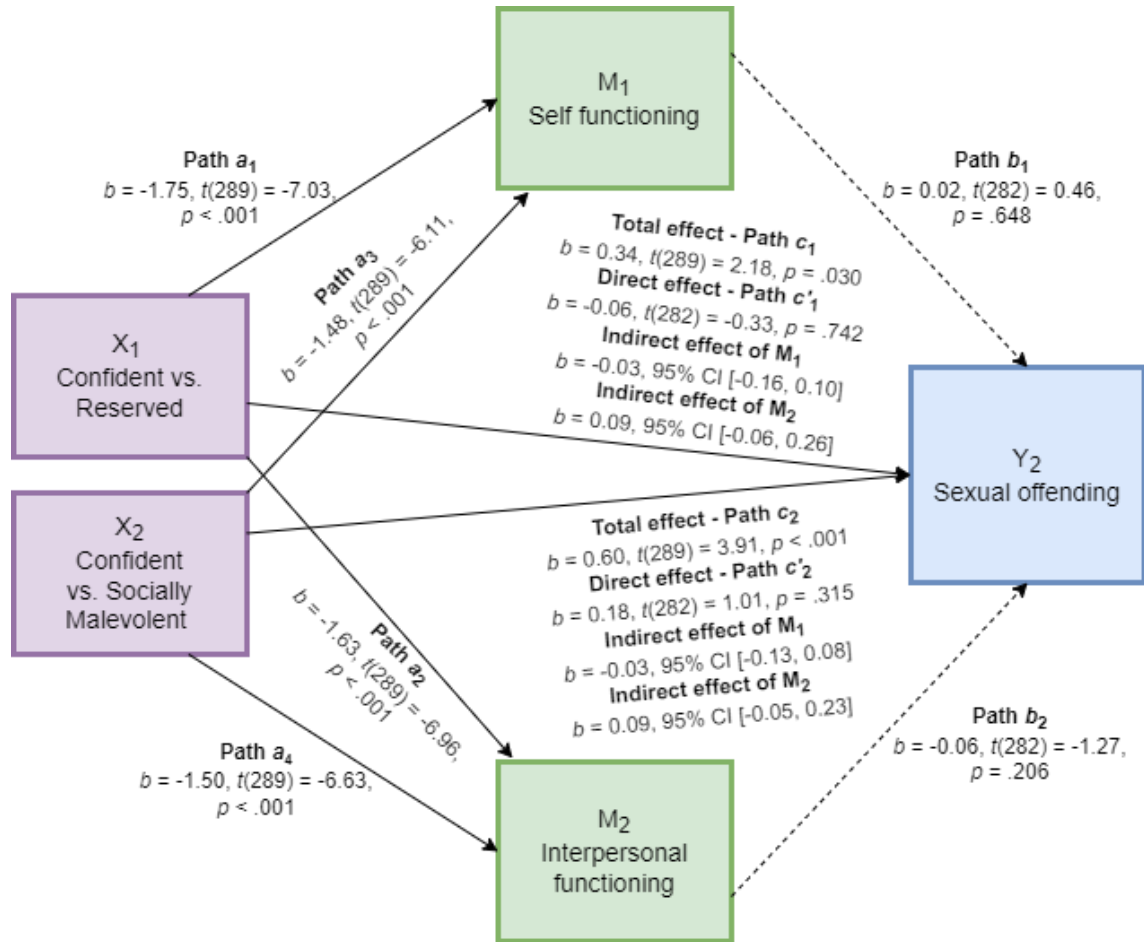


Figure 6.7

Mediation Results for Profile (X), IS (M), and Sexual Offending (Y)

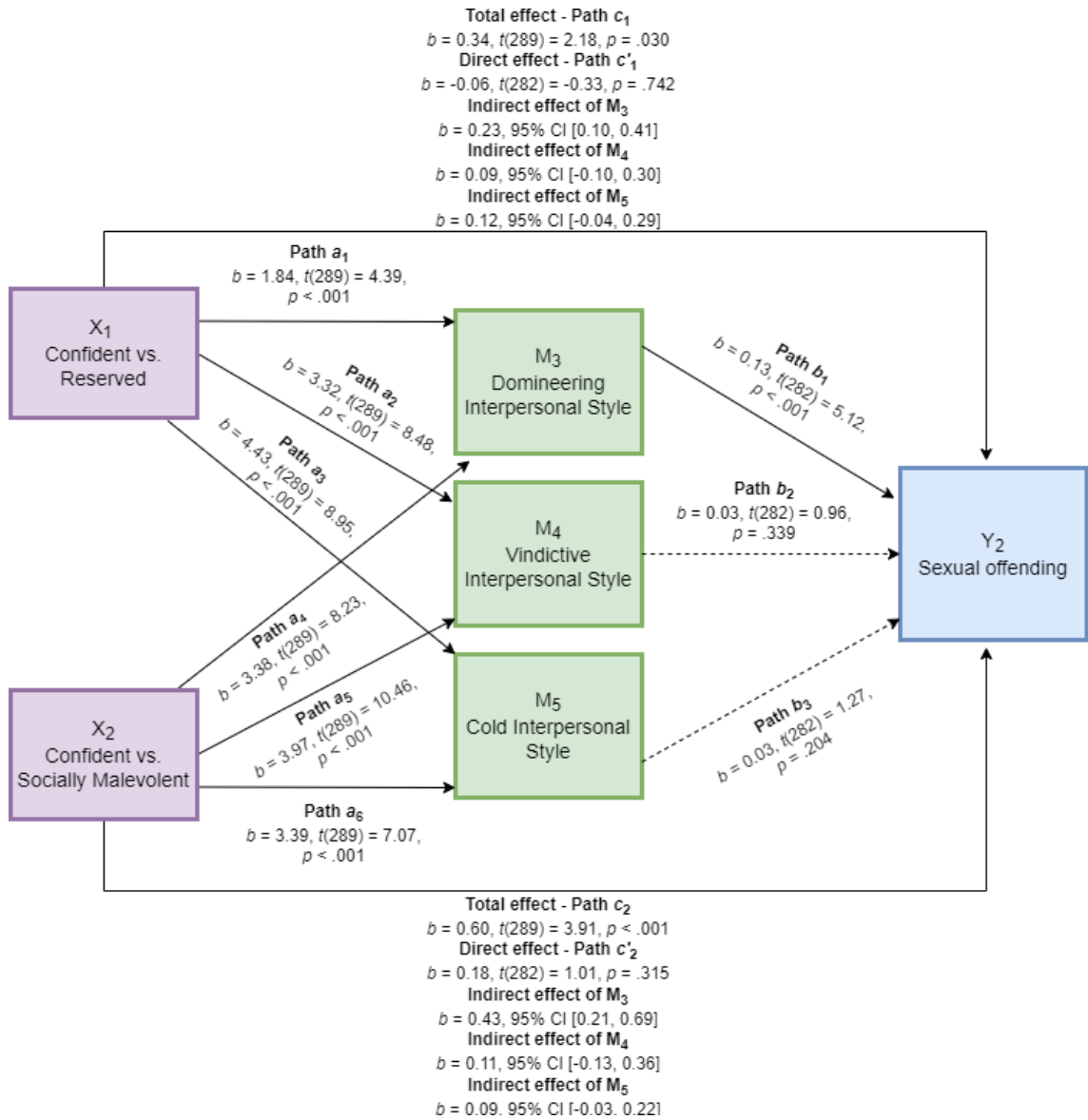


Figure 6.8

Mediation Results for Profile (X), Irritability (M), Cognitive Empathy (M), and Sexual Offending (Y)

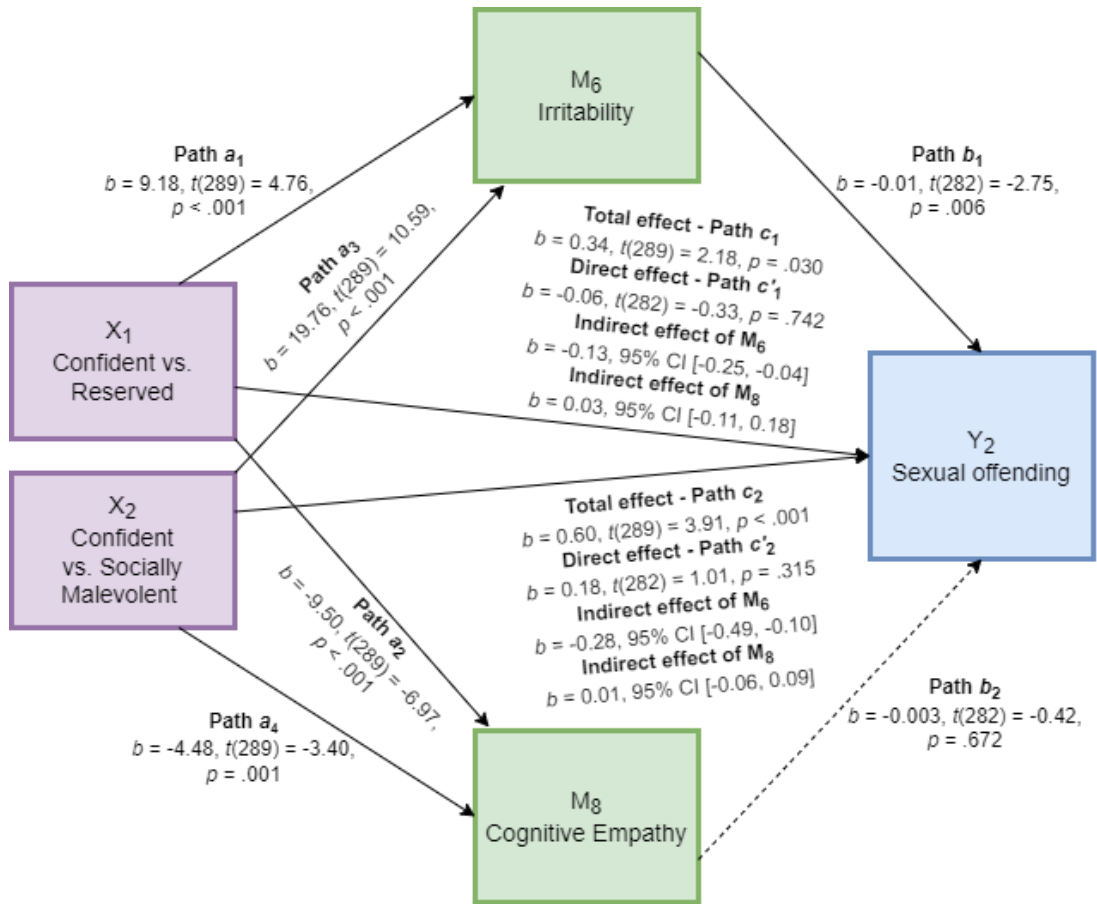


Figure 6.9

Mediation Results for Profile (X), LPF (M), and Violent Offending (Y)

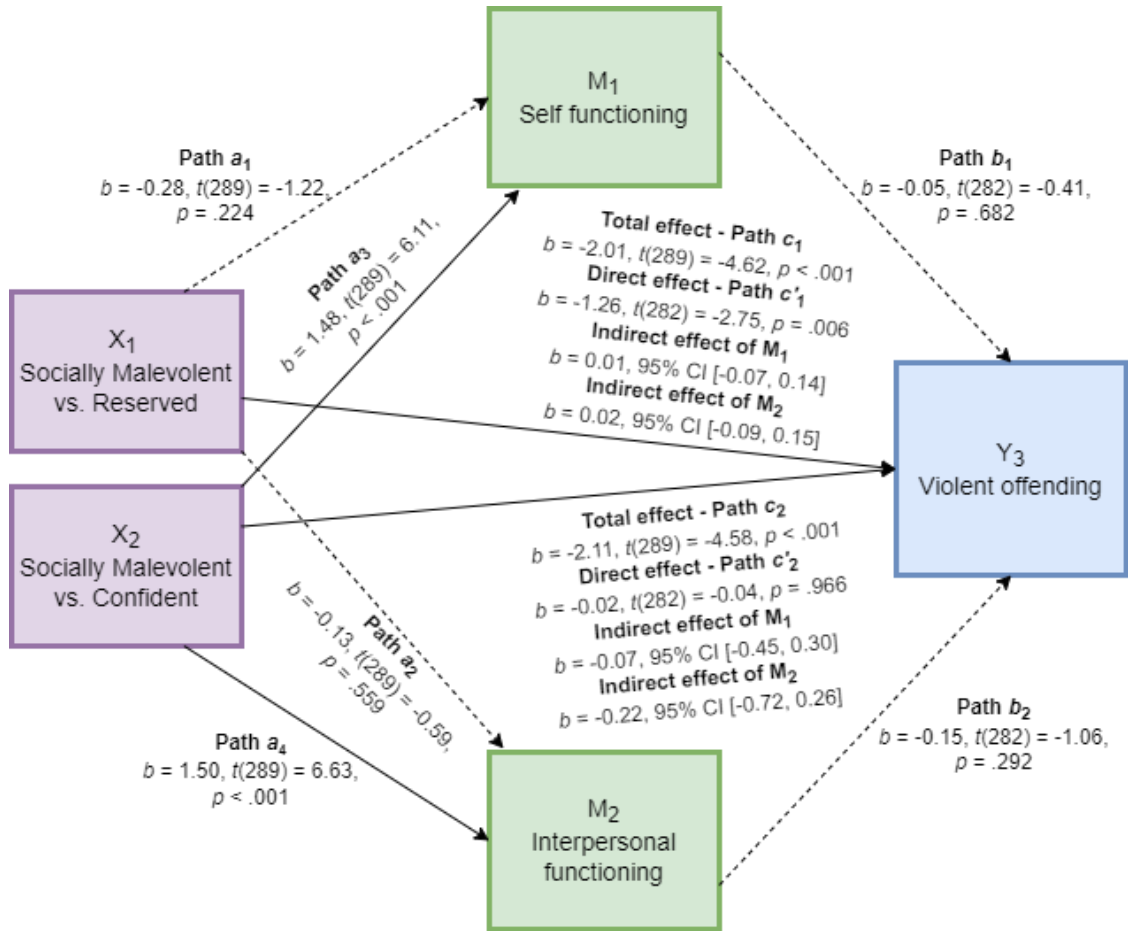


Figure 6.10

Mediation Results for Profile (X), IS (M), and Violent Offending (Y)

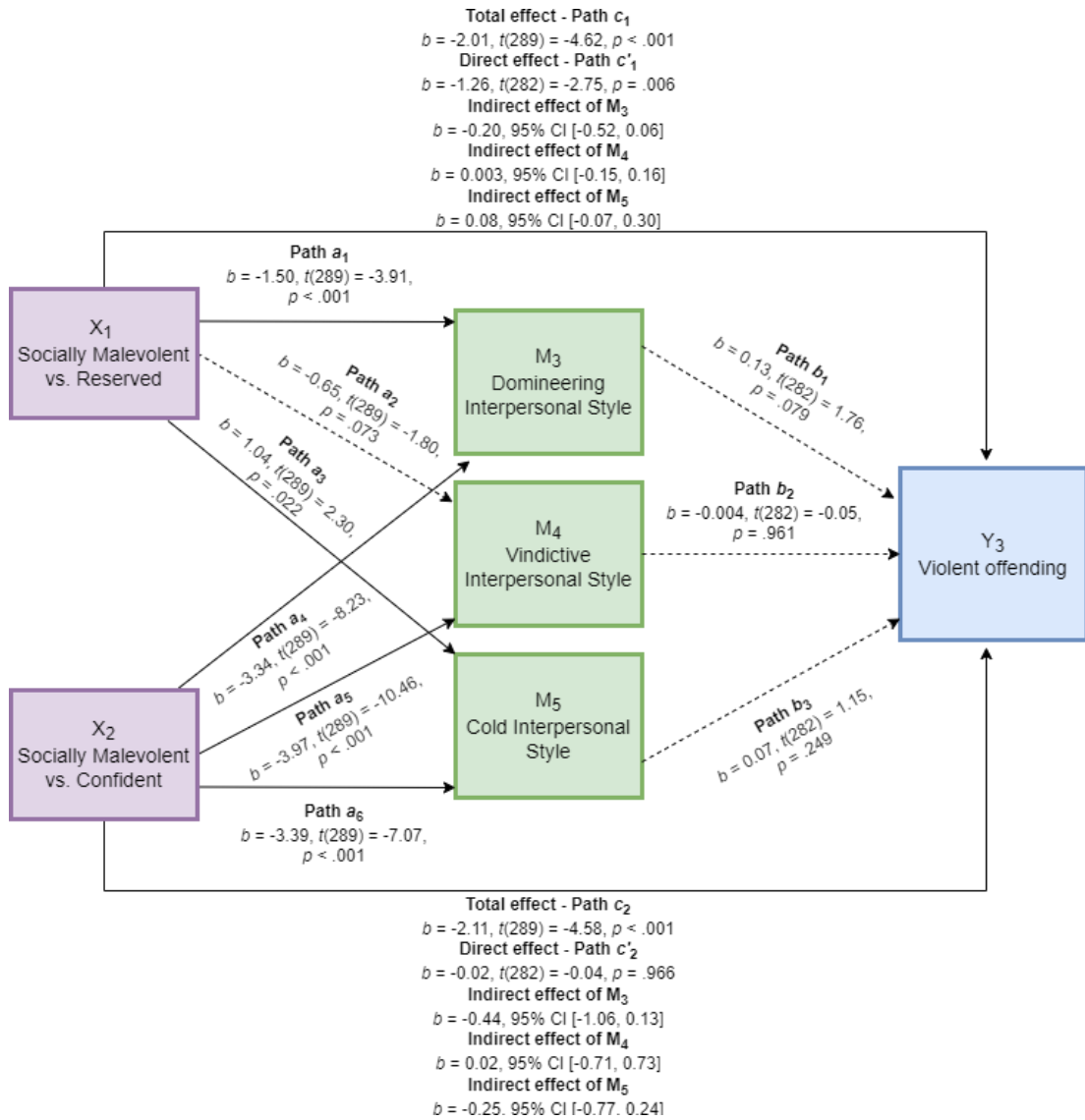
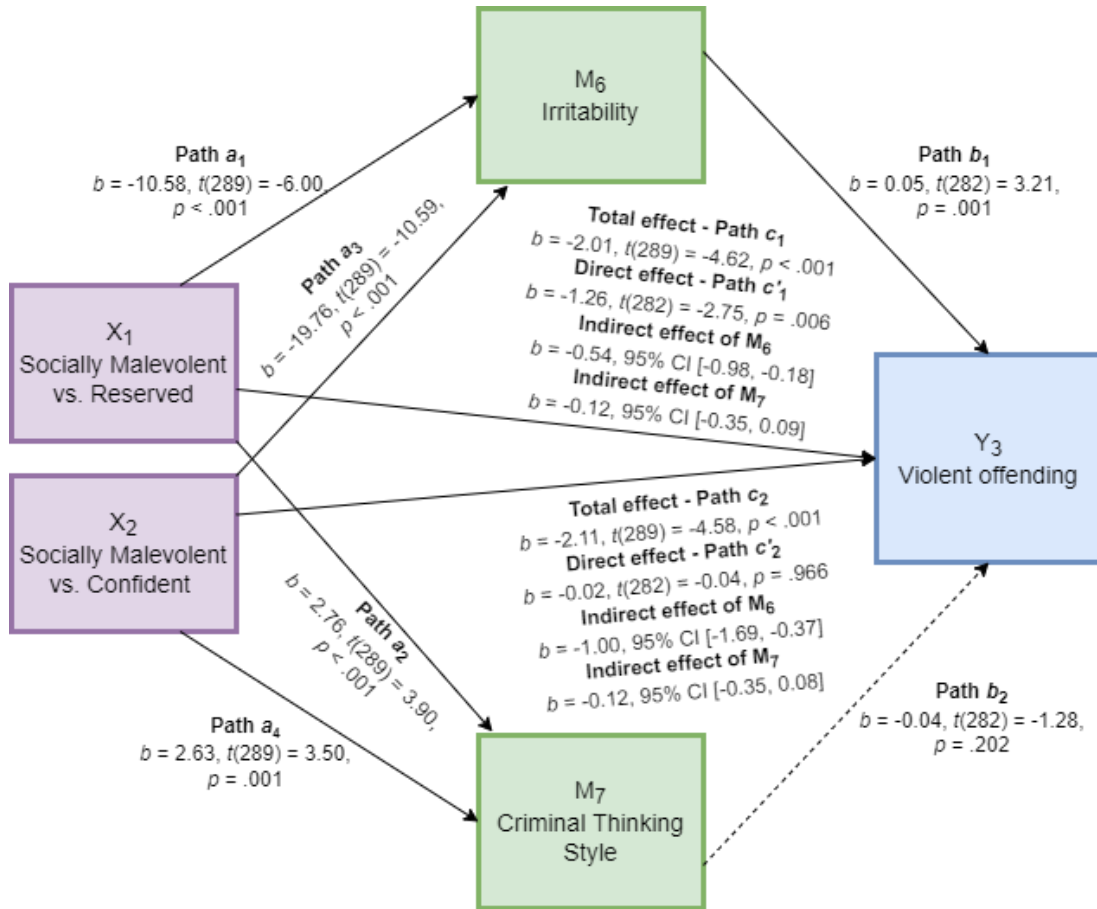


Figure 6.11

Mediation Results for Profile (X), Irritability (M), CTS (M), and Violent Offending (Y)



6.3.5. Results Summary

Mirroring Studies 1 and 2, three discrete personality profiles emerged from this study's male ex-offender sample. Through visual inspection and a series of MANOVAs, it was confirmed that, although not identical, these profiles were highly similar to those identified in the previous two studies. Accordingly, they were assigned the same labels (Confident, Reserved, and Socially Malevolent) in this study as in Studies 1 and 2.

The first hypothesis stated that levels of each type of OB would differ based on profile membership. This prediction was mostly supported, with property, sexual, and violent offending differing based on profile membership; however, levels of drug offending did not differ based on profile. It was also predicted that, if a darker profile emerged, it would be positively associated with OB. As mentioned, drug offending was not

related to profile group. However, the Socially Malevolent group scored significantly higher than the other two groups on property and violent offending. They also scored significantly higher than the Confident group on sexual offending, but were not different from the Reserved group on this type of OB. Thus, the prediction that this profile would be positively associated with OB was partially supported by the results.

The second hypothesis predicted that self functioning, interpersonal functioning, Domineering IS, Vindictive IS, Cold IS, affective empathy, cognitive empathy, irritability, and CTS would be associated with personality profile. This hypothesis was supported for all variables except for affective empathy, which was not related to profile group.

The third hypothesis stated that self functioning, interpersonal functioning, affective empathy, and cognitive empathy would be negatively associated with OB. This was partially supported. As drug offending had not been found to differ based on profile membership, it was omitted from all subsequent analyses. However, self and interpersonal functioning were indeed negatively associated with property, sexual, and violent offending, and cognitive empathy was negatively associated with sexual offending. Nonetheless, cognitive empathy was not related to property or violent offending, and affective empathy was not related to any type of OB.

The fourth hypothesis predicted that Domineering IS, Vindictive IS, Cold IS, irritability, and CTS would all be positively associated with OB. This prediction was partially supported by the results: all three IS's and irritability were positively associated with property, sexual, and violent offending. However, CTS was not related to sexual offending, and contrary to prediction, it was actually negatively associated with property and violent offending.

Finally, the fifth hypothesis was that self functioning, interpersonal functioning, Domineering IS, Vindictive IS, Cold IS, affective empathy, cognitive empathy, irritability, and CTS would mediate the relationships between profile membership and each type of

OB. This was not supported for drug offending, given its null association with profile group. For property offending, irritability mediated the differences between the Socially Malevolent and Reserved groups and between the Socially Malevolent and Confident groups, indicating a full mediation. However, none of the other variables were found to play a role. For sexual offending, both irritability and Domineering IS mediated the differences between the Confident and Reserved groups and between the Confident and Socially Malevolent groups. No other significant mediations were observed for this type of OB. Finally, for violent offending, irritability mediated the differences between the Socially Malevolent and Reserved groups and between the Socially Malevolent and Confident groups. Taken together, the results showed that irritability mediated the relationships between profile group and property, sexual, and violent offending. Domineering IS also mediated the relationship between profile group and sexual offending. LPF, Vindictive IS, Cold IS, cognitive empathy, and CTS did not mediate any of these relationships.

6.4. Discussion

As the final study in this thesis, the current study had three aims. First, it sought to determine whether the profiles that were observed in the community samples of Studies 1 and 2 would also emerge in an ex-offender sample. Second, it aimed to ascertain whether there were relationships between personality profiles and levels of self-reported property, drug, sexual, and violent offending. Third, it sought to investigate whether these associations, if significant, would be mediated by LPF, IS, empathy, irritability, and CTS.

Before proceeding with the variables of interest, the data were examined to assess whether UK participants differed in age from US ones. The results showed that UK participants were significantly older. While this is an interesting finding, it is not likely to have any bearing on the subsequent results, because although younger overall, the mean age of US participants was still 37.92 – an age which many would no longer consider to fit

the 'young adult' demographic that is repeatedly associated with severity and longevity of OB in the literature (e.g., Farrington, 1986; Hirschi and Gottfredson 1983; Moffitt 1993; Piquero et al. 2003).

As highlighted in Chapters 4 and 5 and summarised in Table 4.1, even when derived from the same personality trait models, profiles that emerge across different datasets often do not corroborate one another. Although the profiles observed in this study were not exact replications of those found in Studies 1 and 2, they were confirmed to be highly similar. This finding shows that the FFM- and DT-based profiles derived from community samples in the previous two studies are also generalisable to an ex-offender sample. Furthermore, it adds empirical support to the universality of the traits included in these profiles, demonstrating that darker trait patterns (i.e., the Socially Malevolent profile) are not unique to offender groups, but are also present in the community. Remarkably, 39% of the sample in both Study 2 and Study 3 were represented by the Socially Malevolent profile, despite these studies using community and ex-offender samples, respectively. The proportion was lower in Study 1, with only 31.6% of the sample fitting into this category. These findings suggest that elevation on dark traits may not be a trend that is unique to offender populations, furthering the mounting evidence in the literature that the DT model is applicable to a wide array of samples (e.g., Dinić & Jevremov, 2021; Furnham et al., 2013; Muris et al., 2017). Nonetheless, despite roughly equivalent proportions of the community samples in Studies 1 and 2 representing the Confident profile group (35.2% and 34.76%, respectively), the proportion of ex-offender participants in this study who fit into this category was much lower at 27.4%. Thus, although adaptive trait constellations such as those seen in the Confident profile can be found among offenders and non-offenders alike, they may be less prevalent among offender groups.

As in Study 2, the results of this study also contributed to increasing evidence that personality profiles can be reliably linked to behavioural outcomes. Participants in the

Socially Malevolent group scored significantly higher than both other groups on property and violent offending, and they were significantly higher on sexual offending than the Confident group. Similar to Study 2, these findings demonstrate that high levels of neuroticism and the darker traits captured by the DT, which are strongly represented in the Socially Malevolent profile group, may be especially conducive to OB. This premise is discussed further in Chapter 5, Section 5.4.

Nevertheless, drug offending did not differ according to profile in this study. The reason for this null finding is unclear, but it may be due to floor effects on this particular type of OB. Rates of drug and sexual offending were both low across all profile groups, but unlike sexual offending, drug offending showed large standard deviations. Thus, it is possible that this type of OB was simply not strongly represented in this particular ex-offender sample.

Another consideration is that drug offending is the only type of OB measured in this research that does not involve an interpersonal element in any way (sexual and violent offending are arguably inherently interpersonal, while property offending generally involves theft from another person or group of people). Thus, the drivers of drug offending may be more strongly related to economic necessity than any particular aspect of one's personality. Indeed, all drug offending questions on the offending questionnaire used in this research (Teague et al., 2008) pertained to drug *trafficking* specifically. According to an in-depth investigation of the motivations behind OB in a sample of drug trafficking offenders, the primary motive for this type of OB is financial gain (Desroches, 2005). Theoretical explanations for drug trafficking offending tend to centre on criminological explanations, such as strain theory, social disorganisation theory, and structural disadvantage theory (Desroches, 2005). Hence, this type of OB may be qualitatively different to the interpersonally-driven violent, sexual, and property offence types. This

would explain why the personality-based constructs measured in this study were not strongly related to drug offending, despite the use of an ex-offender sample.

Given the lack of relationship between profile and drug offending, this type of OB was not included in any mediation analyses. Likewise, many of the other predictions for the mediated relationships between profile and OB were not fully supported by the study results. These findings are discussed below.

6.4.2.1. Level of Personality Functioning

The significant relationships observed between profile membership and both types of LPF (self and interpersonal functioning) in this study were as expected, given that LPF is an inherent component of one's overall personality (see Chapter 1, Section 1.2.2.). As in Study 2, self and interpersonal functioning were both higher among Confident participants than Reserved or Socially Malevolent ones; this suggests that the positive, adaptive constellation of traits found in the Confident profile group contribute to a high degree of personality functioning. Likewise, both types of LPF were negatively associated with property, sexual, and violent offending, contributing to the evidence (see Chapters 1, 2, and 5) that unpopular, antisocial aspects of personality are related to OB.

Nonetheless, LPF did not mediate the relationships between personality profile and any type of OB in this study. This was surprising, especially considering interpersonal functioning did play a role in these relationships in Study 2's community sample. It is possible that, like Study 2, floor effects played a role in the null result for sexual offending, as levels of this type of OB were relatively low (see Table 6.6.) in this study despite its use of an ex-offender sample. Nonetheless, it remains unclear why neither self nor interpersonal functioning mediated relationships between profile and property or violent offending. Similar to the discussion of empathy and agreeableness in Chapter 5 (Section 5.4.3.), perhaps the constellations of traits in each profile served to subsume the potential role of LPF in mediating the relationships between traits and OB. LPF was highest among

Confident participants, a profile comprising healthy, adaptive trait levels. Because LPF is intrinsically related to personality and therefore traits, the high levels of personality functioning seen in the Confident profile group may already be represented by its trait distribution, making the addition of LPF redundant. Furthermore, LPF was conceptualised as a clinical construct, having been introduced for the first time in the DSM-5 (APA, 2013). As such, it may only hold explanatory value in the context of clinically disordered personality. Given that this construct is still in its relative infancy, more research may be needed to better elucidate the structure of this construct and whether it is related to behavioural outcomes outside the clinical domain.

6.4.2.2. Empathy

Only cognitive empathy was found to differ based on profile membership in this study, being highest among Confident participants and lowest among Reserved ones. Reserved participants in Study 2 also showed the lowest levels of empathy. The constellation of traits seen in this group suggest that they are introverted, closed to experience, disagreeable, and low in self-esteem while also being slightly neurotic. It is possible that this combination leads to social challenges for these individuals, who may not hold high interest in relationships with others (Costa & McCrae, 1992; McCrae & Costa, 1989; McCrae & John, 1992); perhaps this may result in or stem from empathy deficits. Nonetheless, given that empathy is considered to be a relatively stable aspect of one's personality (Mangione et al., 2002) and to show strong positive associations with agreeableness (Costa et al., 2001; Graziano & Eisenberg, 1997; Magalhães et al., 2012; Mooradian et al., 2011) and negative associations with the DT traits (Heym et al., 2019; Schimmenti et al., 2019), it is surprising that empathy resulted in mostly null associations with personality profiles in this study. However, the empirical evidence regarding empathy and the DT is conflicting thus far, with some studies finding negative associations between these variables and others finding no relationships between them (see Chapter 1, Section

1.2.4. for a summary). As DT research continues to proliferate, it is hoped that more clarity will emerge regarding the structural components of these traits and how empathy may play a role.

The only significant association between empathy and OB in this study was that cognitive empathy was negatively related to sexual offending. This finding aligns with theoretical conceptualisations of this offence type, whereby it is proposed that a lack of empathy with one's victims is a key aetiological factor precipitating sexual offending behaviour (Finkelhor, 1984; Malamuth, 1988; Marshall & Barbaree, 1990; Marshall et al., 1995). This assertion has received empirical support in the literature (e.g., Schuler et al., 2019, 2021). Nonetheless, cognitive empathy did not significantly mediate the relationship between profile and sexual offending in this study. Again, it is possible that this was due to the strong conceptual overlap between agreeableness and empathy, which may have rendered mediation an ineffective approach for examining how empathy may impact engagement in OB over and above the contributions of agreeableness (Fiedler et al., 2018).

Although results did not support the prediction that affective empathy would also be negatively related to OB, a meta-analysis by van Langen et al. (2014) showed that the relationships between empathy and OB are much stronger for cognitive than affective empathy, and this may explain why affective empathy was not related to any type of OB in this study. Future research, with larger samples and therefore increased power, may be better positioned to detect smaller effects in the data than this study's design was capable of. Nonetheless, this does not explain why cognitive empathy was not related to property or violent offending in this study. Perhaps these offence types are more likely to be driven by other factors, such as callousness (Kahn et al., 2013; Ray et al., 2017), financial strain resulting from drug use (Burnett, 2004; Felson & Staff, 2017), or parasitic lifestyle (Hare, 1991, 2003). Meanwhile, Robinson and Rogers (2015) showed that psychopathic offenders are capable of feigning both types of empathy with ease when instructed to do so; as such,

it is also possible that the ex-offenders in this study were simply engaging in untruthful responding. Although efforts were made to control for this behaviour through the use of the BIDR-16, as suggested in Chapter 2, accuracy of results may be strengthened by the use of more objective measures of OB such as the use of official records.

6.4.2.3. Interpersonal Style

As with Study 2, the results of this study provided more support to the notion that the interpersonal circumplex is complimentary to the FFM (Trapnell & Wiggins, 1990) and that the DT maps directly onto this model (Dowgwillo & Pincus, 2017; Jones & Paulhus, 2011). Seven of the eight IS's were found to differ based on profile in this study, with Socially Malevolent participants scoring significantly higher on Domineering IS than the other two groups and higher on Vindictive and Cold IS's than the Confident participants. Furthermore, all three of these IS's were positively related to property, sexual, and violent offending, evidencing the relevance of interpersonal theory to investigations of OB. Together, these findings show that one's approach to interpersonal interactions is fundamentally linked to their personality and the way they behave. Interestingly, none of these IS's were found to mediate the relationships between profile and property or violent offending. However, Domineering IS, which represents very high dominance and moderate hostility within the circumplex (see Chapter 1, Section 1.2.3.), mediated the relationship with sexual offending. Among these three types of OB, it could be argued that sexual offending involves the strongest interpersonal elements, and as such, the results suggest that Domineering IS is conducive to dominating one's victim, in a hostile manner, in the pursuit of power or sexual satisfaction (Malamuth et al., 1996). This finding shows the utility of interpersonal style to explanations of, and pathways to, some types of OB. Furthermore, the divergent findings across offence type in this study (and in Study 2) offer evidence to support the proposition that different types of OB may be underpinned by

disparate motivations and pathways (Bonta & Andrews, 2017; Ireland, Ireland, & Birch, 2019).

6.4.2.4. Irritability

In this study, irritability was significantly related to profile membership, whereby it was highest among Socially Malevolent participants and lowest among Confident ones. This adds more empirical weight to the notion that the Confident profile conceptualises an adaptive, prosocial personality type, and corresponds with two studies by Caprara, Barbaranelli, and Zimbardo (1996) and Caprara, Alessandri, et al. (2013) which found that irritability is positively associated with neuroticism and negatively associated with agreeableness—trait patterns which are present in the Socially Malevolent and Reserved profiles, but the opposite of what is captured in the Confident profile. Meanwhile, results showed that irritability was positively related to property, sexual, and violent offending. These findings align with the predominant trend in the literature, which shows that irritability plays a key role in such behavioural outcomes as aggression (Anderson, 1997; Bettencourt et al., 2006; Caprara, Cinanni, et al., 1985; Caprara, Barbaranelli, & Zimbardo, 1996; Zillman & Weaver, 2007), violence (Caprara, Alessandri, et al., 2013; Caprara, Paciello, et al., 2007; Caprara, Tisak, et al., 2014), and OB (Firestone et al., 2005; Walters, 2020).

Moreover, irritability was the only variable in this study to fully and consistently mediate the relationships between profile and OB, showing significant mediations for all offence types analysed. This is the opposite of Study 2, whereby it was observed that irritability did not mediate any relationships between profile and offence type, despite being significantly associated with both constructs. This suggests that irritability may be a critical driving force of OB among offenders, more so than among the general population. The significant findings for irritability in this study align with empirical endeavours which have found irritability to be a stable trait and aspect of one's personality (Caprara, Paciello,

et al., 2007) and a determinant of aggression (Caprara, Barbaranelli, & Zimbardo, 1996; Dill et al., 1997). Thus, this study's findings support the inclusion of irritability as an individual difference and personality factor that is intrinsic to maladaptive and antisocial behaviours.

6.4.2.5. Criminal Thinking Style

CTS was significantly higher among Socially Malevolent participants than Reserved and Confident ones, evidencing the possibility that the darker constellation of traits seen in this profile group are conducive to criminal attitudes and corroborating with empirical evidence which suggests CTS is associated with low agreeableness and conscientiousness (Eichelsheim et al., 2015). Nonetheless, CTS was unrelated to sexual offending and, contrary to predictions, was actually *negatively* related to property and violent offending. Given that CTS is a variable intrinsically related to criminality (Simourd et al., 2015), and which has been repeatedly linked to OB in the literature (Banse et al., 2013; Gendreau et al., 1997; Walters, 2012, 2016), this is perhaps the most surprising finding from the current study. The most likely explanation for this is the ex-offender nature of the sample used. While CTS is fundamentally related to OB (Simourd, 1997; Simourd & van de Ven, 1999; Simourd et al., 2015), this sample comprised individuals who had been formerly incarcerated but who are now living in the community. Thus, they may be relatively far removed from their criminal histories and therefore reformed or rehabilitated, resulting in attitudes that oppose criminal thinking. This is a hopeful proposition, as it would mean that the correctional system does, at least some of the time, successfully rehabilitate offenders and enable them to succeed in prosocial, offence-free lifestyles upon their release. This would explain why participants' levels of past OB were negatively related to their current levels of CTS, and why CTS therefore did not mediate any relations between personality and OB.

6.4.3. Limitations and Conclusions

This study had many of the same limitations as Study 2, including the use of a male-only sample and modest sample size. In addition, although an ex-offender sample offers a wealth of opportunity for determining associations between various factors and OB, it is perhaps not as valuable to such investigations as a currently incarcerated offender sample would be. Thus, it would be highly beneficial to explore this thesis' research questions in larger, female or mixed-gender, and forensic samples to assess whether the included variables hold more or differently explanatory power with these groups.

This study added to the results of Studies 1 and 2 by showing that discrete personality profiles derived from the FFM and DT models can be identified in an ex-offender sample and, moreover, shown to be largely similar to those derived from other sample types. Alongside Study 2, this study has also established that some aspects of personality, over and above traits, can help explain the overarching drivers of OB. The following chapter will present a general summary of the results of this thesis, synthesised with the wider literature, and a discussion of the potential implications of these findings.

CHAPTER 7: CONCLUDING DISCUSSION

7.1. Overview

This thesis sought to elucidate personality-based drivers of OB. Specifically, it aimed to improve current understanding of the associations between personality traits and self-reported OB, and to investigate how other personality features (level of personality functioning, interpersonal style, irritability, empathy, and criminal thinking style) may impact these relationships. Chapter 1 presented the guiding theoretical framework (interpersonal theory; Leary, 1957; Sullivan, 1953) and a review of the existing literature elucidating current knowledge with regards to each personality construct of interest and how they are related to OB. Chapter 2 followed with a systematic review of the literature surrounding associations between individual personality traits and OB. Next, the methodological approaches taken for the empirical parts of the thesis were detailed in Chapter 3. Then, building on one another, Chapters 4-6 presented a series of studies that addressed this thesis' overarching research question: how are personality traits related to OB, and how do other personality features contribute to these relationships? This chapter summarises and synthesises the findings of those three studies and outlines how this thesis contributes new knowledge. A discussion of the limitations of this thesis, implications of its results, and recommendations for future research are also included.

7.2. Summary of Findings

Study 1 (see Chapter 4) established three personality profiles, encompassing the FFM (McCrae & Costa, 1987) and DT (Paulhus & Williams, 2002) traits, in a predominantly UK-based male community sample. The profiles were assigned labels of *Reserved*, *Confident*, and *Socially Malevolent* following a visual inspection of their respective trait distributions. These profiles were largely replicated in a US-based male community sample in Study 2 (see Chapter 5), and were found to be significantly related to self-reported property, drug, sexual, and violent offending. A series of mediation analyses

were conducted to assess whether the other personality features of interest mediated these relationships. Lastly, Study 3 (see Chapter 6) was carried out in the same manner as Study 2, except an ex-offender sample was used to address the research questions. Again, the profiles were largely replicated, and were found to be associated with property, sexual, and violent offending; however, profiles were not associated with drug offending in that study.

The results of the mediation analyses conducted in Studies 2 and 3 are summarised in Table 7.1, and positioned alongside the studies' hypotheses in Table 7.2.

7.3. Synthesis of Findings

Many previous investigations have presented personality trait models derived from the FFM (see Chapter 4, Section 4.1.1. for a review), and one study thus far has done so using the DT (Garcia & MacDonald, 2017). However, despite ample evidence in the literature that the FFM traits are associated with myriad psychological and behavioural outcomes, including antisocial behaviour, an important focus of research in this area should be to establish the predictive accuracy of these traits (Yarkoni & Westfall, 2017). To succeed in this endeavour, traits cannot only be examined in isolation, as there is significant overlap between personality traits, as well as their lower-level facets (Stewart et al., 2022). Hence, there are growing calls to look beyond the predictive value of single traits in isolation; instead, it is proposed that the field look towards the combined predictive value of many traits together and the ways they interact (Herzberg & Hoyer, 2009; Möttus et al., 2020; Stewart et al., 2022). This thesis contributes to the forefront of this venture, representing the first attempt to establish personality profiles that include all of the FFM and DT traits together (Study 1).

Three discrete profiles encompassing the FFM and DT traits were found in Study 1 (Chapter 4), supporting the utility of examining these two trait models in tandem. Furthermore, highly similar profiles were observed in two other samples (Studies 2 and 3), transcending the boundaries of geographical location (UK vs US) and sample type

Table 7.1*Summary of Mediators Tested in Studies 2 and 3*

Offence Type	Study 2		Study 3	
	Mediators Tested	Significant Mediations	Mediators Tested	Significant Mediations
Property	Self functioning	<i>ns</i>	Self functioning	<i>ns</i>
	Interpersonal functioning	SM vs. C	Interpersonal functioning	<i>ns</i>
	Domineering IS	<i>ns</i>	Domineering IS	<i>ns</i>
	Vindictive IS	SM vs. C SM vs. R	Vindictive IS	<i>ns</i>
	Cold IS	<i>ns</i>	Cold IS	<i>ns</i>
	Irritability	<i>ns</i>	Irritability	SM vs. R SM vs. C
			Criminal thinking style	<i>ns</i>
Drug	Self functioning	<i>ns</i>		
	Interpersonal functioning	SM vs. C		
	Domineering IS	<i>ns</i>	None	n/a
	Vindictive IS	<i>ns</i>		
	Cold IS	<i>ns</i>		
	Irritability	<i>ns</i>		
Sexual	Self functioning	<i>ns</i>	Self functioning	<i>ns</i>
	Interpersonal functioning	<i>ns</i>	Interpersonal functioning	<i>ns</i>
	Domineering IS	<i>ns</i>	Domineering IS	C vs. R C vs. SM
	Vindictive IS	<i>ns</i>	Vindictive IS	<i>ns</i>
	Cold IS	<i>ns</i>	Cold IS	<i>ns</i>
	Irritability	<i>ns</i>	Irritability	C vs. R C vs. SM
			Cognitive empathy	<i>ns</i>
Violent	Self functioning	<i>ns</i>	Self functioning	<i>ns</i>
	Interpersonal functioning	SM vs. C	Interpersonal functioning	<i>ns</i>
	Domineering IS	<i>ns</i>	Domineering IS	<i>ns</i>
	Vindictive IS	SM vs. C SM vs. R	Vindictive IS	<i>ns</i>
	Cold IS	<i>ns</i>	Cold IS	<i>ns</i>
	Irritability	<i>ns</i>	Irritability	SM vs. R SM vs. C
			Criminal thinking style	<i>ns</i>

Note. *ns* = non-significant. SM = Socially Malevolent. C = Confident. R = Reserved. IS = interpersonal style. For all mediation analyses, profile group was the predictor variable.

Table 7.2*Summary of the Hypotheses and Results in Studies 2 and 3*

Hypothesis	Results	
	Study 2 (community sample; <i>n</i> = 210)	Study 3 (ex-offender sample; <i>n</i> = 292)
H1. Scores on all types of OB ^a will differ based on profile membership, and the Socially Malevolent profile will be positively associated with OB.	All types of OB differed based on profile membership. The SM group scored significantly higher than the R and C groups on property, sexual, and violent offending. The SM group scored significantly higher than the C group on drug offending.	Property, sexual, and violent offending differed based on profile membership. The SM group scored significantly higher than the R and C groups on property and violent offending. The SM group scored significantly higher than the C group on sexual offending.
H2. All potential mediators ^b will be associated with profile group.	Except for CTS, all potential mediators were significantly associated with profile group.	Except for affective empathy, all potential mediators were significantly associated with profile group.
H3. Self functioning, interpersonal functioning, affective empathy, and cognitive empathy will be negatively associated with OB ^c .	Self and interpersonal functioning were negatively associated with all types of OB, but affective and cognitive empathy were not.	Self and interpersonal functioning were negatively associated with property, sexual, and violent offending. Cognitive empathy was negatively associated with sexual offending. Affective empathy was not associated with OB.
H4. Domineering IS, Vindictive IS, Cold IS, irritability, and CTS will be positively associated with OB ^c .	All IS's and irritability were positively associated with OB. CTS was not associated with OB.	All IS's and irritability were positively associated with OB. CTS was negatively associated with OB.
H5. All potential mediators will mediate the relationships between profile group & each type of OB.	Property offending: Vindictive IS fully mediated the relationships. Interpersonal functioning also mediated the difference between SM and C groups. Drug offending: Interpersonal functioning mediated the difference between the SM and C groups. Sexual offending: No significant mediations were observed. Violent offending: Vindictive IS fully mediated the relationships. Interpersonal functioning also mediated the difference between SM and C groups.	Property offending: Irritability fully mediated the relationships. Sexual offending: Irritability and Domineering IS fully mediated the relationships. Violent offending: Irritability fully mediated the relationships.

Note. ^aProperty, drug, sexual, and violent. ^bself functioning, interpersonal functioning, Domineering IS, Vindictive IS, Cold IS, irritability, cognitive empathy, affective empathy, and criminal thinking style. ^cBecause drug offending was not related to profile membership in Study 3, it was not included in the analyses for H3 and H4 in that study. SM = Socially Malevolent. C = Confident. R = Reserved. IS = interpersonal style. CTS = criminal thinking style.

(community vs ex-offender). The visual and quantitative similarities between the profiles in these three studies (see Chapter 5, Section 5.3.2., and Chapter 6, Section 6.3.2.) signify the external validity of the profiles initially established in Study 1, indicating that the results of Study 1 are robust and generalisable to other groups.

It is not surprising that, although so qualitatively and quantitatively similar that they can be regarded as nearly identical, the profiles that emerged across the three studies were not exact copies of one another. As discussed in Chapter 4, a jingle fallacy is prominent in personality research, including instances where different profiles are given the same names across studies (Kuper et al., 2021; see Table 4.1 for a summary). This tendency showcases the unlikelihood that profiles emerge as completely indistinguishable from study to study and from sample to sample. However, so long as the profiles are confirmed to be highly similar, the jingle fallacy is not being perpetuated. Thus, the observance of profiles that are virtually the same across three different samples is an encouraging result, holding promise for the utility and generalisability of these profiles as applicable to more diverse populations than has sometimes been the focus in previous work. At the same time, the profiles found in this research represent a brand-new approach, given they are the first to incorporate both the FFM and DT models together. As such, many more studies are required before the universality of these profiles can be ascertained. Nonetheless, given the lack of clarity in the field regarding the stability of the well-known ‘ARC’ profiles (see Chapter 4, Section 4.1.1.), these findings represent an exciting step forward for personality profile research.

Meanwhile, Studies 2 and 3³⁰ presented the same hypotheses with different samples; some results were in line with the thesis’ hypotheses, while others were unexpected (see Table 7.2). Overall, findings supported the prediction that rates of OB would vary based on

³⁰ No hypotheses were presented in Study 1, as it was exploratory in nature.

personality profile; however, in Study 3 drug offending was unrelated to profile membership. While it is unclear why this was the case, a possible explanation is that drug offending is simply not driven by any kind of interpersonal motivations; rather, it appears to be primarily motivated by financial gain or necessity (Desroches, 2005). In this way, drug offending may stand apart from the more interpersonally-driven violent, sexual, and property offence types (see Chapter 6, Section 6.4.), representing a type of OB that is not associated with personality.

In Studies 2 and 3, the Socially Malevolent profile group scored significantly higher than both other groups on property and violent offending, while also scoring higher than both other groups on sexual offending in Study 2. These findings illustrate the relevance of high-DT scores to instances of OB. Although the DT has been linked to many broad maladaptive or antisocial outcomes, previous investigations have not focused on associations with actual self-reported OB (see Chapter 1, Section 1.2.1.3., and Chapter 2, Section 2.4.2.). Thus, this finding contributes to the incremental validity of the DT model's potential for predicting criminal offending. Moreover, although high scores on Machiavellianism, psychopathy, and narcissism were the most prominent feature of this profile group, elevated scores on neuroticism and below-average scores on agreeableness and conscientiousness were also observed in the Socially Malevolent profile across the three studies. Thus, the associations between this profile group and different types of OB also contribute to the growing evidence that low scores on agreeableness and conscientiousness are strongly linked to antisocial and offending behaviour (see Chapter 2 for an in-depth discussion).

Furthermore, it provides some clarity regarding the relevance of neuroticism, as the results of this thesis' systematic review (Chapter 2) showed that the role of neuroticism in OB is far less certain in the extant literature. This thesis' findings therefore contribute new knowledge to the evidence base that suggests high scores on neuroticism are relevant to

OB (e.g., Kumari et al., 2017; Rolison et al., 2013; Sommer et al., 1992). However, as the current work is predicated on the belief that personality traits should be considered in a holistic, person-centred manner rather than in isolation (Herzberg & Hoyer, 2009; Möttus et al., 2020; Stewart et al., 2022), it is perhaps the precise combination of high scores on neuroticism, low scores on agreeableness and conscientiousness, and high scores on the DT traits that interact to produce the greatest explanatory power and predictive value in examinations of the personality traits that are relevant to OB.

Together, the extensive review of the literature presented in Chapter 1 and the inconsistent previous findings, presented in Chapter 2's systematic review, converge in the conclusion that consideration of traits in isolation appears to be inadequate at fully explaining or predicting interpersonal behavioural outcomes, including OB. Consequently, this thesis adopted the view that traits are not the only components that make up personality (Kernberg, 2016; Sharp, 2022), and other aspects that extend beyond traits may also be of critical relevance—particularly those that define how an individual relates to and interacts with other people (Leary, 1957; Pincus et al., 2010; Sharp, 2022). This idea is integral to interpersonal theory (Leary, 1957; Sullivan, 1953), the theoretical framework underpinning this thesis (see Chapter 1, Section 1.2.3.1.), which proposes that patterns of cognitions and behaviours deriving from interpersonal situations underpin one's personality (Pincus et al., 2010). As such, by demonstrating that personality features beyond traits are relevant to explanations of OB, the current thesis strengthens the utility of this theoretical approach in this area of forensic psychology.

The findings for self functioning and interpersonal functioning, which collectively comprise level of personality functioning (LPF), contribute to the mounting evidence that traits and functioning are both vital components of one's personality (see Chapter 1, Section 1.2.2.). Indeed, LPF was designed to be considered alongside traits, as presented in the DSM-5 AMPD (APA, 2013). It is therefore clear from the results of this research that

traits and functioning are intrinsically linked. Meanwhile, the interpersonal styles examined in these studies were also strongly linked to personality profile, adding empirical weight to the theoretical assertion that interpersonal style is an aspect of personality (Pincus et al., 2010). Finally, the results also contribute empirical evidence to the intuitively appealing idea that irritability and empathy, both inherently interpersonal constructs, should also be considered under the umbrella of personality (Caprara, Barbaranelli, & Zimbardo, 1996; Caprara, Alessandri, et al., 2013; Mangione et al., 2002).

The results for LPF also contribute to the very limited evidence in the literature that this construct is related to OB. Garofalo et al. (2018) observed that violent offenders and child sex offenders showed evidence of more marked personality dysfunction than community participants. Convergently, the significant associations between LPF and OB in this research add support to this evidence that LPF is relevant to violent and sexual offending. Moreover, these findings show that this construct may also be associated with property and drug offending, but more studies are needed to corroborate these findings.

Meanwhile, as predicted, irritability and all three interpersonal styles analysed in the two studies were positively associated with OB. These findings align with those of previous studies that have established links between these constructs, such as Blackburn (1998), Firestone et al. (2005), and Walters (2020). The current findings indicate that irritability and interpersonal styles which reside in the hostile-dominant quadrant of the interpersonal circle are both positively associated with OB. In this way, the findings in this thesis converge with previous work to highlight that OB is related to affective and interpersonal personality features.

For the most part, the results pertaining to empathy were contrary to predictions derived from previous empirical and theoretical work. Although cognitive empathy was negatively associated with sexual offending in Study 3, it was not related to any other types of OB in Study 3, nor was it associated with OB in Study 2. Affective empathy was also

unrelated to all types of OB in both studies. These findings were striking, as they did not align with previous evidence in the literature that empathy deficits are implicated in OB (see Chapter 1, Section 1.2.4.2.), especially behaviours of an interpersonal nature such as violent, sexual, and property offending. For example, meta-analyses by Jolliffe and Farrington (2004), and by van Langen et al. (2014), concluded that offenders score lower than non-offenders on both cognitive and affective empathy. It is possible that methodological factors may have contributed to the current findings diverging from previous results. As the current study was the first to combine personality trait profiles, empathy, and OB, it will therefore be important for future work to systematically investigate possible reasons for the discrepant outcomes.

The results for CTS were also mixed and unexpected, running contrary to prediction. This variable was not associated with OB in Study 2, and was negatively associated with OB in Study 3. It is possible that no relationships were observed in Study 2 because of floor effects on CTS with the use of a community sample. Furthermore, Study 3's surprising result can likely be explained by the use of an ex-offender sample in that study. Ex-offenders cannot be regarded as the same as offenders; by definition, they have successfully desisted from OB and shed the offender label. In so doing, it is possible that they have also shifted their cognitive patterns in a way that no longer aligns with their offending histories. Support for this notion comes from the finding that the ex-offender sample actually scored significantly lower than the community sample on criminal thinking style. This may help explain why the ex-offenders' scores on this measure were negatively related to their higher levels of self-reported OB—behaviours that are now part of their criminal histories, but not their present lifestyle.

Finally, many of the mediation results were contrary to expectations (see Table 7.1). None of the potential mediators were observed to consistently mediate the relationships between profiles and OB across the two studies. Contributing yet more mixed findings to

an already diverse evidence-base, the empirical data speaking to this body of work may nonetheless be useful to furthering understanding. In this way, these disparate findings between the two studies are particularly intriguing.

For example, it is unclear why different interpersonal styles emerged as mediators in the two samples. Earlier empirical evidence indicates that offenders with long offence histories have more dominant and coercive interpersonal styles than non-offenders (Blackburn, 1998). According to Blackburn (1998), this finding indicates that persistent offending serves to help the offender navigate what they perceive to be a socially hostile world. This thesis was predicated on the assertion that personality traits alone are not sufficient to explain relationships between personality and OB. It was therefore expected that these three interpersonal styles, all of which reside in the hostile-dominant quadrant of the interpersonal circle (see Chapter 1, Figure 1.2), would all play a key role in associations between personality profiles and OB. In Studies 2 and 3, each of these interpersonal styles was positively predicted by profile, with large effect sizes; they were also positively associated with OB, with medium-to-large correlations across the two studies. Despite these significant relations, no interpersonal style emerged as a consistent mediator in either study: Vindictive IS was implicated in property and violent offending in Study 2, and Domineering IS played a role in sexual offending in Study 3.

There are a few possible explanations for these findings. Perhaps Cold IS did not emerge as a mediator in either study because it resides on the 'hostile' side of the interpersonal circumplex, but is not terribly proximal to the 'dominant' anchor of the circle. Violent and sexual offending share a common theme of dominance over another person or people, which may be why the two interpersonal styles that are closer to the dominant anchor (Vindictive and Domineering) were found to mediate some relationships between profile and these types of OB. Nonetheless, this does not explain why the influence of these interpersonal styles was not consistent across sample or offence type.

Considering that interpersonal style is not a new construct within personality research or studies of OB, this construct does not appear with great frequency in the literature; studies that have included interpersonal style have tended to use prison- or hospital-based samples, often those which present with mental or personality disorders (see Chapter 1, Section 1.2.3. for a review). However, interpersonal style is conceptualised as a construct that is particularly important in clinical contexts (Hopwood et al., 2013). It is not the possession of an interpersonal style that is indicative of pathology, but rather, how far from the centre of the interpersonal circle it is (Hopwood et al., 2013). For instance, all personality disorders reside at the outer edge of the interpersonal circle, indicating severe personality dysfunction (see Chapter 1, Figure 1.4). As this research used non-clinical, non-institutionalised samples, and did not assess the precise location of each participant's interpersonal style within the circumplex, it is possible that participants simply did not present with severe dysfunction in relation to their interpersonal approaches. Thus, the unexpected findings regarding interpersonal style in this thesis indicate that there is a need for more clarity about whether interpersonal style remains relevant to OB among non-clinical, non-institutionalised samples, as it may only hold utility in the context of psychopathology. Evidently, there is a need for further research to investigate this possibility.

Similar to the unexpected findings for interpersonal style, the roles of LPF (self and interpersonal functioning) ran contrary to predictions. LPF is an inherently clinical construct (Morey et al., 2022), as demonstrated by its DSM-5 origins (APA, 2013), and thus far has been primarily examined in the context of personality disorders (e.g., Meehan et al., 2019; Morey et al., 2011; Skodol, 2018). Accordingly, much like interpersonal style, the unexpected findings for LPF may be due in large part to the use of non-clinical, non-institutionalised samples in this research. However, this is not the only possible explanation.

First, self functioning, which encompasses two facets: identity and self-direction (APA, 2013), did not mediate relations between profile and OB in either study, despite being predicted by personality profile and negatively correlated with OB in both studies. Identity has to do with an individual's experience of themselves and boundaries with other people, while self-direction pertains to self-reflection and the pursuit of goals. It may therefore hold tangential relevance to interpersonally-driven offence types such as violent and sexual offending. However, aside from the issue of boundaries, this construct does not appear to be integral to the types of OB examined in this thesis; certainly, it does not add incremental utility to explanations of OB beyond those already provided by personality trait profiles. Overall, the null findings for this construct indicate a need for future research to investigate its relevance to non-clinical, non-institutionalised samples.

Meanwhile, like self functioning, interpersonal functioning also comprises two facets: empathy and intimacy (APA, 2013). These facets are, of course, inherently interpersonal in nature, hence why this construct was hypothesised to play a key role in explaining relationships between personality profiles and OB. Consequently, interpersonal functioning did emerge as a mediator in Study 2, whereby it mediated the differences in property, drug, and violent offending between the Socially Malevolent and Confident profile groups. These findings were largely as expected, although it was also predicted that interpersonal functioning would mediate the differences between the Socially Malevolent and Reserved groups. However, the differences in both self and interpersonal functioning between these profile groups were non-significant, indicating that they did not differ significantly on levels of personality functioning; this explains why interpersonal functioning also did not mediate differences in OB between these groups.

It is harder to explain why interpersonal functioning did not emerge as a mediator for any type of OB in Study 3. As in Study 2, the Socially Malevolent and Reserved groups in Study 3 did not differ significantly on either type of personality functioning, and this likely

explains why the differences in property and violent offending between these groups were not mediated by interpersonal functioning. However, mediation analyses for sexual offending used different pairwise comparisons in this study (see Chapter 6, Section 6.3.4.6.), whereby the Confident group was the reference group compared to each of the other profiles. Because the Confident group did differ significantly from the other two groups on interpersonal functioning, the similarity between the Socially Malevolent and Reserved groups on this construct cannot explain why interpersonal functioning did not mediate the differences in sexual offending between the groups that were compared. It would therefore be prudent for future research to further explore the relevance of this construct to crimes of an interpersonal nature.

The final personality feature examined in this thesis was irritability. Contrary to prediction, irritability was not a significant mediator in any pairwise comparisons in Study 2. Despite this, irritability emerged as the most consistent construct influencing the relationships between personality profile and OB in Study 3. It is interesting that irritability was found to be highly relevant to these relationships in one sample but not the other. One possible explanation for these disparate findings is that levels of irritability were substantially lower in Study 2's community sample, amounting to a possible floor effect, while irritability was more strongly represented in Study 3's ex-offender sample. This finding indicates that while ex-offenders may possess psychologically healthy characteristics that are similar to non-offenders in some respects (e.g., high levels of personality functioning; low levels of criminal thinking style), they may still differ from members of the community on some personality features that are implicated in OB. It appears that irritability is a core personality construct that, when measured cross-sectionally, remains relevant to explanations of retrospective OB. In this way, a notable contribution of this thesis concerns how irritability has emerged as a stable trait that should be considered alongside OB, regardless of whether the sample are institutionalised

offenders or members of the community who have successfully distanced themselves from their former criminal behaviour.

7.4. Strengths and Limitations

In addition to some clear strengths, this research also has some noteworthy limitations. First, because OB was measured via self-report, every effort was made to ensure truthful responses from participants (e.g., incorporation of a socially desirable responding measure; anonymity; confidentiality), rather than naively assuming that all participants would be transparent and honest when reporting their offending histories. This represents a strength of this thesis. However, the exclusive use of self-report does not reflect best practice, nor the recommendations put forth in Chapter 2. Ideally, the measurement of OB would have entailed a combination of self-report and official records; however, because this research had to be carried out remotely due to COVID-19 restrictions, it was not possible to obtain official records to coincide with self-report. Consequently, the possibility that some participants were not completely truthful in their reporting of their offence histories must not be overlooked. Nonetheless, there is some support in the literature for the predictive validity of self-report methods with offender groups (Gomes et al., 2018; Mills et al., 2003). Thus, the sole reliance on self-report in this thesis was deemed to still be methodologically appropriate.

Another strength to this research was that it used samples deriving primarily from two geographical regions: the UK and the US. The use of samples from two countries aids somewhat in the generalisability of the results. A further strength is that, across the three studies, exclusively-student samples were not used. This was done in order to circumvent a common trend in psychology research whereby students in higher education are perceived to be representative of the wider population, despite empirical evidence suggesting these groups differ significantly on personal and attitudinal variables such as those included in this thesis (Hanel & Vione, 2016). The use of general population samples therefore adds

additional support to the generalisability of results; however, the fact that all samples derived from countries in the global north means that they are relatively homogeneous. Thus, another limitation of this thesis is the lack of representation from the global south (e.g., Asia, Latin America, Africa, and Oceania), as it means the results cannot be extended to other cultures (Shen et al., 2011). Further research is needed in these regions, as there may be overarching cultural differences that influence the manifestation of personality and which set the global south apart from the global north (Aghababaei et al., 2022).

Another limitation to this thesis is that it has used non-clinical samples to explore constructs that are typically associated with psychopathology and personality disorders (Hopwood et al., 2013; Morey et al., 2022). As mentioned in Chapter 3, the research was originally designed to include a forensic psychiatric sample, rendering these variables (e.g., LPF, interpersonal style) highly relevant for inclusion. However, as the thesis took a different direction in response to COVID-19 restrictions, some of the variables may no longer hold the same relevance; this would also explain many of the null findings discussed in the previous section. In addition, after this research was already underway, an updated version of the Level of Personality Functioning-Brief Scale (version 2.0; Weekers et al., 2018) was created. The new version replaced the binary scale with a Likert scale, and changed three items that had not performed well in the previous version (Natoli et al., 2022). Unfortunately, it was too late to incorporate the new measure into this research, so the previous version was used in Studies 2 and 3. Use of the updated version may have led to greater performance of the LPF results in those studies.

It is often argued in personality research that lower-level facets hold greater predictive validity than higher-order domains (Möttus, 2016), and that even lower-order nuances (Condon et al., 2020) aid even more in the endeavour to predict and discriminate among behavioural outcomes (Stewart et al., 2022). However, this thesis took a macro-level approach to its examination of personality traits (higher-order domains), as one of the

aims was to ascertain whether reliable personality profiles could be derived from two popular models of personality that are typically examined separately from one another (the FFM and the DT). The choice to focus on domains rather than their facets or nuances was underpinned by a few considerations. First, this research advocates for a shift away from the predictive value of separate traits. Instead, it argues that it is necessary to attend to the manner in which they interact with one another, and to give credence to the possibility that it is precisely this combination of different levels of several traits together that holds the greatest explanatory power. Furthermore, practical implications were considered when conceptualising this thesis' design, with the goal of establishing personality profiles that could be used to inform treatment interventions with forensic populations (this is discussed further in Section 7.1.5.). To align the thesis' methodology with this intention, it was necessary to focus on higher-order domains rather than parsing traits into their subcomponents.

Lastly, a fundamental limitation to this research was the conceptual overlap between many of the variables. For instance, irritability is a facet of neuroticism (Costa & McCrae, 1995); empathy is a facet of interpersonal functioning (APA, 2013); and LPF has been shown to have strong convergent correlations with three of the FFM traits (agreeableness, conscientiousness, and neuroticism; Sleep & Lynam, 2022). Thus, while the similarities between variables meant they held intuitive appeal for inclusion in the thesis, as well as ample empirical support in the literature (see Chapter 1), the overlap between some of them may have resulted in the unfortunate consequence of diminishing any individual effects they may have otherwise exerted in analyses. Meanwhile, although all of the other predictor and mediator variables can be clearly regarded as aspects of personality, criminal thinking style is more of an attitudinal variable (Culhane et al., 2019). Despite not aligning as closely with the other variables, CTS has been argued to be one of the 'Big Four' risk factors for OB (Andrews & Bonta, 2010a), and results of previous

meta-analyses (e.g., Banse et al., 2013; Gendreau et al., 1997; Walters, 2012, 2016) suggest criminal attitudes are a critical criminogenic need factor that contributes to recidivism rates. Indeed, a recent longitudinal study of sex offenders (Olver et al., 2021) found that reduction in criminal attitudes was associated with lower levels of general and violent recidivism after 14-year follow-up. However, it is important to note that studies examining offenders with and without mental disorders (e.g., Morgan et al., 2010; Wolff et al., 2011) have failed to observe any discernible differences in level of criminal attitudes between these two groups. Together, these findings demonstrate the importance of targeting criminal attitudes in offender treatment programs when seeking to reduce recidivism risk, regardless of whether or not the offenders present with mental disorders. Thus, although criminal attitudes may not have been an optimal fit for inclusion in this thesis, they align with its person-centred focus and remain highly relevant to investigations of the predictors of OB, warranting further investigation in future studies.

7.5. Implications

Many of the results of this thesis were consistent with previous studies. Personality traits were found to be significantly predictive of OB, which corresponds to decades of research linking traits to antisocial (Miller & Lynam, 2001), delinquent (e.g., Heaven, 1996; Ljubin-Golub et al., 2017; Wright et al., 2017), and offending behaviour (e.g., Eysenck, 1964; Heaven et al., 2004; John et al., 1994; O’Riordan & O’Connell, 2014). These findings show that personality traits continue to be important predictors of behavioural outcomes. This aligns with previous findings in the literature. For instance, Quilty et al. (2008) demonstrated that FFM traits predict therapeutic outcomes; after controlling for shared variance among the five traits, neuroticism and conscientiousness were found to be uniquely predictive of treatment response, and extraversion interacted with both neuroticism and conscientiousness in relation to this outcome. In addition, using the PEN model, Müller et al. (2008) found that traits affected treatment for alcohol

dependence, an issue that has causal links to OB (Boden et al., 2013). These findings are supported by a meta-analysis that showed FFM traits are associated with therapeutic alliance and treatment outcomes (Bucher et al., 2019).

Collectively, the results of Studies 2 and 3 also contribute to a body of research in which hostile-dominant interpersonal styles have been associated with criminality (Blackburn, 1998), aggression (Harris et al., 2014; Podubinski et al., 2016), and violence (Doyle & Dolan, 2006) among institutionalised offenders. The results of this thesis show that these interpersonal styles are also positively associated with OB in non-institutionalised samples, lending validity to this construct as relevant to non-clinical and clinical populations alike. The findings also support the utility of LPF in non-clinical, non-institutionalised populations, as thus far the focus in the literature has been on the clinical relevance of this construct. Only one previous study has linked LPF to OB (Garofalo et al., 2018), finding that functioning was lower among violent and child sex offenders than members of the community. The results of this thesis align with those of Garofalo et al. (2018), as self and interpersonal functioning were consistently negatively associated with OB in community and ex-offender samples. Finally, the significant relationships between irritability and OB in these two studies also support previous investigations that have found irritability to be associated with violence (Caprara et al., 2013; Caprara et al., 2007; Caprara et al., 2014) and OB (Firestone et al., 2005; Walters, 2020).

In addition, some variables emerged as adding nuance to the relationships between personality profiles and OB: interpersonal functioning, interpersonal style, and irritability (see Table 7.1). Thus, together, the findings of this thesis point to the importance of personality in individual explanations of OB. This holds particular significance for treatment implications, as the results suggest that person-centred approaches can aid forensic practitioners in parsimoniously explaining individual pathways to OB. By assessing forensic patients and prisoners for the personality features examined in this

thesis, practitioners can build a model of the aspects of an individual's personality that have contributed to their offending pathways, narrowing in on those relevant constructs as treatment targets while avoiding the waste of time or resources on aspects that are not relevant to the individual's OB. This idea is in line with the Risk-Need-Responsivity model (Andrews & Bonta, 1994, 2010a), which calls for specificity in treatment approaches so as not to treat problems that are not present in the individual. Indeed, although traits have been found to play an important role (Bucher et al., 2019; Müller et al., 2008; Quilty et al., 2008), research suggests that level of personality functioning holds vital implications for therapeutic alliance, readiness for treatment, and treatment outcome (Bach & Simonsen, 2021). It is therefore recommended that personality assessments are integrated into the admissions procedure in forensic institutions, as their results can aid in informing case formulations about an offender's likely strengths and barriers to treatment outcomes (Bucher et al., 2019), as well as personal characteristics to target in treatment when addressing drivers of an individual's OB.

The findings from this thesis also hold valuable theoretical implications. First, the personality profiles that were found in Study 1 proved to be consistent and reliable across samples in the subsequent studies. This points to the utility of examining models of 'positive' (FFM) and 'darker' (DT) traits in conjunction with one another, rather than only focusing on one of these popular models as relevant to explaining behaviour. Furthermore, the profiles observed in the ex-offender sample mirrored those found in the community samples; this demonstrates that high levels of DT traits are not only seen in antisocial or offender populations, and suggests that perhaps the DT should be regarded as a universal model of human personality, much like the FFM is. Although it focuses on the 'dark' side of personality, the evidence suggests that such a dark side is highly represented in the general population and should not be considered only relevant to deviant populations.

Second, the associations observed between various personality features and OB were not consistent across the board. In many instances, a given construct was associated with, or mediated relationships with, some offence types but not others. This pattern highlights the importance of parsing offence type when conducting research on OB or with offender populations. As discussed in Chapters 1, 2, and 3, offenders are not a homogeneous group, and should not be regarded as such (Garofalo et al., 2018). By enhancing our understanding of the differences between different types of offenders, we can improve theoretical models of pathways to OB (Seto, 2008). Furthermore, as offence type is often used as a way to categorise offenders into different treatment programs (Andrews & Bonta, 2010a), improving our understanding of the different pathways to various offence types can facilitate the refinement of such treatment programmes and, ultimately, treatment outcomes among different types of offenders.

Lastly, the findings of this thesis add empirical weight to the assertions put forth by interpersonal theory. Although not replicated in Study 3, the results of Study 2 signal the importance of interpersonal functioning in explaining relationships between personality traits and OB; meanwhile, hostile-dominant interpersonal styles also emerged as mediators of several of the relationships between these variables. Together, these findings support interpersonal theory's proposition that pathological behaviour, such as OB, is best understood through an examination of interpersonal processes (Hopwood et al., 2013). This appears to be particularly relevant when OB is interpersonal in nature, as is the case with violent and sexual offending. If an individual presents with high scores on DT traits combined with high neuroticism, as well as interpersonal dysfunction as encapsulated by LPF and a hostile-dominant interpersonal style, together these features may combine or interact to contribute to interpersonally-driven OB. This may be because the offender perceives the world to be a hostile place (as proposed by interpersonal theory and captured by high neuroticism); because they experience dysfunction in empathy and intimacy (high

DT scores and low levels of interpersonal functioning); or because all of these things combine to result in an individual who approaches is predisposed to anxiety, hostility, and callousness and is unable to function appropriately in a social world.

7.6. Directions for Future Research

The results of this thesis shine light on many new avenues for future research. First, the similarity in the personality profiles observed across the three studies imply that they are indeed valid and generalisable across adult samples. However, more studies, with larger samples, are needed to confirm this contention. It is particularly important to incorporate institutionalised offender samples, clinical samples, and participants from other cultures and countries—especially the global south. Second, additional studies that explore empathy and self-reported OB among community, offender, and ex-offender samples are needed in order to better explain the null findings observed in this study regarding the roles of cognitive and affective empathy. Third, the field would benefit from research that quantifies the conceptual overlap between empathy and interpersonal functioning, and between neuroticism and irritability, in order to better determine the limits of investigating these constructs together in the same model. Fourth, more research is needed exploring associations between LPF and OB; at present, only one study outside of this thesis has attempted to do so (Garofalo et al., 2018), despite LPF having distinct clinical utility. Fifth, more research is needed that examines interpersonal style among nonclinical samples. It is possible that this construct is only relevant in the context of psychopathology or severe personality dysfunction, but until more studies are conducted with samples that do not present with any psychopathology, this cannot be ascertained. Similarly, although there is ample discussion in the literature about the orthogonal locations of each interpersonal style within the interpersonal circumplex, and how these placements correspond to those of personality disorders and traits, there is a dearth of literature exploring the qualitative properties of these interpersonal styles. Researchers may therefore wish to take a

qualitative approach to exploring the personal experiences of individuals who fit within a particular category of interpersonal style. An additional direction those studies might take is to compare the lived experiences of participants with and without personality pathologies, and with and without offending histories, when it comes to how these interpersonal styles manifest in individual's day-to-day lives. Lastly, whenever possible future studies should follow the recommendations put forth in Chapter 2, which implore researchers to: (a) remember that offenders are not a homogenous group and should therefore be parsed according to offence type, and (b) aim to use a combination of self-report and official records when measuring OB.

7.7. Overall Conclusions

The overarching aim of this thesis was to improve our understanding of associations between personality traits and self-reported OB, while also considering how other personality features may impact these relationships. The literature presented in Chapter 1 and the systematic review reported in Chapter 2 converged in providing a comprehensive overview of the state of the literature surrounding associations between OB and each personality trait and feature of interest, highlighting that there are still many gaps in our knowledge that need addressing before we will have a full understanding of the ways in which personality can predict OB. With these gaps in mind, Study 1 sought to establish FFM- and DT-based personality profiles in a community sample, and Studies 2 and 3 aimed to assess whether those profiles would be replicated in another community sample (Study 2) and an ex-offender sample (Study 3), while also investigating the roles that other personality and attitudinal variables played in associations between these profiles and OB. The results of this series of studies have shown that three personality profiles, labelled Confident, Reserved, and Socially Malevolent, emerged in all three samples, thereby evidencing the generalisability and wide applicability of these profiles. Furthermore, subsequent investigations in Studies 2 and 3 demonstrated that levels of different types of

OB vary on the basis of profile membership, and that interpersonal functioning, interpersonal style, and irritability contribute by mediating these relationships in some instances. These findings add theoretical support to interpersonal theory and to person-centred approaches in personality research. Moreover, the results of this thesis have valuable practical implications, highlighting the importance of individualised explanations of offending pathways and suggesting that person-centred treatment approaches may aid in improving treatment outcomes for forensic populations. Future research can build on these findings in several important ways, ultimately serving to enhance our understanding of discrete types of offenders and best-practice approaches to offender rehabilitation.

REFERENCES

- Aghababaei, N., Lefdahl-Davis, E. M., & Blachnio, A. (2022). Editorial: Positive and negative psychosocial outcomes of the “dark” personality traits. *Frontiers in Psychology, 13*, 919304. <https://doi.org/10.3389/fpsyg.2022.919304>
- Akse, J., Hale, W. W., III, Engles, R. R. C. M. E., Raaijmakers, Q. A. W., & Meeus, W. H. (2007). Co-occurrence of depression and delinquency in personality types. *European Journal of Personality, 21*(2), 235-256. <https://doi.org/10.1002/per.604>
- Alarcon, G., Eschleman, K. J., & Bowling, N. A. (2009). Relationships between personality variables and burnout: A meta-analysis. *Work & Stress, 23*(3), 244-263. <https://doi.org/10.1080/02678370903282600>
- Alexiou, E., Wijk, H., Ahlquist, G., Kullgren, A., & Degl’Innocenti, A. (2018). Sustainability of a person-centered ward atmosphere and possibility to provide person-centered forensic psychiatric care after facility relocation. *Journal of Forensic and Legal Medicine, 56*, 108-113. <https://doi.org/10.1016/j.jflm.2018.04.006>
- Aluja, A., García, O., & García, L. F. (2004). Replicability of the three, four and five Zuckerman’s personality super-factors: Exploratory and confirmatory factor analysis of the EPQ-RS, ZKPQ and NEO-PI-R. *Personality and Individual Differences, 36*(5), 1093- 1108. [https://doi.org/10.1016/s0191-8869\(03\)00203-4](https://doi.org/10.1016/s0191-8869(03)00203-4)
- American Psychiatric Association. (2013). *Diagnostic and statistical manual of mental disorders* (5th ed.). <https://doi.org/10.1176/appi.books.9780890425596>
- Ames, Daniel R., Rose, Paul, and Anderson, Cameron P. (2006). The NPI-16 as a short measure of narcissism. *Journal of Research in Personality, 40*, 440-450.

- Anderson, C. A. (1997). Effects of violent movies and trait hostility on hostile feelings and aggressive thoughts. *Aggressive Behavior*, 23(3), 161-178.
[https://doi.org/10.1002/\(sici\)1098-2337\(1997\)23:3<161::aid-ab2>3.0.co;2-p](https://doi.org/10.1002/(sici)1098-2337(1997)23:3<161::aid-ab2>3.0.co;2-p)
- Andrews, D. A., & Bonta, J. (1994). *The psychology of criminal conduct*. Anderson.
- Andrews, D. A., & Bonta, J. (2010a). *The psychology of criminal conduct* (5th ed.).
 Routledge.
- Andrews, D. A., Bonta, J., & Wormith, J. S. (2006). The recent past and near future of risk and/or need assessment. *Crime & Delinquency*, 52(1), 7–27.
<https://doi.org/10.1177/0011128705281756>
- Asendorpf, J. B., Borkenau, P., Ostendorf, F., & van Aken, M. A. G. (2001). Carving personality description at its joints: Confirmation of three replicable personality prototypes for both children and adults. *European Journal of Personality*, 15(3), 169-198. <https://doi.org/10.1002/per.408>
- Asendorpf, J. B., & van Aken, M. A. (1999). Resilient, overcontrolled, and undercontrolled personality prototypes in childhood: Replicability, predictive power, and the trait-type issue. *Journal of Personality and Social Psychology*, 77(4), 815–832.
<https://doi.org/10.1037/0022-3514.77.4.815>
- Ashton, M. C., Lee, K., Perugini, M., Szarota, P., de Vries, R. E., Di Blas, L., Boies, K., & De Raad, B. (2004). A six-factor structure of personality-descriptive adjectives: Solutions from psycholexical studies in seven languages. *Journal of Personality and Social Psychology*, 86(2), 356–366. <https://doi.org/10.1037/0022-3514.86.2.356>
- Azizli, N., Atkinson, B., Baughman, H. M., Chin, K., Vernon, P. A., Harris, E., & Veselka, L. (2016). Lies and crimes: Dark Triad, misconduct, and high-stakes deception. *Personality and Individual Differences*, 89, 34-39.
<https://doi.org/10.1016/j.paid.2015.09.034>

- Bach, B., & Simonsen, S. (2021). How does level of personality functioning inform clinical management and treatment? Implications for ICD-11 classification of personality disorder severity. *Current Opinion in Psychiatry*, 34(1), 54-63.
<https://doi.org/10.1097/YCO.0000000000000658>
- Banse, R., Koppehele-Gossel, J., Kistemaker, L. M., Werner, V. A., & Schmidt, A. F. (2013). Pro-criminal attitudes, intervention, and recidivism. *Aggression and Violent Behavior*, 18(6), 673-685. <https://doi.org/10.1016/j.avb.2013.07.024>
- Barańczuk, U. (2019a). The Five Factor Model of personality and emotion regulation: A meta-analysis. *Personality and Individual Differences*, 139, 217-227.
<https://doi.org/10.1016/j.paid.2018.11.025>
- Barańczuk, U. (2019b). The Five Factor Model of personality and alexithymia: A meta-analysis. *Journal of Research in Personality*, 78, 227-248.
<https://doi.org/10.1016/j.jrp.2018.12.005>
- Barata, P. C., Holtzman, S., Cunningham, S., O'Connor, B. P., & Stewart, D. E. (2016). Building a definition of irritability from academic definitions and lay descriptions. *Emotion Review*, 8(2), 164-172. <https://doi.org/10.1177/1754073915576228>
- Barbaranelli, C. (2002). Evaluating cluster analysis solutions: An application to the Italian NEO Personality Inventory. *European Journal of Personality*, 16, S43-S55.
<https://doi.org/10.1002/per.449>
- Baron, R. M., & Kenny, D. A. (1986). The moderator-mediator variable distinction in social psychological research: Conceptual, strategic, and statistical considerations. *Journal of Personality and Social Psychology*, 51(6), 1173-1182.
<https://doi.org/10.1037/0022-3514.51.6.1173>
- Bartol, C. R., & Holanchock, H. A. (1979). Eysenck's theory of criminality: A test on an American prisoner population. *Criminal Justice and Behavior*, 6(3), 245-249.
<https://doi.org/10.1177/009385487900600304>

- Baughman, H. M., Dearing, S., Giammarco, E., & Vernon, P. A. (2012). Relationships between bullying behaviours and the Dark Triad: A study with adults. *Personality and Individual Differences, 52*(5), 571-575.
<https://doi.org/10.1016/j.paid.2011.11.020>
- Beaver, K. M., Boutwell, B. B., Barnes, J. C., Vaughn, M. G., & DeLisi, M. (2017). The association between psychopathic personality traits and criminal justice outcomes: Results from a nationally representative sample of males and females. *Crime & Delinquency, 63*(6), 708-730. <https://doi.org/10.1177/0011128715573617>
- Bebbington, P., Jakobwitz, S., McKenzie, N., Killaspy, H., Iveson, R., Duffield, G., & Kerr, M. (2017). Assessing needs for psychiatric treatment in prisoners: 1. Prevalence of disorder. *Social Psychiatry and Psychiatric Epidemiology, 52*(2), 221-229. <https://doi.org/10.1007/s00127-016-1311-7>
- Becerra-García, J. A., García-León, A., & Egan, V. (2012). Childhood abuse history differentiates personality in sex offenders. *Journal of Forensic Psychiatry & Psychology, 23*(1), 61-66. <https://doi.org/10.1080/14789949.2011.634020>
- Becerra-García, J. A., García-León, A., & Egan, V. (2013). A cross-cultural comparison of criminological characteristics and personality traits in sexual offenders against children: Study in Spain and the United Kingdom. *Psychiatry, Psychology and Law, 20*(3), 344- 352. <https://doi.org/10.1080/13218719.2012.677758>
- Becerra-García, J. A., García-León, A., Muela-Martinez, J. A., & Egan, V. (2013). A controlled study of the Big Five personality dimensions in sex offenders, non-sex offenders and non-offenders: Relationship with offending behaviour and childhood abuse. *Journal of Forensic Psychiatry & Psychology, 24*(2), 233-246.
<https://doi.org/10.1080/14789949.2013.764463>
- Bender, D. S., Morey, L. C., & Skodol, A. E. (2011). Toward a model for assessing level of personality functioning in DSM–5, Part I: A review of theory and methods.

Journal of Personality Assessment, 93, 332–346.

<http://dx.doi.org/10.1080/00223891.2011.583808>

- Bettencourt, B. A., Talley, A., Benjamin, A. J., & Valentine, J. (2006). Personality and aggressive behavior under provoking and neutral conditions: A meta-analytic review. *Psychological Bulletin*, 132(5), 751-777. <https://doi.org/10.1037/0033-2909.132.5.751>
- Blackburn, R. (1975). An empirical classification of psychopathic personality. *British Journal of Psychiatry*, 127, 456–460. <https://doi.org/10.1192/bjp.127.5.456>
- Blackburn, R. (1993). *The psychology of criminal conduct. theory, research and practice*. John Wiley & Sons.
- Blackburn, R. (1998). Psychopathy and personality disorder: Implications of interpersonal theory. In D. J. Cooke, A. E. Forth, & R. D. Hare (Eds.), *Psychopathy: Theory, research, and implications for society* (pp. 269-302). Kluwer Academic Publishers.
- Blackburn, R., Logan, C., Renwick, S. J. D., & Donnelly, J. P. (2005). Higher-order dimensions of personality disorder: Hierarchical structure and relationships with the Five-Factor Model, the interpersonal circle, and psychopathy. *Journal of Personality Disorders*, 19(6), 597-623. <https://doi.org/10.1521/pedi.2005.19.6.597>
- Blackburn, R., & Renwick, S. J. (1996). Rating scales for measuring the interpersonal circle in forensic psychiatric patients. *Psychological Assessment*, 8(1), 76-84. <https://doi.org/10.1037/1040-3590.8.1.76>
- Blair, R. J. R. (1995). A cognitive developmental approach to morality: Investigating the psychopath. *Cognition*, 57(1), 1-29. [https://doi.org/10.1016/0010-0277\(95\)00676-P](https://doi.org/10.1016/0010-0277(95)00676-P)
- Blair, R. J. R. (2001). Neurocognitive models of aggression, the antisocial personality disorders, and psychopathy. *Journal of Neurology, Neurosurgery & Psychiatry*, 71(6), 727-731. <https://doi.org/10.1136/jnnp.71.6.727>

- Blair, R. J. R. (2005). Responding to the emotions of others: Dissociating forms of empathy through the study of typical and psychiatric populations. *Consciousness and Cognition: An International Journal*, 14(4), 698–718.
<https://doi.org/10.1016/j.concog.2005.06.004>
- Blake, E., & Gannon, T. (2008). Social perception deficits, cognitive distortions, and empathy deficits in sex offenders. *Trauma, Violence, & Abuse*, 9(1), 34-55.
<https://doi.org/10.1177/1524838007311104>
- Blickle, G., Schlegel, A., Fassbender, P., & Klein, U. (2006). Some personality correlates of business white-collar crime. *Applied Psychology*, 55(2), 220-233.
<https://doi.org/10.1111/j.1464-0597.2006.00226.x>
- Block, J. (1971). *Lives through time*. Bancroft Books.
- Block, J., Block, J. H., & Keyes, S. (1988). Longitudinally foretelling drug use in adolescence: Early childhood personality and environmental precursors. *Child Development*, 59(2), 339-355. <https://doi.org/10.2307/1130314>
- Block, J. H., & Block, J. (1980). The role of ego-control and ego-resiliency in the organization of behavior. In W. A. Collins (Ed.), *Development of cognition, affect, and social relations: The Minnesota Symposia on Child Psychology, Volume 13* (pp. 39-102). Psychology Press.
- Boden, J. M., Fergusson, D. M., & Horwood, L. J. (2013). Alcohol misuse and criminal offending: Findings from a 30-year longitudinal study. *Drug and Alcohol Dependence*, 128(1-2), 30-36. <https://doi.org/10.1016/j.drugalcdep.2012.07.014>
- Boduszek, D., Adamson, G., Shevlin, M., & Hyland, P. (2012). The role of personality in the relationship between criminal social identity and criminal thinking style within a sample of prisoners with learning difficulties. *Journal of Learning Disabilities and Offending Behaviour*, 3(1), 12-23. <https://doi.org/10.1108/20420921211236771>

- Boduszek, D., & Hyland, P. (2012). Psycho-sociological review of criminal thinking style. *Journal of Humanistics & Social Sciences*, 1(1), 28-36.
- Boduszek, D., Hyland, P., Bourke, A., Shevlin, M., & Adamson, G. (2013). Assessment of psycho-social factors predicting recidivistic violent offenses within a sample of male prisoners. *The Irish Journal of Psychology*, 34(1), 24-34.
<https://doi.org/10.1080/03033910.2012.754324>
- Boduszek, D., McLaughlin, C., & Hyland, P. (2011). Criminal attitudes of ex-prisoners: The role of personality, anti-social friends and recidivism. *The Internet Journal of Criminology*, 9, 1-10.
- Boillat, C., Duering, G., Pflueger, M. O., Graf, M., & Rosburg, T. (2017). Neuroticism in child sex offenders and its association with sexual dysfunctions, cognitive distortions, and psychological complaints. *International Journal of Law and Psychiatry*, 54, 83-89. <https://doi.org/10.1016/j.ijlp.2017.05.010>
- Boillat, C., Schwab, N., Stutz, M., Pflueger, M. O., Graf, M., & Rosburg, T. (2017). Neuroticism as a risk factor for child abuse in victims of childhood sexual abuse. *Child Abuse & Neglect*, 68, 44-54. <https://doi.org/10.1016/j.chiabu.2017.03.018>
- Bonta, J., & Andrews, D. A. (2017). *The psychology of criminal conduct* (6th ed.). Routledge.
- Bornstein, R. F. (1998). Reconceptualizing personality disorder diagnosis in the DSM–V: The discriminant validity challenge. *Clinical Psychology: Science and Practice*, 5(3), 333-343. <https://doi.org/10.1111/j.1468-2850.1998.tb00153.x>
- Brauer, J. R. (2009). Testing social learning theory using reinforcement's residue: A multilevel analysis of self-reported theft and marijuana use in the national youth survey. *Criminology*, 47(3), 929-970. <https://doi.org/10.1111/j.1745-9125.2009.00164.x>

- Bray, J. H., & Maxwell, S. E. (1985). *Multivariate analysis of variance*. SAGE.
<https://dx.doi.org/10.4135/9781412985222>
- Brook, M., & Kosson, D. S. (2013). Impaired cognitive empathy in criminal psychopathy: Evidence from a laboratory measure of empathic accuracy. *Journal of Abnormal Psychology, 122*(1), 156-166. <https://doi.org/10.1037/a0030261>
- Brown, T. G., Ouimet, M. C., Eldeb, M., Tremblay, J., Vingilis, E., Nadeau, L., Pruessner, J., & Bechara, A. (2016). Personality, executive control, and neurobiological characteristics associated with different forms of risky driving. *PloS ONE, 11*(2), 1-18. <https://doi.org/10.1371/journal.pone.0150227>
- Bucher, M. A., Suzuki, T., & Samuel, D. B. (2019). A meta-analytic review of personality traits and their associations with mental health treatment outcomes. *Clinical Psychology Review, 70*, 51-63. <https://doi.org/10.1016/j.cpr.2019.04.002>
- Burnett, R. (2004). To reoffend or not to reoffend? The ambivalence of convicted property offenders. In S. Maruna & R. Immarigeon (Eds.), *After crime and punishment: Pathways to offender reintegration* (pp. 152-180). Willan Publishing.
- Buss, A. H., & Durkee, A. (1957). An inventory for assessing different kinds of hostility. *Journal of Consulting Psychology, 21*(4), 343-349.
<https://doi.org/10.1037/h0046900>
- Buss, A. H., & Perry, M. (1992). The aggression questionnaire. *Journal of Personality and Social Psychology, 63*(3), 452-459.
- Button, K. S., Ioannidis, J. P. A., Mokrysz, C., Nosek, B. A., Flint, J., Robinson, E. S. J., & Munafo, M. R. (2013). Power failure: Why small sample size undermines the reliability of neuroscience. *Nature Reviews Neuroscience, 14*(5), 365-376.
<https://doi.org/10.1038/nrn3475>

- Cale, E. M. (2006). A quantitative review of the relations between the “Big 3” higher order personality dimensions and antisocial behavior. *Journal of Research in Personality, 40*(3), 250-284. <https://doi.org/10.1016/j.jrp.2005.01.001>
- Caprara, G. V., Alessandri, G., Tisak, M. S., Paciello, M., Caprara, M. G., Gerbino, M., & Fontaine, R. G. (2013). Individual differences in personality conducive to engagement in aggression and violence. *European Journal of Personality, 27*(3), 290-303. <https://doi.org/10.1002/per.1855>
- Caprara, G. V., Barbaranelli, C., & Zimbardo, P. G. (1996). Understanding the complexity of human aggression: Affective, cognitive, and social dimensions of individual differences in propensity toward aggression. *European Journal of Personality, 10*(2), 133-155. [https://doi.org/10.1002/\(sici\)1099-0984\(199606\)10:2<133::aid-per252>3.0.co;2-e](https://doi.org/10.1002/(sici)1099-0984(199606)10:2<133::aid-per252>3.0.co;2-e)
- Caprara, G. V., Cinanni, V., D’Imperio, G., Passerini, S., Renzi, P., & Travaglia, G. (1985). Indicators of impulsive aggression: Present status of research on irritability and emotional susceptibility scales. *Personality and Individual Differences, 6*(6), 665-674. [https://doi.org/10.1016/0191-8869\(85\)90077-7](https://doi.org/10.1016/0191-8869(85)90077-7)
- Caprara, G. V., Paciello, M., Gerbino, M., & Cugini, C. (2007). Individual differences conducive to aggression and violence: Trajectories and correlates of irritability and hostile rumination through adolescence. *Aggressive Behavior, 33*(4), 359-374. <https://doi.org/10.1002/ab.20192>
- Caprara, G. V., Tisak, M. S., Alessandri, G., Fontaine, R. G., Fida, R., & Paciello, M. (2014). The contribution of moral disengagement in mediating individual tendencies toward aggression and violence. *Developmental Psychology, 50*(1), 71-85. <https://doi.org/10.1037/a0034488>
- Carson, R. C. (1969). *Interaction concepts of personality*. Aldine.

- Carson, R. C. (1979). Personality and exchange in developing relationships. In R. L. Burgess & T. L. Huston (Eds.), *Social exchange in developing relationships* (pp. 247-269). Academic Press.
- Carvalho, J., & Nobre, P. J. (2019). Five-Factor Model of personality and sexual aggression. *International Journal of Offender Therapy and Comparative Criminology*, 63(5), 797-814. <https://doi.org/10.1177/0306624x13481941>
- Caspi, A. (1998). Personality development across the life course. In W. Damon & N. Eisenberg (Eds.), *Handbook of child psychology* (5th ed.), Vol 3: *Social, emotional, and personality development* (pp. 311-388). Wiley.
- Caspi, A., Harrington, H., Milne, B., Amell, J. W., Theodore, R. F., & Moffit, T. E. (2003). Children's behavioral styles at age 3 are linked to their adult personality traits at age 26. *Journal of Personality*, 71(4), 495-514. <https://doi.org/10.1111/1467-6494.7104001>
- Caspi, A., & Silva, P. A. (1995). Temperamental qualities at age three predict personality traits in young adulthood: Longitudinal evidence from a birth cohort. *Child Development*, 66(2), 486-498. <https://doi.org/10.2307/1131592>
- Chabrol, H., Melioli, T., Van Leeuwen, N., Rodgers, R., & Goutaudier, N. (2015). The Dark Tetrad: Identifying personality profiles in high-school students. *Personality and Individual Differences*, 83, 97-101. <https://doi.org/10.1016/j.paid.2015.03.051>
- Chabrol, H., Van Leeuwen, N., Rodgers, R. F., & Séjourné, N. (2009). Contributions of psychopathic, narcissistic, Machiavellian, and sadistic personality traits to juvenile delinquency. *Personality and Individual Differences*, 47(7), 734-739. <https://doi.org/10.1016/j.paid.2009.06.020>.
- Claes, L., Tavernier, G., Roose, A., Bijttebier, P., Smith, S. F., & Lilienfeld, S. O. (2014). Identifying personality subtypes based on the Five-Factor Model dimensions in male prisoners: Implications for psychopathy and criminal offending. *International*

Journal of Offender Therapy and Comparative Psychology, 58(1), 41-58.

<https://doi.org/10.1177/0306624X12462013>

Clower, C. E., & Bothwell, R. K. (2001). An exploratory study of the relationship between the Big Five and inmate recidivism. *Journal of Research in Personality*, 35(2), 231-237. <https://doi.org/10.1006/jrpe.2000.2312>

Cohen, J. (1977). *Statistical power analysis for behavioral sciences* (revised ed.). Academic Press.

Cohen, J. (1988). *Statistical power analysis for the behavioral sciences* (2nd ed.). Erlbaum.

Columb, M. O., & Atkinson, M. S. (2016). Statistical analysis: Sample size and power estimations. *BJA Education*, 16(5), 159-161. <https://doi.org/10.1093/bjaed/mkv034>

Condon, D., Wood, D., Möttus, R., Booth, T., Costantini, G., Greiff, S., Johnson, W., Lukaszewski, A., Murray, A., Revelle, W., Wright, A. G. C., Ziegler, M., & Zimmermann, J. (2020). Bottom up construction of a personality taxonomy. *European Journal of Psychological Assessment*, 36(6), 923-934. <https://doi.org/10.1027/1015-5759/a000626>

Conte, J. M., Heffner, T. S., Roesch, S. C., & Aasen, B. (2017). A person-centric investigation of personality types, job performance, and attrition. *Personality and Individual Differences*, 104, 554-559. <https://doi.org/10.1016/j.paid.2016.09.004>

Cookson, A., Daffern, M., & Foley, F. (2012). Relationship between aggression, interpersonal style, and therapeutic alliance during short-term psychiatric hospitalization. *International Journal of Mental Health Nursing*, 21(1), 20-29. <https://doi.org/10.1111/j.1447-0349.2011.00764.x>

Costa, P. T., Jr., & McCrae, R. R. (1992). *Revised NEO personality inventory (NEO PI-R) and NEO five-factor inventory (NEO-FFI) professional manual*. Psychological Assessment Resources.

- Costa, P. T., Jr., & McCrae, R. R. (1995). Domains and facets: Hierarchical personality assessment using the Revised NEO Personality Inventory. *Journal of Personality Assessment, 64*(1), 21-50. http://dx.doi.org/10.1207/s15327752jpa6401_2
- Costa, P. T., Jr., & McCrae, R. R. (1997). Longitudinal stability of adult personality. In R. Hogan, J. Johnson, & S. Briggs (Eds.), *Handbook of personality psychology* (pp. 269-290). Academic Press.
- Costa, P. T., Jr., Terracciano, A., & McCrae, R. R. (2001). Gender differences in personality traits across cultures: Robust and surprising findings. *Journal of Personality and Social Psychology, 81*(2), 322–331. <https://doi.org/10.1037/0022-3514.81.2.322>
- Craig, L. A., Browne, K. D., Beech, A., & Stringer, I. (2006). Differences in personality and risk characteristics in sex, violent and general offenders. *Criminal Behaviour and Mental Health, 16*(3), 183-194. <https://doi.org/10.1002/cbm.618>
- Crowne, D. P., & Marlowe, D. (1964). *The approval motive: Studies in evaluative dependence*. Wiley.
- Culhane, S. E., Walker, S., & Hildebrand, M. M. (2019). Serial homicide perpetrators' self-reported psychopathy and criminal thinking. *Journal of Police and Criminal Psychology, 34*(1), 1-13. <https://doi.org/10.1007/s11896-017-9245-x>
- Curcio, A. L., Mak, A. S., & Knott, V. E. (2015). The Australian Self-report Delinquency Scale: A revision. *Australian Journal of Psychology, 67*(3), 166-177. <https://doi.org/10.1111/ajpy.12075>
- Da Rosa, G. D., Martin, P., Kim, J., Russell, D., Abraham, W. T., Gondo, Y., Hirose, N., Masui, Y., & Poon, L. W. (2020). A cultural comparison of personality profiles of U.S. and Japanese centenarians. *The International Journal of Aging and Human Development, 0*(00), 1-22. <https://doi.org/10.1177/0091415020920002>

- Daffern, M., Day, A., & Cookson, A. (2012). Implications for the prevention of aggression behavior within psychiatric hospitals drawn from interpersonal communication theory. *International Journal of Offender Therapy and Comparative Criminology*, 56(3), 401-419. <https://doi.org/10.1177/0306624x11404183>
- Daffern, M., Duggan, C., Huband, N., & Thomas, S. (2008). The impact of interpersonal style on aggression and treatment non-completion in patients with personality disorder admitted to a medium secure psychiatric unit. *Psychology, Crime & Law*, 16(6), 481-492. <https://doi.org/10.1080/10683160801948717>
- Daffern, M., Duggan, C., Huband, N., & Thomas, S. (2010). Staff and patient's perceptions of each other's interpersonal style: Relationship with severity of personality disorder. *International Journal of Offender Therapy and Comparative Criminology*, 54(4), 611-624. <https://doi.org/10.1177/0306624X09335111>
- Daljeet, K. N., Brenner, N. L., Giammarco, E. A., Meyer, J. P., & Paunonen, S. V. (2017). Taking a person-centred approach to personality: A latent-profile analysis of the HEXACO model of personality. *Journal of Research in Personality*, 70, 241-251. <https://doi.org/10.1016/j.jrp.2017.08.003>
- Dargis, M., & Koenigs, M. (2018). Personality traits differentiate subgroups of criminal offenders with distinct cognitive, affective, and behavioral profiles. *Criminal Justice and Behavior*, 45(7), 984-1007. <https://doi.org/10.1177/0093854818770693>
- Davoren, M., Fitzpatrick, M., Caddow, F., Caddow, M., O'Neill, C., O'Neill, H., & Kennedy, H. G. (2015). Older men and older women remand prisoners: Mental illness, physical illness, offending patterns and needs. *International Psychogeriatrics*, 27(5), 747-755. <https://doi.org/10.1017/s1041610214002348>
- de Vogel, V., & Lancel, M. (2016). Gender differences in the assessment and manifestation of psychopathy: Results from a multicenter study in forensic

psychiatric patients. *International Journal of Forensic Mental Health*, 15(1), 97-110. <https://doi.org/10.1080/14999013.2016.1138173>

Dean, A. C., Alstein, L. L., Berman, M. E., Constans, J. I., Sugar, C. A., & McCloskey, M. S. (2013). Secondary psychopathy, but not primary psychopathy, is associated with risky decision-making in noninstitutionalized young adults. *Personality and Individual Differences*, 54(2013), 272-277.

<http://dx.doi.org/10.1016/j.paid.2012.09.009>

Decuyper, M., Collins, O. F., De Clercq, B., Vermeiren, R., Broekaert, E., Bijttebier, P., Roose, A., & De Fruyt, F. (2013). Latent personality profiles and the relations with psychopathology and psychopathic traits in detained adolescents. *Child Psychiatry & Human Development*, 44(2), 217-232. <https://doi.org/10.1007/s10578-012-0320-3>

Deng, L., & Chan, W. (2017). Testing the difference between reliability coefficients alpha and omega. *Educational and Psychological Measurement*, 77(2), 185-203.

<https://doi.org/10.1177/0013164416658325>

Dennison, S. M., Stough, C., & Birgden, A. (2001). The big 5 dimensional personality approach to understanding sex offenders. *Psychology, Crime & Law*, 7(3), 243-261.

<https://doi.org/10.1080/10683160108401796>

Desroches, F. (2005). *The crime that pays: Drug trafficking and organized crime in Canada*. Canadian Scholars' Press Inc.

Deveney, C., Stoddard, J., Evans, R., Chavez, G., Harney, M., & Wulff, R. (2019). On defining irritability and its relationship to affective traits and social interpretations.

Personality and Individual Differences, 144, 61-67.

<https://doi.org/10.1016/j.paid.2019.02.031>

- Dickinson, K. A., & Pincus, A. L. (2003). Interpersonal analysis of grandiose and vulnerable narcissism. *Journal of Personality Disorders, 17*(3), 188–207. <https://doi.org/10.1521/pedi.17.3.188.22146>
- Digman, J. M. (1997). Higher-order factors of the Big Five. *Journal of Personality and Social Psychology, 73*(6), 1246–1256. <https://doi.org/10.1037/0022-3514.73.6.1246>
- Dill, K. E., Anderson, C. A., Anderson, K. B., & Deuser, W. E. (1997). Effects of aggressive personality on social expectations and social perceptions. *Journal of Research in Personality, 31*(2), 272–292. <https://doi.org/10.1006/jrpe.1997.2183>
- Dinić, B. M., & Jevremov, T. (2021). Trends in research related to the Dark Triad: A bibliometric analysis. *Current Psychology, 40*(7), 3206–3215. <https://doi.org/10.1007/s12144-019-00250-9>
- Dolan, M., & Blackburn, R. (2006). Interpersonal factors as predictors of disciplinary infractions in incarcerated personality disordered offenders. *Personality and Individual Differences, 40*(5), 897–907. <https://doi.org/10.1016/j.paid.2005.10.003>
- Dolan, M., & Völlm, B. (2009). Antisocial personality disorder and psychopathy in women: A literature review on the reliability and validity of assessment instruments. *International Journal of Law and Psychiatry, 32*(1), 2–9. <https://doi.org/10.1016/j.ijlp.2008.11.002>
- Domes, G., Hollerbach, P., Vohs, K., Mokros, A., & Habermeyer, E. (2013). Emotional empathy and psychopathy in offenders: An experimental study. *Journal of Personality Disorders, 27*(1), 67–84. <https://doi.org/10.1521/pedi.2013.27.1.67>
- Donnellan, M. B., & Robins, R. W. (2010). Resilient, overcontrolled, and undercontrolled personality types: Issues and controversies. *Social and Personality Psychology Compass, 4*(11), 1070–1083. <https://doi.org/10.1111/j.1751-9004.2010.00313.x>

- Dowgwillo, E. A., & Pincus, A. L. (2017). Differentiating Dark Triad traits within and across interpersonal circumplex surfaces. *Assessment, 24*(1), 24-44.
<https://doi.org/10.1177/1073191116643161>
- Dowgwillo, E. A., Roche, M. J., & Pincus, A. L. (2018). Examining the interpersonal nature of Criterion A of the DSM-5 Section III Alternative Model for Personality Disorders using bootstrapped confidence intervals for the interpersonal circumplex. *Journal of Personality Assessment, 100*(6), 581-592.
<https://doi.org/10.1080/00223891.2018.1464016>
- Doyle, M., & Dolan, M. (2006). Evaluating the validity of anger regulation problems, interpersonal style, and disturbed mental state for predicting inpatient violence. *Behavioral Sciences and the Law, 24*(6), 783-798. <https://doi.org/10.1002/bsl.739>
- Dragostinov, Y., & Mõttus, R. (2023). Test-Retest reliability and construct validity of the brief Dark Triad measurements. *Journal of Personality Assessment, 105*(2), 143-148. <https://doi.org/10.1080/00223891.2022.2052303>
- Draycott, S. G., & Kline, P. (1995). The Big Three or the Big Five—the EPQ-R vs the NEO-PI: A research note, replication and elaboration. *Personality and Individual Differences, 18*(6), 801-804. [https://doi.org/10.1016/0191-8869\(95\)00010-4](https://doi.org/10.1016/0191-8869(95)00010-4)
- Dryburgh, N. S. J., & Vachon, D. D. (2019). Relating sex differences in aggression to three forms of empathy. *Personality and Individual Differences, 151*, 109526.
<https://doi.org/10.1016/j.paid.2019.109526>
- Du, T. V., Yardley, A. E., & Thomas, K. M. (2021). Mapping Big Five personality traits within and across domains of interpersonal functioning. *Assessment, 28*(5), 1358-1675. <https://doi.org/10.1177/1073191120913952>
- Dubas, J. S., Gerris, J. R. M., Janssens, J. M. A. M., & Vermulst, A. A. (2002). Personality types of adolescents: Concurrent correlates, antecedents, and type X parenting

interactions. *Journal of Adolescence*, 25(1), 79-92.

<https://doi.org/10.1006/jado.2001.0450>

- Duke, L. H., Furtado, V., Guo, B., & Völlm, B. A. (2018). Long-stay in forensic-psychiatric care in the UK. *Social Psychiatry and Psychiatric Epidemiology*, 53(3), 313-321. <https://doi.org/10.1007/s00127-017-1473-y>
- Dyce, J. A., & O'Connor, B. P. (1998). Personality disorders and the Five-Factor Model: a test of facet-level predictions. *Journal of Personality Disorders*, 12(1), 31-45. <https://doi.org/10.1521/pedi.1998.12.1.31>
- Dziak, J. J., Lanza, S. T., & Tan, X. (2014). Effect size, statistical power and sample size requirements for the Bootstrap Likelihood Ratio Test in latent class analysis. *Structural Equation Modelling: A Multidisciplinary Journal*, 21(4), 534-552. <https://doi.org/10.1080/10705511.2014.919819>
- Easton, S., Furness, H., & Brantingham, P. (2014). *The cost of crime in Canada*. The Fraser Institute.
- Edens, J. F. (2009). Interpersonal characteristics of male criminal offenders: Personality, psychopathological, and behavioral correlates. *Psychological Assessment*, 21(1), 89-98. <https://doi.org/10.1037/a0014856>
- Eichelsheim, V. I., Nieuwbeerta, P., Dirkzwager, A. J. E., Reef, J., & De Cuyper, R. (2015). Predicting individual differences in criminal attitudes from offender characteristics: A study among Dutch prisoners. *Psychology, Crime & Law*, 21(6), 531-550. <https://doi.org/10.1080/1068316X.2014.999062>
- Elliott, D. S., & Ageton, S. S. (1980). Reconciling race and class differences in self-reported and official estimates of delinquency. *American Sociological Review*, 45(1), 95. <https://doi.org/10.2307/2095245>
- Elliott, D. S., Huizinga, D., & Ageton, S. (1985). *Explaining delinquency and drug use*. Sage.

- Elliott, I. A., Beech, A. R., & Mandeville-Norden, R. (2012). The psychological profiles of internet, contact, and mixed internet/contact sex offenders. *Sexual Abuse: A Journal of Research and Treatment*, 25(1), 3-20.
<https://doi.org/10.1177/1079063212439426>
- Entringer, T. M., Gebauer, J. E., & Paulhus, D. L. (2022). Extracting agency and communion from the Big Five: A four-way competition. *Assessment*, 29(6), 1216-1235. <https://doi.org/10.1177/10731911211003978>
- Erikson, E. H. (1950). *Childhood and society*. Norton.
- Eriksson, T. G., Masche-No, J. G., & Dåderman, A. M. (2017). Personality traits of prisoners as compared to general populations: Signs of adjustment to the situation? *Personality and Individual Differences*, 107, 237-245.
<https://doi.org/10.1016/j.paid.2016.11.030>
- European Commission. (2011). *Crime and deviance in the EU: Key findings from EU funded social sciences and humanities research projects*.
https://ec.europa.eu/research/social-sciences/pdf/policy_reviews/crime-and-deviance_en.pdf
- Eysenck, H. I. (2008). Personality and crime: Where do we stand. *Psychology, Crime & Law*, 2(3), 143-152. <https://doi.org/10.1080/10683169608409773>
- Eysenck, H. J. (1964). *Crime and Personality*. Routledge & Kegan Paul.
- Eysenck, S. B. G., & Eysenck, H. J. (1970). Crime and personality: An empirical test of the three-factor theory. *British Journal of Criminology*, 10, 225-239.
- Eysenck, S. B. G., Rust, J., & Eysenck, H. J. (1977). Personality and the classification of adult offenders. *The British Journal of Criminology*, 17(2), 169-179.
<https://doi.org/10.1093/oxfordjournals.bjc.a046806>
- Farrington, D. P. (1973). Self-reports of deviant behavior: Predictive and stable? *Journal of Criminal Law and Criminology*, 64(1), 99-110. <https://doi.org/10.2307/1142661>

- Farrington, D. P. (1986). Age and Crime. *Crime and Justice*, 7, 189-250.
- Farrington, D. P., Gaffney, H., & Ttofi, M. M. (2017). Systematic reviews of explanatory risk factors for violence, offending, and delinquency. *Aggression and Violent Behavior*, 33, 24-36. <https://doi.org/10.1016/j.avb.2016.11.004>
- Faul, F., Erdfelder, E., Lang, A. G., & Buchner, A. (2007). G*Power 3: A flexible statistical power analysis program for the social, behavioral, and biomedical sciences. *Behavior Research Methods*, 39(2), 175-191. <https://doi.org/10.3758/bf03193146>
- Favini, A., Gerbino, M., Eisenberg, N., Lunetti, C., & Tharton, E. (2018). Personality profiles and adolescents' maladjustment: A longitudinal study. *Personality and Individual Differences*, 129, 119-125. <https://doi.org/10.1016/j.paid.2018.03.016>
- Felson, R. B., & Staff, J. (2017). Committing economic crime for drug money. *Crime & Delinquency*, 63(4), 375-390. <https://doi.org/10.1177/0011128715591696>
- Ferguson, S. L., & Hull, D. M. (2018). Personality profiles: Using latent profile analysis to model personality typologies. *Personality and Individual Differences*, 122, 177-183. <https://doi.org/10.1016/j.paid.2017.10.029>
- Fiedler, K., Harris, C., & Schott, M. (2018). Unwarranted inferences from statistical mediation tests – An analysis of articles published in 2015. *Journal of Experimental Social Psychology*, 75, 95-102. <https://doi.org/10.1016/j.jesp.2017.11.008>
- Field, A. (2017). *Discovering statistics using IBM SPSS Statistics* (5th ed.). SAGE.
- Finkelhor, D. (1984). *Child sexual abuse: New theory and research*. Free Press.
- Firestone, P., Nunes, K. L., Moulden, H., Broom, I., & Bradford, J. M. (2005). Hostility and recidivism in sexual offenders. *Archives of Sexual Behavior*, 34(3), 277-283. <https://doi.org/10.1007/s10508-005-3116-8>

- Fix, R. L., & Fix, S. T. (2015). Trait psychopathy, emotional intelligence, and criminal thinking: Predicting illegal behavior among college students. *International Journal of Law and Psychiatry*, 42-43, 183-188. <https://doi.org/10.1016/j.ijlp.2015.08.024>
- Foxhall, M., Hamilton-Giachritsis, C., & Button, K. (2019). The link between rejection sensitivity and borderline personality disorder: A systematic review and meta-analysis. *British Journal of Clinical Psychology*, 58, 289-326. <https://doi.org/10.1111/bjc.12216>
- Fromm, E. (1947). *Escape from freedom*. Rinehan.
- Furnham, A., Richards, S. C., & Paulhus, D. L. (2013). The Dark Triad of personality: A 10 year review. *Social and Personality Psychology Compass*, 7(3), 199-216. <https://doi.org/10.1111/spc3.12018>
- Furnham, A., Richards, S. C., Rangel, L., & Jones, D. N. (2014). Measuring malevolence: Quantitative issues surrounding the Dark Triad of personality. *Personality and Individual Differences*, 67, 114-121. <https://doi.org/10.1016/j.paid.2014.02.001>
- Furnham, A., & Saipe, J. (1993). Personality correlates of convicted drivers. *Personality and Individual Differences*, 14(2), 329-336. [https://doi.org/10.1016/0191-8869\(93\)90131-1](https://doi.org/10.1016/0191-8869(93)90131-1)
- Garcia, D., & MacDonald, S. (2017). Dark personality profiles: Estimating the cluster structure of the Dark Triad. *PsyCH Journal*, 6(3), 239-240. <https://doi.org/10.1002/pchj.175>
- Garcia, D., & Moraga, F. R. G. (2017). The Dark Cube: Dark character profiles and OCEAN. *PeerJ*, 5, e3845. <https://doi.org/10.7717/peerj.3845>
- Garofalo, C., Bogaerts, S., & Denissen, J. J. A. (2018). Personality functioning and psychopathic traits in child molesters and violent offenders. *Journal of Criminal Justice*, 55, 80-87. <https://doi.org/10.1016/j.jcrimjus.2018.02.003>

- Gaughan, E. T., Miller, J. D., & Lynam, D. R. (2012). Examining the utility of general models of personality in the study of psychopathy: A comparison of the HEXACO-PI-R and NEO PI-R. *Journal of Personality Disorders, 26*(4), 513-523.
<https://doi.org/10.1521/pedi.2012.26.4.513>
- Gendreau, P., Andrews, D. A., Goggin, C., & Chanteloupe, F. (1992). *The development of clinical and policy guidelines for the prediction of criminal behaviour in criminal justice settings*. Ministry of the Solicitor General of Canada.
<https://www.publicsafety.gc.ca/lbrr/archives/hv%206049%20d48%201992-eng.pdf>
- Gendreau, P., Goggin, C. E., & Law, M. E. (1997). Predicting prison misconducts. *Criminal Justice and Behavior, 24*(4), 414-431.
<https://doi.org/10.1177/0093854897024004002>
- Gendreau, P., Little, T., & Goggin, C. (1996). A meta-analysis of the predictors of adult offender recidivism: What works! *Criminology, 34*(4), 575–608.
<https://doi.org/10.1111/j.1745-9125.1996.tb01220.x>
- Gerlach, M., Farb, B., Revelle, W., & Amaral, L. A. N. (2018). A robust data-driven approach identifies four personality types across four large datasets. *Nature Human Behaviour, 2*(10), 735-742. <https://doi.org/10.1038/s41562-018-0419-z>
- Gignac, G. E., & Szodorai, E. T. (2016). Effect size guidelines for individual differences researchers. *Personality and Individual Differences, 102*, 74-78.
<https://doi.org/10.1016/j.paid.2016.06.069>
- Gingrich, T. N., & Campbell, J. B. (1995). Personality characteristics of sexual offenders. *Sexual Addiction & Compulsivity: The Journal of Treatment & Prevention, 2*(1), 54-51. <https://doi.org/10.1080/10720169508400066>
- Glenn, A. L., & Sellbom, M. (2015). Theoretical and empirical concerns regarding the Dark Triad as a construct. *Journal of Personality Disorders, 29*(3), 360-377.
https://doi.org/10.1521/pedi_2014_28_162

- Glover, N. G., Crego, C., & Widiger, T. A. (2012). The clinical utility of the Five Factor Model of personality disorder. *Personality Disorders: Theory, Research, and Treatment, 3*(2), 176-184. <https://doi.org/10.1037/a0024030>
- Goldberg, L. R. (1999). A broad-bandwidth, public-domain, personality inventory measuring the lower-level facets of several Five-Factor Models. In I. Mervielde, I. J. Deary, F. De Fruyt, and F. Ostendorf (Eds.), *Personality Psychology in Europe* (Vol. 7), pp. 7-28. Tilburg University Press.
- Gomes, H. S., Maia, A., & Farrington, D. P. (2018). Measuring offending: self-reports, official records, systematic observation and experimentation. *Reviewing Crime Psychology, 4*(1), 26-44. <https://doi.org/10.1080/23744006.2018.1475455>
- Gow, A. J., Whiteman, M. C., Pattie, A., & Deary, I. J. (2005). Goldberg's 'IPIP' Big-Five factor markers: Internal consistency and concurrent validation in Scotland. *Personality and Individual Differences, 39*, 317-329. <https://doi.org/10.1016/j.paid.2005.01.011>
- Graziano, W. G., & Eisenberg, N. (1997). Agreeableness: A dimension of personality. In R. Hogan, S. Briggs, & J. Johnson (Eds.), *Handbook of personality psychology* (pp. 795–824). Academic Press.
- Grumm, M., & von Collani, G. (2009). Personality types and self-reported aggressiveness. *Personality and Individual Differences, 47*(8), 845–850. <https://doi.org/10.1016/j.paid.2009.07.001>
- Gudjónsson, G. (2016). Hans Eysenck's theory on the 'causes' and 'cures' of criminality: A personal reflection. *Personality and Individual Differences, 103*, 105-112. <https://doi.org/10.1016/j.paid.2016.04.030>
- Gudjónsson, G. H., Pétursson, H., Sigurdardóttir, H., & Skúlason, S. (1991). The personality of Icelandic prisoners: Some normative data. *Nordisk Psykiatrisk Tidsskrift, 45*(2), 151-157. <https://doi.org/10.3109/08039489109103279>

- Gupta, S. C., & Sethi, B. B. (1974). Psychosocial aspects and personality patterns of murderers. *Indian Journal of Psychiatry, 16*, 111-120.
- Haapasalo, J. (1990). Sensation seeking and Eysenck's personality dimensions in an offender sample. *Personality and Individual Differences, 11*(1), 81-84.
[https://doi.org/10.1016/0191-8869\(90\)90171-m](https://doi.org/10.1016/0191-8869(90)90171-m)
- Hall, G. C. N., & Hirschman, R. (1991). Toward a theory of sexual aggression: A quadripartite model. *Journal of Consulting and Clinical Psychology, 59*(5), 643-669. <https://doi.org/10.1037/0022-006x.59.5.662>
- Hall, G. D. N., & Hirschman, R. (1992). Sexual aggression against children: A conceptual perspective of etiology. *Criminal Justice and Behavior, 19*(1), 8-23.
<https://doi.org/10.1177/0093854892019001003>
- Hanel, P. H. P., & Vione, K. C. (2016). Do student samples provide an accurate estimate of the general public? *PLoS One, 11*(12), e0168354.
<https://doi.org/10.1371/journal.pone.0168354>
- Hanson, R. K., & Morton, K. E. (2003, June). *Recidivism risk factors for sexual offenders: An updated meta-analysis*. Paper presented at the Annual Convention of the Canadian Psychological Association, Hamilton, Ontario.
- Hare, R. D. (1985). A checklist for the assessment of psychopathy in criminal populations. In M. H. Ben-Aron, S. J. Hucker, & C. D. Webster (Eds.), *Clinical criminology: The assessment and treatment of criminal behavior* (pp. 157-168). M & M Graphics.
- Hare, R. D. (1991). *The Hare Psychopathy Checklist-Revised*. Multi-Health Systems.
- Hare, R. D. (2003). *The Hare Psychopathy Checklist-Revised* (2nd ed.). Multi-Health Systems.
- Harris, S. T., Oakley, C., & Picchioni, M. M. (2014). A systematic review of the association between attributional bias/interpersonal style, and violence in

schizophrenia/psychosis. *Aggression and Violent Behavior*, 19(3), 235-241.

<https://doi.org/10.1016/j.avb.2014.04.009>

Hart, C. M., Ritchie, T. D., Hepper, E. G., & Gebauer, J. E. (2015). The Balanced

Inventory of Desirable Responding Short Form (BIDR-16). *SAGE Open*, 5(4), 1-9.

<https://doi.org/10.1177/2158244015621113>

Hart, D., Burock, D., London, B., Atkins, R., & Bonilla-Santiago, G. (2005). The relation of personality types to physiological, behavioral, and cognitive processes.

European Journal of Personality, 19(5), 391-407. <https://doi.org/10.1002/per.547>

Hart, D., Hofmann, V., Edelstein, W., & Keller, M. (1997). The relation of childhood personality types to adolescent behavior and development: A longitudinal study of Icelandic children. *Developmental Psychology*, 33(2), 195–205.

<https://doi.org/10.1037/0012-1649.33.2.195>

Hayes, A. F. (2022). *Introduction to mediation, moderation, and conditional process analysis: A regression-based approach* (3rd ed.). Guilford Press.

Heaven, P. C. L. (1996). Personality and self-reported delinquency: Analysis of the “Big Five” personality dimensions. *Personality and Individual Differences*, 20(1), 47-54.

[https://doi.org/10.1016/0191-8869\(95\)00136-t](https://doi.org/10.1016/0191-8869(95)00136-t)

Heaven, P. C. L., Newbury, K., & Mak, A. (2004). The impact of adolescent and parental characteristics on adolescent levels of delinquency and depression. *Personality and Individual Differences*, 36(1), 173-185.

[https://doi.org/10.1016/S01918869\(03\)00077-1](https://doi.org/10.1016/S01918869(03)00077-1)

Heaven, P. C. L., & Virgen, M. (2001). Personality, perceptions of family and peer influences, and males’ self-reported delinquency. *Personality and Individual Differences*, 30(2), 321-331. [https://doi.org/10.1016/S0191-8869\(00\)00049-0](https://doi.org/10.1016/S0191-8869(00)00049-0)

Heeks, M., Reed, S., Tafhiri, M., & Prince, S. (2018, July). Home Office research report 99: The economic and social costs of crime (2nd ed.).

https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/954485/the-economic-and-social-costs-of-crime-horr99.pdf

- Hengartner, M. P., Muller, S., Rodgers, S., Rossler, W., & Ajdacic-Gross, V. (2014). Interpersonal functioning deficits in association with DSM-IV personality disorder dimensions. *Social Psychiatry and Psychiatric Epidemiology*, *49*(2), 317-325. <https://doi.org/10.1007/s00127-013-0707-x>
- Hepper, E. G., Hart, C. M., Meek, R., Cisek, S., & Sedikides, C. (2014). Narcissism and empathy in young offenders and non-offenders. *European Journal of Personality*, *28*(2), 201-210. <https://doi.org/10.1002/per.1939>
- Herzberg, P. Y., & Hoyer, J. (2009). Personality prototypes in adult offenders. *Criminal Justice and Behavior*, *36*(3), 259-274. <https://doi.org/10.1177/0093854808328331>
- Herzberg, P. Y., & Roth, M. (2006). Beyond resilient, undercontrollers, and overcontrollers? An extension of personality prototype research. *European Journal of Personality*, *20*(1), 5-28. <https://doi.org/10.1002/per.557>
- Heym, N., Firth, J., Kibowski, F., Sumich, A., Egan, V., & Bloxson, C. A. J. (2019). Empathy at the heart of darkness: Empathy deficits that bind the Dark Triad and those that mediate indirect relational aggression. *Frontiers in Psychiatry*, *10*(95), 1-10. <https://doi.org/10.3389/fpsyt.2019.00095>
- Hill, S. A., Mitchell, P., & Leipold, A. (2017). Transfers of mentally disordered adolescents from custodial settings to psychiatric hospital in England and Wales 2004-2014. *Journal of Forensic Psychiatry & Psychology*, *28*(1), 1-9. <https://doi.org/10.1080/14789949.2016.1237536>
- Hirschi, T., & Gottfredson, M. (1983). Age and the explanation of crime. *American Journal of Sociology*, *90*, 1330-33.
- Hogan, R. (1982). A socioanalytic theory of personality. In M. Page (Ed.), *Nebraska Symposium on motivation* (Vol. 30, pp. 55-89). University of Nebraska Press.

- Hopwood, C. J., Good, E. W., & Morey, L. C. (2018). Validity of the DSM-5 Levels of Personality Functioning Scale-Self Report. *Journal of Personality Assessment*, *100*(6), 650-659. <https://doi.org/10.1080/00223891.2017.1420660>
- Hopwood, C. J., Wright, A. G. C., Ansell, E. B., & Pincus, A. L. (2013). The interpersonal core of personality pathology. *Journal of Personality Disorders*, *27*(3), 270-295. <https://doi.org/10.1521/pedi.2013.27.3.270>
- Horney, K. (1945). *Our inner conflicts*. Norton.
- Hornsveld, R. H. J., Bulten, E. B. H., de Vries, E. T., & Kraaimaat, F. W. (2008). Violent forensic psychiatric inpatients and violent detainees in the Netherlands. *The Journal of Forensic Psychiatry & Psychology*, *19*(3), 407-419. <https://doi.org/10.1080/14789940802190145>
- Horsley, F., & Ireland, J. L. (2010). Affective empathy: Beliefs about aggression and schemas in a sample of convicted violent offenders and community sample. *The Police Journal: Theory, Practice and Principles*, *83*(3), 227-249. <https://doi.org/10.1350/pojo.2010.83.3.491>
- Hosser, D., & Bosold, C. (2006). A comparison of sexual and violent offenders in a German youth prison. *Howard Journal of Criminal Justice*, *45*(2), 159-170. <https://doi.org/10.1111/j.1468-2311.2006.00412.x>
- Hubicka, B., Källmén, H., Hiltunen, A., & Bergman, H. (2010). Personality traits and mental health of severe drunk drivers in Sweden. *Social Psychiatry and Psychiatric Epidemiology*, *45*(7), 723-731. <https://doi.org/10.1007/s00127-009-0111-8>
- Huey, S. J., Jr., & Weisz, J. R. (1997). Ego control, ego resiliency, and the five-factor model as predictors of behavioral and emotional problems in clinic-referred children and adolescents. *Journal of Abnormal Psychology*, *106*(3), 404-415. <https://doi.org/10.1037/0021-843x.106.3.404>

- Hutsebaut, J., Feenstra, D. J., & Kamphuis, J. H. (2016). Development and preliminary psychometric evaluation of a brief self-report questionnaire for the assessment of the DSM-5 Level of Personality Functioning Scale: The LPFS Brief Form (LPFS-BF). *Personality Disorders: Theory, Research, and Treatment*, 7(2), 192-197. <https://doi.org/10.1037/per0000159>
- Iffland, J. A., Berner, W., & Briken, P. (2014). Relationship factors in sex offender couples: A pilot study in an outpatient setting. *Journal of Sex & Marital Therapy*, 40(6), 529-540. <https://doi.org/10.1080/0092623X.2013.788108>
- International Personality Item Pool. (n.d.). *Characteristics of the Preliminary IPIP Scales Measuring the Big-Five Domains*. <http://ipip.ori.org/newBigFive5broadTable.htm>
- Ireland, C. A., Ireland, J. L., Jones, N. S., Chu, S., & Lewis, M. (2019). Predicting security incidents in high secure male psychiatric care. *International Journal of Law and Psychiatry*, 64, 40-52. <https://doi.org/10.1016/j.ijlp.2019.01.004>
- Ireland, J. L., Ireland, C. A., & Birch, P. (2019). *Violent and sexual offenders: Assessment, treatment and management* (2nd ed.). Routledge.
- Isler, L., Liu, J. H., Sibley, C. G., & Flether, G. H. O. (2016). Self-regulation and personality profiles: Empirical development, longitudinal stability and predictive ability. *European Journal of Personality*, 30, 274-287. <https://doi.org/10.1002/per.2054>
- Isler, L. M. (2017). *A typological investigation of personality: Trait expression as a coordinated system of self-regulatory functioning* [Doctoral dissertation, Victoria University of Wellington]. ResearchArchive–Te Puna Rangahau.
- Jakobwitz, S., & Egan, V. (2006). The dark triad and normal personality traits. *Personality and Individual Differences*, 40, 331-339. <https://doi.org/10.1016/j.paid.2005.07.006>
- Jalil, R., Huber, J. W., Sixsmith, J., & Dickens, G. L. (2019). The role of interpersonal style in aggression and its containment in a forensic mental health setting: A

correlational and pseudoprospective study of patients and nursing staff.

International Journal of Mental Health Nursing, 29(3), 427-439.

<https://doi.org/10.1111/inm.12677>

Jansman-Hart, E. M., Seto, M. C., Crocker, A. G., Nicholls, T. L., & Côté, G. (2011).

International trends in demand for forensic mental health services. *International Journal of Forensic Mental Health*, 10(4), 326-336.

<https://doi.org/10.1080/14999013.2011.625591>

Johansen, M. S., Normann-Eide, E., Normann-Eide, T., Klungsøyr, O., Kvarstein, E., &

Wilberg, T. (2016). Relationship between affect consciousness and personality functioning in patients with personality disorders: A prospective study. *Journal of Personality Disorders*, 30(5), 633-652. https://doi.org/10.1521/pedi_2015_29_220

John, O. P., Caspi, A., Robins, R. W., Moffitt, T. E., & Stouthamer-Loeber, M. (1994).

The “Little Five”: Exploring the nomological network of the Five-Factor Model of personality in adolescent boys. *Child Development*, 65, 160-178.

<https://doi.org/10.2307/1131373>

Jolliffe, D., & Farrington, D. P. (2004). Empathy and offending: A systematic review and meta-analysis. *Aggression and Violent Behavior*, 9(5), 441-476.

<https://doi.org/10.1016/j.avb.2003.03.001>

Jolliffe, D., & Farrington, D. P. (2006). Development and validation of the Basic Empathy Scale. *Journal of Adolescence*, 29(4), 589-611.

<https://doi.org/10.1016/j.adolescence.2005.08.010>

Jonason, P. K., Girgis, M., & Milne-Home, J. (2017). The exploitative mating strategy of the Dark Triad traits: Tests of rape-enabling attitudes. *Archives of Sexual Behavior*, 46(3), 697-706. <https://doi.org/10.1007/s10508-017-0937-1>

Jonason, P. K., & Webster, G. D. (2010). The Dirty Dozen: A concise measure of the Dark Triad. *Psychological Assessment*, 22, 420-432.

- Jones, D. M., & Figueredo, A. J. (2013). The core of darkness: Uncovering the heart of the dark triad. *European Journal of Personality, 27*(6), 521-531.
<https://doi.org/10.1002/per.1893>
- Jones, D. M., & Paulhus, D. L. (2014). Introducing the Short Dark Triad (SD3): A brief measure of dark personality traits. *Assessment, 21*(1), 28-41.
<https://doi.org/10.1177/1073191113514105>
- Jones, D. N., & Neria, A. L. (2015). The Dark Triad and dispositional aggression. *Personality and Individual Differences, 86*, 360-364.
<https://doi.org/10.1016/j.paid.2015.06.021>
- Jones, D. N., & Paulhus, D. L. (2011). Differentiating the Dark Triad within the interpersonal circumplex. In L. M. Horowitz & S. Strack (Eds.), *Handbook of interpersonal psychology: Theory, research, assessment, and therapeutic interventions* (pp. 249-269). Wiley & Sons.
- Jones, S. E., Miller, J. D., & Lynam, D. R. (2011). Personality, antisocial behavior, and aggression: A meta-analytic review. *Journal of Criminal Justice, 39*(4), 329-337.
<https://doi.org/10.1016/j.jcrimjus.2011.03.004>
- Jornet-Gibert, M., Gallardo-Pujol, D., Suso, C., & Andrés-Pueyo, A. (2013). Attitudes do matter: The role of attitudes and personality in DUI offenders. *Accident Analysis and Prevention, 50*, 445-450. <https://doi.org/10.1016/j.aap.2012.05.023>
- Judge, T. A., Heller, D., & Mount, M. K. (2002). Five-Factor Model of personality and job satisfaction: A meta-analysis. *Journal of Applied Psychology, 87*(3), 530-541.
[https://doi.org/1037//0021-9010.87.3.530](https://doi.org/10.1037//0021-9010.87.3.530)
- Jung, S., & Jamieson, L. (2012). An exploratory examination of obsessive, schizotypal, and narcissistic traits among sexual offenders. *Applied Psychology in Criminal Justice, 8*(1), 1-14.

- Kahn, R. E., Byrd, A. L., & Pardini, D. A. (2013). Callous-unemotional traits robustly predict future criminal offending in young men. *Law and Human Behavior, 37*(2), 87-97. <https://doi.org/10.1037/b0000003>
- Karpman, B. (1941). On the need of separating psychopathy into two distinct clinical types: The symptomatic and the idiopathic. *Journal of Criminal Psychopathology, 3*, 112–137.
- Kavanagh, P. S., Signal, T. D., & Taylor, N. (2013). The Dark Triad and animal cruelty: Dark personalities, dark attitudes, and dark behaviors. *Personality and Individual Differences, 55*(6), 666-670. <https://doi.org/10.1016/j.paid.2013.05.019>
- Kerber, A., Roth, M., & Herzberg, P. Y. (2021). Personality types revisited – a literature-informed and data-driven approach to an integration of prototypical and dimensional constructs of personality description. *PLoS ONE, 16*(1), e0244849. <https://doi.org/10.1371/journal.pone.0244849>
- Kernberg, O. F. (1984). *Severe personality disorders: Psychotherapeutic strategies*. Yale University Press.
- Kernberg, O. F. (2016). What is personality? *Journal of Personality Disorders, 30*(2), 145-156. <https://doi.org/10.1521/pedi.2106.30.2.145>
- Kiesler, D. J. (1987). *Manual for the Impact Message Inventory*. Consulting Psychologists Press, Inc.
- Kim, D., & Lee, Y. (2017). Identifying the influences of demographic characteristics and personality of inveterate drunk drivers on the likelihood of driving under the influence of alcohol (DUIA) recurrence. *International Journal of Urban Sciences, 21*(3), 300-311. <https://doi.org/10.1080/12265934.2017.1365004>
- King, M. F., & Bruner, G. C. (2000). Social desirability bias: A neglected aspect of validity testing. *Psychology and Marketing, 17*(2), 79-103. [https://doi.org/10.1002/\(sici\)1520-6793\(200002\)17:2<79::aid-mar2>3.0.co;2-0](https://doi.org/10.1002/(sici)1520-6793(200002)17:2<79::aid-mar2>3.0.co;2-0)

- Klimstra, T. A., Luyckx, K., Teppers, E., Goossens, L., & de Fruyt, F. (2011). Congruence between adolescent personality types based on the Big Five domains and the 30 NEO-PI-3 personality facets. *Journal of Research in Personality, 45*(5), 513–517. <https://doi.org/10.1016/j.jrp.2011.07.004>
- Kmet, L. M., Lee, R. C., & Cook, L. S. (2004). *Standard assessment criteria for evaluating primary research papers from a variety of fields*. Alberta Heritage Foundation for Medical Research.
- Knight, K., Garner, B. R., Simpson, D., Morey, J. T., & Flynn, P. M. (2006). An assessment for criminal thinking. *Crime & Delinquency, 52*(1), 159-177. <https://doi.org/10.1177/0011128705281749>
- Koss, M. P., Abbey, A., Campbell, R., Cook, S., Norris, J., Testa, M., & White, J. (2007). Revising the SES: A collaborative process to improve assessment of sexual aggression and victimization. *Psychology of Women Quarterly, 31*(4), 357-370. <https://doi.org/10.1111/j.1471-6402.2007.00385.x>
- Kumari, A., Iqbal, N., & Khan, W. (2017). Personality and character virtues as predictors of mental health among prisoners. *Indian Journal of Health and Well-being, 8*(12), 1584- 1590.
- Kuper, N., Modersitzki, N., Phan, L. V., & Rauthmann, J. F. (2021). The dynamics, processes, mechanisms, and functioning of personality: An overview of the field. *British Journal of Psychology, 112*(1), 1-51. <https://doi.org/10.1111/bjop.12486>
- Landis, J. R., & Koch, G. G. (1977). The measurement of observer agreement for categorical data. *Biometrics, 33*(1), 159-174. <https://doi.org/10.2307/2529310>
- Larstone, R. M., Jang, K. L., Livesley, W. J., Vernon, P. A., & Wolf, H. (2002). The relationship between Eysenck's P-E-N model of personality, the Five-Factor Model of personality, and traits delineating personality dysfunction. *Personality and*

Individual Differences, 33(1), 25-37. [https://doi.org/10.1016/s0191-8869\(01\)00132-5](https://doi.org/10.1016/s0191-8869(01)00132-5)

Lawton, R., Parker, D., Manstead, A. S. R., & Stradling, S. (1997). The role of affect in predicting social behaviours: The case of road traffic violations. *Journal of Applied Social Psychology*, 27(1), 1258–1276. <https://doi.org/10.1111/j.1559-1816.1997.tb01805.x>

Leal, W. E. (2017). *Is my personality your problem?: Examining the effect of personality on drug use and criminal involvement* [Doctoral dissertation, Florida State University]. Florida State University Libraries.

Leary, T. (1957). *Interpersonal diagnosis of personality*. Ronald Press.

Leichsenring, F., Kunst, H., & Hoyer, J. (2003). Borderline personality organization in violent offenders: Correlations of identity diffusion and primitive defense mechanisms with antisocial features, neuroticism, and interpersonal problems. *Bulletin of the Menninger Clinic*, 67(4), 314-327. <https://doi.org/10.1521/bumc.67.4.314.26983>

Lev, D., Hershkovitz, E., & Yechiam, E. (2008). Decision making and personality in traffic offenders: A study of Israeli drivers. *Accident Analysis and Prevention*, 40, 223-230. <https://doi.org/10.1016/j.aap.2007.05.009>

Levenson, M., Kiehl, K., & Fitzpatrick, C. (1995). Assessing psychopathic attributes in a noninstitutionalized population. *Journal of Personality and Social Psychology*, 68(1), 151-158. <https://doi.org/10.1037/0022-3514.68.1.151>

Lilienfeld, S. O., Watts, A. L., Murphy, B., Costello, T. H., Bowes, S. M., Smith, S. F., Latzman, R. D., Haslam, N., & Tabb, K. (2019). Personality disorders as emergent interpersonal syndromes: Psychopathic personality as a case example. *Journal of Personality Disorders*, 33(5), 577-622. <https://doi.org/10.1521/pedi.2019.33.5.577>

- Ljubin-Golub, T., Vrselja, I., & Pandžić, M. (2017). The contribution of sensation seeking and the Big Five personality factors to different types of delinquency. *Criminal Justice and Behavior, 44*(11), 1518-1536.
<https://doi.org/10.1177/0093854817730589>
- Logan, C., & Johnstone, L. (2010). Personality disorder and violence: Making the link through risk formulation. *Journal of Personality Disorders, 24*(5), 610-633.
<https://doi.org/10.1521/pedi.2010.24.5.610>
- Lu, Y., & Lung, F. (2012). Perceived parental attachment, personality characteristics, and cognition in male incest. *International Journal of Offender Therapy and Comparative Criminology, 56*(4), 557-572.
<https://doi.org/10.1177/0306624X11402166>
- Lynam, D. R., & Widiger, T. A. (2001). Using the Five-Factor Model to represent the DSM-IV personality disorders: an expert consensus approach. *Journal of Abnormal Psychology, 110*(3), 401-412. <https://doi.org/10.1037//0021-843x.110.3.401>
- Madsen, L., Parsons, S., & Grubin, D. (2006). The relationship between the Five-Factor Model and DSM personality disorder in a sample of child molesters. *Personality and Individual Differences, 40*(2), 227-236.
<https://doi.org/10.1016/j.paid.2005.06.023>
- Magalhães, E., Costa, P., & Costa, M. J. (2012). Empathy of medical students and personality: Evidence from the Five-Factor Model. *Medical Teacher, 34*(10), 807-812. <https://doi.org/10.3109/0142159x.2012.702248>
- Mai, C., & Subramanian, R. (2017). *The price of prisons: Examining state spending trends, 2010-2015*. <https://www.vera.org/downloads/publications/the-price-of-prisons-2015-state-spending-trends.pdf>
- Mak, A. S. (1993). A self-report delinquency scale for Australian adolescents. *Australian Journal of Psychology, 45*(2), 75-79. <https://doi.org/10.1080/00049539308259122>

- Malamuth, N. M. (1988). A multidimensional approach to sexual aggression: Combining measures of past behavior and present likelihood. *Annals of the New York Academy of Sciences*, 528(1), 123-132. <https://doi.org/10.1111/j.1749-6632.1988.tb42065.x>
- Malamuth, N. M., Heavey, C. L., & Linz, D. (1996). The confluence model of sexual aggression. *Journal of Offender Rehabilitation*, 23(3-4), 13-37. https://doi.org/10.1300/j076v23n03_03
- Malouff, J. M., Thorsteinsson, E. B., Rooke, S. E., & Schutte, N. S. (2007). Alcohol involvement and the Five-Factor Model of personality: A meta-analysis. *Journal of Drug Education*, 37(3), 277–294. <https://doi.org/10.2190/de.37.3.d>
- Malouff, J. M., Thorsteinsson, E. B., & Schutte, N. S. (2005). The relationship between the Five-Factor Model of personality and symptoms of clinical disorders: A meta-analysis. *Journal of Psychopathology and Behavioral Assessment*, 27(2), 101-114. <https://doi.org/10.1007/s10862-005-5384-y>
- Malouff, J. M., Thorsteinsson, E. B., & Schutte, N. S. (2006). The Five-Factor Model of personality and smoking: A meta-analysis. *Journal of Drug Education*, 36(1), 47-58. <https://doi.org/10.2190/9EP8-17P8-EKG7-66AD>
- Malouff, J. M., Thorsteinsson, E. B., Schutte, N. S., Bhullar, N., & Rooke, S. E. (2010). The Five-Factor Model of personality and relationship satisfaction of intimate partners: A meta-analysis. *Journal of Research in Personality*, 44(1), 124-127. <https://doi.org/10.1016/j.jrp.2009.09.004>
- Maltby, J., Day, L., & Macaskill, A. (2017). *Personality, individual differences and intelligence* (4th ed.). Pearson.
- Mangione, S., Kane, G. C., Caruso, J. W., Gonnella, J. S., Nasca, T. J., & Hojat, M. (2002). Assessment of empathy in different years of internal medicine training. *Medical Teacher*, 24(4), 370–373. <https://doi.org/10.1080/01421590220145725>

- Maples, J. L., Lamkin, J., & Miller, J. D. (2014). A test of two brief measures of the Dark Triad: The Dirty Dozen and Short Dark Triad. *Psychological Assessment, 26*(1), 326-331. <https://doi.org/10.1037/a0035084>
- Marshall, W. L., & Barbaree, H. E. (1990). An integrated theory of the etiology of sexual offending. In W. L. Marshall, D. R. Laws, & H. E. Barbaree (Eds.), *Handbook of sexual assault: Issues, theories, and treatment of the offender* (pp. 257–275). Plenum.
- Marshall, W. L., Hudson, S. M., Jones, R., & Fernandez, Y. M. (1995). Empathy in sex offenders. *Clinical Psychology Review, 15*(2), 99-113. [https://doi.org/10.1016/0272-7358\(95\)00002-7](https://doi.org/10.1016/0272-7358(95)00002-7)
- Martin-Avellan, L., McGauley, G., Campbell, C., & Fonagy, P. (2005). Using the SWAP-200 in a personality-disordered forensic population: Is it valid, reliable and useful? *Criminal Behaviour and Mental Health, 15*(1), 28–45. <https://doi.org/10.1002/cbm.35>
- Mayer, S. V., Jusyte, A., Klimecki-Lenz, O. M., & Schönenberg, M. (2018). Empathy and altruistic behavior in antisocial violent offenders with psychopathic traits. *Psychiatry Research, 269*, 625-632. <https://doi.org/10.1016/j.psychres.2018.08.035>
- McCabe, G. A., Oltmanns, J. R., & Widiger, T. A. (2021). Criterion A scales: Convergent, discriminant, and structural relationships. *Assessment, 28*(3), 813-828. <https://doi.org/10.1177/1073191120947160>
- McCoy, K., Fremouw, W., Tyner, E., Clegg, C., Johansson-Love, J., & Strunk, J. (2006). Criminal-thinking styles and illegal behavior among college students: Validation of the PICTS. *Journal of Forensic Sciences, 51*(5), 1174-1177. <https://doi.org/10.1111/j.1556-4029.2006.00216.x>

- McCrae, R. R., & Costa, P. T., Jr. (1985). Comparison of EPI and psychoticism scales with measures of the Five-Factor Model of personality. *Personality and Individual Differences, 6*(5), 587-597. [https://doi.org/10.1016/0191-8869\(85\)90008-x](https://doi.org/10.1016/0191-8869(85)90008-x)
- McCrae, R. R., & Costa, P. T., Jr. (1987). Validation of the five-factor model of personality across instruments and observers. *Journal of Personality and Social Psychology, 52*(1), 81-90. <https://doi.org/10.1037//0022-3514.52.1.81>
- McCrae, R. R., & Costa, P. T., Jr. (1989). The structure of interpersonal traits: Wiggins's circumplex and the Five-Factor Model. *Journal of Personality and Social Psychology, 56*(4), 586-595. <https://doi.org/10.1037/0022-3514.56.4.586>
- McCrae, R. R., & Costa, P. T., Jr. (1994). The stability of personality: Observations and evaluations. *Current Directions in Psychological Science, 3*(6), 173-175. <https://doi.org/10.1111/1467-8721.ep10770693>
- McCrae, R. R., & Costa, P. T., Jr. (2008). The five-factor theory of personality. In O. P. John, R. W. Robins, & L. A. Pervin (Eds.), *Handbook of personality: Theory and research* (pp. 159-181). The Guilford Press.
- McCrae, R. R., & John, O. P. (1992). An introduction to the Five-Factor Model and its applications. *Journal of Personality, 60*(2), 175-215. <https://doi.org/10.1111/j.1467-6494.1992.tb00970.x>
- McEwan, A. W. (1983). Eysenck's theory of criminality and the personality types and offences of young delinquents. *Personality and Individual Differences, 4*(2), 201-204. [https://doi.org/10.1016/0191-8869\(83\)90021-1](https://doi.org/10.1016/0191-8869(83)90021-1)
- McHoskey, J. W., Worzel, W., & Szyarto, C. (1998). Machiavellianism and psychopathy. *Journal of Personality and Social Psychology, 74*(1), 192-210. <https://doi.org/10.1037/0022-3514.74.1.192>
- McIntosh Fuller, K. L. (2012). *Personality and crime: An examination of the influence of the Five Factor Model on offending and co-offending* (Publication No. 3499755)

[Doctoral dissertation, Indiana University of Pennsylvania]. ProQuest Dissertations Publishing.

- McKerracher, D. W., & Watson, R. A. (1968). The Eysenck Personality Inventory in male and female subnormal psychopaths in a special security hospital. *British Journal of Social and Clinical Psychology*, 7(4), 295-302. <https://doi.org/10.1111/j.2044-8260.1968.tb00572.x>
- Međedović, J., & Kujačić, D. (2017). A General Factor of Personality in a sample of inmates: Associations with indicators of life-history strategy and covitality. *Psihologija*, 50(1), 37- 49. <https://doi.org/10.2298/PSI160513004M>
- Meehan, K. B., Siefert, C., Sexton, J., & Huprich, S. K. (2019). Expanding the role of Levels of Personality Functioning in personality disorder taxonomy: Commentary on Criterion A of the AMPD in HiTOP. *Journal of Personality Assessment*, 101(4), 367-373. <https://doi.org/10.1080/00223891.2018.1551228>
- Merton, R. K. (1938). Social structure and anomie. *American Sociological Review*, 3(5), 672-682. <https://doi.org/10.2307/2084686>
- Merton, R. K. (1957). *Social theory and social structure*. Free Press.
- Merz, E. L., & Roesch, S. C. (2011). A latent profile analysis of the Five Factor Model of personality: Modeling trait interactions. *Personality and Individual Differences*, 51, 915-919. <https://doi.org/10.1016/j.paid.2011.07.022>
- Miller, J. D., & Campbell, W. K. (2008). Comparing clinical and social personality conceptualizations of narcissism. *Journal of Personality*, 76(3), 449–476. <https://doi.org/10.1111/j.1467-6494.2008.00492.x>
- Miller, J. D., Hoffman, B. J., Gaughan, E. T., Gentile, B., Maples, J., & Campbell, W. K. (2011). Grandiose and vulnerable narcissism: A nomological network analysis. *Journal of Personality*, 79(5), 1013-1042. <https://doi.org/10.1111/j.1467-6494.2010.00711.x>

- Miller, J. D., & Lynam, D. (2001). Structural models of personality and their relation to antisocial behavior: A meta-analytic review. *Criminology*, *39*(4), 765-798. <https://doi.org/10.1111/j.1745-9125.2001.tb00940.x>
- Miller, J. D., Lynam, D., & Leukefeld, C. (2003). Examining antisocial behavior through the lens of the Five Factor Model of personality. *Aggressive Behavior*, *29*(6), 497-514. <https://doi.org/10.1002/ab.10064>
- Miller, J. D., Vize, C., Crowe, M. L., & Lynam, D. R. (2019). A critical appraisal of the Dark-Triad literature and suggestions for moving forward. *Current Directions in Psychological Science*, *28*(4), 353-360. <https://doi.org/10.1177/0963721419838233>
- Mills, J. F., Kroner, D. G., & Hemmati, T. (2004). The Measures of Criminal Attitudes and Associates (MCAA): The prediction of general and violent recidivism. *Criminal Justice and Behavior*, *31*(6), 717-733. <https://doi.org/10.1177/0093854804268755>
- Mills, J. F., Loza, W., & Kroner, D. G. (2003). Predictive validity despite social desirability: Evidence for the robustness of self-report among offenders. *Criminal Behaviour and Mental Health*, *13*(2), 140-150. <https://doi.org/10.1002/cbm.536>
- Ministry of Justice. (2022). Prison population figures: 2022. <https://www.gov.uk/government/publications/prison-population-figures-2022>
- Moffitt, T. E. (1993). 'Life-course persistent' and 'Adolescence-limited' antisocial behavior: A developmental taxonomy. *Psychological Review*, *100*, 674-701.
- Moher, D., Liberati, A., Tetzlaff, J., Altman, D. G., & the PRISMA Group. (2009). Preferred reporting items for systematic reviews and meta-analyses: The PRISMA statement. *Annals of Internal Medicine*, *151*(4), 264-270. <https://doi.org/10.7326/0003-4819-151-4-200908180-00135>
- Monsen, J., Hagtvet, K., Havik, O., & Eilertsen, D. (2006). Circumplex structure and personality disorder correlates of the interpersonal problems model (IIP-C):

Construct validity and clinical implications. *Psychological Assessment*, *18*(2), 165-173. <https://doi.org/10.1037/1040-3590.18.2.165>

Mooradian, T. A., Davis, M., & Matzler, K. (2011). Dispositional empathy and the hierarchical structure of personality. *The American Journal of Psychology*, *124*(1), 99-109. <https://doi.org/10.5406/amerjpsyc.124.1.0099>

Morey, L. C., Berghuis, H., Bender, D. S., Verheul, R., Krueger, R. F., & Skodol, A. E. (2011). Toward a model for assessing level of personality functioning in DSM-5, part II: Empirical articulation of a core dimension of personality pathology. *Journal of Personality Assessment*, *93*(4), 347-353. <https://doi.org/10.1080/00223891.2011.577853>

Morey, L. C., McCredie, M. N., Bender, D. S., & Skodol, A. E. (2022). Criterion A: Level of personality functioning in the alternative DSM–5 model for personality disorders. *Personality Disorders: Theory, Research, and Treatment*, *13*(4), 305-315. <https://doi.org/10.1037/per0000551>

Morgan, R. D., Fisher, W. H., Duan, N., Mandracchia, J. T., & Murray, D. (2010). Prevalence of criminal thinking among state prison inmates with serious mental illness. *Law and Human Behavior*, *34*(4), 324-336. <https://doi.org/10.1007/s10979-009-9182-z>

Möttus, R. (2016). Towards more rigorous personality domain–outcome research. *European Journal of Personality*, *30*, 292–303. <https://doi.org/10.1002/per.2041>

Möttus, R., Wood, D., Condon, D. M., Back, M. D., Baumert, A., Costantini, G., Epskamp, S., Greiff, S., Johnson, W., Lukaszewski, A., Murray, A., Revelle, W., Wright, A. G. C., Yarkoni, T., Ziegler, M., & Zimmermann, J. (2020). Descriptive, predictive and explanatory personality research: Different goals, different approaches, but a shared need to move beyond the Big Few traits. *European Journal of Personality*, *34*(6), 1175-1201. <https://doi.org/10.1002/per.2311>

- Müller, S. E., Weijers, H. G., Böning, J., & Wiesbeck, G. A. (2019). Personality traits predict treatment outcome in alcohol-dependent patients. *Neuropsychobiology*, *57*, 159-164. <https://doi.org/10.1159/000147469>
- Muris, P., Merckelbach, H., Otgaar, H., & Meijer, E. (2017). The malevolent side of human nature: A meta-analysis and critical review of the literature on the Dark Triad (narcissism, Machiavellianism, and psychopathy). *Perspectives on Psychological Science*, *12*(2), 183-204. <https://doi.org/10.1177/1745691616666070>
- Muthén, L. K., & Muthén, B. O. (1998-2017). *Mplus user's guide* (8th ed.). Muthén & Muthén.
- Nasby, W., Hayden, B., & DePaulo, B. M. (1980). Attributional bias among aggressive boys to interpret unambiguous social stimuli as displays of hostility. *Journal of Abnormal Psychology*, *89*(3), 459-468. <https://doi.org/10.1037/0021-843x.89.3.459>
- Natoli, A. P., Bach, B., Behn, A., Cottin, M., Gritti, E. S., Hutsebaut, J., Lamba, N., Le Corff, Y., Zimmerman, J., & Lapalme, M. (2022). Multinational evaluation of the measurement invariance of the Level of Personality Functioning Scale–brief form 2.0: Comparison of student and community samples across seven countries. *Personality Assessment*. Advance online publication. <https://doi.org/10.1037/pas0001176>
- Nigel, S. M., Dudeck, M., Otte, S., Knauer, K., Klein, V., Böttcher, T., Maaß, C., Vasic, N., & Streb, J. (2018). Psychopathy, the Big Five and empathy as predictors of violence in a forensic sample of substance abusers. *Journal of Forensic Psychiatry & Psychology*, *29*(6), 882-900. <https://doi.org/10.1080/14789949.2018.1439993>
- Nylund-Gibson, K., & Choi, A. Y. (2018). Ten frequently asked questions about latent class analysis. *Translational Issues in Psychological Science*, *4*(4), 440-461. <https://doi.org/10.1037/tps0000176>

- O'Boyle, E. H., Forsyth, D. R., Banks, G. C., Story, P. A., & White, C. D. (2014). A meta-analytic test of redundancy and relative importance of the dark triad and five-factor model of personality. *Journal of Personality, 83*(6), 644-664.
<https://doi.org/10.1111/jopy.12126>
- O'Riordan, C., & O'Connell, M. (2014). Predicting adult involvement in crime: Personality measures are significant, socio-economic measures are not. *Personality and Individual Differences, 68*, 98-101. <https://doi.org/10.1016/j.paid.2014.04.010>
- Olver, M. E., Stockdale, K. C., & Simourd, D. J. (2021). Assessment and modification of general criminal attitude among men who have sexually offended. *Criminal Justice and Behavior, 48*(4), 459-480. <https://doi.org/10.1177/0093854820925846>
- Oshio, A., Abe, S., & Cutrone, P. (2012). Development, reliability, and validity of the Japanese version of Ten Item Personality Inventory (TIPI-J). *The Japanese Journal of Personality, 21*, 40-52. <https://doi.org/10.2132/personality.21.40>
- Ostendorf, F. (2000). Personality disorders and the Five-Factor Model of personality: A meta-analysis. *European Psychiatry, 15*(2), s226-s227.
[https://doi.org/10.1016/S0924-9338\(00\)93972-5](https://doi.org/10.1016/S0924-9338(00)93972-5)
- Pabian, S., De Backer, C. J. S., & Vandebosch, H. (2015). Dark Triad personality traits and adolescent cyber-aggression. *Personality and Individual Differences, 75*, 41-46.
<https://doi.org/10.1016/j.paid.2014.11.015>
- Padfield, N., & Maruna, S. (2006). The revolving door at the prison gate: Exploring the dramatic increase in recalls to prison. *Criminology & Criminal Justice, 6*(3), 329-352. <https://doi.org/10.1177/1748895806065534>
- Parks-Leduc, L., Feldman, G., & Bardi, A. (2014). Personality traits and personal values: A meta-analysis. *Personality and Social Psychology Review, 19*(1), 3-29.
<https://doi.org/10.1177/1088868314538548>

- Paulhus, D. L. (1988). *Assessing self-deception and impression management in self-reports: The Balanced Inventory of Desirable Responding*. Unpublished manual, University of British Columbia, Vancouver, Canada.
- Paulhus, D. L. (1991). Measurement and control of response bias. In J. P. Robinson, P. R. Shaver, & L. S. Wrightsman (Eds.), *Measures of personality and social psychological attitudes* (pp. 17-59). Elsevier Academic Press.
<https://doi.org/10.1016/b978-0-12-590241-0.50006-x>
- Paulhus, D. L. (1994). *Balanced Inventory of Desirable Responding: Reference manual for BIDR Version 6*. Unpublished manual, University of British Columbia, Vancouver, Canada.
- Paulhus, D. L. (1998). *Manual for the Paulhus Deception Scales: BIDR Version 7*. Toronto, ON: Multi-Health Systems.
- Paulhus, D. L. (2002). Socially desirable responding: The evolution of a construct. In H. I. Braun, D. N. Jackson, & D. E. Wiley (Eds.), *The role of constructs in psychological and educational measurement* (pp. 49-69). Lawrence Erlbaum.
- Paulhus, D. L., Neumann, C. S., & Hare, R. D. (2017). *Manual for the Self-Report Psychopathy Scale 4th edition*. Multi-Health Systems.
- Paulhus, D. L., & Williams, K. M. (2002). The Dark Triad of personality: Narcissism, Machiavellianism, and psychopathy. *Journal of Research in Personality*, 36(6), 556-563. [https://doi.org/10.1016/s0092-6566\(02\)00505-6](https://doi.org/10.1016/s0092-6566(02)00505-6)
- Peters, G. Y. (2014). The alpha and the omega of scale reliability and validity: Why and how to abandon Cronbach's alpha and the route towards more comprehensive assessment of scale quality. *The European Health Psychologist*, 16(2), 56-69.
- Pettersen, C., Nunes, K. L., Kostiuk, N., Jung, S., & Atlas, M. (2019). Explicit and implicit self-esteem, narcissism, and recidivism risk in a sample of men who have sexually

offended against children. *Archives of Sexual Behavior*, 49(4), 1319-1332.

<https://doi.org/10.1007/s10508-019-01598-6>

Pincus, A. L. (2011). Some comments on nomology, diagnostic process, and narcissistic personality disorder in the DSM-5 proposal for personality and personality disorders. *Personality Disorders: Theory, Research, and Treatment*, 2(1), 41–53.

<https://doi.org/10.1037/a0021191>

Pincus, A. L. (2018). An interpersonal perspective on Criterion A of the DSM-5 alternative model for personality disorders. *Current Opinion in Psychology*, 21, 11-17.

<https://doi.org/10.1016/j.copsyc.2017.08.035>

Pincus, A. L., & Ansell, E. B. (2003). Interpersonal theory of personality. In T. Millon, M. J. Lerner, & I. B. Weiner (Eds.), *Handbook of psychology (Vol. 5): Personality and social psychology* (pp. 209-229). John Wiley & Sons.

Pincus, A. L., Cain, N. M., & Halberstadt, A. L. (2020). Importance of self and other in defining personality pathology. *Psychopathology*, 53(3-4), 133-140.

<https://doi.org/10.1159/000506313>

Pincus, A. L., & Hopwood, C. J. (2012). A contemporary interpersonal model of personality pathology and personality disorder. In T. A. Widiger (Ed.), *The Oxford handbook of personality disorders* (pp. 372–398). Oxford University Press.

<https://doi.org/10.1093/oxfordhb/9780199735013.013.0018>

Pincus, A. L., Lukowitsky, M. R., & Wright, A. G. C. (2010). The interpersonal nexus of personality and psychopathology. In T. Millon, R. F. Krueger, & E. Simonsen (Eds.), *Contemporary directions in psychopathology: Scientific foundations of the DSM-V and ICD-11* (pp. 523-552). Guildford Press.

Pincus, A. L., & Wiggins, J. S. (1990). Interpersonal problems and conceptions of personality disorders. *Journal of Personality Disorders*, 4(4), 342-352.

<https://doi.org/10.1521/pedi.1990.4.4.342>

- Piquero, A. R., Farrington, D. P., & Blumstein, A. (2003). The criminal career paradigm. In M. Tonry (Ed.), *Crime and Justice: A review of the Research* (Vol. 30), 359-506. University of Chicago Press.
- Podubinski, T., Lee, S., Hollander, Y., & Daffern, M. (2014). Characteristics of interpersonal hostile-dominance in psychiatric inpatients. *Psychiatry*, *77*(3), 275-288. <https://doi.org/10.1521/psyc.2014.77.3.275>
- Podubinski, T., Lee, S., Hollander, Y., & Daffern, M. (2016). An examination of the stability of interpersonal hostile-dominance and its relationship with psychiatric symptomatology and post-discharge aggression. *Aggressive Behavior*, *42*(4), 324-332. <https://doi.org/10.1002/ab.21628>
- Preacher, K. J., & Hayes, A. F. (2004). SPSS and SAS procedures for estimating indirect effects in simple mediation models. *Behavior Research Methods, Instruments & Computers*, *36*(4), 717-731. <https://doi.org/10.3758/BF03206553>
- Preacher, K. J., & Hayes, A. F. (2008). Asymptotic and re-sampling strategies for assessing and comparing indirect effects in multiple mediator models. *Behavior Research Methods*, *40*(3), 879-891. <https://doi.org/10.3758/brm.40.3.879>
- Quilty, L. C., De Fruyt, F., Rolland, J. P., Kennedy, S. H., Rouillon, P. F., & Bagby, R. M. (2008). Dimensional personality traits and treatment outcome in patients with major depressive disorder. *Journal of Affective Disorders*, *108*(3), 241-250. <https://doi.org/10.1016/j.jad.2007.10.022>
- Quinsey, V. L., Khanna, A., & Malcolm, P. B. (1998). A retrospective evaluation of the Regional Treatment Centre sex offender treatment program. *Journal of Interpersonal Violence*, *13*(5), 621-644. <https://doi.org/10.1177/088626098013005005>
- Ragatz, L. (2011). *A comparison of white-collar offenders and non-white-collar offenders on the psychological variables of personality, criminal thinking, and psychopathy*

[Doctoral dissertation, West Virginia University]. The Research Repository at West Virginia University.

- Rammstedt, B., Riemann, R., Angleitner, A., & Borkenau, P. (2004). Resilients, overcontrollers, and undercontrollers: The replicability of the three personality prototypes across informants. *European Journal of Personality, 18*(1), 1–14. <https://doi.org/10.1002/per.495>
- Randall, P., Carr, A., Dooley, B., & Rooney, B. (2011). Psychological characteristics of Irish clerical sexual offenders. *The Irish Journal of Psychology, 32*(1-2), 4-13. <https://doi.org/10.1080/03033910.2011.610191>
- Rangaswami, K., & Arunagiri, S. (1982). Personality dimensions of criminals and mentally ill criminals. *Indian Journal of Psychiatry, 24*(1), 88-91.
- Raskin, R., & Terry, H. (1988). A principal-components analysis of the Narcissistic Personality Inventory and further evidence of its construct validity. *Journal of Personality and Social Psychology, 54*, 890–902.
- Ray, J. V., Frick, P. J., Thornton, L. C., Wall Myers, T. D., Steinberg, L., & Cauffman, E. (2017). Callous–unemotional traits predict self-reported offending in adolescent boys: The mediating role of delinquent peers and the moderating role of parenting practices. *Developmental Psychology, 53*(2), 319-328. <https://doi.org/10.1037/dev0000210>
- Reniers, R. L. E. P., Corcoran, R., Drake, R., Shryane, N. M., & Völlm, B. R. (2011). The QCAE: A questionnaire of cognitive and affective empathy. *Journal of Personality Assessment, 93*(1), 84-95. [https://doi.org/10.1016/s0924-9338\(09\)71073-9](https://doi.org/10.1016/s0924-9338(09)71073-9)
- Richardson, D. R., Hammock, G. S., Smith, S. M., Gardner, W., & Signo, M. (1994). Empathy as a cognitive inhibitor of interpersonal aggression. *Aggressive Behavior, 20*(4), 275-289. [https://doi.org/10.1002/1098-2337\(1994\)20:4<275::aid-ab2480200402>3.0.co;2-4](https://doi.org/10.1002/1098-2337(1994)20:4<275::aid-ab2480200402>3.0.co;2-4)

- Riopka, S. J., Coupland, R. B. A., & Olver, M. E. (2015). Self-reported psychopathy and its association with criminal cognition and antisocial behavior in a sample of university undergraduates. *Canadian Journal of Behavioural Science, 47*(3), 216-225. <https://doi.org/10.1037/a0039075>
- Robins, R. W., John, O. P., Caspi, A., Moffitt, T. E., & Stouthamer-Loeber, M. (1996). Resilient, overcontrolled, and undercontrolled boys: Three replicable personality types. *Journal of Personality and Social Psychology, 70*(1), 157-171. <https://doi.org/10.1037/0022-3514.70.1.157>
- Robinson, E. V., & Rogers, R. (2015). Empathy faking in psychopathic offenders: The vulnerability of empathy measures. *Journal of Psychopathology and Behavioral Assessment, 37*(4), 545-552. <https://doi.org/10.1007/s10862-015-9479-9>
- Roche, M. J., Shoss, N. E., Pincus, A. L., & Ménard, K. S. (2011). Psychopathy moderates the relationship between time in treatment and levels of empathy in incarcerated male sexual offenders. *Sexual Abuse: A Journal of Research and Treatment, 23*(2), 171-192. <https://doi.org/10.1177/1079063211403161>
- Rolison, J. J., Hanoch, Y., & Gummerum, M. (2013). Characteristics of offenders: The HEXACO model of personality as a framework for studying offenders' personality. *The Journal of Forensic Psychiatry & Psychology, 24*(1), 71-82. <https://doi.org/10.1080/14789949.2012.752024>
- Rosenthal, R. (1979). The “file drawer problem” and tolerance for null results. *Psychological Bulletin, 86*(3), 638-641.
- Rossi, G., Weekers, L. C., & Hutsebaut, J. (2021). Resilient, undercontrolled, and overcontrolled personality types based upon DSM-5 maladaptive personality traits. *Heliyon, 7*(5), e06938. <https://doi.org/10.1016/j.heliyon.2021.e06938>
- Roth, M., & Herzberg, P. Y. (2007). The resilient type: ‘Simply the best’ or merely artifact of social desirability? *Psychology Science, 49*, 150-167.

- Roth, M., & von Collani, G. (2007). A head-to-head comparison of Big-Five types and traits in the prediction of social attitudes: Further evidence for a five-cluster typology. *Journal of Individual Differences*, 28(3), 138-149.
<https://doi.org/10.1027/1614-0001.28.3.138>
- Rydén-Lodi, B., Burk, W. J., Stattin, H., & af Klinteberg, B. (2008). Personality and reconviction in crime: A three-year follow-up study of male criminal recidivists. *International Journal of Forensic Mental Health*, 7(1), 83-94.
<https://doi.org/10.1080/14999013.2008.9914405>
- Salize, H. J., & Dressing, H. (2007). Admission of mentally disordered offenders to specialized forensic care in fifteen European Union member states. *Social Psychiatry and Psychiatric Epidemiology*, 42(4), 336-342.
<https://doi.org/10.1007/s00127-007-0159-2>
- Samuel, D. B., & Widiger, T. A. (2004). Clinicians' personality descriptions of prototypic personality disorders. *Journal of Personality Disorders*, 18(3), 286-308.
<https://doi.org/10.1521/pedi.18.3.286.35446>
- Samuels, J., Bienvenu, J., Cullen, B., Costa, P. T., Jr., Eaton, W. W., & Nestadt, G. (2004). Personality dimensions and criminal arrest. *Comprehensive Psychiatry*, 45(4), 275-280. <https://doi.org/10.1016/j.comppsy.2004.03.013>
- Santos, J. C., & Cutcliffe, J. R. (2018). *European psychiatric/mental health nursing in the 21st century: A person-centred evidence-based approach*. Springer International.
- Schimmenti, A., Jonason, P. K., Passanisi, A., La Marca, L., Di Dio, N., & Gervasi, A. M. (2019). Exploring the dark side of personality: Emotional awareness, empathy, and the Dark Triad traits in an Italian sample. *Current Psychology*, 38(1), 100-109.
<https://doi.org/10.1007/s12144-017-9588-6>

- Schnabel, K., Asendorpf, J. B., & Ostendorf, F. (2002). Replicable types and subtypes of personality: German NEO-PI-R versus NEO-FFI. *European Journal of Personality, 16*, S7–S24. <https://doi.org/10.1002/per.445>
- Schuler, M., Mohnke, S., Amelung, T., Dziobek, I., Borchardt, V., Gerwinn, H., Kärigel, C., Kneer, J., Massau, C., Pohl, A., Weiß, S., Pieper, S., Sinke, C., Beier, K. M., Walter, M., Ponseti, J., Schiffer, B., Tillman, H. C. K., & Walter, H. (2021). Empathy in paedophilia and sexual offending against children: A longitudinal extension. *Journal of Sexual Aggression, 2021*, 1-18. <https://doi.org/10.1080/13552600.2021.1931721>
- Schuler, M., Mohnke, S., Amelung, T., Dziobek, I., Lemme, B., Borchardt, V., Gerwinn, H., Kärigel, C., Kneer, J., Massau, C., Pohl, A., Tenbergen, G., Weiß, S., Wittforth, M., Waller, L., Beier, K. M., Walter, M., Ponseti, J., Schiffer, B., ... Walter, H. (2019). Empathy in pedophilia and sexual offending against children: A multifaceted approach. *Journal of Abnormal Psychology, 128*(5), 453-464. <http://dx.doi.org/10.1037/abn0000412>
- Schwartz, R. L., Fremouw, W., Schenk, A., & Ragatz, L. L. (2012). Psychological profile of male and female animal abusers. *Journal of Interpersonal Violence, 27*(5), 846-861. <https://doi.org/10.1177/0886260511423254>
- Schwarz, N. (1999). Self-reports: How the questions shape the answers. *American Psychologist, 54*(2), 93-105. <https://doi.org/10.1037/0003-066x.54.2.93>
- Seigfried, K. (2007). *Self-reported online child pornography behavior: A psychological analysis* [Unpublished master's thesis]. John Jay College of Criminal Justice.
- Seigfried-Spellar, K. C. (2014). Distinguishing the viewers, downloaders, and exchangers of Internet child pornography by individual differences: Preliminary findings. *Digital Investigation, 11*(4), 252-260. <https://doi.org/10.1016/j.diin.2014.07.003>

- Seto, M. C. (2008). *Pedophilia and sexual offending against children: Theory, assessment, and intervention*. American Psychological Association.
- Sexton, J., Hilton, M., Benson, S., & Rosen, A. (2019). Exploring Kernberg's model of personality functioning as a moderator of traits: Focus on DSM-5's Section III Alternative Model of Personality Disorder. *Journal of the American Psychoanalytic Association, 67*(6), 1074-1055. <https://doi.org/10.1177/0003065119898772>
- Shamay-Tsoory, S., Harari, H., Aharon-Peretz, J., & Levkovitz, Y. (2010). The role of the orbitofrontal cortex in affective theory of mind deficits in criminal offenders with psychopathic tendencies. *Cortex, 46*(5), 668–677. <https://doi.org/10.1016/j.cortex.2009.04.008>
- Sharp, C. (2022). Fulfilling the promise of the LPF: Comment on Morey et al. (2022). *Personality Disorders: Theory, Research, and Treatment, 13*(4), 316-320. <https://doi.org/10.1037/per0000567>
- Sharp, C., & Wall, K. (2021). DSM-5 level of personality functioning: Refocusing personality disorder on what it means to be human. *Annual Review of Clinical Psychology, 17*(1), 313-337. <https://doi.org/10.1146/annurev-clinpsy-081219-105402>
- Shen, W., Kiger, T. B., Davies, S. E., Rasch, R. L., Simon, K. M., & Ones, D. S. (2011). Samples in applied psychology: Over a decade of research in review. *Journal of Applied Psychology, 96*(5), 1055-1064. <https://doi.org/10.1037/a0023322>
- Shimotsukasa, T., Oshio, A., Tani, M., & Yamaki, M. (2019). Big Five personality traits in inmates and normal adults in Japan. *Personality and Individual Differences, 141*, 81-85. <https://doi.org/10.1016/j.paid.2018.12.018>
- Shine, J., McCloskey, H., & Newton, M. (2002). Self-esteem and sex offending. *Journal of Sexual Aggression, 8*(1), 51-1. <https://doi.org/10.1080/13552600208413332>

- Siddaway, A. P., Wood, A. M., & Hedges, L. V. (2019). How to do a systematic review: A best practice guide for conducting and reporting narrative reviews, meta-analyses, and meta-syntheses. *Annual Review of Psychology, 70*(1), 747-770.
<https://doi.org/10.1146/annurev-psych-010418-102803>
- Sikand, M., & Reddy, K. J. (2017). Role of psychosocial factors in criminal behaviour in adults in India. *International Journal of Criminal Justice Sciences, 12*(1), 24-44.
- Simourd, D. J. (1997). The Criminal Sentiments Scale-Modified and Pride in Delinquency Scale: Psychometric properties and construct validity of two measures of criminal attitudes. *Criminal Justice and Behavior, 24*(1), 52-70.
<https://doi.org/10.1177/0093854897024001004>
- Simourd, D. J., & Olver, M. E. (2002). The future of criminal attitudes research and practice. *Criminal Justice and Behavior, 29*(4), 427-446.
<https://doi.org/10.1177/0093854802029004005>
- Simourd, D. J., Olver, M. E., & Brandenburg, B. (2015). Changing criminal attitudes among incarcerated offenders: Initial examination of a structured treatment program. *International Journal of Offender Therapy and Comparative Criminology, 60*(12), 1425-1445. <https://doi.org/10.1177/0306624X15579257>
- Simourd, D. J., & van de Ven, J. (1999). Assessment of criminal attitudes: Criterion-related validity of the Criminal Sentiments Scale-Modified and Pride in Delinquency Scale. *Criminal Justice and Behavior, 26*(1), 90-106.
<https://doi.org/10.1177/0093854899026001005>
- Simourd, L., & Andrews, D. A. (1994). Correlates of delinquency: A look at gender differences. *Forum on Correctional Research, 6*(1), 26-31.
- Singh, U. P., Singh, L. B., Sinha, B., & Kumari, R. (1985). Extraversion, neuroticism and criminality: A comparative study of different criminal groups. *Indian Journal of Social Work, 46*(2), 259-266.

- Skilling, T. A., & Sorge, G. B. (2014). Measuring antisocial values and attitudes in justice-involved male youth: Evaluating the psychometric properties of the Pride in Delinquency Scale and the Criminal Sentiments Scale–Modified. *Criminal Justice and Behavior, 41*(8), 992-1007. <https://doi.org/10.1177/0093854814521415>
- Skodol, A. E. (2018). Impact of personality pathology on psychosocial functioning. *Current Opinion in Psychology, 21*, 33-38. <https://doi.org/10.1016/j.copsyc.2017.09.006>
- Sleep, C. E., & Lynam, D. R. (2022). The problems with Criterion A: A comment on Morey et al. (2022). *Personality Disorders: Theory, Research, and Treatment, 13*(4), 325-327. <https://doi.org/10.1037/per0000585>
- Sleep, C., Lynam, D. R., & Miller, J. D. (2020). Personality impairment in the DSM-5 and ICD-11: Current standing and limitations. *Current Opinion in Psychiatry, 34*(1), 39-43. <https://doi.org/10.1097/yco.0000000000000657>
- Smith, M. M., Sherry, S. B., Vidovic, V., Saklofske, D. H., Stoeber, J., & Benoit, A. (2019). Perfectionism and the Five-Factor Model of Personality: A meta-analytic review. *Personality and Social Psychology Review, 1*-24. <https://doi.org/10.1177/1088868318814973>
- Soldz, S., Budman, S., Demby, A., & Merry, J. (1995). A short form of the Inventory of Interpersonal Problems circumplex scales. *Assessment, 2*(1), 53-63. <https://doi.org/10.1177/1073191195002001006>
- Sommer, R., Barnes, G. E., & Murray, R. P. (1992). Alcohol consumption, alcohol abuse, personality and female perpetrated spouse abuse. *Personality and Individual Differences, 13*(12), 1315-1323. [https://doi.org/10.1016/0191-8869\(92\)90174-n](https://doi.org/10.1016/0191-8869(92)90174-n)
- Soto, C. J., Kronauer, A., & Liang, J. K. (2016). Five-factor model of personality. In S. K. Whitbourne (Ed.), *Encyclopedia of adulthood and aging* (Vol. 2, pp. 506-510). Wiley.

- Specht, J., Luhmann, M., & Geiser, C. (2014). On the consistency of personality types across adulthood: latent profile analyses in two large-scale panel studies. *Journal of Personality and Social Psychology, 107*(3), 540-556.
<https://doi.org/10.1037/a0036863>
- Spinella, M. (2005). Prefrontal substrates of empathy: Psychometric evidence in a community sample. *Biological Psychology, 70*(3), 175–181.
<https://doi.org/10.1016/j.biopsycho.2004.01.005>
- Steca, P., Alessandri, G., & Caprara, G. V. (2010). The utility of a well-known personality typology in studying successful aging: resilient, undercontrollers, and overcontrollers in old age. *Personality and Individual Differences, 48*(4), 442-446.
<https://doi.org/10.1016/j.paid.2009.11.016>
- Stewart, R. D., Möttus, R., Seeboth, A., Soto, C. J., & Johnson, W. (2022). The finer details? The predictability of life outcomes from Big Five domains, facets, and nuances. *Journal of Personality, 90*(2), 167-182.
<https://doi.org/10.1111/jopy.12660>
- Stoll, C. B., Boillat, C., Pflueger, M. O., Graf, M., & Rosburg, T. (2019). Psychopathy, neuroticism, and abusive behavior in low risk child sex offenders. *Journal of Child Sexual Abuse, 28*(8), 990-1006. <https://doi.org/10.1080/10538712.2019.1630880>
- Stone, L. E., & Segal, D. L. (2022). Social impairment and personality disorder features among older adults: An application of the circumplex model. *Personality and Mental Health, 16*(1), 19-29. <https://doi.org/10.1002/pmh.1523>
- Straus, M. A. (1979). Measuring intrafamilial conflict and violence: The Conflict Tactics (CT) Scales. *Journal of Marriage and the Family, 41*(1), 75-88.
<https://doi.org/10.2307/351733>
- Sturge, G. (2019). *UK Prison Population Statistics*.
<https://commonslibrary.parliament.uk/research-briefings/sn04334/>

- Sullivan, H. S. (1953). *The interpersonal theory of psychiatry*. Norton.
- Sullivan, H. S. (1954). *The psychiatric interview*. Norton.
- Sutherland, E. H. (1939). *Principles of criminology* (3rd ed.). Lippincott.
- Sutherland, E. H. (1947). *Principles of criminology* (4th ed.). Lippincott.
- Sutin, A. R., Stephan, Y., Luchetti, M., Artese, A., Oshio, A., & Terracciano, A. (2016). The Five-Factor Model of personality and physical inactivity: A meta-analysis of 16 samples. *Journal of Research in Personality, 63*, 22-28.
<https://doi.org/10.1016/j.jrp.2016.05.001>
- Sykes, G. M., & Matza, D. (1957). Techniques of neutralization: A theory of delinquency. *American Sociological Review, 22*(6), 664. <https://doi.org/10.2307/2089195>
- Tangney, J. P., Stuewig, J., Furukawa, E., Kopelovich, S., Meyer, P. J., & Cosby, B. (2012). Reliability, validity, and predictive utility of the 25-item Criminogenic Cognitions Scale (CCS). *Criminal Justice and Behavior, 39*(10), 1340-1360.
<https://doi.org/10.1177/0093854812451092>
- Teague, R., Mazerolle, P., Legosz, M., & Sanderson, J. (2008). Linking childhood exposure to physical abuse and adult offending: Examining mediating factors and gendered relationships. *Justice Quarterly, 25*(2), 313-348.
<https://doi.org/10.1080/07418820802024689>
- ter Laak, J., de Goede, M., Aleva, L., Brugman, G., van Leuven, M., & Hussmann, J. (2003). Incarcerated adolescent girls: Personality, social competence, and delinquency. *Adolescence, 38*, 251-265.
- Thornton, A. J. V., Graham-Kevan, N., & Archer, J. (2010). Adaptive and maladaptive personality traits as predictors of violent and nonviolent offending behavior in men and women. *Aggressive Behavior, 36*(3), 177-186. <https://doi.org/10.1002/ab.20340>
- Thornton, A. J. V., Graham-Kevan, N., & Archer, J. (2013). Development and confirmatory factor analysis of the nonviolent and violent offending behaviour

scale (NVOBS). *Aggressive Behavior*, 39(3), 171-181.

<https://doi.org/10.1002/ab.21468>

Toohey, M. J., & DiGiuseppe, R. (2017). Defining and measuring irritability: Construct clarification and differentiation. *Clinical Psychology Review*, 53, 93-108.

<https://doi.org/10.1016/j.cpr.2017.01.009>

Topalli, V., Higgins, G. E., & Copes, H. (2014). A causal model of neutralization acceptance and delinquency. *Criminal Justice and Behavior*, 41(5), 553-573.

<https://doi.org/10.1177/0093854813509076>

Trapnell, P. D., & Wiggins, J. S. (1990). Extension of the Interpersonal Adjective Scales to include the Big Five dimensions of personality. *Journal of Personality and Social Psychology*, 59(4), 781-790. <https://doi.org/10.1037/0022-3514.59.4.781>

Tuente, S. K., Bogaerts, S., & Veling, W. (2019). Hostile attribution bias and aggression in adults - a systematic review. *Aggression and Violent Behavior*, 46, 66-81.

<https://doi.org/10.1016/j.avb.2019.01.009>

Udayar, S., Urbanaviciute, I., Massoudi, K., & Rossier, J. (2020). The role of personality profiles in the longitudinal relationship between work-related well-being and life satisfaction among working adults in Switzerland. *European Journal of Personality*, 34, 77-92. <https://doi.org/10.1002/per.2225>

Urban, S., Stéphan, P., Haersaat, S., Francescotti, E., Fegert, J. M., Schmeck, K., Perler, C., Gasser, J., & Schmid, M. (2017). Examination of the importance of age of onset, callous-unemotional traits and anger dysregulation in youths with antisocial behaviors. *European Child & Adolescent Psychiatry*, 26(1), 87-97.

<https://doi.org/10.1007/s00787-016-0878-6>

Vachon, D. D., & Lynam, D. R. (2016). Fixing the problem with empathy: Development and validation of the affective and cognitive measure of empathy. *Assessment*, 23(2), 135-149. <https://doi.org/10.1177/1073191114567941>.

- Van de Mortel. (2008). Faking it: social desirability response bias in self-report research. *Australian Journal of Advanced Nursing*, 25(4), 40-48.
- van Langen, M. A. M., Wissink, I. B., van Vugt, E. S., Van der Stouwe, T., & Stams, G. J. J. M. (2014). The relation between empathy and offending: A meta-analysis. *Aggression and Violent Behavior*, 19(2), 179-189.
<https://doi.org/10.1016/j.avb.2014.02.003>
- Vernham, Z., Tapp, J., & Moore, E. (2016). Observer ratings of interpersonal behavior as predictors of aggression and self-harm in a high-security sample of male forensic inpatients. *Journal of Interpersonal Violence*, 31(9), 1597-1617.
<https://doi.org/10.1177/0886260515569060>
- Verona, E., & Vitale, J. (2018). Psychopathy in women: Assessment, manifestations, and etiology. In C. J. Patrick (Ed.), *Handbook of psychopathy* (pp. 509–528). The Guilford Press.
- Vitacco, M. J., Neumann, C. S., & Pardini, D. A. (2014). Predicting future criminal offending in a community-based sample of males using self-reported psychopathy. *Criminal Justice and Behavior*, 41(3), 345-363.
<https://doi.org/10.1177/0093854813500488>
- Vize, C. E., Lynam, D. R., Collison, K. L., & Miller, J. D. (2018). Differences among dark triad components: A meta-analytic investigation. *Personality Disorders: Theory, Research, and Treatment*, 9(2), 101-111. <https://doi.org/10.1037/per0000222>
- Wai, M., & Tiliopoulos, N. (2012). The affective and cognitive empathic nature of the dark triad of personality. *Personality and Individual Differences*, 52(7), 794-799.
<https://doi.org/10.1016/j.paid.2012.01.008>
- Wall, H. J., Campbell, C. C., Kaye, L. K., Levy, A., & Bhullar, N. (2019). Personality profiles and persuasion: An exploratory study investigating the role of the Big-5,

- Type D personality and the Dark Triad on susceptibility to persuasion. *Personality and Individual Differences*, 139, 69-76. <https://doi.org/10.1016/j.paid.2018.11.003>
- Walters, G. D. (2003). Changes in criminal thinking and identity in novice and experienced inmates: Prisonization revisited. *Criminal Justice and Behavior*, 30(4), 399-421. <https://doi.org/10.1177/0093854803253137>
- Walters, G. D. (2006). Appraising, researching and conceptualizing criminal thinking: A personal view. *Criminal Behaviour and Mental Health*, 16(2), 97-99. <https://doi.org/10.1002/cbm.50>
- Walters, G. D. (2012). Criminal thinking and recidivism: Meta-analytic evidence on the predictive and incremental validity of the Psychological Inventory of Criminal Thinking Styles (PICTS). *Aggression and Violent Behavior*, 17(3), 272-278. <https://doi.org/10.1016/j.avb.2012.02.010>
- Walters, G. D. (2016). Predicting recidivism with the Criminal Sentiments Scale: A meta-analysis of a putative measure of criminal thought content. *Criminal Justice and Behavior*, 43(9), 1159-1172. <https://doi.org/10.1177/0093854816649004>
- Walters, G. D. (2020). Hostility and reactive criminal thinking as mediators of the violent victimization–violent offending relationship: affect before cognition? *Criminal Justice Studies*, 33(4), 316-336. <https://doi.org/10.1080/1478601x.2020.1784163>
- Ward, T. (2000). Sexual offenders' cognitive distortions as implicit theories. *Aggression and Violent Behavior*, 5(5), 491-507. [https://doi.org/10.1016/s1359-1789\(98\)00036-6](https://doi.org/10.1016/s1359-1789(98)00036-6)
- Ward, T., & Durrant, R. (2013). Altruism, empathy, and sex offender treatment. *International Journal of Behavioral Consultation and Therapy*, 8(3-4), 66-71. <https://doi.org/10.1037/h0100986>
- Watson, R., Thomas, S., & Daffern, M. (2017). The impact of interpersonal style on ruptures and repairs in the therapeutic alliance between offenders and therapists in

sex offender treatment. *Sexual Abuse*, 29(7), 709-728.

<https://doi.org/10.1177/1079063215617514>

Watts, A. L., Waldman, I. D., Smith, S. F., Poore, H. E., & Lilienfeld, S. O. (2017). The nature and correlates of the Dark Triad: The answers depend on the questions.

Journal of Abnormal Psychology, 126(7), 951-968.

<https://doi.org/10.1037/abn0000296>

Weekers, L. C., Hutsebaut, J., & Kamphuis, J. H. (2018). The Level of Personality

Functioning Scale-Brief Form 2.0: Update of a brief instrument for assessing level of personality functioning. *Personality and Mental Health*, 13(1), 3-14.

<https://doi.org/10.1002/pmh.1434>

Weinfurt, K. P. (1995). Multivariate analysis of variance. In L. G. Grimm & P. R. Yarnold (Eds.), *Reading and understanding multivariate statistics* (pp. 245–276). American Psychological Association.

Weller, B. E., Bowen, N. K., & Faubert, S. J. (2020). Latent class analysis: A guide to best practice. *Journal of Black Psychology*, 46(4), 287-311.

<https://doi.org/10.1177/0095798420930932>

Westhead, J., & Egan, V. (2015). Untangling the concurrent influences of the Dark Triad, personality and mating effort on violence. *Personality and Individual Differences*,

86, 222-226. <https://doi.org/10.1016/j.paid.2015.05.031>

Weston, S. J., & Jackson, J. J. (2015). Identification of the healthy neurotic: Personality traits predict smoking after disease onset. *Journal of Research in Personality*, 54,

61-69. <https://doi.org/10.1016/j.jrp.2014.04.008>

Widiger, T. A. (2015). *The Oxford handbook of the Five Factor Model*. Oxford University Press. <https://doi.org/10.1093/oxfordhb/9780199352487.001.0001>

Widiger, T. A., Trull, T. J., Clarkin, J. F., Sanderson, C., & Costa, P. T., Jr. (1994). A description of the DSM-III-R and DSM-IV personality disorders with the Five-

- Factor Model of personality. In P. T. Costa Jr. & T. A. Widiger (Eds.), *Personality disorders and the Five-Factor Model of personality* (pp. 41-56). American Psychological Association.
- Wiebe, R. P. (2004). Delinquent behavior and the Five-Factor model: Hiding in the adaptive landscape? *Individual Differences Research*, 2(1), 38-62.
- Wiggins, J. S. (1996). An informal history of the interpersonal circumplex tradition. *Journal of Personality Assessment*, 66(2), 217-233.
https://doi.org/10.1207/s15327752jpa6602_2
- Williams, K. M., Nathanson, C., & Paulhus, D. L. (2003, August). Structure and validity of the self-report psychopathy scale-III in normal populations. In *111th annual convention of the American Psychological Association*.
- Wilson, G. D., & MacLean, A. (1974). Personality, attitudes and humor preferences of prisoners and controls. *Psychological Reports*, 34(3), 847-854.
<https://doi.org/10.2466/pr0.1974.34.3.847>
- Wilson, S., Durbin, C. E., & Stroud, C. B. (2017). Interpersonal dysfunction in personality disorders: A meta-analytic review. *Psychological Bulletin*, 143(7), 677-734.
<https://doi.org/10.1037/bul0000101>
- Winter, K., Spengler, S., Bempohl, F., Singer, T., & Kanske, P. (2017). Social cognition in aggressive offenders: Impaired empathy, but intact theory of mind. *Scientific Reports*, 7(670), 1-10. <https://doi.org/10.1038/s41598-017-00745-0>
- Witte, T. D., Di Placido, C., Gu, D., & Wong, S. C. P. (2006). An investigation of the validity and reliability of the Criminal Sentiments Scale in a sample of treated sex offenders. *Sexual Abuse: A Journal of Research and Treatment*, 18(3), 249-258.
<https://doi.org/10.1007/s11194-006-9017-0>
- Wolff, N., Morgan, R. D., Shi, J., Huening, J., & Fisher, W. H. (2011). Thinking styles and emotional states of male and female prison inmates by mental disorder status.

Psychiatric Services, 62(12), 1485-1493.

<https://doi.org/10.1176/appi.ps.000432011>

World Health Organization. (n.d.). *Information sheet: Mental health and prisons*.

https://www.who.int/mental_health/policy/mh_in_prison.pdf

World Health Organization. (2001). *The World Health Report 2001 – Mental health: New understanding, new hope*. World Health Organization.

Wright, J. P., Morgan, M. A., Almeida, P. R., Almosaed, N. F., Moghrabi, S. S., &

Bashatah, F. S. (2017). Malevolent forces: Self-control, the Dark Triad, and crime.

Youth, Violence and Juvenile Justice, 15(2), 191-215.

<https://doi.org/10.1177/1541204016667995>

Yarkoni, T., & Westfall, J. (2017). Choosing prediction over explanation in psychology:

lessons from machine learning. *Perspectives on Psychological Science*, 12, 1100-

1122. <https://doi.org/10.1177/1745691617693393>

Youngs, D., & Canter, D. (2014). When is an offender not a criminal? Instrumentality

distinguishes self-reported offending of criminals. *Journal of Criminal Psychology*,

4(2), 116-128. <http://dx.doi.org/10.1108/JCP-09-2013-0025>

Zeigler-Hill, V., & Besser, A. (2021). Dark personality features and workplace outcomes:

The mediating role of difficulties in personality functioning. *Current Psychology*,

40(11), 5430-5444. <https://doi.org/10.1007/s12144-019-00527-z>

Zell, E., Krizan, Z., & Teeter, S. R. (2015). Evaluating gender similarities and differences

using metasynthesis. *American Psychologist*, 70(1), 10-20.

<http://dx.doi.org/10.1037/a0038208>

Zillman, D., & Weaver, J. B., III. (2007). Aggressive personality traits in the effects of

violent imagery on unprovoked impulsive aggression. *Journal of Research in*

Personality, 41(4), 753-771. <https://doi.org/10.1016/j.jrp.2006.08.006>

Zuckerman, M., Kuhlman, D. M., Joireman, J., Teta, P., & Kraft, M. (1993). A comparison of three structural models for personality: The Big Three, the Big Five, and the Alternative Five. *Journal of Personality and Social Psychology*, 65(4), 757-768.
<https://doi.org/10.1037/0022-3514.65.4.757>

APPENDICES

Appendix A – Study 1 Forms

Study 1 Participant Information Sheet

**Edge Hill
University**

Project Title:

A Systematic Investigation of the Links Between Personality and Offending Behaviour: The Roles of Trait Profiles, Level of Personality Functioning, and Interpersonal Style

Contact Information

Principal researcher: Robyn Mooney

Supervisor: Dr Helen Wall

Address of the research team: Department of Psychology, Edge Hill University, St Helens Rd, Ormskirk, UK, L39 4QP

You are being invited to take part in a research study which forms part of the researcher's PhD degree in Psychology (Edge Hill University, UK). Before you decide whether or not to take part, it is important that you understand why this research is being done and what it will involve.

Please take time to read this information sheet carefully. You can discuss it with others if you wish. If you would like to request more information or ask any questions before taking part in the study, please feel free to contact the researcher or research supervisor (email addresses are provided above). Thank you for taking the time to read this information.

What is the purpose of the study?

The purpose of this research is to investigate potential links between personality (i.e., individual differences in the way people think, feel, and behave) and offending behaviour. More specifically, this research looks at associations among adaptive and challenging personality traits, positive and negative aspects of personality functioning, individual approaches to interpersonal relationships and interactions, and various types of offending behaviour. This study also examines similarities and differences between offenders and non-offenders in regard to these characteristics. If any associations are found among these characteristics and offending behaviour, this knowledge could lead to more person-centred, tailored approaches to psychological interventions for institutionalised offenders.

Why have I been invited?

You have been invited to participate in this project in order to form part of the non-offender sample. To be eligible for participation, you must be a) male and b) aged 18+ years.

What will I be asked to do?

Taking part in this research will involve you providing some very basic demographic information (i.e., age, gender, and nationality) and completing a set of five self-report questionnaires:

International Personality Item Pool-Five Factor Model (IPIP-FFM). This measure will be used to assess your adaptive personality traits.

Short Dark Triad (SD3). This brief measure will be used to assess your challenging personality traits.

Balanced Inventory of Desirable Responding Short Form (BIDR-16). This brief measure will be used to assess the style with which you respond to questionnaires.

Level of Personality Functioning Scale-Brief Form (LPFS-BF). This measure aims to assess your personality functioning in relation to yourself and others.

Inventory of Interpersonal Problems Circumplex Scales-Short Form (IIP-SC). This measure explores your approach to interpersonal interactions and relationships.

Please note that the results of these questionnaires are for research purposes only; this is *not* a clinical or diagnostic assessment by any means.

Timescale

If you decide to take part, the set of questionnaires should take approximately 20-30 minutes to complete in total. After this, you will be taken to a debriefing page prepared by the researcher that explains the study in more detail and provides information about who to contact should you desire more information or support.

What are the benefits of taking part?

By taking part in this study, you will help advance a very understudied research topic. Specifically, your participation will help advance knowledge about adaptive and challenging personality traits, personality functioning, and interpersonal approaches among individuals with and without histories of offending behaviour. This knowledge could improve psychological treatment for institutionalised offenders through contributing to more person-centred, tailored approaches to interventions that focus on personality and its contribution to an individual's offending behaviour.

After you have completed the questionnaires, you will be offered £5 as a thank-you for your participation in this study. If you wish to accept the remuneration, you will be asked to provide your email address following the debriefing. Please note that the email address you provide must be linked to a valid PayPal account in order for you to receive the £5 remuneration. However, if you do not wish to receive the remuneration or if you cannot accept it because you do not have PayPal, you will not be required to provide this information. Your email address will remain separate from your anonymous survey responses.

What are the possible disadvantages and risks of taking part?

It is unlikely that you will experience any distress due to taking part in this study. Nevertheless, if you do experience some unpleasant feelings or feel like you would like some support, you can contact a confidential free support service at any time of day via the following contact: Samaritans, Tel: 116 123, Email: jo@samaritans.org. Alternatively, you may wish to contact another confidential support service, SANEline, which can be reached from 4:30pm to 10:30pm on Tel: 0300 304 7000.

Do I have to take part in the study?

It is completely your choice whether or not you take part in the study and the information provided here is meant to help you make that decision. If you decide to take part, you do not have to respond to any questions that you prefer not answering. There will be no negative consequences if you decide not to take part. If you wish to save your responses and return to complete the survey at a later time, you may do so by closing your browser and returning to the survey via the same link you originally accessed the survey on. However, once two weeks have elapsed, your incomplete responses will be withdrawn and you will need to re-start the survey from scratch if you still wish to participate.

Consent

Before you commence the questionnaires, you will be presented with a consent page that asks you to indicate that you agree to take part in the research and that you consent to each aspect of the project.

Can I withdraw consent?

Prior to submitting your responses, you are free to withdraw from the study by simply closing your browser. Meanwhile, after your responses have been submitted, you may withdraw your data anytime within two weeks of your participation. You do not have to provide a reason for your withdrawal. However, when two weeks have elapsed since your responses were submitted, you will no longer be able to withdraw your data.

On the following page, you will be asked to provide a word or number that is memorable and unique to you. This ensures that, should you wish to withdraw your anonymous data, the researcher can locate your responses. You will need to provide the researcher with this memorable word or number if you wish to withdraw your data after submitting your responses. You may do so by contacting the researcher via email.

What will happen to the results of the research study?

Your data will be statistically analysed and presented in the researcher's PhD dissertation. At no point will your personal data be singled out for analysis; only data from groups of respondents will be used for analyses. Following completion of the study, the data will be retained for subsequent analyses and disseminated in journal articles and presentations. Your anonymous data may be shared with other researchers doing similar research, but your answers will remain anonymous.

Confidentiality and anonymity

The answers you submit are anonymous and confidential. You will never be identified by name and will not be singled out in any formal write-up of the results; only group data will be presented. This data will not be shared with any third parties (with the possible exception of other researchers conducting similar research, as specified above). An exception to confidentiality and anonymity arises if you disclose to the researcher an intent to harm yourself or others or give details of a previously unreported crime you committed. In that case, this information may be reported to the appropriate organisations. However, you will not be asked about this in this study.

Security of information obtained

Your completed anonymous consent forms and questionnaires will be stored securely on a password-protected encrypted server at Edge Hill University. Anonymous data will also be backed up on an external hard drive that will be stored in a locked cabinet in the researcher's office at Edge Hill University.

What if there is a problem?

If any aspect of this research concerns you please contact the researcher, who will do her best to answer your questions. Alternatively, you may wish to contact the research supervisor, whose contact details are stated at the beginning of this information sheet. If you remain dissatisfied, you may also contact Phil Bentley, Secretary of the Edge Hill University Research Ethics Sub-committee, on research@edgehill.ac.uk.

Insurance

The study is covered by insurance provided by Edge Hill University.

Who is supporting the research?

Edge Hill University is the sponsor for this study based in the United Kingdom. We will be using information from you in order to undertake this study. Edge Hill University is committed to ensuring compliance with current data protection legislation and confirms that all data collected is used fairly, stored safely, and not disclosed to any other person unlawfully. The University is a data controller and, in some instances, may be a data processor of this data. This means that we are responsible for looking after your information and using it properly.

At Edge Hill, we are committed to respecting and protecting your personal information. We will keep anonymous, non-identifiable information about you for a minimum of 10 years after the study has ended. This is in accordance with Medical Research Council good research practice guidelines and ensures that future researchers may benefit from the information your data contain. Your rights to access, change, or move your information are limited, as we need to manage your information in specific ways in order for the research to be reliable and accurate.

You can find out more about how we use your data at edgehill.ac.uk/about/legal/privacy.

Who has reviewed the study?

This research has been reviewed by an independent group, called a Research Ethics Committee, to protect your interests. Specifically, the Edge Hill University Psychology Department Research Ethics Committee reviewed this study and gave favourable opinion.

Contacting the research team

If you would like more information about this study, please find contact details for the researcher and her supervisor below.

Principal researcher: Robyn Mooney

Supervisor: Dr Helen Wall

Address of the research team: Department of Psychology, Edge Hill University, St Helens Rd, Ormskirk, UK, L39 4QP

Thank you for taking the time to read this information sheet.

Study 1 Consent Form

Edge Hill University

Project Title: A Systematic Investigation of the Links Between Personality and Offending Behaviour: The Roles of Trait Profiles, Level of Personality Functioning, and Interpersonal Style
Researcher: Robyn Mooney
Research Supervisor: Dr Helen Wall

- 1. I confirm that I am aged 18 years or over.
- 2. I have read and understood the participant information sheet and have had the opportunity to email the researcher to ask questions.
- 3. I understand that I do not have to agree immediately, but I can consider the information that I have received and come back to the study at a later date using the same link I first accessed the study on.
- 4. I understand that my participation is voluntary and that I do not have to respond to any questions that I prefer not answering.
- 5. I understand that I am free to withdraw from the survey at any time by closing my browser, and that if I do this my partial data will not be recorded or used in this project.
- 6. I understand that I am free to withdraw my data from the project any time within two weeks of submitting my responses, without giving any reason, without my legal rights being affected. I understand that I may do so by contacting the researcher via email and providing her with my memorable word or number. I understand that I must provide this memorable word or number in order to withdraw from the project after my responses have been submitted, as this will be the only way to identify my anonymous data. I understand that after two weeks have elapsed since I submitted my survey responses, I will no longer be able to withdraw my data.
- 7. I understand that information relating to myself obtained as part of the study will remain anonymous and that I will not be personally identified in the final report of the study. I understand this information will also remain confidential to those outside of the research team (other than possibly researchers conducting similar research, as specified in the information sheet). I am mindful of the fact that, though not asked about in this study, if I disclose to the researcher an intent to harm myself or others or a previously unreported crime I committed, this information may be reported to the appropriate organisations.
- 8. I understand that this consent form may be seen by responsible individuals from Edge Hill University for the purposes of monitoring research procedures. I

understand that this is for audit purposes only, to ensure that my consent has been sought and that the study is being carried out correctly.

- 9. I understand that data will be stored securely, and that information will be handled in accordance with the Data Protection Act 2018 and GDPR (General Data Protection Regulation) guidelines.

- 10. I agree to take part in the above study carried out by Ms Mooney (a postgraduate student researcher based at Edge Hill University) under the supervision of Dr Wall, and I am satisfied that the purpose and procedures of the study have been fully explained to me.

Study 1 Debrief Form

Edge Hill University

Project Title:

A Systematic Investigation of the Links Between Personality and Offending Behaviour: The Roles of Trait Profiles, Level of Personality Functioning, and Interpersonal Style

Thank you for participating in this study. If you have any questions relating to the study, please do not hesitate to contact the researcher on the contact details located at the bottom of this page.

What did I complete?

The study you completed seeks to provide an enhanced understanding of potential links between personality and offending behaviour. More specifically, I am interested in associations among challenging and adaptive personality traits, positive and negative aspects of personality functioning, individual approaches to interpersonal relationships and interactions, and various types of offending behaviour. I am also interested in the similarities and differences between offenders and non-offenders in regard to these characteristics. If any associations are found among these characteristics and offending behaviour, this knowledge could lead to more person-centred, tailored approaches to psychological interventions for institutionalised offenders.

You were asked to provide some very basic demographic information and complete a set of five self-report questionnaires:

- *International Personality Item Pool (IPIP-FFM)*. This measure assessed your adaptive personality traits.
- *Short Dark Triad (SD3)*. This brief measure was used to assess your challenging personality traits.
- *Balanced Inventory of Desirable Responding Short Form (BIDR-16)*. This brief measure was used to assess the style with which you respond to questionnaires.
- *Level of Personality Functioning Scale-Brief Form (LPFS-BF)*. This measure aimed to assess your personality functioning in relation to yourself and others.
- *Inventory of Interpersonal Problems Circumplex Scales-Short Form (IIP-SC)*. This measure explored your approach to interpersonal interactions and relationships.

Please note again, the questionnaire results are for research purposes only and are *not* a clinical or diagnostic assessment of you by any means.

Support

If the research has upset or distressed you in any way, you may find the following free confidential support agency useful: Samaritans; Tel: 116 123; Email: jo@samaritans.org.

Alternatively, you may wish to contact another confidential support service, SANEline, which can be reached from 4:30pm to 10:30pm on Tel: 0300 304 7000.

Complaints

If you have any complaints regarding the research you may first wish to contact the researcher, Ms Mooney. Alternatively, you may want to speak to the research supervisor, Dr Wall, on the contact details listed below. If you remain unhappy, you may also contact Phil Bentley, Secretary of the Edge Hill University Research Ethics Sub-committee, on research@edgehill.ac.uk.

Results

A summary of the anonymised results will be available in due course. If you wish to receive a copy, please inform the researcher as soon as possible.

Withdrawal

If you wish to withdraw your data from the study, you may do so any time within two weeks of having submitted your responses. To withdraw your data, please contact the researcher to put forth your request. Please note that you must provide the researcher with your memorable word or number if you wish to withdraw. After two weeks have passed, you will no longer be able to withdraw your data from the project.

Contact details for the researcher and supervisor

If you would like more information about this study or would like to receive a copy of the information sheet and/or the consent form and/or the debriefing form, please contact the researcher on the details below.

Researcher: Robyn Mooney,

Research supervisor: Dr Helen Wall,

Address of the research team: Edge Hill University, St Helens Rd, Ormskirk, UK, L39 4QP

Thank you again for taking the time to participate in this research study.

Appendix B – Study 2 Forms

Study 2 Participant Information Sheet

**Edge Hill
University**

Project Title:

A Systematic Investigation of the Links Between Personality and Offending Behaviour: The Roles of Trait Profiles, Level of Personality Functioning, and Interpersonal Style

Contact Information

Principal researcher: Robyn Mooney,

Supervisor: Dr Helen Wall,

Address of the research team: Department of Psychology, Edge Hill University, St Helens Rd, Ormskirk, UK, L39 4QP

You are being invited to take part in a research study which forms part of the researcher's PhD degree in Psychology (Edge Hill University, UK). Before you decide whether or not to take part, it is important that you understand why this research is being done and what it will involve.

Please take time to read this information sheet carefully. You can discuss it with others if you wish. If you would like to request more information or ask any questions before taking part in the study, please feel free to contact the researcher or research supervisor (email addresses are provided above). Thank you for taking the time to read this information.

What is the purpose of the study?

The purpose of this research is to investigate potential links between personality (i.e., individual differences in the way people think, feel, and behave) and offending behaviour. More specifically, this research looks at associations among adaptive and challenging personality traits and attitudes, positive and negative aspects of personality functioning, individual approaches to interpersonal relationships and interactions, and various types of offending behaviour. If any associations are found among these personal characteristics and offending behaviour, this knowledge could lead to more person-centred, tailored approaches to psychological interventions for institutionalised offenders.

Why have I been invited?

You have been invited to participate in this project in order to form part of the community sample. To be eligible for participation, you must be a) male and b) aged 18+ years.

What will I be asked to do?

Taking part in this research will involve you providing some very basic demographic information (i.e., age, gender, and nationality) and completing a set of self-report questionnaires that ask about your personality, interpersonal style, empathy, attitudes, and offending behaviour you may have engaged in in the past.

Please note that the results of these questionnaires are for research purposes only; this is *not* a clinical or diagnostic assessment by any means.

Timescale

If you decide to take part, the set of questionnaires should take approximately 20-30 minutes to complete in total. After this, you will be taken to a debriefing page prepared by the researcher that explains the study in more detail and provides information about who to contact should you desire more information or support.

What are the benefits of taking part?

By taking part in this study, you will help advance a very understudied research topic. Specifically, your participation will help advance knowledge about adaptive and challenging personality traits, personality functioning, and interpersonal approaches among individuals with and without histories of offending behaviour. This knowledge could improve psychological treatment for institutionalised offenders through contributing to more person-centred, tailored approaches to interventions that focus on personality and its contribution to an individual's offending behaviour.

What are the possible disadvantages and risks of taking part?

It is unlikely that you will experience any distress due to taking part in this study. Nevertheless, if you do experience some unpleasant feelings or feel like you would like some support, you can contact confidential, free support services at any time of day via the following contacts:

National Suicide Prevention Lifeline: call 1-800-273-8255

Crisis Text Line: Text "START" to 741741 to text with a trained Crisis Counselor

Do I have to take part in the study?

It is completely your choice whether or not you take part in the study and the information provided here is meant to help you make that decision. If you decide to take part, you do not have to respond to any questions that you prefer not answering. There will be no

negative consequences if you decide not to take part. If you wish to save your responses and return to complete the survey at a later time, you may do so by closing your browser and returning to the survey via the same link you originally accessed the survey on. However, once two weeks have elapsed, your incomplete responses will be withdrawn and you will need to re-start the survey from scratch if you still wish to participate.

Consent

Before you commence the questionnaires, you will be presented with a consent page that asks you to indicate that you agree to take part in the research and that you consent to each aspect of the project.

Can I withdraw consent?

Prior to submitting your responses, you are free to withdraw from the study by simply closing your browser. Meanwhile, after your responses have been submitted, you may withdraw your data anytime within two weeks of your participation. You do not have to provide a reason for your withdrawal. However, when two weeks have elapsed since your responses were submitted, you will no longer be able to withdraw your data.

On the following page, you will be asked to provide a word or number that is memorable and unique to you. This ensures that, should you wish to withdraw your anonymous data, the researcher can locate your responses. You will need to provide the researcher with this memorable word or number if you wish to withdraw your data after submitting your responses. You may do so by contacting the researcher via email.

What will happen to the results of the research study?

Your data will be statistically analysed and presented in the researcher's PhD dissertation. At no point will your personal data be singled out for analysis; only data from groups of respondents will be used for analyses. Following completion of the study, the data will be retained for subsequent analyses and disseminated in journal articles and presentations. Your anonymous data may be shared with other researchers doing similar research, but your answers will remain anonymous.

Confidentiality and anonymity

The answers you submit are anonymous and confidential. You will never be identified by name and will not be singled out in any formal write-up of the results; only group data will be presented. This data will not be shared with any third parties (with the possible exception of other researchers conducting similar research, as specified above).

Security of information obtained

Your completed anonymous consent forms and questionnaires will be stored securely on a password-protected encrypted server at Edge Hill University, UK. Anonymous data will also be backed up on an external hard drive that will be stored in a locked cabinet in the researcher's office at Edge Hill University.

What if there is a problem?

If any aspect of this research concerns you please contact the researcher, who will do her best to answer your questions. Alternatively, you may wish to contact the research supervisor, whose contact details are stated at the beginning of this information sheet. If you remain dissatisfied, you may also contact Phil Bentley, Secretary of the Edge Hill University Research Ethics Sub-committee, on research@edgehill.ac.uk.

Insurance

The study is covered by insurance provided by Edge Hill University.

Who is supporting the research?

Edge Hill University is the sponsor for this study based in the United Kingdom. We will be using information from you in order to undertake this study. Edge Hill University is committed to ensuring compliance with current data protection legislation and confirms that all data collected is used fairly, stored safely, and not disclosed to any other person unlawfully. The University is a data controller and, in some instances, may be a data processor of this data. This means that we are responsible for looking after your information and using it properly.

At Edge Hill, we are committed to respecting and protecting your personal information. We will keep anonymous, non-identifiable information about you for a minimum of 10 years after the study has ended. This is in accordance with Medical Research Council good research practice guidelines and ensures that future researchers may benefit from the information your data contain. Your rights to access, change, or move your information are limited, as we need to manage your information in specific ways in order for the research to be reliable and accurate.

You can find out more about how we use your data at edgehill.ac.uk/about/legal/privacy.

Who has reviewed the study?

This research has been reviewed by an independent group, called a Research Ethics Committee, to protect your interests. Specifically, the Edge Hill University Psychology Department Research Ethics Committee reviewed this study and gave favourable opinion.

Contacting the research team

If you would like more information about this study, please find contact details for the researcher and her supervisor below.

Principal researcher: Robyn Mooney,

Supervisor: Dr Helen Wall,

Address of the research team: Department of Psychology, Edge Hill University, St Helens Rd, Ormskirk, UK, L39 4QP

Thank you for taking the time to read this information sheet.

Study 2 Consent Form

Edge Hill University

Project Title: A Systematic Investigation of the Links Between Personality and Offending Behaviour: The Roles of Trait Profiles, Level of Personality Functioning, and Interpersonal Style

Researcher: Robyn Mooney

Research Supervisor: Dr Helen Wall

- 1. I confirm that I am aged 18 years or over.

- 2. I have read and understood the participant information sheet and have had the opportunity to email the researcher to ask questions.

- 3. I understand that I do not have to agree immediately, but I can consider the information that I have received and come back to the study at a later date using the same link I first accessed the study on.

- 4. I understand that my participation is voluntary and that I do not have to respond to any questions that I prefer not answering.

- 5. I understand that I am free to withdraw from the survey at any time by closing my browser, and that if I do this my partial data will not be recorded or used in this project.

- 6. I understand that I am free to withdraw my data from the project any time within two weeks of submitting my responses, without giving any reason, without my legal rights being affected. I understand that I may do so by contacting the researcher via email and providing her with my memorable word or number. I understand that I must provide this memorable word or number in order to withdraw from the project after my responses have been submitted, as this will be the only way to

identify my anonymous data. I understand that after two weeks have elapsed since I submitted my survey responses, I will no longer be able to withdraw my data.

- 7. I understand that information relating to myself obtained as part of the study will remain anonymous and that I will not be personally identified in the final report of the study. I understand this information will also remain confidential to those outside of the research team (other than possibly researchers conducting similar research, as specified in the information sheet). I am mindful of the fact that, though not asked about in this study, if I disclose to the researcher an intent to harm myself or others or a previously unreported crime I committed, this information may be reported to the appropriate organisations.
- 8. I understand that this consent form may be seen by responsible individuals from Edge Hill University for the purposes of monitoring research procedures. I understand that this is for audit purposes only, to ensure that my consent has been sought and that the study is being carried out correctly.
- 9. I understand that data will be stored securely, and that information will be handled in accordance with the Data Protection Act 2018 and GDPR (General Data Protection Regulation) guidelines.
- 10. I agree to take part in the above study carried out by Ms Mooney (a postgraduate student researcher based at Edge Hill University) under the supervision of Dr Wall, and I am satisfied that the purpose and procedures of the study have been fully explained to me.

Study 2 Debrief Form

Edge Hill University

Project Title:

A Systematic Investigation of the Links Between Personality and Offending Behaviour: The Roles of Trait Profiles, Level of Personality Functioning, and Interpersonal Style

Thank you for participating in this study. If you have any questions relating to the study, please do not hesitate to contact the researcher on the contact details located at the bottom of this page.

What did I complete?

The study you completed seeks to provide an enhanced understanding of potential links between personality and offending behaviour. More specifically, I am interested in associations among challenging and adaptive personality traits, positive and negative aspects of personality functioning, individual approaches to interpersonal relationships and interactions, and various types of offending behaviour. I am also interested in the similarities and differences between offenders and non-offenders in regard to these characteristics. If any associations are found among these characteristics and offending behaviour, this knowledge could lead to more person-centred, tailored approaches to psychological interventions for institutionalised offenders.

You were asked to provide some very basic demographic information and complete a set of self-report questionnaires. Please note again, the questionnaire results are for research purposes only and are *not* a clinical or diagnostic assessment of you by any means.

Support

If the research has upset or distressed you in any way, you may find the following free confidential support services useful:

National Suicide Prevention Lifeline: call 1-800-273-8255

Crisis Text Line: Text "START" to 741741 to text with a trained Crisis Counselor

Complaints

If you have any complaints regarding the research you may first wish to contact the researcher, Ms Mooney. Alternatively, you may want to speak to the research supervisor, Dr Wall, on the contact details listed below. If you remain unhappy, you may also contact Phil Bentley, Secretary of the Edge Hill University Research Ethics Sub-committee, on research@edgehill.ac.uk.

Results

A summary of the anonymised results will be available in due course. If you wish to receive a copy, please inform the researcher as soon as possible.

Withdrawal

If you wish to withdraw your data from the study, you may do so any time within two weeks of having submitted your responses. To withdraw your data, please contact the

researcher to put forth your request. Please note that you must provide the researcher with your memorable word or number if you wish to withdraw. After two weeks have passed, you will no longer be able to withdraw your data from the project.

Contact details for the researcher and supervisor

If you would like more information about this study or would like to receive a copy of the information sheet and/or the consent form and/or the debriefing form, please contact the researcher on the details below.

Researcher: Robyn Mooney,

Research supervisor: Dr Helen Wall,

Address of the research team: Edge Hill University, St Helens Rd, Ormskirk, UK, L39 4QP

Thank you again for taking the time to participate in this research study.

Appendix C – Study 3 Forms

Study 3 Participant Information Sheet

Edge Hill University

Project Title:

A Systematic Investigation of the Links Between Personality and Offending Behaviour: The Roles of Trait Profiles, Level of Personality Functioning, and Interpersonal Style

Contact Information

Principal researcher: Robyn Mooney,

Supervisor: Dr Helen Wall,

Address of the research team: Department of Psychology, Edge Hill University, St Helens Rd, Ormskirk, UK, L39 4QP

You are being invited to take part in a research study which forms part of the researcher's PhD degree in Psychology (Edge Hill University, UK). Before you decide whether or not to take part, it is important that you understand why this research is being done and what it will involve.

Please take time to read this information sheet carefully. You can discuss it with others if you wish. If you would like to request more information or ask any questions before taking part in the study, please feel free to contact the researcher or research supervisor (email addresses are provided above). Thank you for taking the time to read this information.

What is the purpose of the study?

The purpose of this research is to investigate potential links between personality (i.e., individual differences in the way people think, feel, and behave) and offending behaviour. More specifically, this research looks at associations among adaptive and challenging personality traits and attitudes, positive and negative aspects of personality functioning, individual approaches to interpersonal relationships and interactions, and various types of offending behaviour. If any associations are found among these personal characteristics and offending behaviour, this knowledge could lead to more person-centred, tailored approaches to psychological interventions for institutionalised offenders.

Why have I been invited?

You have been invited to participate in this project in order to form part of the ex-offender sample. To be eligible for participation, you must also be a) male and b) aged 18+ years.

What will I be asked to do?

Taking part in this research will involve you providing some very basic demographic information (i.e., age, gender, and nationality) and completing a set of self-report

questionnaires that ask about your personality, interpersonal style, empathy, attitudes, and offending behaviour you may have engaged in in the past.

Please note that the results of these questionnaires are for research purposes only; this is *not* a clinical or diagnostic assessment by any means.

Timescale

If you decide to take part, the set of questionnaires should take approximately 20-30 minutes to complete in total. After this, you will be taken to a debriefing page prepared by the researcher that explains the study in more detail and provides information about who to contact should you desire more information or support.

What are the benefits of taking part?

By taking part in this study, you will help advance a very understudied research topic. Specifically, your participation will help advance knowledge about adaptive and challenging personality traits, personality functioning, and interpersonal approaches among individuals with and without histories of offending behaviour. This knowledge could improve psychological treatment for institutionalised offenders through contributing to more person-centred, tailored approaches to interventions that focus on personality and its contribution to an individual's offending behaviour.

What are the possible disadvantages and risks of taking part?

It is unlikely that you will experience any distress due to taking part in this study. Nevertheless, if you do experience some unpleasant feelings or feel like you would like some support, you can contact confidential free support services at any time of day via the following contacts:

United Kingdom

Samaritans

Tel: 116 123

Email: jo@samaritans.org

SANeline

Tel: 0300 304 7000 (4:30pm-10:30pm)

United States

National Suicide Prevention Lifeline

Tel: 1-800-273-8255

Crisis Text Line

Text "START" to 741741 to text with a trained Crisis Counselor

Do I have to take part in the study?

It is completely your choice whether or not you take part in the study and the information provided here is meant to help you make that decision. If you decide to take part, you do not have to respond to any questions that you prefer not answering. There will be no negative consequences if you decide not to take part. If you wish to save your responses and return to complete the survey at a later time, you may do so by closing your browser and returning to the survey via the same link you originally accessed the survey on. However, once two weeks have elapsed, your incomplete responses will be withdrawn and you will need to re-start the survey from scratch if you still wish to participate.

Consent

Before you commence the questionnaires, you will be presented with a consent page that asks you to indicate that you agree to take part in the research and that you consent to each aspect of the project.

Can I withdraw consent?

Prior to submitting your responses, you are free to withdraw from the study by simply closing your browser. Meanwhile, after your responses have been submitted, you may withdraw your data anytime within two weeks of your participation. You do not have to provide a reason for your withdrawal. However, when two weeks have elapsed since your responses were submitted, you will no longer be able to withdraw your data.

On the following page, you will be asked to provide a word or number that is memorable and unique to you. This ensures that, should you wish to withdraw your anonymous data, the researcher can locate your responses. You will need to provide the researcher with this memorable word or number if you wish to withdraw your data after submitting your responses. You may do so by contacting the researcher via email.

What will happen to the results of the research study?

Your data will be statistically analysed and presented in the researcher's PhD dissertation. At no point will your personal data be singled out for analysis; only data from groups of respondents will be used for analyses. Following completion of the study, the data will be retained for subsequent analyses and disseminated in journal articles and presentations. Your anonymous data may be shared with other researchers doing similar research, but your answers will remain anonymous.

Confidentiality and anonymity

The answers you submit are anonymous and confidential. You will never be identified by name and will not be singled out in any formal write-up of the results; only group data will be presented. This data will not be shared with any third parties (with the possible exception of other researchers conducting similar research, as specified above).

Security of information obtained

Your completed anonymous consent forms and questionnaires will be stored securely on a password-protected encrypted server at Edge Hill University, UK. Anonymous data will also be backed up on an external hard drive that will be stored in a locked cabinet in the researcher's office at Edge Hill University.

What if there is a problem?

If any aspect of this research concerns you please contact the researcher, who will do her best to answer your questions. Alternatively, you may wish to contact the research supervisor, whose contact details are stated at the beginning of this information sheet. If you remain dissatisfied, you may also contact Phil Bentley, Secretary of the Edge Hill University Research Ethics Sub-committee, on research@edgehill.ac.uk.

Insurance

The study is covered by insurance provided by Edge Hill University.

Who is supporting the research?

Edge Hill University is the sponsor for this study based in the United Kingdom. We will be using information from you in order to undertake this study. Edge Hill University is committed to ensuring compliance with current data protection legislation and confirms that all data collected is used fairly, stored safely, and not disclosed to any other person unlawfully. The University is a data controller and, in some instances, may be a data processor of this data. This means that we are responsible for looking after your information and using it properly.

At Edge Hill, we are committed to respecting and protecting your personal information. We will keep anonymous, non-identifiable information about you for a minimum of 10 years after the study has ended. This is in accordance with Medical Research Council good research practice guidelines and ensures that future researchers may benefit from the information your data contain. Your rights to access, change, or move your information are limited, as we need to manage your information in specific ways in order for the research to be reliable and accurate.

You can find out more about how we use your data at edgehill.ac.uk/about/legal/privacy.

Who has reviewed the study?

This research has been reviewed by an independent group, called a Research Ethics Committee, to protect your interests. Specifically, the Edge Hill University Psychology Department Research Ethics Committee reviewed this study and gave favourable opinion.

Contacting the research team

If you would like more information about this study, please find contact details for the researcher and her supervisor below.

Principal researcher: Robyn Mooney,

Supervisor: Dr Helen Wall,

Address of the research team: Department of Psychology, Edge Hill University, St Helens Rd, Ormskirk, UK, L39 4QP

Thank you for taking the time to read this information sheet.

Study 3 Consent Form

Edge Hill University

Project Title: A Systematic Investigation of the Links Between Personality and Offending Behaviour: The Roles of Trait Profiles, Level of Personality Functioning, and Interpersonal Style
Researcher: Robyn Mooney
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If you wish to withdraw your data from the study, you may do so any time within two weeks of having submitted your responses. To withdraw your data, please contact the researcher to put forth your request. Please note that you must provide the researcher with your memorable word or number if you wish to withdraw. After two weeks have passed, you will no longer be able to withdraw your data from the project.

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If you would like more information about this study or would like to receive a copy of the information sheet and/or the consent form and/or the debriefing form, please contact the researcher on the details below.

Researcher: Robyn Mooney,

Research supervisor: Dr Helen Wall,

Address of the research team: Edge Hill University, St Helens Rd, Ormskirk, UK, L39 4QP

Thank you again for taking the time to participate in this research study.

Appendix D – Short Dark Triad

Jones & Paulhus, 2014

Please indicate how much you agree with each of the following statements using the following rating scale:

<i>Disagree strongly</i>	<i>Disagree</i>	<i>Neither agree nor disagree</i>	<i>Agree</i>	<i>Agree strongly</i>
1	2	3	4	5

Describe yourself as you generally are now, not as you wish to be in the future. Describe yourself as you honestly see yourself, in relation to other people you know of the same sex as you are, and roughly your same age.

So that you can describe yourself in an honest manner, your responses will be kept in absolute confidence.

Please read each statement carefully, and then select the number that corresponds to your reply.

Item	Reverse Scored?	Trait
It's not wise to tell your secrets.		Machiavellianism
I like to use clever manipulation to get my way.		Machiavellianism
Whatever it takes, you must get the important people on your side.		Machiavellianism
I avoid direct conflict with other people because they may be useful in the future.		Machiavellianism
It's wise to keep track of information that you can use against people later.		Machiavellianism
You should wait for the right time to get back at people.		Machiavellianism
There are things you should hide from other people to preserve your reputation.		Machiavellianism
You should make sure your plans benefit yourself, not others.		Machiavellianism
Most people can be manipulated.		Machiavellianism
I like to get revenge on authorities.		Psychopathy
I avoid dangerous situations.	Y	Psychopathy
Payback needs to be quick and nasty.		Psychopathy
People often say I'm out of control.		Psychopathy
It's true that I can be mean to others.		Psychopathy
People who mess with me always regret it.		Psychopathy

I have never gotten into trouble with the law.	Y	Psychopathy
I enjoy having sex with people I hardly know.		Psychopathy
I'll say anything to get what I want.		Psychopathy
I insist on getting the respect I deserve.		Narcissism
People see me as a natural leader.		Narcissism
I hate being the centre of attention.	Y	Narcissism
Many group activities tend to be dull without me.		Narcissism
I know that I am special because everyone keeps telling me so.		Narcissism
I like to get acquainted with important people.		Narcissism
I feel embarrassed if someone compliments me.	Y	Narcissism
I have been compared to famous people.		Narcissism
I am an average person.	Y	Narcissism

Appendix E - International Personality Item Pool-Five Factor Model

Goldberg, 1999

Please indicate how much you agree with each of the following statements using the following rating scale:

<i>Disagree strongly</i>	<i>Disagree</i>	<i>Neither agree nor disagree</i>	<i>Agree</i>	<i>Agree strongly</i>
1	2	3	4	5

Describe yourself as you generally are now, not as you wish to be in the future. Describe yourself as you honestly see yourself, in relation to other people you know of the same sex as you are, and roughly your same age.

So that you can describe yourself in an honest manner, your responses will be kept in absolute confidence.

Please read each statement carefully, and then select the number that corresponds to your reply.

Item	Reverse Scored?	Trait
I am the life of the party.		Extraversion
I don't talk a lot.	Y	Extraversion
I feel comfortable around people.		Extraversion
I keep in the background.	Y	Extraversion
I start conversations.		Extraversion
I have little to say.	Y	Extraversion
I talk to a lot of different people at parties.		Extraversion
I don't like to draw attention to myself.	Y	Extraversion
I don't mind being the centre of attention.		Extraversion
I am quiet around strangers.	Y	Extraversion
I am interested in people.		Agreeableness
I feel little concern for others.	Y	Agreeableness
I insult people.	Y	Agreeableness
I sympathize with others' feelings.		Agreeableness
I am not interested in other people's problems.	Y	Agreeableness
I have a soft heart.		Agreeableness
I am not really interested in others.	Y	Agreeableness
I take time out for others.		Agreeableness
I feel others' emotions.		Agreeableness
I make people feel at ease.		Agreeableness
I am always prepared.		Conscientiousness

I leave my belongings around.	Y	Conscientiousness
I pay attention to details.		Conscientiousness
I make a mess of things.	Y	Conscientiousness
I get chores done right away.		Conscientiousness
I often forget to put things back in their proper place.	Y	Conscientiousness
I like order.		Conscientiousness
I shirk my duties.	Y	Conscientiousness
I follow a schedule.		Conscientiousness
I am exacting in my work.		Conscientiousness
I get stressed out easily.		Neuroticism
I am relaxed most of the time.	Y	Neuroticism
I worry about things.		Neuroticism
I seldom feel blue.	Y	Neuroticism
I am easily disturbed.		Neuroticism
I get upset easily.		Neuroticism
I change my mood a lot.		Neuroticism
I have frequent mood swings.		Neuroticism
I get irritated easily.		Neuroticism
I often feel blue.		Neuroticism
I have a rich vocabulary.		Openness
I have difficulty understanding abstract ideas.	Y	Openness
I have a vivid imagination.		Openness
I am not interested in abstract ideas.	Y	Openness
I have excellent ideas.		Openness
I do not have a good imagination.	Y	Openness
I am quick to understand things.		Openness
I use difficult words.		Openness
I spend time reflecting on things.		Openness
I am full of ideas.		Openness

Appendix F - Balanced Inventory of Desirable Responding Short Form

Hart et al., 2015

Please indicate how much you agree with each of the following statements using the following rating scale:

<i>Disagree strongly</i>	<i>Disagree</i>	<i>Neither agree nor disagree</i>	<i>Agree</i>	<i>Agree strongly</i>
1	2	3	4	5

Describe yourself as you generally are now, not as you wish to be in the future. Describe yourself as you honestly see yourself, in relation to other people you know of the same sex as you are, and roughly your same age.

So that you can describe yourself in an honest manner, your responses will be kept in absolute confidence.

Please read each statement carefully, and then select the number that corresponds to your reply.

Item	Reverse Scored?	Subscale
I sometimes tell lies if I have to.		Impression management
I never cover up my mistakes.		Impression management
There have been occasions when I have taken advantage of someone.		Impression management
I sometimes try to get even rather than forgive and forget.		Impression management
I have said something bad about a friend behind his/her back.		Impression management
When I hear people talking privately, I avoid listening.		Impression management
I never take things that don't belong to me.		Impression management
I don't gossip about other people's business.		Impression management
I have not always been honest with myself.	Y	Self-deceptive enhancement
I always know why I like things.		Self-deceptive enhancement
It's hard for me to shut off a disturbing thought.	Y	Self-deceptive enhancement
I never regret my decisions.		Self-deceptive enhancement

I sometimes lose out on things because I can't make up my mind soon enough.	Y	Self-deceptive enhancement
I am a completely rational person.		Self-deceptive enhancement
I am very confident of my judgements.		Self-deceptive enhancement
I have sometimes doubted my ability as a lover.	Y	Self-deceptive enhancement

Appendix G - Level of Personality Functioning Scale-Brief Form

Hutsebaut et al., 2016

Report which of the following statements apply to you. Only choose 'yes' if this has been the case for at least a year.

- 1 I often do not know who I really am
Yes/No
- 2 I often think very negatively about myself
Yes/No
- 3 My emotions change without me having a grip on them
Yes/No
- 4 I have clear aims in my life and succeed in achieving those (R)
Yes/No
- 5 I often do not understand my own thoughts and feelings
Yes/No
- 6 I am often very strict with myself
Yes/No
- 7 I often have difficulty understanding the thoughts and feelings of others
Yes/No
- 8 I often find it hard to tolerate it when others have a different opinion
Yes /No
- 9 I often do not fully understand why my behavior has a certain effect on others
Yes/No
- 10 My relationships and friendships never last long
Yes/No
- 11 There is almost no one who is really close to me
Yes/No
- 12 I often do not succeed in working cooperatively with others in an equal way
Yes/No

Appendix H - Inventory of Interpersonal Problems-Short Circumplex Form

Soldz et al., 1995

Please indicate how much you agree with each of the following statements using the following rating scale:

<i>Disagree strongly</i>	<i>Disagree</i>	<i>Neither agree nor disagree</i>	<i>Agree</i>	<i>Agree strongly</i>
1	2	3	4	5

Item	Octant
It is hard for me to understand another person's point of view.	PA (Domineering)
It is hard for me to be supportive of another person's goals in life.	BC (Vindictive)
It is hard for me to show affection to people.	DE (Cold)
It is hard for me to join in groups.	FG (Socially Avoidant)
It is hard for me to tell a person to stop bothering me.	HI (Nonassertive)
It is hard for me to let other people know when I am angry.	JK (Exploitable)
It is hard for me to attend to my own welfare when somebody else is needy.	LM (Overly Nurturant)
It is hard for me to keep things private from other people.	NO (Intrusive)
I am too aggressive toward other people.	PA (Domineering)
It is hard for me to feel good about another person's happiness.	BC (Vindictive)
It is hard for me to experience a feeling of love for another person.	DE (Cold)
It is hard for me to introduce myself to new people.	FG (Socially Avoidant)
It is hard for me to confront people with problems that come up.	HI (Nonassertive)
It is hard for me to be assertive without worrying about hurting the other person's feelings.	JK (Exploitable)
I try to please other people too much.	LM (Overly Nurturant)
I open up to people too much.	NO (Intrusive)
I try to control other people too much.	PA (Domineering)
I am too suspicious of other people.	BC (Vindictive)
It is hard for me to feel close to other people.	DE (Cold)
It is hard for me to socialize with other people.	FG (Socially Avoidant)
It is hard for me to be assertive with another person.	HI (Nonassertive)
I am too easily persuaded by other people.	JK (Exploitable)
I put other people's needs before my own too much.	LM (Overly Nurturant)
I want to be noticed too much.	NO (Intrusive)

I argue with other people too much.	PA (Domineering)
I want to get revenge against people too much.	BC (Vindictive)
I keep other people at a distance too much.	DE (Cold)
It is hard for me to ask other people to get together socially with me.	FG (Socially Avoidant)
It is hard for me to be firm when I need to be.	HI (Nonassertive)
I let other people take advantage of me too much.	JK (Exploitable)
I am affected by another person's misery too much.	LM (Overly Nurturant)
I tell personal things to other people too much.	NO (Intrusive)

Appendix I - Irritability Scale

Caprara, Cinanni, et al., 1985

Please indicate how much you agree with each of the following statements using the following rating scale:

<i>Disagree strongly</i>	<i>Disagree</i>	<i>Neither agree nor disagree</i>	<i>Agree</i>	<i>Agree strongly</i>
1	2	3	4	5

1. I easily fly off the handle with those who don't listen or understand.
2. I am often in a bad mood.
3. Usually when someone shows a lack of respect for me, I let it go by. (R)
4. I have never been touchy. (R)
5. It makes my blood boil to have somebody make fun of me.
6. I think I have a lot of patience. (R)
7. When I am irritated I need to vent my feelings immediately.
8. When I am tired I easily lose control.
9. I think I am rather touchy.
10. When I am irritated I can't tolerate discussions.
11. I could not put anyone in his place, even if it were necessary. (R)
12. I can't think of any good reason for resorting to violence. (R)
13. I often feel like a powder keg ready to explode.
14. I seldom strike back even if someone hits me first. (R)
15. I can't help being a little rude to people I don't like.
16. Sometimes when I am angry I lose control over my actions.
17. I do not know of anyone who would wish to harm me. (R)
18. Sometimes I really want to pick a fight.
19. I do not like to make practical jokes. (R)
20. When I am right, I am right.
21. I never get mad enough to throw things. (R)
22. When someone raises his voice I raise mine higher.
23. Sometimes people bother me just by being around.
24. Some people irritate me if they just open their mouth.
25. Sometimes I shout, hit and kick and let off steam.
26. I don't think I am a very tolerant person.
27. Even when I am very irritated I never swear. (R)
28. It is others who provoke my aggression.
29. Whoever insults me or my family is looking for trouble.
30. It takes very little for things to bug me.

Appendix J - Questionnaire of Cognitive and Affective Empathy

Reniers et al., 2011

Please indicate how much you agree with each of the following statements using the following rating scale:

<i>Disagree strongly</i>	<i>Disagree</i>	<i>Neither agree nor disagree</i>	<i>Agree</i>	<i>Agree strongly</i>
1	2	3	4	5

	<i>Item</i>
Cognitive Empathy	I can easily work out what another person might want to talk about.
	I can tell if someone is masking their true emotion.
	I can sense if I am intruding, even if the other person does not tell me.
	I am good at predicting how someone will feel.
	I am good at predicting what someone will do.
	I am quick to spot when someone in a group is feeling awkward or uncomfortable.
	I can pick up quickly if someone says one thing but means another.
	I can easily tell if someone else is interested or bored with what I am saying.
	I can easily tell if someone else wants to enter a conversation.
	Other people tell me I am good at understanding how they are feeling and what they are thinking.
	I try to look at everybody's side of a disagreement before I make a decision.
	Before criticizing somebody, I try to imagine how I would feel if I was in their place.
	When I am upset at someone, I usually try to "put myself in his shoes" for a while.
	I always try to consider the other fellow's feelings before I do something.
	I sometimes try to understand my friends better by imagining how things look from their perspective.
	I can usually appreciate the other person's viewpoint, even if I do not agree with it.
	(R) I sometimes find it difficult to see things from the "other guy's" point of view.
Before I do something I try to consider how my friends will react to it.	
I find it easy to put myself in somebody else's shoes.	
Affective Empathy	I am happy when I am with a cheerful group and sad when the others are glum.
	It worries me when others are worrying and panicky.
	People I am with have a strong influence on my mood.
	I am inclined to get nervous when others around me seem to be nervous.
	(R) I usually stay emotionally detached when watching a film.
	(R) I am usually objective when I watch a film or play, and I don't often get completely caught up in it.
	I often get deeply involved with the feelings of a character in a film, play, or novel.
	(R) It is hard for me to see why some things upset people so much.
	I often get emotionally involved with my friends' problems.
	Friends talk to me about their problems as they say that I am very understanding.
	It affects me very much when one of my friends seems upset.
I get very upset when I see someone cry.	

Appendix K - Criminal Sentiments Scale-Modified

Simourd, 1997

*NOTE: the original scale uses A/U/D to denote agree/undecided/disagree, but these were converted to a numerical rating scale in this research.

Please indicate how much you agree with each of the following statements using the following rating scale:

<i>Disagree</i>	<i>Neither agree nor disagree</i>	<i>Agree</i>
1	2	3

LAW

1. Pretty well all laws deserve our respect. (R)
2. It's our duty to obey all laws. (R)
3. Laws are usually bad.
4. The law is rotten to the core.
5. You cannot respect the law because it's there only to help a small and selfish group of people.
6. All laws should be obeyed just because they are laws. (R)
7. The law does not help the average person.
8. The law is good. (R)
9. Law and justice are the same thing. (R)
10. The law makes slaves out of most people for a few people on the top.

COURTS

11. Almost any jury can be fixed.
12. You cannot get justice in court.
13. Lawyers are honest. (R)
14. The prosecution often produces fake witnesses.
15. Judges are honest and kind. (R)
16. Court decisions are pretty well always fair. (R)
17. Pretty well anything can be fixed in court if you have enough money.
18. A judge is a good person. (R)

POLICE

19. The police are honest. (R)
20. A cop is a friend to people in need. (R)
21. Life would be better with fewer cops.
22. The police should be paid more for their work. (R)
23. The police are as crooked as the people they arrest.
24. Society would be better off if there were more police. (R)
25. The police almost never help people.

TOLERANCE FOR LAW VIOLATIONS

26. Sometimes a person like me has to break the law to get ahead in life.
27. Most successful people broke the law to get ahead in life.
28. You should always obey the law, even if it keeps you from getting ahead in life. (R)
29. It's OK to break the law as long as you don't get caught.
30. Most people would commit crimes if they wouldn't get caught.
31. There is never a good reason to break the law. (R)
32. A hungry man has the right to steal.
33. It's OK to get around the law as long as you don't actually break it.
34. You should only obey those laws that are reasonable.
35. You're crazy to work for a living if there's an easier way, even if it means breaking the law.

IDENTIFICATION WITH CRIMINAL OTHERS

36. People who have broken the law have the same sorts of ideas about life as me.
37. I prefer to be with people who obey the law rather than people who break the law. (R)
38. I'm more like a professional criminal than people who break the law now and then.
39. People who have been in trouble with the law are more like me than people who don't have trouble with the law.
40. I have very little in common with people who never break the law.
41. No one who breaks the law can be my friend. (R)

Appendix L - Self-Report Measure of Adult Offending

Teague et al., 2008

Please indicate approximately how many times you have engaged in each of the following behaviours using the following rating scale:

<i>Never</i>	<i>1-3 times</i>	<i>4-10 times</i>	<i>11-20 times</i>	<i>20+ times</i>
1	2	3	4	5

Your responses will be kept confidential.

Please read each statement carefully, then select the number that corresponds to your reply.

1. Purposely damaged or destroyed other property that did not belong to you, including public property.
2. Tagged or put graffiti on walls, bus panels, trains, or other public places.
3. Stole or tried to steal something worth **less** than £50.
4. Stole or tried to steal something worth **more** than £50.
5. Stole or tried to steal a car, motorbike, or any other motor vehicle that did not belong to you.
6. Took a car, motorbike, or any other vehicle for a ride or drive without the owner's permission.
7. Hacked into or misused a computer or computer site.
8. Knowingly bought, sold, or held stolen goods (or tried to do any of these things).
9. Tried to cheat someone by selling them something that was worthless or not what you said it was (including drugs).
10. Used, or tried to use, credit cards/cheques without the owner's permission.
11. Purposefully set fire or tried to set fire to a building, car, or other property.
12. Sold marijuana or hash ("pot", "grass").
13. Sold hard drugs such as heroin, cocaine, LSD, etc.
14. Gotten involved in a gang fight (taken part in a fight between two or more groups).
15. Used physical force (strong-arm methods) to get money or things from another person.

16. Hit or threatened to hit another person.
17. Attacked someone with the idea of seriously hurting or killing them.
18. Pressured or pushed someone such as a date or a friend to go further sexually than they wanted to do.
19. Physically hurt or threatened to hurt someone to get them to have sex with you.