

**The Clinical Utility of Personality Profiles of High-Risk Offenders in
Rehabilitation**

by

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Abstract

Personality disorders are common among high-risk offenders. These disorders may have relevance for their risk of offending, and they are likely to present barriers to their engagement in rehabilitation programmes. Co-morbidity between personality disorders—and the high frequency of clinical disorders in general—in offender samples complicate research on personality disorder in offender rehabilitation. One approach to understanding this heterogeneity is to use cluster analysis (CA). CA is an empirical strategy which is used to identify subgroups (clusters) of individuals who have similar scores on the variables used in the analysis. It has been used to empirically identify different patterns of personality and clinical psychopathology among incarcerated offenders. Two profiles frequently emerge in cluster analytic research on offender psychopathology profiles: an *antisocial/narcissistic* profile and a *high-psychopathology* profile. However, previous research has not empirically examined whether the identification of these profiles has clinical relevance for offender rehabilitation; that is, whether the profiles are simply descriptive, or whether they can provide useful information for the management and rehabilitation of offenders.

In the current research, I used data collected from high risk offenders entering prison-based rehabilitation programmes to investigate the clinical utility of psychopathology clusters. Using a self-report measure of personality and clinical psychopathology—the Millon Clinical Multiaxial Inventory III—I identified three clusters: a *low-psychopathology* cluster (26% of the sample), a high-psychopathology cluster (35% of the sample), and an antisocial/narcissistic cluster (39% of the sample). The *high-psychopathology* and *antisocial/narcissistic* clusters in particular resembled high risk clusters found in previous research.

To determine whether the three clusters had clinical relevance, I investigated cluster differences in criminal risk, treatment responsiveness, and self-report predictive validity. I found

evidence for cluster differences in criminal risk: men in the *high-psychopathology* and *antisocial/narcissistic* clusters had higher rates of criminal recidivism after release compared to men in the *low-psychopathology* cluster. However, I found that regardless of psychopathology, men in all three clusters made progress in treatment, and there was little evidence that clusters that reported more psychopathology were less engaged, or made less progress. In the final study I examined cluster differences in self-presentation style and the predictive validity of self-report. Results indicated that offenders who reported high levels of psychopathology had a more general tendency for negative self-presentation, and their self-report on risk-related measures was highly predictive of criminal recidivism.

Combined, the results of this research show that cluster analysis of self-reported psychopathology can generate a parsimonious model of heterogeneity in offender samples. Importantly, the resulting clusters can also provide information for some of the most important tasks in offender management: assessment and treatment. The results suggest the highest risk offenders tend to report higher levels of psychopathology, and that offenders who report extensive psychopathology also have highly predictive risk-related self-report. Perhaps one of the most reassuring findings of the current research is that even offenders who report high levels of psychopathology appear to benefit from rehabilitation.

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Chapter One

Introduction

We all differ in the way we view ourselves and the world around us, and there is no reason to believe that offenders are any different in this respect. Yet until recently research has disproportionately focussed on what offenders have in common, rather than what sets them apart from one another. This thesis seeks to unpack some of the heterogeneity between offenders by identifying different patterns on a self-report measure of personality pathology, and exploring their relevance for offender rehabilitation.

There is emerging consensus within the research literature that—when consistent with best practise guidelines—offender rehabilitation can produce modest but significant reductions in criminal risk (Dowden & Andrews, 2000; McGuire, 2013). A central concern in offender rehabilitation is the assessment and mitigation of criminal risk. However, criminal behaviour has multiple determinants (Walters, 2011), and approaches that are effective in reducing criminal risk for some offenders may be less effective with others (Polaschek, 2011). Vose, Cullen, and Smith (2008) state that “the individual differences across offenders make it imprudent to take a one-size-fits-all approach to correctional treatment” (p. 22). These individual differences may influence how well we assess criminal risk and approach treatment for different offenders.

Research on offender personality traits, personality styles, and personality disorder reflects a growing interest in offender heterogeneity, and has led to the development of models relating dysfunctional personality traits to criminal behaviour. For example, Eysenck and Gudjonsson (1989) focussed on three dimensions of personality: psychoticism (antisocial, cold, aggressive, impulsive), extraversion (sociable, carefree, assertive), and neuroticism (anxious, dependent, moody). They argued that high scores on each of these dimensions—but especially psychoticism—were related to criminal behaviour, and they suggested that different personality patterns were linked to different patterns of criminal behaviour.

Offender personality styles¹ are frequently dysfunctional (Blackburn & Fawcett, 1999), and personality disorders appear to be common in offender samples (Coid et al., 2009; Retzlaff, Stoner, & Kleinsasser, 2002), especially among higher risk offenders (Blackburn, Logan, Donnelly, & Renwick, 2003; Kirkpatrick et al., 2010; Wilson, 2004). For example, using structured clinical interviews to diagnose personality disorder, Coid et al. (2009) sought to determine the prevalence of personality disorder in a sample of prisoners in England and Wales ($N = 496$). Of the sample, 65% were diagnosed with one or more personality disorders, and 31% had at least two personality disorders. They found the most prevalent disorders were antisocial (50%), paranoid (23%), and borderline personality disorder (18%). In another study, Retzlaff et al. (2002) looked at the prevalence of personality disorders using a self-reported measure—the Millon Clinical Multiaxial Inventory III—with a large sample of prisoners in the United States ($N = 10,637$). Like Coid and colleagues, they found evidence for a range of personality disorders, the most prevalent being antisocial (29%), avoidant (25%), narcissistic (21%), passive-aggressive (21%), and sadistic (20%). Using the same measure with a sample of high-risk offenders in New Zealand, Wilson (2004) found an even greater prevalence of personality disorder. The most common disorders were antisocial (60%), passive-aggressive (48%), avoidant (34%), depressive (33%), and self-defeating (30%).

The high prevalence of personality disorder in offender samples suggests that personality disorder is an important consideration for offender management and rehabilitation. Perhaps because of this high prevalence, the assessment of maladaptive personality styles has become commonplace in offender rehabilitation (Douglas, Hart, & Kropp, 2001; Megargee, 1994; Retzlaff et al., 2002). In the following sections I will review

¹ Two terms—personality styles and personality disorders—are used here to acknowledge that the various dimensions comprising normal personality and personality disorder exist on a continuum (Livesley, 2012a), and subclinical levels of personality traits can likely still inform offender management.

two well-known classification systems for personality disorder, and then discuss the personality disorder measure used in this research: the Millon Clinical Multiaxial Inventory III.

Personality Disorder

There are currently two highly influential systems for the classification of personality disorders. The first is the *Diagnostic and Statistical Manual of Mental Disorders* (DSM) produced by the American Psychiatric Association. The most recent version—the DSM-5—was released this year (2013). The general features of personality disorder identified in the DSM-5 involve enduring cognitive, affective, and behavioural (including interpersonal) styles that are inflexible, and lead to functional impairment or subjective distress. The DSM-5 continues in the tradition of the DSM-IV and DSM-IV-TR in identifying 10 main categories of personality disorder: paranoid, schizoid, schizotypal, antisocial, borderline, histrionic, narcissistic, avoidant, dependent, and obsessive compulsive.

A second classification system is the *International Classification of Diseases* produced by the World Health Organisation (WHO). The most recent version—the ICD-10—was released in 1992, and an updated edition is due out in 2015. The general features of personality disorder in the ICD-10 involve longstanding and severe disturbances in personality and behavioural tendencies, generally associated with distress and social disruption. The ICD-10 lists eight specific personality disorders: paranoid, schizoid, dissocial, emotionally unstable (impulsive and borderline), histrionic, anankastic, anxious (avoidant), and dependent².

² Passive-aggressive and narcissistic personality disorders appear under ‘other specific personality disorders’, and schizotypal disorder appears in a separate section alongside schizophrenia and delusional disorders.

Both classification systems stress the enduring nature of personality disorder, and resulting impairment. Furthermore, both systems identify a similar series of distinct categories of personality dysfunction, identifiable on the basis of co-occurring symptoms. The DSM and ICD categorisations of personality disorder have been criticised on several grounds. Firstly, they imply the existence of discrete, categorical disorders, despite longstanding evidence for a dimensional structure to personality pathology continuous with normal personality (Clark, 2007; Eysenck & Gudjonsson, 1989; Livesley, 2012a; Millon & Davis, 1996; Widiger & Simonsen, 2005). Furthermore, the existence of patterns resembling the personality disorders in the DSM-5 and ICD-10 is not strongly supported by empirical research: “empirical analyses consistently fail to identify structures resembling DSM-IV diagnoses” (Livesley, 2012a, p. 364). Finally, there are high levels of diagnostic co-occurrence between the disorders, and with other clinical disorders (formerly Axis I disorders) including anxiety and depression (Clark, 2007; Widiger & Simonsen, 2005). Livesley (2012b) criticised the existing classification systems as suffering from both redundancy (multiple disorders describe essentially the same phenomena), and poor coverage (the correspondence between personality disorder diagnoses and clinical presentations is limited).

Dissatisfaction with the DSM-5 and ICD-10 systems has led some researchers to suggest there is a need to “identify the fundamental dimensions of maladaptive personality functioning that underlie and cut across the existing diagnostic categories” (Widiger & Simonsen, 2005). The current research takes a more dimensional and holistic view of personality dysfunction than the DSM-5 and ICD-10.

The measure of personality pathology used in the current research—the Millon Clinical Multi-axial Inventory III (MCMI-III)—is based on Theodore Millon’s evolutionary model of personality (Millon & Davis, 1996; Millon, Davis, & Millon, 1997). Central to the

theoretical model are three dimensions that relate to evolutionary processes: pleasure/pain, passive/active, and self/other. The pleasure/pain dimension represents existential life-enhancement or life-preservation strategies. The passive/active dimension represents ecological adaptation, either passive accommodation of the ecological niche, or active modification of the ecological niche. The self/other dimension represents replication strategies, either reproductive propagation or reproductive nurturance.

Millon and colleagues (Millon & Davis, 1996; Millon et al., 1997) argued that individual differences in personality could be traced to variations on these three dimensions, and that more severe deficiency, imbalance, or conflict on the dimensions may lead to personality disorder. For example, a deficient experience of pleasure and pain characterises schizoid personality disorder, while an almost exclusive focus on the nurturance of others characterises dependent personality disorder (Table 1.1).

Table 1.1

DSM personality disorders on the three polarities

	Existential Aim		Replication Strategy		
	Life Enhancement	Life Preservation	Reproductive Propagation	Reproductive Nurturance	
Polarity	Pleasure-Pain		Self-Other		
Deficiency, Imbalance, or Conflict	Pleasure (low) Pain (low or high)	Pleasure Pain (Reversal)	Self (low) Other (high)	Self (high) Other (low)	Self-Other (Reversal)
Adaptation Mode	DSM Personality Disorders				
Passive: Accommodation	Schizoid Depressive	Self-defeating	Dependent	Narcissistic	Compulsive
Active: Modification	Avoidant	Sadistic	Histrionic	Antisocial	Passive-aggressive

Note. Adapted from *MCMI-III Manual 2ed.* (p. 16), by T. Millon, R. Davis, and C. Millon, 1997, Minneapolis: National Computer Systems.

In line with recent personality disorder theorists (Clark, 2007; Livesley, 2012a; Widiger & Simonsen, 2005), Millon and colleagues viewed personality disorder traits as

continuous with normal personality. For example, a dissenting personality style was considered to be on a continuum with antisocial personality disorder, and an outgoing personality style was thought to be on a continuum with histrionic personality disorder. Millon et al. (1997) stated: “the differences between a clinical disorder and normal functioning, especially with personality scales, is one of degree rather than kind” (p. 60). It is only when personality styles become inflexible and are associated with severe impairment that they are considered to be pathological.

The MCMI-III Scale

The MCMI-III is the third revision of a self-report measure of personality psychopathology based on Millon’s model of personality (Millon & Davis, 1996; Millon et al., 1997). The MCMI-III contains 175 items which key on to eleven basic patterns of personality pathology (schizoid, avoidant, depressive, dependent, histrionic, narcissistic, antisocial, sadistic, compulsive, passive-aggressive, and self-defeating), three patterns of personality pathology considered to be more severe and extensive than the basic patterns (schizotypal, borderline, and paranoid), seven clinical syndrome scales (anxiety, somatoform, bipolar:manic, dysthymia, alcohol dependence, drug dependence, post-traumatic stress disorder), and three severe clinical syndrome scales (thought disorder, major depression, and delusional disorder). From here, these 24 personality and clinical psychopathology scales will be referred to as the ‘MCMI-III psychopathology scales’. There are also three validity indices: an index of the overall level of symptoms reported (the disclosure scale), an index of socially desirable responding (the desirability scale), and an index of self-deprecation (the debasement scale). The validity indices are described further in Chapter Five.

Raw scores on the MCMI-III scales are transformed into base rate (BR) scores. BR scores of ≥ 85 indicate that a clinical diagnosis is likely, and scores between 75 and 85 indicate the presence of traits consistent with a disorder. The conversion to BR scores adjusts

for variations in the prevalence of different disorders, so a score of 85 is indicative of pathology regardless of whether the disorder is likely to be common (e.g., antisocial personality disorder) or rare (e.g. delusional disorder) among offenders.

Once the raw scores have been converted to BR scores, further adjustments to the BR scores are made based on the respondent's level of disclosure (scores on the psychopathology scales are decreased when the disclosure score is high, and increased when the disclosure score is low), the presence of anxiety and depression (scores on the avoidant, depressive, self-defeating, schizotypal, and borderline scales are decreased when the anxiety and depression scores are high), and the presence of defensive personality styles (scores on the histrionic, narcissistic, and compulsive scales are increased if they are the highest among the personality pathology scales). Descriptions of the personality and clinical subscales in the MCMI-III are presented in Appendix 1.

The substantial overlap between the MCMI-III scales and DSM personality disorder criteria likely reflects Millon's involvement with the DSM-IV personality disorder taskforce. Like the DSM-5 and ICD-10, the MCMI-III seeks to identify enduring symptoms, and associated social and functional impairment. Furthermore, the majority of the MCMI-III personality scales share considerable conceptual overlap with DSM-IV criteria (Millon et al., 1997). However, DSM and MCMI concepts are not perfectly aligned. One point of divergence that is likely to be important in the current research is the diagnostic criteria for antisocial personality disorder (Groth-Marnat, 2003). While the DSM-IV and DSM-5 criteria place an emphasis on overt antisocial and criminal behaviour, the MCMI-III antisocial personality items are a more direct reflection of antisocial personality traits (e.g. impulsivity, callousness, externalising). This distinction is important, as the relationship between antisocial personality disorder and criminal behaviour may simply reflect the fact that

criminal behaviour forms part of the diagnostic criteria for antisocial personality in the DSM-5. Table 1.2 shows the MCMI-III personality scales against DSM-5 and ICD-10 counterparts.

The clinical syndrome scales in the MCMI-III are provided to acknowledge “the interplay between longstanding characterological patterns and the distinctive clinical symptoms currently being manifested” (Millon et al., 1997, p. 3). The manual suggests they should be interpreted only with reference to the individual’s personality, and argues that there is no sharp distinction between Axis I (clinical) and Axis II (personality) psychopathology, although axis I syndromes tend to be more transitory. This perspective is consistent with recent personality theory (Clark, 2005) and with the removal of the Axis I/Axis II distinction between personality and clinical dysfunction in the DSM-5.

Table 1.2

MCMI-III, DSM-5, and ICD-10 personality disorders

MCMI-III	DSM-5	ICD-10
Clinical Personality Patterns		
1 Schizoid	Schizoid	Schizoid
2A Avoidant	Avoidant	Anxious
2B Depressive		
3 Dependent	Dependent	Dependent
4 Histrionic	Histrionic	Histrionic
5 Narcissistic	Narcissistic	
6A Antisocial	Antisocial	Dissocial
6B Sadistic (Aggressive)		
7 Compulsive	Obsessive-Compulsive	Anankastic
8A Negativistic (Passive-Aggressive)		
8B Masochistic (Self-Defeating)		
Severe Personality Pathology		
S Schizotypal	Schizotypal	
C Borderline	Borderline	Emotionally Unstable
P Paranoid	Paranoid	Paranoid

Psychometric Properties. The MCMI-III was developed on a sample of 600 individuals who were primarily inpatients/outpatients of psychiatric hospitals, and it was cross-validated on a second sample ($N = 398$). Analyses using the cross validation sample indicated that the scales had good internal consistency, with Cronbach's alphas ranging from .66 (compulsive) to .90 (major depression). The test-retest reliability over 5-14 days for a sub-sample ($n = 87$) ranged from .84 (anxiety) to .96 (somatoform). In general, the scales correlated well with other self-report measures of personality and clinical psychopathology. Three notable exceptions were the histrionic, narcissistic, and compulsive scales, which tended to have negative correlations with other measures of maladaptive traits (e.g. all three correlated negatively with the SCL-90-R global severity index). Millon et al. (1997) suggested that these three scales have a curvilinear shape, with moderate levels reflecting adaptive traits (sociability, confidence, and conscientiousness respectively), and high or low levels being maladaptive. Further, Millon and colleagues suggested that there are inherent difficulties assessing the functioning of individuals with histrionic, narcissistic, and compulsive disorder by self report, as they “excel in minimising problems, denying difficulties, and presenting themselves in a favourable light”. The other MCMI-III scales showed more expected correlations with psychological maladjustment, and the scales also showed good agreement with therapist ratings based on descriptions of each disorder consistent with Millon’s evolutionary model of personality and DSM-IV criteria (Millon et al., 1997).

The convergence between MCMI-III scores and clinical ratings was also explored in research by Rossi, Hauben, Van den Brande, and Sloore (2003). Their sample comprised 853 respondents with MCMI-III profiles (39% from prisons, and 61% from clinical settings), of which 330 were also assessed by clinicians for the presence of personality disorders. Rossi et al. found that the prevalence of clinician-rated personality disorder was similar to reported

MCMI-III personality disorder ($BR \geq 85$) for the schizoid, avoidant, passive-aggressive, schizotypal, and paranoid scales. However, the MCMI-III tended to underdiagnose relative to clinician ratings on the histrionic, narcissistic, antisocial, sadistic, compulsive, and borderline scales, and over-diagnose on the depressive, dependent, and self-defeating scales. In general, clinical ratings of each disorder were more strongly correlated with the corresponding MCMI-III scale than with other MCMI-III scales.

Positive Features. The MCMI-III has a number of strengths, including the dimensional structure of both the scale and the underlying theory, the ability to take into account co-morbidity both between personality disorders and with Axis I syndromes, and the ability to provide an indication of the severity of personality dysfunction. These three strengths will be explored in turn.

Dimensional structure. The underlying assumption that personality is dimensional and multifaceted fits well with recent conceptualisations of personality disorder (Clark, 2007; Livesley, 2012a; Widiger & Simonsen, 2005), and is reflected by increasing dissatisfaction with the categorical model implied in the DSM-5 and ICD-10. Consistent with a dimensional theory of personality pathology, the MCMI-III manual stresses the heuristic nature of diagnostic cut-offs: “Normality and pathology of personality exist on a continuum. The sharp diagnostic dividing line created in the official manual, and the BR 75 and 85 thresholds in the MCMI, are created for practical purposes. Such divisions do not exist in reality” (Millon et al., 1997, p. 123).

Co-morbidity. The format of the MCMI-III encourages personality pathology to be interpreted in the context of the overall profile of self-reported personality and clinical symptomatology. There is evidence that personality and clinical disorders co-occur, whether as a result of multiple pathologies, or symptoms in common (Clark, 2007). For example, Coid et al. (2009) found that antisocial, borderline, narcissistic, paranoid, schizoid, schizotypal,

obsessive-compulsive, dependent, and avoidant personality disorders were each associated with an increased chance of diagnostic co-morbidity with Axis I clinical disorders.

Personality and clinical disorders are no longer on separate axes in the *DSM-5* as they were in the *DSM-IV-TR*. Widiger and Simonsen (2005) assert that "there is no sharp distinction between Axis I and Axis II phenomena. The scales of every personality inventory...reflect in varying degrees both long-standing (i.e., traits) and more transitory characteristics (i.e., states)" (p. 8).

Severity. A common criticism directed at classification systems like the DSM is that by providing a list of diagnostic criteria they describe the nature of personality dysfunction, but not the severity of impairment associated with the personality dysfunction (Verheul, 2005). The MCMI-III provides an indication of clinical severity in three different ways. First, scores on each scale may be interpreted in relation to two different clinical cut-offs: scores over 75 indicate the presence of clinically significant personality traits, while scores over 85 indicate that pathology is likely to be severe enough to constitute personality disorder. A second indication of the severity of personality dysfunction comes from scores on the severe personality pathology scales, which can be interpreted as highly dysfunctional variants of the basic personality disorders. Finally, the clinical symptomatology (Axis I) scales can also give an indication of the nature of impairment and level of distress associated with personality pathology.

Limitations. Despite the strong theoretical and empirical base of the MCMI-III, the scale has a number of limitations. First, although it provides good coverage of personality pathology listed in the DSM-5 and ICD-10, it does not explicitly measure more adaptive personality styles. The primary difference between the MCMI-III and measures of non-pathological personality traits such as Costa and McCrae's (1992) five factor model—neuroticism, extraversion, openness, agreeableness, and conscientiousness—is the focus on

primarily maladaptive and inflexible personality styles. Assessment of more adaptive personality traits may reveal individual strengths that serve a protective function against criminal behaviour. However, substantial correlations between the MCMI-III and measures of normal personality indicate shared variance (Saulsman & Page, 2004), suggesting that measures of personality pathology and measures of normal personality cover similar ground.

Millon and colleagues (1997) cautioned against interpreting subclinical ($BR < 75$) scores as milder versions of the full-blown disorders, because these scores may not reflect maladaptive traits. For example, the item “I think I am a very sociable and outgoing person” loads negatively on the schizoid and avoidant scales, but positively on the histrionic and narcissistic scales. There is also likely to be more heterogeneity among individuals who only show some of the traits on a given scale than there is among individuals who exhibit the majority of the traits. Due to the inherent inflexibility and self-perpetuating nature of personality disorders, individuals with personality disorder are likely to show impairment in a range of situations, whereas individuals who report lower levels of a given trait may vary over time and in different contexts.

A second limitation with the MCMI-III is that compared to previous versions of the scale—the MCMI-I and MCMI-II—there has been little psychometric validation outside of the test manual (Craig, 2013). The only extensive validation study that was not conducted by Millon and colleagues found lower correspondence between MCMI-III scores and clinical ratings than reported in the manual (Rossi et al., 2003). Furthermore, there has been little reported empirical evidence supporting the adjustments to other scales made for disclosure, anxiety/depression, and defensive personality styles. Although it is likely that the validity of self-report measures can be compromised by self-presentation and current symptomatology, no data is reported on the efficacy of the MCMI-III adjustments in increasing the validity of the scale.

A final consideration for the use of the MCMI-III in this research is that it relies exclusively on offender self-report. It is relatively common to use self-report measures to assess personality style (e.g. Malouff, Thorsteinsson, & Schutte, 2005). However, greater caution is required in the assessment of personality disorder, as diagnostic error is more likely to be harmful to the individual being assessed. Millon et al. (1997) recommended that the MCMI-III not be used as a stand-alone diagnostic tool. While it may provide useful information on psychological functioning, diagnoses should only be made by skilled clinicians who also take into account other sources of information, including interviews, observation of client behaviour, and knowledge of relevant demographic and historical information (Clark, 2007; Millon et al., 1997). It is possible that some offenders lack sufficient self-awareness to accurately report on their psychological functioning, and this may be especially true for offenders with personality disorder. Furthermore, when psychometric assessment may inform treatment planning and parole board decisions, offenders have an incentive to present themselves in the best possible light. Due to the potential pitfalls of self-report measures, questions of the validity of offender self-report are explored throughout this research.

The Current Research

The following four chapters describe an empirical investigation into the personality profiles of high risk offenders entering rehabilitation. In Chapter Two I describe empirical clusters identified on the basis of self-reported personality and clinical psychopathology (MCMI-III). Next, I explore the clinical utility of the clusters in light of two relevant research areas in offender rehabilitation: risk assessment (Chapter Three), and treatment response (Chapter Four). In Chapter Five I examine potential barriers to the validity of self-report. In the final chapter I summarise and integrate the research findings, describing the overall implications and clinical significance the findings have for offender rehabilitation.

Chapter Two

Offender Personality Profiles

“Understanding the taxonomic structure of a deviant population is the keystone of theory building and the cornerstone of intervention”

(Knight & Prentky, 1990, p.23)

The previous chapter reviewed evidence that maladaptive personality styles are common among high-risk offenders and may be an important source of inter-individual variation in offender rehabilitation. The MCMI-III was presented as an instrument that could capture some of the personality heterogeneity in offender samples. Research on offender personality can be complicated by co-morbidity between personality disorders, and a high prevalence of associated clinical syndromes. One technique that has been used to understand different patterns of personality style and clinical syndromes is cluster analysis (CA). CA is an exploratory data reduction procedure used to identify patterns and reveal structure in complex multivariate data. CA procedures have been used to identify relatively homogeneous subgroups of offenders with distinct patterns of personality and clinical psychopathology. CA is well suited to research on offender psychopathology because it can provide a representation of the co-morbidity seen between psychological disorders. Furthermore, CA of continuous measures of psychopathology permits analysis at both clinical and sub-clinical levels of severity, rather than focusing solely on the presence or absence of individual disorders. CA of offender characteristics has been instrumental in the formation of offender typologies (Blackburn, 1986; 1996; Knight & Prentky, 1990), and the empirical evaluation of typological theory (Skeem, Johansson, Andershed, Kerr, & Louden, 2007).

Offender Psychopathology Profiles

Previous CA research with offenders has used diverse samples (e.g., general offender populations, domestic violence perpetrators, psychopathic offenders) with equally diverse levels of estimated criminal risk. Studies differ on the clustering variables, the CA technique, and the external variables on which the clusters are compared. Two key areas where CA research has been employed include the identification of subtypes among criminal psychopaths, and among domestic violence perpetrators. I will explore each area of research

in turn, and discuss how the findings may inform predictions for patterns of psychopathology among high-risk offenders.

Psychopathic Subtypes. The construct of psychopathy is ubiquitous in offender rehabilitation. Not only are measures of psychopathic personality strong predictors of criminal behaviour (Leistico, Salekin, DeCoster, & Rogers, 2008), psychopathy is also thought by some to be a barrier to successful rehabilitation (Andrews & Bonta, 2010; Serin, 1995). However, theoretical and empirical research increasingly suggests that there is heterogeneity in the psychopathy construct. *Primary* and *secondary* variants of psychopathy are thought to differ in their aetiology, symptomology, and prognosis for effective treatment (Karpman, 1948; Skeem et al., 2007). Karpman (1948) argued that although *primary* and *secondary* psychopaths share many cardinal features of psychopathy—lack of conscience and empathy, irresponsibility, failure to learn from experience—they differ in important ways. The psychopathic features of *secondary* psychopaths reflect hostility and neuroses resulting from childhood attachment and environment, and they are therefore likely to respond to psychological treatment. In contrast, Karpman believed the self-centred and irresponsible behaviour of *primary* psychopaths reflects a constitutional lack of conscience, that cannot be modified with treatment.

More recently, CA has been used to empirically explore questions of heterogeneity in the psychopathy construct. This research has typically used psychometric measures—psychopathy features, self-reported anxiety, and sometimes substance dependence—in a CA of psychopathic prisoners.

Skeem et al. (2007) used the interpersonal, affective, behavioural, and antisocial facets of the Psychopathy Checklist-Revised (PCL-R: Hare, 1991) and self-reported anxiety in a CA with a sample of 123 male psychopathic violent offenders. They found two clusters: *primary psychopaths* had higher scores on the interpersonal, affective, and behavioural facets

of psychopathy, while *secondary psychopaths* had higher scores on trait anxiety. Interestingly for the current research, the two clusters were also found to differ on other aspects of psychopathology. Compared to *secondary psychopaths*, *primary psychopaths* had higher clinical functioning, lower borderline, avoidant, and dependent personality disorder, and lower somatic anxiety, social withdrawal, and major mental illness. However, there were no differences between the two clusters on narcissistic, histrionic, antisocial, paranoid, schizoid, schizotypal, and obsessive personality disorder.

A similar CA with prison inmates used the interpersonal, affective, and behavioural facets of the PCL-R along with measures of interpersonal psychopathy, alcohol and drug abuse, and trait anxiety. Swogger and Kosson (2007) found four clusters, two of which resembled the *primary psychopaths* and *secondary psychopaths* found by Skeem et al. (2007). The remaining two clusters were labelled *low-psychopathology criminals* and *criminals with negative affect*, and were found to have less serious and less extensive criminal histories than the *primary* and *secondary* psychopathic clusters. A third study using similar methodology found four similar clusters (Vassileva, Kosson, Abramoqitz, & Conrod, 2005).

Domestic Violence Subtypes. A second body of research has developed around the identification of subtypes among perpetrators of domestic violence. In a review of clinical, theoretical, and empirical research in this area, Holtzworth-Munroe and Stuart (1994) proposed a 3-fold typology based on the severity and generality of violence, and personality and clinical psychopathology. They described *Family-Only* batterers as primarily engaging in mild forms of domestic violence, and generally restricting their violence to family members. They were thought to have little psychopathology aside from passive/dependent traits. *Dysphoric/Borderline* batterers were described as engaging in moderate to severe domestic violence, in addition to some violent and criminal behaviour outside the family. They were

thought to be dysphoric, psychologically distressed and emotionally volatile, with borderline and schizoid traits, and substance abuse problems. *Generally Violent/Antisocial* batterers were described as engaging in moderate to severe domestic violence, with violent and criminal behaviour not limited to the family. They were thought to have antisocial and psychopathic traits, and substance abuse problems.

A number of CA studies have tested this domestic violence typology. These studies generally use self-reported measures of violence severity and generality, and psychopathology scales to identify clusters among domestic violence perpetrators. Tweed and Dutton (1998) used a scale measuring the frequency and severity of abuse, and the borderline, schizoid, and major depression scales from the MCMI-II in a CA with a sample of men in treatment for domestic violence. They found two clusters. An *impulsive* cluster reported more psychopathology overall, and had high scores on passive-aggressive, antisocial, avoidant, and borderline personality disorder, but reported slightly less severe physical violence. An *instrumental* cluster had high scores on sadistic, antisocial, and narcissistic personality disorder. They reported more histrionic and narcissistic personality disorder than the *impulsive* cluster, and more severe physical violence. Tweed and Dutton likened their *impulsive* cluster to Holtzworth-Munroe and Stuart's (1994) *dysphoric/borderline* subtype, while the *instrumental* cluster resembled the *generally violent/antisocial* subtype.

In a similar study, Huss and Ralston (2008) used batterers' scores on borderline, antisocial, and depressive MCMI-III scales and physical violence scales in a CA. They found three clusters, which resembled Holtzworth-Munroe and Stuart's (1994) *family only*, *dysphoric/borderline*, and *generally violent/antisocial* subtypes. The *family only* cluster reported the least violence, and the least depressive, antisocial, and borderline personality disorder of the three clusters. The *generally violent/antisocial* cluster reported the most violence and antisocial personality disorder, and the *borderline/dysphoric* cluster reported the

most depressive personality disorder. The *family only* cluster was also found to have a lower rate of domestic violence recidivism after treatment compared to the other two clusters.

A third study found similar results by using batterers' scores on the antisocial, borderline, and dependent MCMI scales and scales of physical violence in a CA (Eckhardt, Holtzworth-Munroe, Norlander, Sibley, & Cahill, 2008). In addition to *family only*, *dysphoric/borderline*, and *generally violent/antisocial* subtypes, they also found a *low-level antisocial* subtype, who reported more antisocial personality disorder, and more frequent and severe violence than the *family only* subtype, but less violence than the other two subtypes.

The reviewed literature on psychopathic and domestic violence subtypes illustrates that CA of offender characteristics can be used as a tool to evaluate and expand on theoretical typologies. Because psychopathic and domestic violence samples overlap with the general offender population, it is likely that psychopathic and domestic violence subtypes will be represented to some extent in typological research with samples of offenders in general.

Research looking for psychopathic and domestic violence subtypes has used relevant theory to guide the selection of clustering variables that distinguish between the hypothesised subtypes. However, some studies have taken a more exploratory approach to the identification of offender clusters, by using scales that cover a range of personality and clinical psychopathology features.

Exploratory CA of Offender Psychopathology. Blackburn and colleagues have investigated offender psychopathology patterns in CA research with violent offenders (Blackburn, 1986; Blackburn & Coid, 1999) and mentally disordered offenders (Blackburn, 1996). Based on self-report measures of personality psychopathology, they identified four main offender subtypes (Blackburn, 1986; 1996). *Primary psychopaths* reported the most narcissistic, antisocial, and histrionic personality disorder; *secondary psychopaths* reported the most extensive personality psychopathology, in particular avoidant, schizoid, antisocial,

passive-aggressive, and paranoid personality disorder; *controlled personalities* reported very little psychopathology; and *inhibited personalities* were the most distressed and socially withdrawn, but reported little antisocial/externalising psychopathology. In a similar approach, Wales (2005) used self-report measures of personality psychopathology in a CA with a sample of child sex offenders. He found four clusters which closely resembled Blackburn's (1996) *primary*, *secondary*, *controlled*, and *inhibited* subtypes.

While Blackburn and Wales focussed primarily on personality disorder, other CA research included both personality and clinical psychopathology (Beech, Oliver, Fisher, & Beckett, 2005; Weekes & Morison, 1993). Weekes and Morison (1993) found five clusters among incarcerated offenders. Similar to Blackburn's (1986; 1996) *secondary* psychopaths, a cluster with extensive psychopathology emerged with scores in the clinical range on many personality scales, along with anxiety and substance abuse. Two additional clusters with prominent antisocial and narcissistic personality disorder resembled Blackburn's *primary* psychopaths. These clusters also reported high levels of drug abuse, but little other psychopathology. Two final clusters reported less psychopathology, and resembled Blackburn's *controlled* and *inhibited* clusters. In a similar study, Beech et al. (2005) found three clusters based on the personality and clinical psychopathology patterns of adult sex offenders in prison rehabilitation programmes. The first cluster reported very little psychopathology overall: most prominent were compulsive, narcissistic, and histrionic disorders. The second cluster resembled Blackburn's (1996) *primary* psychopaths, with profiles that featured antisocial and narcissistic personality disorder and substance abuse. However, this cluster also reported moderate (non-clinical) levels of anxiety and depressive personality, not typically associated with psychopathy (Skeem, Polaschek, Patrick, & Lilienfeld, 2011). The final cluster resembled Blackburn's (1996) *secondary* psychopaths,

reporting avoidant, depressive, dependent, antisocial, and self-defeating personality disorder, as well as anxiety, dysthymia, and substance dependence.

By far the majority of CA studies of offender psychopathology have used self-report measures to identify psychopathology. By contrast, using clinician-rated measures of psychopathology, Blackburn and Coid (1999) found six clusters. The three clusters with the highest levels of criminal risk³ were (a) a cluster with extensive psychopathology, but especially antisocial, borderline, and passive-aggressive personality disorder, (b) a cluster with primarily antisocial and narcissistic personality disorder, and (c) a paranoid/antisocial cluster.

Although the reviewed studies differ regarding the number of clusters identified, two patterns consistently emerge: a *high-psychopathology* cluster, reporting extensive personality psychopathology which reflected distress, social withdrawal, and hostility; and an *antisocial/narcissistic* cluster, with reported personality psychopathology limited to antisocial and narcissistic traits. Both patterns appear to be associated with substance abuse, but the *high-psychopathology* pattern features more anxiety and depressive psychopathology (Beech et al., 2005; Weekes & Morison, 1993). These clusters have been identified in research with perpetrators of domestic violence (Hamberger, Lohr, Bonge, & Tolin, 1996; Rothschild, Dimson, Storaasli, & Clapp, 1997), psychopathic inmates (Hicks, Markon, Patrick, Krueger, & Newman, 2004), and substance abusers (McMahon, 2008). As noted above, some studies identify additional clusters, but there is little consistency between studies on the nature of these. A table with the main features of the *antisocial/narcissistic* and *high-psychopathology* patterns with examples from the reviewed research is provided in Appendix 2. These two patterns are also likened respectively to the *primary/secondary* subtypes from the

³ Based on PCL-R scores and criminal history

psychopathy literature, and the *generally violent-antisocial/borderline-dysphoric* subtypes from the domestic violence literature.

Number of Clusters and Criminal Risk

An important determinant of the number of clusters identified appears to be estimated criminal risk level of the research sample. Studies using more risk-heterogeneous samples tend to find more clusters than those concentrating only on high risk offenders. For example, studies that use high scorers on the PCL-R have obtained two clusters (Hicks et al., 2004; Skeem et al., 2007). In contrast, studies from unselected criminal samples generally find three to six clusters, whether they construct clusters using PCL-R data (Swogger & Kosson, 2007; Vassileva et al., 2005), or other measures of psychopathology (Blackburn, 1986; Blackburn, 1996; Blackburn & Coid, 1999; Beech et al., 2005; Wales, 2005; Weekes & Morison, 1993). Furthermore, studies that identify more than two clusters find their clusters differ on measures related to criminal risk: PCL-R scores (Blackburn & Coid, 1999; Wales, 2005) and/or criminal history (Blackburn & Coid, 1999; Swogger & Kosson, 2007; Vassileva et al., 2005).

Lastly, when examining criminal risk in relation to specific psychopathology patterns, the *antisocial/narcissistic* and *high-psychopathology* patterns have been associated with more extensive criminal histories (Blackburn & Coid, 1999) and higher PCL-R scores (Blackburn & Coid, 1999; Wales, 2005) than other psychopathology profiles. Taken together, these studies suggest that *antisocial/narcissistic* and *high-psychopathology* clusters contain higher risk individuals than clusters with other psychopathology profiles.

The Current Research

The current research sought to extend the findings of previous research to a sample of high-risk offenders participating in a New Zealand rehabilitation programme. This chapter describes the identification of patterns of self-reported personality and clinical

psychopathology using CA. The validity and clinical utility of the cluster solution are explored further in Chapters Three, Four, and Five.

Based on previous research—and due to the high risk nature of the sample—I expected to find one cluster with high overall personality and clinical psychopathology (especially passive-aggressive, avoidant, and borderline personality disorder, along with anxiety and substance abuse). I also expected to find a cluster with an antisocial-narcissistic profile, prone to substance abuse, but with little other psychopathology. I did not have specific predictions about the existence or nature of any further clusters.

Method

Participants

The data reported in this thesis were from 623 male offenders who were undergoing assessment for an intensive prison-based rehabilitation programme run by the New Zealand Department of Corrections between 1998 and 2012. During the programmes, the men completed a range of psychometric assessments, both at the beginning and at the end of treatment. Demographic information and additional therapist-rated measures were also available in the database. Only men with complete and valid⁴ pre-programme Millon Clinical Multiaxial Inventory III scores were selected. Of the 618 men (99% of the sample) who had ethnicity information, 61% identified as Māori, 26% as European/Pākehā, 11% as Pasifika, and 2% as another ethnicity. The mean age at the start of the programme ($n = 621$) was 32 years ($SD = 9$).

Programmes. The treatment programmes in the current research were residential closed-group programmes of roughly 10 prisoners per group, and two therapists: a psychologist and a programme facilitator. Men participated in (a) a general programme for high-risk offenders ($n = 220$), (b) an adult sex offender treatment programme ($n = 55$), or (c)

⁴ The three-item validity index on the MCMI-III indicates careless responding, and only tests with validity scores of 0 or 1 were considered valid in this study.

a programme for repetitive violence ($n = 348$). The core treatment programmes ran for approximately 25 weeks. Standard admission criteria included having a high level of criminal risk (estimated 5 year risk of re-incarceration of at least 70%), a minimum or low-medium security rating, being at least 20 years of age, and having agreed to participate in the programme.

The programmes were embedded in a therapeutic community based on democratic principles, to facilitate social learning. Treatment was broadly cognitive behavioural, and consistent with the *risk, needs, responsivity* model of offender rehabilitation (Andrews & Bonta, 2010). Treatment included assessment, examination of previous offence patterns, development of treatment goals, skill acquisition (addressing emotion regulation, substance abuse, social skills, and problem solving), and reintegration planning. Programme evaluations suggest that the programmes produced small but significant reductions in criminal risk (Polaschek & Kilgour, 2013). The programmes are described in greater detail in Polaschek and Kilgour (2013), and Wilson, Kilgour, and Polaschek (2013).

Datasets. The data used in this research came from three sources. The bulk of the psychometric and descriptive data was collected and scored as a routine part of the assessment phase of treatment. An additional measure—the short form of the Working Alliance Inventory—was collected for a subset of the men in the sample as part of a doctoral research project completed by Elizabeth Ross (2008), and is described further in Chapter Four. Data concerning criminal convictions after the programme were obtained separately, and are described further in Chapter Three.

Cluster Analysis Variables

The current study used scales from the MCMI-III (described in Chapter One) to identify patterns of self-reported psychopathology. The variables used to derive clusters in this chapter were the 14 clinical personality scales (schizoid, avoidant, depressive, dependent,

histrionic, narcissistic, antisocial, sadistic, compulsive, passive-aggressive, self-defeating, schizotypal, borderline, and paranoid), and 10 clinical syndrome scales (anxiety, somatoform, bipolar manic, dysthymia, alcohol dependence, drug dependence, post-traumatic stress disorder, thought disorder, major depression, and delusional disorder). Both personality and clinical psychopathology scales were included to reflect high co-morbidity and lack of clear distinctions between Axis I and II disorders (Clark, 2005; Millon et al., 1997). I refer to these 24 scales collectively as the MCMI-III psychopathology scales. As mentioned in the previous chapter, BR scores of 85 or higher indicate that a clinical diagnosis is likely (scores in this range will be referred to as ‘clinical-level’ scores), and scores between 75 and 84 indicate the presence of traits consistent with the disorder (‘trait-level’ scores). Scores of 74 or below do not point to the presence of clinical dysfunction (‘sub-clinical’ scores), although this does not necessarily imply normal functioning. Pre-treatment scores were used for the CA, as these scores are available early in treatment, and may assist therapist decision making⁵. However, for a subset of the men ($n = 302$) post-treatment MCMI-III scores were also available. These post-treatment scores were used for the analyses in Chapter Four.

Data Analytic Procedure

The extent of reported personality and clinical psychopathology for the whole sample was assessed by calculating the means and the percentage over the $BR \geq 75$ and $BR \geq 85$ cut-offs on the 24 MCMI-III psychopathology scales. Next, patterns of psychopathology were identified using a combination of principal components analysis and CA.

There were three steps to the identification of psychopathology patterns. First, principal components analysis was used to reduce the 24 MCMI-III psychopathology scales into a more manageable number for CA. There are several problems with using scale scores

⁵ Pre-treatment scores are also more likely to resemble the MCMI-III scores of offenders who are not in treatment, potentially expanding the applicability of the current results to the broader prison population.

directly in a CA. Including too many variables that do not differentiate well between clusters may obscure the cluster solution, so it is preferable to include a limited number of scales (Everitt, Landau, & Leese, 2001). In addition, if some scales are highly correlated, their shared variance may contribute more to the resulting cluster solution than variance tapped by a single scale, therefore PCA may be used first to identify a smaller number of standardised variables for the CA (Jobson, 1992). Once principal components had been identified, scores on each of the resulting components were generated for each case (based on each man's MCMI-III data).

The second step was to use the component scores for each case in a CA, which assigns each case to a cluster, based on similarities in their scores on the components. A combination of Ward's method and *k*-means cluster analysis was used.

Finally, once every case had been assigned to a cluster, the resulting clusters were compared on their reported personality and clinical psychopathology. The clusters were compared on the MCMI-III components from the principal components analysis, the original MCMI-III scales, age, and ethnicity.

The statistical programme SPSS 18 was used for all analyses in the current research. By convention, an alpha level of 0.05 is considered statistically significant for comparisons between the clusters.

Results

In order to determine the extent of personality and clinical psychopathology reported by the sample as a whole, means and the percentage of the sample with $BR \geq 75$ and $BR \geq 85$ on each of the 24 MCMI-III personality and clinical psychopathology scales are presented in Table 2.1. The most frequently reported personality disorders were antisocial (60% of the sample), passive-aggressive (35%), self-defeating (34%), and depressive (32%). The most frequently reported clinical symptomatology was alcohol dependence (53% of the sample),

anxiety (51%), and drug dependence (42%). Only 8.5% of the sample reported no personality or clinical psychopathology at the trait level ($BR \geq 75$), and on average individuals in the sample reported trait level psychopathology on 5 of the 24 MCMI-III scales.

Table 2.1

Means and prevalence of MCMI-III disorders for the full sample (N = 623)

	<i>M</i>	<i>SD</i>	Percentage over cut-off	
			≥ 75	≥ 85
1 Schizoid	59.8	22.0	23.3	6.9
2A Avoidant	53.3	27.3	27.0	5.6
2B Depressive	58.4	28.4	32.3	13.0
3 Dependent	48.4	26.7	18.0	4.2
4 Histrionic	44.3	15.6	2.4	1.1
5 Narcissistic	60.0	17.6	17.8	10.3
6A Antisocial	74.1	15.0	59.6	23.8
6B Sadistic	59.4	17.9	18.8	4.5
7 Compulsive	45.1	14.1	1.8	0.6
8A Passive Aggressive	55.1	28.3	35.0	10.3
8B Self Defeating	55.2	28.4	33.5	5.3
S Schizotypal	52.5	26.8	13.3	3.0
C Borderline	54.0	22.5	16.5	4.5
P Paranoid	58.3	25.2	17.3	8.2
A Anxiety	56.2	33.4	50.7	21.2
H Somatoform	36.8	27.4	1.0	0.5
N Bipolar Manic	56.4	19.0	7.7	2.2
D Dysthymia	46.9	28.8	14.6	1.4
B Alcohol Dependence	72.1	17.5	53.3	20.7
T Drug Dependence	71.3	17.0	41.6	19.9
R PTSD	45.1	27.8	9.5	2.9
SS Thought Disorder	45.5	25.5	3.2	0.5
CC Major Depression	35.1	26.5	1.4	0.8
PP Delusional	50.1	25.5	5.6	1.9

Principal Components Analysis (PCA)

A correlation matrix for the pre-programme scores on the 24 psychopathology scales in the MCMI-III revealed that the majority of the scales correlated with each other, with a mean $r = .44$ (Appendix 3). Principal components analysis of these 24 scales was used as a data reduction strategy to decrease the number of variables for CA, reduce correlations between clustering variables, and standardise the clustering variables (Everitt et al., 2001; Jobson, 1992). Oblique (oblimin) rotation was used, due to expected correlations between components (e.g. Rushton & Irwing, 2009). The Kaiser-Meyer-Olkin measure was .93, which suggests the sample size was more than adequate for the analysis (Field, 2009). Bartlett's test of sphericity was significant ($p < .001$), indicating that correlations between scales were sufficiently large for data reduction.

Using Kaiser's criterion of eigenvalues greater than 1, four components emerged, that together explained 68.64% of the variance. An additional method to determine the number of components to retain is to examine the scree plot (Figure 2.1). It is clear that the first component accounted for a substantial proportion of the variance, and subsequent components accounted for considerably less. Components after the fourth component accounted for very little variance.

The rationale for using principal components analysis was to reduce the MCMI-III clinical data for CA, while retaining as much information as possible. Therefore I elected to follow Kaiser's criterion, as it errs on the side of retaining extra components (Pallant, 2007, p. 182), which may have theoretical value. A four-component solution was selected for further analysis⁶. The average of the communalities after extraction was .69 (*range* = .53-.82), which suggests that a substantial proportion of the scale variance is captured by the four components. The component loadings for the four-component solution is shown in Table 2.2.

⁶ For comparison, see Appendix 4 for one-factor, two-factor, and three-factor solutions.

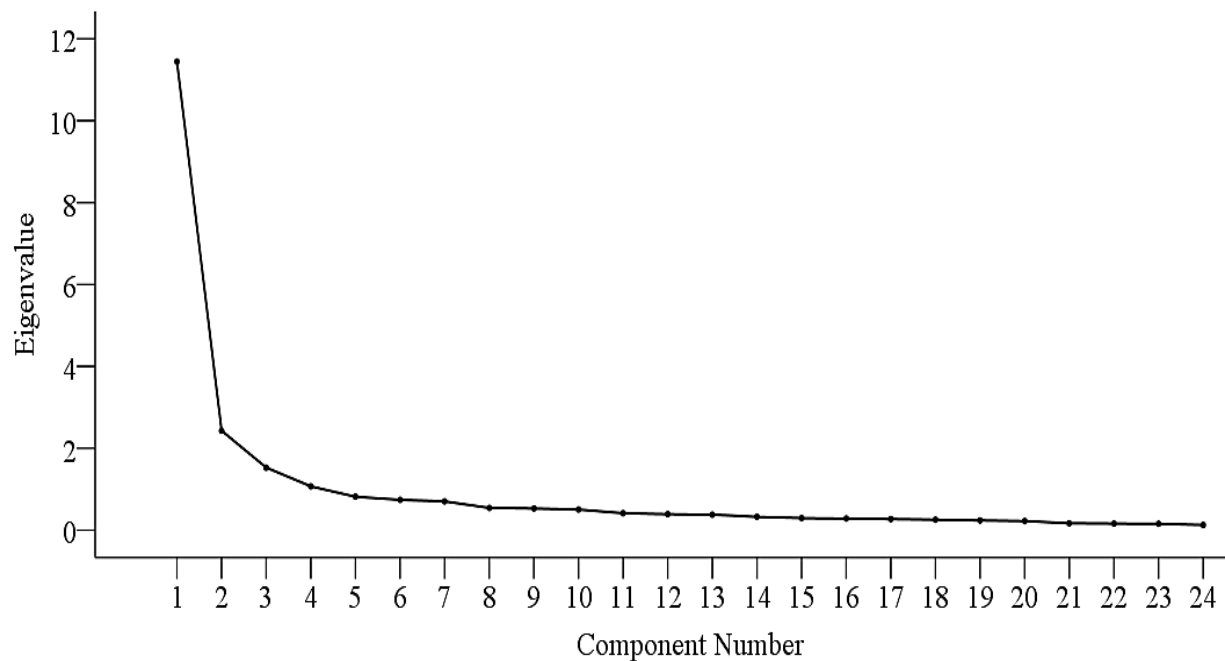


Figure 2.1. Scree plot for principal components analysis.

The first component—internalising psychopathology—accounted for 47.69% of the variance, and the strongest loadings were for scales associated with depression, anxiety, and distress. The second component—externalising psychopathology—accounted for an additional 10.12% of the variance. The scales in this component share an underlying theme of impulsivity and lack of social conformity, and the personality disorders are associated with interpersonal hostility and aggression. The final two components included scales relating to interpersonal style. The third component—admiration-seeking—accounted for 6.37% of the variance, and featured the narcissistic and histrionic personality disorder scales, associated with a self-centered attention-seeking manner. Finally, the fourth component—social withdrawal/eccentricity—accounted for an additional 4.46% of the variance, and featured the odd or eccentric personality disorders, reflecting interpersonal mistrust and eccentric thought patterns. The bipolar manic scale did not load strongly on any component⁷.

⁷ The bipolar manic scale had a weak loading of .39 on component 1. For convenience, this scale has been grouped with component 1 scales in the following analyses.

Table 2.2

Principal components analysis of MCMI-III psychopathology scales (N = 623)⁸

Component		1	2	3	4
Internalising	CC Major Depression	.94			
	R PTSD	.87			
	H Somatoform	.86			
	A Anxiety	.76			
	D Dysthymia	.75			
	2B Depressive	.58			
	3 Dependent	.56			
	SS Thought Disorder	.53			
	8B Self Defeating	.51			
	N Bipolar Manic				
Externalising	6A Antisocial		.94		
	T Drug		.84		
	B Alcohol		.74		
	6B Sadistic		.66		
	7 Compulsive		-.56		
	C Borderline	.45	.46		
Admiration-seeking	5 Narcissistic			.87	
	4 Histrionic			.71	-.48
Social withdrawal/eccentricity	PP Delusional				.81
	P Paranoid				.77
	1 Schizoid				.74
	S Schizotypal				.62
	2A Avoidant				.56
	8A Passive Aggressive				.42

⁸ For clarity, only loadings of 0.4 or above are shown in Table 2.2, as lower loadings are considered to explain little variance (Field, 2009).

Correlations between the four components are presented in Table 2.3. Moderate correlations between the components were expected in line with relationships between psychopathology dimensions reported in previous research (Rushton & Irwing, 2009).

Table 2.3

Correlations between principal components

	INT	EXT	ADM	SW/E
Internalising	-	.43**	-.27**	.60**
Externalising	.43**	-	-.03	.42**
Admiration-seeking	-.27**	-.03	-	-.09*
Social-withdrawal/eccentricity	.60**	.42**	-.09*	-

Note. * $p < .05$; ** $p < .01$; INT = Internalising, EXT = Externalising, ADM = Admiration-seeking, SW/E = Social-withdrawal/eccentricity.

To derive scores for each individual on each of the four components I used the regression method, which weights the component scores according to the loading of each scale on each component. These component scores for each case were saved to use in the CA.

Cluster Analysis

A common approach in the offender subtyping literature is to use a hierarchical CA technique like Ward's method to identify the number of clusters, followed by a non-hierarchical method like k -means to allocate cases to clusters (Blackburn & Coid, 1999; Eckhardt, Samper, & Murphy, 2008; Spaans et al., 2009). Ward's method is a hierarchical agglomerative method of CA: clusters are formed by progressively linking cases, starting with the two cases most similar to each other. One pitfall of hierarchical methods of CA is that the nature of the clusters may change as more cases are added to the cluster. As a result, cases assigned to clusters early in the procedure may no longer be in the best-fitting cluster by the end. For this reason, once Ward's method has been used to identify the optimal number of clusters, the non-hierarchical k -means technique is often used to produce final

cluster allocations. *K*-means is a partitioning method of CA. Cases are assigned to a pre-specified number of groups based on proximity to the cluster centres (Jobson, 1992).

CA in the current research was a two-stage process which involved first Ward's method, and later *k*-means. In the first stage, the four principal component regression scores for each case were used in a Ward's method CA, to identify the optimal number of clusters in the sample and the location of the cluster centres. Euclidian distances squared was selected as the similarity measure. In order to determine the best number of clusters, it is necessary to identify the point at which dissimilar clusters combine. Figure 2.2 plots the agglomeration coefficient—an index of the distance between the two clusters being combined—against cluster solutions from 10 clusters down to 1 cluster.

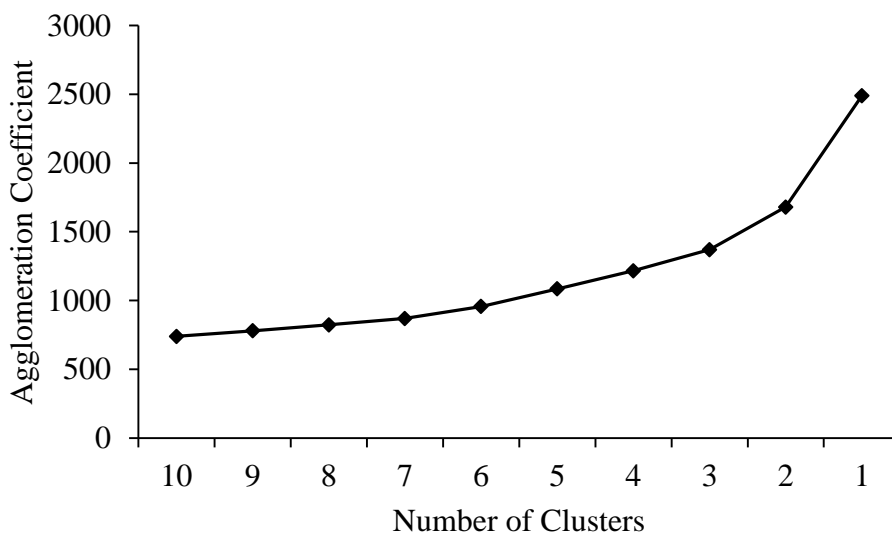


Figure 2.2. Agglomeration coefficients for cluster solutions from 1 cluster to 10 clusters.

The slope is relatively smooth until there is a jump in the agglomeration coefficient when three clusters were combined to form two clusters. This jump suggests that in a two-cluster solution dissimilar clusters have been combined, and a three-cluster solution may be optimal. There was a further jump in the agglomeration coefficient when two clusters were combined to form one cluster.

Another common way to identify the point at which dissimilar clusters combine is to look at the dendrogram (Figure 2.3). The dendrogram is another visual representation of the distance between clusters as they are combined. It is presented in the form of a tree diagram, with distances re-scaled on a metric from 0 to 25. On the left-hand side each case begins in a separate cluster, and similar cases are progressively joined until all cases are in the same cluster on the right-hand side of the figure. Vertical lines show the distance between the two clusters being joined.

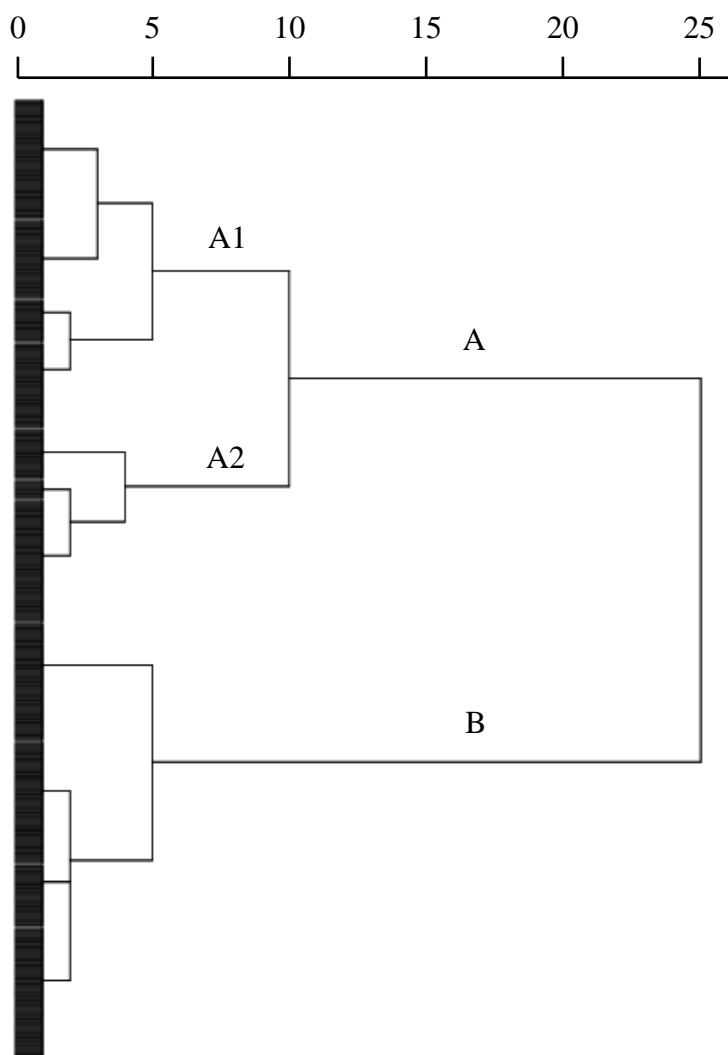


Figure 2.3. Dendrogram showing inter-cluster distances as clusters are combined.

It is clear from the dendrogram that the single cluster on the right was comprised of two distinct clusters that differed to a large degree (clusters A and B). One of these two clusters was comprised of two further clusters (clusters A1 and A2). After this point, multiple further clusters broke off in very quick succession, with little increase in cluster distance. Therefore, like the scree plot in Figure 2.2, the dendrogram suggested that dissimilar clusters would be combined if three clusters were merged into two clusters, and again if two clusters were merged into one. As the aim of the current research was to identify dissimilar clusters, the three cluster solution was selected.

Cluster Split-Half Reliability. To determine whether a three-cluster solution was reliable across subsets of the dataset, cases were randomly allocated into one of two groups, and the Ward's method analysis was repeated for each of the subsets ($n = 311$ in subset 1 and $n = 312$ in subset 2). For each subset, the dendrogram and the scree plot both indicated a three-cluster solution was optimal (Appendix 5). These results suggest that a three-cluster solution was reliable across subsets of the dataset, and this solution was selected for further analyses using the full dataset.

As mentioned earlier, once Ward's method has been used to identify the optimal number of clusters, k -means CA is often used to assign cases to the best-fitting cluster. Therefore, the final step in the cluster assignment process was a k -means analysis, specifying three clusters, and using the cluster centres from the Ward's method CA.

Cluster Descriptions and Comparisons

Once all cases in the dataset had been allocated into one of the three clusters, differences between the clusters in personality and clinical psychopathology, age, and ethnicity were explored. Cluster differences on the four MCMI-III components used to derive clusters are presented first. Next, cluster differences on the 24 personality and clinical

psychopathology scales from the MCMI-III are presented. Finally, the age and ethnic composition of each cluster are presented.

Personality and Clinical Psychopathology. Cluster comparisons on the four MCMI-III components identified earlier are presented in Figure 2.4. Multiple one-way ANOVAs revealed significant differences between the three clusters on each of the four components.

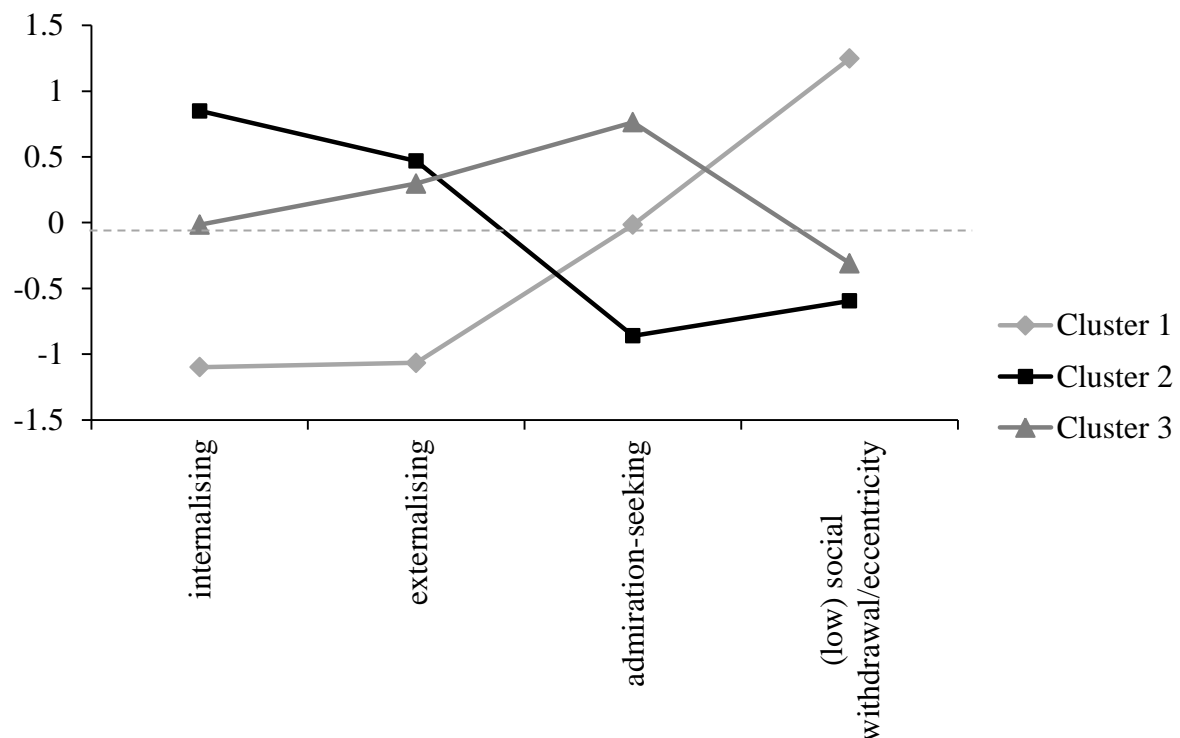


Figure 2.4. Cluster comparison on MCMI-III principal components.

Because the component scores from the MCMI-III were used for the cluster derivation, we would expect clusters to differ on MCMI-III scores. Further one-way ANOVAs revealed significant differences between the clusters on all 24 MCMI-III psychopathology scales. Tukey post-hoc tests with Bonferroni adjustments revealed that the only non-significant group differences were between clusters two and three on the bipolar:manic, antisocial, drug, alcohol, sadistic, delusional, and paranoid scales; and between clusters 1 and 3 on the histrionic scale. These statistics are presented in Appendix 6.

The percentage of the men in each cluster reaching trait levels ($BR \geq 75$) and clinical levels ($BR \geq 85$) for the personality and clinical psychopathology scales is presented in Table 2.4, and mean scores for each cluster on the MCMI-III scales are presented in Figure 2.5.

Table 2.4

Percentage of each cluster reaching $BR \geq 75$ or $BR \geq 85$ on MCMI-III scales.

Component	MCMI Scale	Cluster 1		Cluster 2		Cluster 3	
		<i>n</i> = 163		<i>n</i> = 215		<i>n</i> = 245	
		≥ 75	≥ 85	≥ 75	≥ 85	≥ 75	≥ 85
Internalising	CC Major Depression	-	-	4.2	2.3	-	-
	R PTSD	-	-	21.9	7.9	4.9	0.4
	H Somatoform	-	-	2.8	1.4	-	-
	A Anxiety	14.7	1.2	81.4	44.2	47.8	14.3
	D Dysthymia	0.6	-	29.8	4.2	10.6	-
	2B Depressive	0.6	-	69.3	34.9	20.8	2.4
	3 Dependent	-	-	40.0	12.1	10.6	-
	SS Thought Disorder	-	-	8.8	1.4	0.4	-
	8B Self Defeating	7.4	-	55.8	14.9	31.4	0.4
	N Bipolar Manic	-	-	15.3	6.0	6.1	0.4
Externalising	6A Antisocial	21.5	1.2	73.5	27.0	72.7	35.9
	T Drug	19.6	6.1	51.6	26.5	47.3	23.3
	B Alcohol	22.7	3.1	68.8	30.7	60.0	23.7
	6B Sadistic	0.6	0.6	21.4	6.5	28.6	5.3
	7 Compulsive	6.1	1.8	-	-	0.4	0.4
	C Borderline	-	-	38.1	12.1	8.6	0.8
Admiration-seeking	5 Narcissistic	4.9	1.2	1.9	-	40.4	25.3
	4 Histrionic	4.3	2.5	-	-	3.3	1.2
Social withdrawal/ eccentricity	PP Delusional	-	-	11.2	3.7	4.5	1.6
	P Paranoid	-	-	32.6	15.8	15.5	6.9
	1 Schizoid	4.9	-	40.9	16.3	20.0	3.3
	S Schizotypal	0.6	-	29.3	7.9	7.8	0.8
	2A Avoidant	5.5	-	55.8	15.8	15.9	0.4
	8A Passive Aggressive	0.6	-	54.9	21.9	40.4	6.9

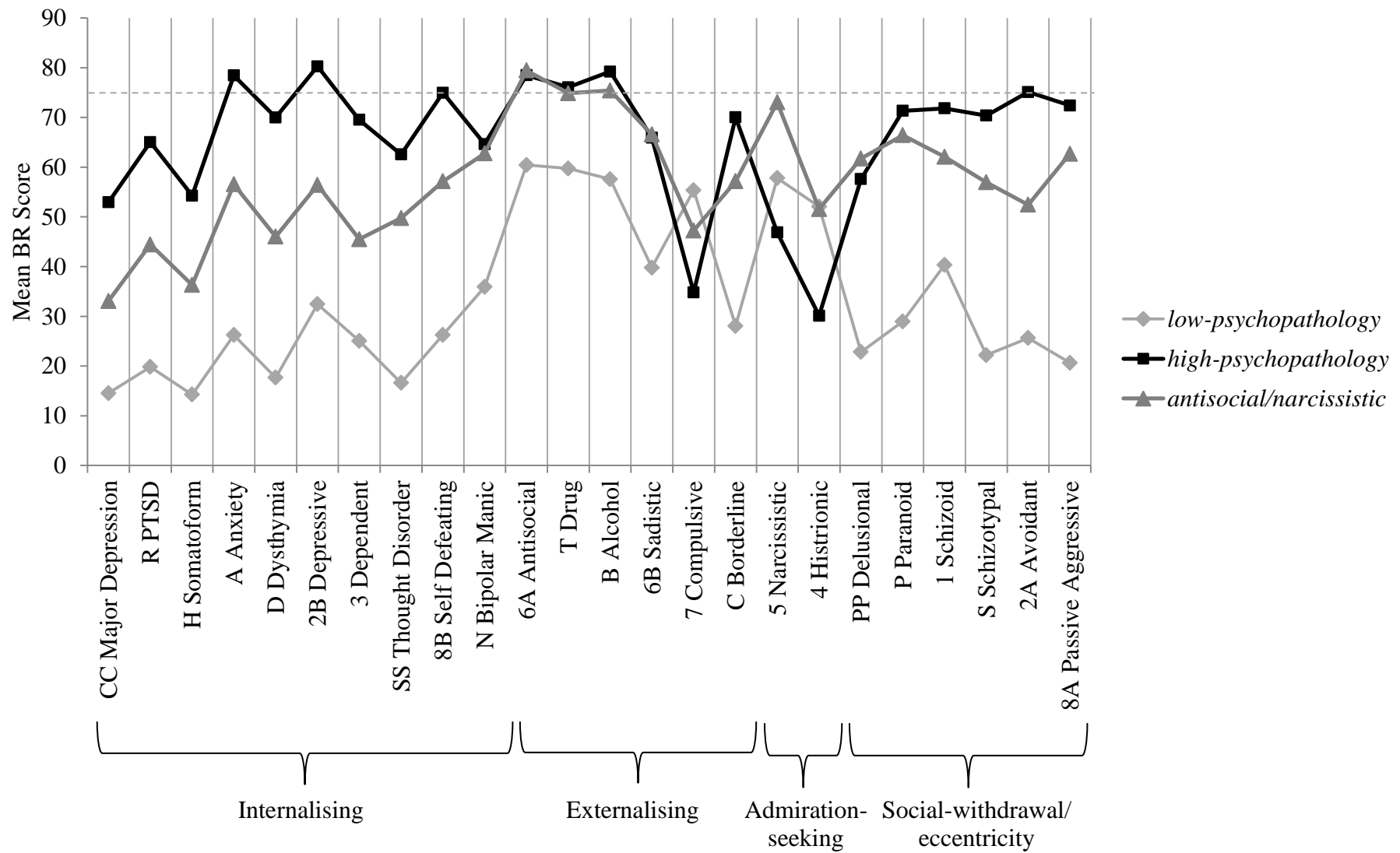


Figure 2.5. Cluster comparison on MCMII-III psychopathology scales.

To give an indication of the co-morbidity in psychopathology evident in the three clusters, Table 2.5 shows the prevalence of any disorder, the average number of disorders, and the prevalence of severe personality and clinical disorders reported by each cluster.

Table 2.5

Prevalence and severity of MCMI-III pathology at $BR \geq 75$ and $BR \geq 85$

	<i>Cluster 1</i>		<i>Cluster 2</i>		<i>Cluster 3</i>	
	<i>n = 163</i>		<i>n = 215</i>		<i>n = 245</i>	
	≥ 75	≥ 85	≥ 75	≥ 85	≥ 75	≥ 85
% with at least one disorder	69.9	15.3	100	91.2	98.4	73.5
Average number of disorders	1.1	0.2	8.1	3.1	5.0	1.5
% with at least one severe personality disorder	0.6	-	64.2	27.0	23.3	7.8
% with at least one severe clinical disorder	-	-	19.1	6.5	4.9	1.6

The patterns of reported psychopathology will be described in a number of ways. First, each cluster will be described in terms of their MCMI-III scores relative to the other two clusters (i.e. between cluster comparisons). Next, the types of psychopathology reported within each cluster will be described in terms of (a) the overall shape of the profile, (b) the proportion of offenders reporting clinical levels ($BR \geq 85$) of psychopathology, and (c), the average number of disorders reported at the trait level ($BR \geq 75$).

Cluster 1 ($n = 163$). Individuals in cluster 1 had the lowest scores of the three clusters on scales relating to social-withdrawal/eccentricity, internalising psychopathology, and externalising psychopathology, but they fell between the other two clusters on the narcissistic scale. Their profile was characterised by peaks on the antisocial, drug, alcohol, compulsive, narcissistic, and histrionic scales; however, the mean scores for all these scales were in the sub-clinical range ($BR < 75$). Only 15% of men in this cluster reported at least one disorder at the clinical level. The most frequently reported disorders were drug and alcohol dependence, but only 6% reached the clinical-level cutoff for drug dependence, and 3% for

alcohol dependence. On average, men in this cluster reported trait-level psychopathology on only one scale. I have called this cluster the *low-psychopathology* cluster.

Cluster 2 ($n = 215$). Individuals in this cluster had the highest scores on the majority of scales relating to social-withdrawal/eccentricity and internalising psychopathology, and the lowest scores on scales relating to admiration-seeking. Their scores on externalising psychopathology scales were similar to those of cluster three. Their profile was characterised by high reported psychopathology in multiple domains. The means scores for the anxiety, depressive, self-defeating, antisocial, drug, alcohol, and avoidant scales were in the trait-level range. Of the men in this cluster, 91% reported at least one disorder at the clinical level. The most frequently reported disorders for men in this cluster were anxiety (44%), depressive (35%), alcohol (31%), antisocial (27%), drug (27%), and passive-aggressive (22%). On average, men in this cluster reported trait-level psychopathology on eight scales. I have called this cluster the *high-psychopathology* cluster.

Cluster 3 ($n = 245$). Individuals in this cluster had scores that tended to fall between the other two clusters on the social-withdrawal/eccentricity and internalising psychopathology scales. However, their scores were similar to cluster two on the externalising psychopathology scales, and they had the highest scores of the three clusters on the narcissistic scale. Their profile was characterised by peaks on the antisocial, alcohol, drug, and narcissistic scales, with means scores in the trait-level range on antisocial, drug, and alcohol. Of the men in this cluster, 74% reported at least one disorder at the clinical level. The most frequently reported disorders among men in this cluster were antisocial (36%), drug (23%), alcohol (24%), and narcissistic (25%), and on average, men reported trait-level psychopathology on five scales. I have called this cluster the *antisocial/narcissistic* cluster.

Age and Ethnicity. A one-way ANOVA was conducted to compare clusters on the mean age at the start of treatment. In addition, a chi-square test of independence was

performed to compare clusters on ethnic composition (Table 2.6). There were significant differences between clusters on mean age at the start of treatment: $F(2, 618) = 12.92, p < .001, \eta^2 = .040$. Tukey post-hoc tests revealed that men in the *antisocial/narcissistic* cluster were significantly younger when they started treatment than men in the *low-psychopathology* and *high-psychopathology* clusters. There were also significant differences between clusters in ethnicity: $\chi^2(6) = 23.03, p < .001$, Cramer's $V = .137$. There were proportionately fewer Māori and more European/Pākehā offenders in the *low-psychopathology* cluster, and proportionately more Pasifika and fewer European/Pākehā offenders in the *antisocial/narcissistic* cluster.

Table 2.6
Comparisons on Age and Ethnicity

		Cluster 1 <i>low- psychopathology</i>	Cluster 2 <i>high- psychopathology</i>	Cluster 3 <i>antisocial/ narcissistic</i>
Age (n = 621)	<i>M</i>	34.2	32.7	29.9
	<i>SD</i>	9.6	9.1	8.2
Ethnicity (n = 618)	Māori	50.9%	64.3%	65.2%
	European/Pākehā	36.6%	26.3%	19.7%
	Pasifika	8.7%	8.5%	13.9%
	Other	3.7%	0.9%	1.2%

Discussion

This chapter has explored the personality and clinical psychopathology reported by high-risk offenders, and sought to identify distinct patterns of psychopathology using CA. It was clear that the sample as a whole reported extensive psychopathology. The most highly reported disorders—antisocial, alcohol, and anxiety—were similar in nature to those reported in other offender samples (e.g. Retzlaff et al., 2002), but were reported much more frequently in the current high-risk sample.

Principal components analysis of the 24 MCMI-III scales pointed to a four component solution—internalising, externalising, admiration-seeking, and social-withdrawal/eccentricity—that explained most of the variance in self-reported psychopathology. Three of the four components contained both personality and clinical syndrome scales, which suggests that there is a high level of overlap between the two types of scale. The lack of clear distinction between personality and clinical psychopathology is consistent with recent models of personality pathology (e.g. Clark, 2007), and supports the use of both types of scale in the current research, rather than solely the personality disorder scales (e.g. Blackburn, 1996). Three of the four components—internalising, externalising, and social-withdrawal/eccentricity—strongly resembled dimensions of personality and clinical psychopathology identified in recent research (Andrews et al., 2009; Markon, 2010). These models will be discussed further in Chapter Six.

Psychopathology Profiles

Cluster analysis of scores on the four MCMI-III principal components produced three clusters with distinct profiles of self-report personality and clinical psychopathology. Two clusters resembled the predicted *antisocial/narcissistic* and *high-psychopathology* patterns found in previous research. A third—*low-psychopathology*—cluster reported considerably less psychopathology than the other two clusters.

The *antisocial/narcissistic* cluster had a profile characterised by antisocial and narcissistic personality disorder. These egocentric disorders suggest the men in this cluster can be aggressive, status-seeking, reactive to personal challenges, and unlikely to admit to personal failings (Millon & Davis, 1996). Both antisocial and narcissistic personality disorders are associated with aggressive and disruptive behaviour in correctional settings (Stoner, 2008). Almost a quarter of the men in this cluster also reported clinically-significant levels of drug and alcohol problems ($BR \geq 85$), consistent with an externalising pattern of

psychopathology. Clusters with a pattern of antisocial and narcissistic personality disorder and substance abuse are common in offender subtyping research (Blackburn, 1996; Blackburn & Coid, 1999; Weekes & Morison, 1993), and have also been found in the domestic violence (Hamberger et al., 1996; Rothschild et al., 1997) and substance abuse (McMahon, 2008) literatures. In many ways this pattern appears to be a more pathological variant of the standard offender profile: the most prevalent disorders of which are antisocial, alcohol, narcissistic, anxiety, and passive-aggressive (e.g. Retzlaff et al., 2002). However, this pattern has also been linked to the construct of primary psychopathy, due to the presence of antisocial, impulsive, and egocentric traits but relatively little internalising psychopathology compared to offenders with a *high-psychopathology* profile (e.g., Blackburn, 1996).

The *high-psychopathology* cluster reported the most extensive personality and clinical psychopathology of the three clusters. Their mean profile suggested that in addition to the externalising psychopathology seen in the *antisocial/narcissistic* cluster, these men were highly distressed, emotionally reactive, and socially withdrawn. Scores on antisocial, avoidant, and passive aggressive personality disorder suggest that these men respond in aggressive ways to feelings of rejection (Millon & Davis, 1996). It may therefore be difficult for therapists to build trust in treatment. In addition, the combination of depressive and self-defeating personality disorders seen in this cluster suggests these men feel they deserve to suffer, and they may elicit negative events in their lives. Men in this cluster also reported high levels of drug and alcohol problems, which may reflect ineffective coping strategies, given their significantly higher scores on internalising psychopathology relative to the other two clusters. The range of psychopathology reported by men in this cluster suggests they are likely to have great difficulty adjusting to the prison environment (Stoner, 2008). The extensive psychopathology—including internalising and externalising psychopathology—

reported by men in the *high-psychopathology* cluster has been found in most other research looking for offender psychopathology subtypes (Beech et al., 2005; Blackburn, 1986; 1996; Blackburn & Coid 1999; Hicks et al., 2004; Weekes & Morison, 1993) as well as in domestic violence and substance abuse samples (Hamburger et al., 1996; McMahon, 2008; Rothschild et al., 1997). This pattern has been linked to the construct of secondary psychopathy, due to the reported internalising psychopathology in addition to antisocial and impulsive traits (e.g., Blackburn, 1996).

The *low-psychopathology* cluster reported very little personality and clinical psychopathology. The most prominent scales on their profile were those common in correctional settings—antisocial, alcohol, and drug—although few men reached the clinical cut-off for these disorders. The only other elevations were on the histrionic, narcissistic and compulsive scales. Craig (2005) argued that these three scales do not necessarily reflect psychopathology, and are often elevated in non-clinical samples. Furthermore, Millon and colleagues (1997) highlighted the link between these scales and a tendency toward positive self-presentation. The *low-psychopathology* profile was primarily characterised by the absence of psychopathology, a presentation less commonly seen in high-risk offenders than the *antisocial/narcissistic* and *high-psychopathology* patterns. However, Beech et al. (2005), Blackburn (1996; Blackburn & Coid, 1999), Rothschild et al. (1997), and Weekes and Morison (1993) all identified a cluster that reported little psychopathology, with slightly elevated compulsive scores.

The similarity between the clusters found in the current research and those from previous research supports the external validity of the cluster solution. In particular, the findings from Beech et al. (2005) resemble the findings in the current research. Their CA of MCMI-III personality and clinical scales with a sample of incarcerated sex offenders (rapists and sexual murderers) also identified three clusters. The first had low scores except on the

compulsive, narcissistic and histrionic scales, and looked like the *low-psychopathology* cluster in this study. The second had peaks on antisocial, narcissistic, and substance abuse scales, like the *antisocial/narcissistic* cluster in the current research, but with lower scores and elevated depressive and anxiety scores. The third reported extensive psychopathology, resembling the *high-psychopathology* cluster in the current research. The clear parallels between the clusters found in this research to clusters from previous research—despite differences between samples and data analytic techniques—strongly support the generalisability of the findings reported here.

This chapter has shown that the self-reported psychopathology of high-risk offenders can be described in terms of three main patterns: *low-psychopathology*, *high-psychopathology*, and *antisocial/narcissistic*. These patterns resemble psychopathology patterns found in previous CA research with offender samples. However, the previous research has tended to be primarily descriptive, and only speculated on the relevance the clusters might have for offender management and rehabilitation. In contrast, the following three chapters of the current research seek to empirically explore questions of clinical utility for the three clusters. First, Chapter Three explores differences between clusters in criminal risk and rates of criminal recidivism. Next, Chapter Four examines whether the three clusters differ in the progress they make in treatment. Finally, Chapter Five explores differences between the clusters in the predictive validity of self-report measures.

Chapter Three

Personality and Criminal Risk

“No classification can or should be expected to be entirely homogeneous. The pragmatic question is whether placement in a category impedes or facilitates the achievement of clinically significant goals”

(Millon, 1997, p. 9)

Criminal risk assessment—the identification of which individuals are likely to engage in criminal behaviour—plays a central role in offender management and rehabilitation. Risk assessment can guide decisions regarding who to release, and when to release them. It can provide information about who to treat: treatment effects are greater when intensive treatment is delivered to offenders with higher criminal risk (Andrews & Bonta, 2010). Risk assessment can also be used to guide custodial decisions: offenders with a high risk of recidivism tend to place greater demands on internal prison security (Chen & Shapiro, 2007), and may have a negative effect on low-risk offenders when grouped together (Lowenkamp & Latessa, 2004).

In their simplest and oldest form, empirical approaches to offender risk assessment involve the identification of static variables that predict criminal behaviour (e.g., age, gender, number of previous convictions). These approaches have resulted in greater accuracy in risk prediction compared to unstructured clinical judgement (Hanson & Morton-Bourgon, 2005), but tell us very little about the sources of criminal risk (Ward, Polaschek, & Beech, 2006). Static risk variables often act as statistical proxies for risk, indicating that offenders have a propensity to engage in criminal behaviour, but not *why* they have this propensity. These static variables are usually insensitive to change, and offer little direction for treatment endeavours.

The limitations of static risk variables have led to a search for more psychologically meaningful risk predictors that tell us something about the *nature* of criminal risk (Mann, Hanson, & Thornton, 2010). Ideally, risk factors are informative regarding the biological, psychological and social origins of criminal behaviour, and suggest potential avenues for intervention. Psychological dispositions are among factors that may play a causal role in criminal behaviour (Moffitt, 1993). In particular, offender personality characteristics and disorders have been a focus in research with offenders (e.g., Blackburn, Logan, Renwick, & Donnelly, 2005; Duggan & Howard, 2009).

Relationship Between Offender Personality and Criminal Behaviour

The high levels of personality pathology among high risk offenders suggest there may be a relationship between personality dysfunction and criminal risk (Blackburn et al., 2003; Kirkpatrick et al., 2010; Wilson, 2004). Furthermore, certain symptoms of personality disorder have been theoretically and empirically linked to higher criminal risk, including hostile and antisocial attitudes, low empathy, impulsivity, egocentrism, paranoia, anger, callousness, and emotional lability (Andrews & Bonta, 2010; Falkenbach, Poythress, & Heide, 2003; Moffitt, 1993).

Antisocial personality disorder and psychopathy have received the lion's share of attention due to their ability to predict criminal behaviour (Andrews & Bonta, 2010; Cooke, Michie, Hart, & Clark, 2004; Leistico et al., 2008). Other disorders have also been linked to criminal behaviour. For example, narcissistic, sadistic, paranoid, antisocial, passive-aggressive, and schizoid traits have been found to predict assault charges (Retzlaff et al., 2002), and DSM-IV cluster B personality disorders (antisocial, borderline, histrionic, and narcissistic) have been linked with criminal convictions and incarceration (Coid, Yang, Tyrer, Roberts, & Ullrich, 2006). However, when controlling for other personality disorders and substance abuse, Roberts and Coid (2010) found that only antisocial personality disorder showed a robust relationship with lifetime offending among incarcerated offenders.

The reviewed studies would suggest that antisocial and psychopathic personality disorders are the main disorders to consider in relation to criminal behaviour. Furthermore, the research by Roberts and Coid (2010) suggests that the relationship between many personality disorders and criminal behaviour can be traced back to co-morbidity with antisocial personality disorder. However, there are several conceptual problems with research that looks at the relationship between individual diagnoses and criminal behaviour while controlling for other diagnoses. First, categorical diagnoses fail to take into account evidence

that personality disordered traits exist on a continuum, and that sub-clinical variation in personality pathology may have a bearing on criminal risk. Second, this research assumes that personality disorders are separable from one another, despite evidence that multiple disorders have shared variance as a result of overlapping symptoms. For example, borderline and antisocial personality disorders are both characterised by behavioural impulsivity (*DSM-5*, APA, 2013; Millon et al., 1997). It would be difficult to argue that removal of this shared variance would produce more pure measures of each disorder that could clarify their independent relationship with criminal behaviour. Third, although antisocial and psychopathic personality disorders appear to be relatively strong predictors of criminal behaviour compared to other personality disorders, this relationship may be partially explained by predictor-criterion contamination. Both DSM antisocial personality disorder and PCL psychopathy have been criticised on the grounds that the diagnostic criteria make heavy reference to past criminal behaviour, potentially making the relationship with criminal recidivism tautological (Blackburn, 2007; Skeem et al., 2011).

This predictor-criterion contamination casts doubt on the predictive validity of the core personality traits of antisocial and psychopathic personality in predicting criminal behaviour. As well, it necessitates our re-evaluation of the relationship between other personality disorders and criminal behaviour. By controlling for antisocial personality when examining the relationship between other personality disorders and criminal behaviour (e.g. Roberts & Coid, 2010), we may essentially be removing variance associated with previous criminal behaviour. It is therefore perhaps not surprising that any relationship between personality disorders and criminal behaviour disappears: we may be inadvertently controlling for the relationship between personality disorder and past criminal behaviour.

In sum, despite mixed evidence for a relationship between personality disorder and criminal recidivism, there are substantial problems with the current practice of treating each

disorder separately, with or without controlling for other disorders (especially antisocial personality disorder). CA research may be useful in this respect: by looking at psychopathology profiles instead of individual disorders for their relationship to criminal behaviour, CA techniques embrace psychological co-morbidity, rather than attempting to control for it.

Psychopathology Clusters and Criminal Risk

If there is a relationship between personality disorder and criminal behaviour, we might expect clusters that differ in personality disorder to also differ in criminal risk. The CA research reviewed in Chapter Two provides some support for this idea: *antisocial/narcissistic* and *high-psychopathology* clusters identified in previous research tended to have higher scores on a measure linked to criminal risk (PCL-R), and more extensive criminal histories than other, lower-psychopathology clusters.

However, the PCL-R is not an ideal risk assessment measure to use in this context, as it was designed as a measure of personality pathology, which means that cluster differences in PCL-R scores reflect differences in personality dysfunction, in addition to differences in criminal risk. So while there is some evidence that psychopathology clusters may differ in criminal risk, the methodological limitations of previous research suggest that previous findings require replication with measures that do not confound personality with criminal risk, for example criminal history and criminal recidivism.

The Current Research

In this chapter I sought to determine whether the three psychopathology profiles identified in Chapter Two differed in criminal risk. The clusters were compared on historical (criminal history), contemporary (risk estimates made during treatment), and prospective (criminal recidivism) indices of criminal risk.

Issues of predictor-criterion contamination were minimised in two ways. First, as mentioned in Chapter One, the MCMI antisocial scale places much more emphasis on antisocial personality traits rather than previous criminal behaviour, so the clusters themselves were not derived using measures of criminal behaviour. Second, direct measures of criminal behaviour (criminal history and criminal recidivism) were included as dependent variables, as they are not confounded by personality measures. While three of the risk assessment measures included in this study—the PCL:SV, VRS, and SAQ—do make some reference to offender personality, the PCL:SV has been retained for comparative purposes, and the VRS and SAQ each have only one subscale relating to personality.

The reviewed research has suggested that greater levels of psychopathology may be linked to greater criminal risk, and that *antisocial/narcissistic* and *high-psychopathology* clusters have more extensive criminal histories and higher PCL scores than clusters with less psychopathology. Therefore I anticipated that clusters with *antisocial/narcissistic* or *high-psychopathology* patterns would have a higher risk of re-offending relative to the *low-psychopathology* cluster. I expected offenders in the former two clusters to have more extensive criminal histories, higher estimated criminal risk in treatment, and higher rates of recidivism after treatment.

Method

Measures

A number of risk-related variables were used to explore cluster differences in criminal risk. These included an automated risk assessment measure computed primarily on criminal history variables (RoC*RoI), a self-reported measure of criminal risk (Self-Appraisal Questionnaire), a staff-rated measure of violence risk (Violence Risk Scale), a screening measure for psychopathy (Psychopathy Checklist: Screening Version), and official records of criminal convictions prior to treatment and after release from prison.

The RoC*RoI (Bakker, Riley, & O'Malley, 1999). The RoC*RoI is an actuarial criminal risk assessment measure developed by the New Zealand Department of Corrections. Calculated automatically by computer-based algorithm, it is primarily based on criminal history variables, and represents the likelihood of reconviction leading to re-imprisonment within five years (i.e., it proxies as an estimate of the likelihood of reconviction for serious offences). During development it demonstrated high predictive validity—AUC of .76 (Bakker, O'Malley, & Riley 1998)—which has been confirmed in more recent cohort analyses (Nadesu, 2007).

The Psychopathy Checklist: Screening Version (PCL:SV; Hart, Cox, & Hare, 1995). The PCL:SV is a 12-item psychometric scale scored by clinicians to screen for psychopathy. It includes six items that relate to affective/interpersonal features of psychopathy (factor 1), and six items that relate to the socially deviant/impulsive lifestyle features of psychopathy (factor 2). Clinicians score the 12 items on a scale from 0 to 2 (absent, inconclusive, and present, respectively), and scores equal to or above the cut-off of 18 indicate a psychopathy diagnosis is likely (Hart et al., 1995). The PCL:SV is moderately predictive of criminal recidivism (Skeem et al., 2011).

The Violence Risk Scale (VRS; Wong & Gordon, 2000). The VRS is an actuarial scale, rated by professional staff, and based on an interview, file notes, and observation. It includes 6 static and 20 dynamic risk items, each rated from 0 to 3. For dynamic items, a score of 2 or 3 represents a risk factor prominent enough to make a worthwhile treatment target. With male offenders, VRS scores have good inter-rater reliability ($ICC = .91-.97$) and internal consistency ($\alpha = .93$), and predict both general and violent reoffending 3 years after release, with AUCs of .74 and .72 respectively (Wong & Gordon, 2006). Only pre-programme scores were considered in this study (post-programme scores were considered in Chapter Four).

The Self-Appraisal Questionnaire (SAQ: Loza, 1996; 2005). The SAQ is a 72-item true-false self-report psychometric scale designed to predict criminal recidivism. The scale has seven subscales—criminal tendencies, antisocial personality problems, conduct problems, criminal history, alcohol/drug abuse, antisocial associates, and anger—the last does not contribute to total SAQ scores. Loza (2005) found high test-retest reliability (.92-.95), and there is evidence that the SAQ is as effective in predicting criminal recidivism as common professionally-rated risk assessment measures (Loza & Loza-Fanous, 2001). Again, only pre-programme scores were considered here.

Offending Data

Criminal History. Criminal conviction records were available, providing information on the total number of convictions, violent convictions, and age at first conviction for offenders prior to their participation in the programme.

Recidivism. Post-release conviction records were also obtained for men in the sample. Dichotomous reconviction data (reconvicted/not) were coded for the period between release from prison and the date when their conviction history was obtained. Data were also coded for the length of time between release and reconviction offence date. Reconviction, violent reconviction and reimprisonment were examined.

Data Analytic Plan

The relationship between cluster membership and criminal risk was explored in a number of ways. First, the full sample was described on risk-related variables: criminal history, estimated criminal risk at the time of treatment (SAQ, RoC*RoI, VRS, and PCL:SV), and rates of criminal recidivism for individuals who had been released from prison after the programme. Next, the three clusters identified in Chapter Two were compared on these same variables using ANOVA and chi-square analyses. Finally, survival analysis was used to further explore cluster differences in rates of criminal recidivism taking into account variable

follow-up times for men in the sample. For several of the comparison variables, data were available for only part of the sample; sample sizes are reported for all analyses.

Results

Men in the sample had a mean age of 17 years when they received their first adult conviction ($SD = 3$; $n = 618$). On average they had 55 convictions prior to the programme ($SD = 47$; $n = 620$), including 7 convictions for violence ($SD = 6$; $n = 616$).

The average estimated risk for men in the sample was high on a number of measures. The mean score on the SAQ was 31.6 at the start of the programme ($SD = 10.6$; $n = 140$). This score placed men in the sample in the high-moderate risk range on average (Loza, 2005). The mean score on the RoC*RoI at the start of treatment was .67 ($SD = .19$; $n = 617$). This score indicates that offenders in the sample had an estimated likelihood of returning to prison within the next five years of nearly 70%. The mean score on the VRS was 56.2 at the start of the programme ($SD = 8.8$; $n = 374$). Again, this score suggests that men in the sample had a high risk for violent and non-violent recidivism (Wong & Gordon, 2006). Finally, the mean score on the PCL:SV was 19.4 ($SD = 3.3$; range = 8-24; $n = 198$)⁹.

At the time of data collection 505 men had been released from prison (81% of the full sample). The mean follow-up period (the time between release from prison and reconviction data extraction) for released men was about five years ($M=1770$ days, $SD = 1452$). Of the 188 men who had a follow-up of 5 years or more, 88% had reconvictions at 5 years, 61% had violent reconvictions, and 52% had been re-imprisoned.

Cluster Comparisons on Risk-Related Variables

Criminal History. To determine whether men in each cluster differed on criminal history variables, three one-way ANOVAs were performed comparing clusters on (a) mean number of previous convictions, (b) mean number of violent convictions, and (c) age at first

⁹ 79% of men in the sample fell in the 'psychopathic' range, with scores of 18 or greater (Hart et al., 1995).

conviction (Table 3.1). There were significant differences between clusters on the number of previous convictions: $F(2, 617) = 7.98, p < .001, \eta^2 = .025$. Post-hoc tests revealed that men in the *high-psychopathology* cluster had more previous convictions than men in the *low-psychopathology* cluster ($p < .001$), and also more previous convictions than men in the *antisocial/narcissistic* cluster ($p < .05$). There were no significant differences between clusters on the number of violent convictions ($F[2, 613] = 1.72, p = .18, \eta^2 = .006$), or age at first conviction ($F[2, 615] = 0.75, p = .47, \eta^2 = .002$).

Table 3.1

Comparisons on criminal risk and criminal recidivism

		Cluster 1 <i>low-</i> <i>psychopathology</i>	Cluster 2 <i>high-</i> <i>psychopathology</i>	Cluster 3 <i>antisocial/</i> <i>narcissistic</i>
	<i>N</i>	<i>M (SD)</i>	<i>M (SD)</i>	<i>M (SD)</i>
Criminal History				
Convictions	620	46.0 (37.3)	64.2 (56.4)	51.8 (40.9)
Violent convictions	616	6.5 (4.6)	7.6 (6.5)	7.1 (5.7)
Age first conviction	618	17.3 (2.5)	17.2 (3.0)	17.0 (2.2)
Criminal Risk				
SAQ	140	23.8 (8.6)	37.6 (8.9)	36.2 (8.2)
RoC*RoI	617	.62 (0.21)	.68 (0.17)	.69 (0.18)
VRS total	374	53.8 (8.7)	56.1 (8.7)	58.0 (8.6)
Static		12.2 (3.1)	13.1 (2.7)	13.2 (2.6)
Dynamic		41.5 (7.1)	42.9 (7.2)	44.7 (7.3)
PCL:SV total	198	19.0 (3.0)	19.1 (3.5)	19.9 (3.3)
F1		9.7 (2.1)	8.9 (2.5)	9.7 (2.1)
F2		9.3 (1.9)	10.2 (1.7)	10.2 (1.6)
Criminal Recidivism (overall)	505	%	%	%
Reconviction		65.6	80.5	84.7
Violent Reconviction		32.8	46.6	43.8
Re-imprisonment		31.1	48.3	48.3

Estimated Criminal Risk. One-way between-groups analysis of variance was performed to test for differences between clusters on a self-report risk instrument (SAQ), a computer-generated risk assessment measure based primarily on criminal history variables (RoC*RoI), a clinician-rated measure of static and dynamic violence risk (VRS), and a screening measure for psychopathy commonly used in risk assessment (PCL:SV). Results of these comparisons are presented in Table 3.1.

There were significant differences between clusters on total SAQ scores: $F(2, 137) = 39.15, p < 0.001, \eta^2 = .346$. Post-hoc tests revealed that the *low-psychopathology* cluster reported a lower level of criminal risk than the *high-psychopathology* cluster ($p < .001$) and the *antisocial/narcissistic* cluster ($p < .001$), but the latter two clusters did not differ significantly in their reported criminal risk ($p = .725$).

There were also significant differences between clusters on the RoC*RoI: $F(2, 614) = 6.87, p < .01, \eta^2 = .022$. Post-hoc tests revealed that the *low-psychopathology* cluster had lower estimated criminal risk than the *high-psychopathology* cluster ($p < .05$) and the *antisocial/narcissistic* cluster ($p < .01$), but the latter two clusters did not differ significantly in their estimated criminal risk ($p = .783$).

The clusters also differed significantly in total VRS scores: $F(2, 371) = 7.08, p < .001, \eta^2 = .037$. Post-hoc tests revealed that the *low-psychopathology* cluster had significantly lower VRS scores than the *antisocial/narcissistic* cluster ($p < .001$), but the *high-psychopathology* cluster did not differ significantly from the *low-psychopathology* cluster ($p = .13$) or the *antisocial/narcissistic* cluster ($p = .18$). Cluster differences on the static and dynamic VRS scales were also considered separately. There were significant differences between clusters on the static scale: $F(2, 371) = 4.54, p < .05, \eta^2 = .024$. Post-hoc tests indicated that the *low-psychopathology* cluster had significantly lower scores than both the *high-psychopathology* cluster ($p < .05$) and the *antisocial/narcissistic* cluster ($p < .05$). There

were also significant differences on the dynamic scale: $F(2, 371) = 6.13, p < .01, \eta^2 = .032$.

The *low-psychopathology* cluster had lower scores than the *antisocial/narcissistic* cluster ($p < .01$), but the *high-psychopathology* cluster did not differ from either of the other two clusters. Despite the differences between clusters on VRS scores, the mean total scores for all three clusters fell into the high-risk category (Wong & Gordon, 2006).

The three clusters did not differ significantly on the PCL:SV total score: $F(2, 195) = 1.72, p = .182, \eta^2 = .017$. There was also no difference between the clusters on the proportion of individuals considered to be psychopathic—with scores of 18 or more—on the PCL:SV: $\chi^2(2) = 1.21, p = .54$, Cramer's $V = .078$. For the *low-psychopathology* cluster, 79% of individuals had scores of 18 or more, compared to 74% of the *high-psychopathology* cluster, and 82% of the *antisocial/narcissistic* cluster. On the PCL:SV subscales, cluster differences on factor 1 (affective/interpersonal features of psychopathy) were marginally significant: $F(2, 195) = 2.75, p = .07, \eta^2 = .027$. Post-hoc tests indicated that the *high-psychopathology* cluster had marginally lower factor 1 scores than the *antisocial/narcissistic* cluster ($p = .08$).

However, there were significant differences between clusters on factor 2 (socially deviant/impulsive lifestyle features of psychopathy): $F(2, 195) = 5.99, p < .01, \eta^2 = .058$.

Post-hoc tests revealed that the *low-psychopathology* cluster had significantly lower scores on factor 2 than the *high-psychopathology* cluster ($p < .05$) and the *antisocial/narcissistic* cluster ($p < .01$).

Rates of Recidivism. Cluster differences in rates of recidivism were examined in two ways. First, the rates of recidivism for men in the three clusters were compared using chi square analysis. Second, clusters were compared using survival analysis, in order to take into account variation in follow-up times for men in the sample.

Cluster Differences in Recidivism. The three clusters were compared on their rates of recidivism using chi square analyses. Three recidivism outcomes were assessed: any

reconviction, violent reconviction, and reconviction leading to re-imprisonment (Table 3.1).

The three clusters did not differ significantly on the length of the follow-up period: $F(2, 502) = 1.12, p > .05, \eta^2 = .004$.

Reconviction. Men in the three clusters were not equally likely to be reconvicted: $\chi^2(2) = 17.28, p < .001$, Cramer's $V = .185$. Pairwise comparisons revealed that men in the *low-psychopathology* cluster were significantly less likely to be reconvicted than men in the *high-psychopathology* cluster ($\chi^2[1] = 8.33, p < .01$, Cramer's $V = .168$), or men in the *antisocial/narcissistic* cluster ($\chi^2[1] = 16.22, p < .001$, Cramer's $V = .221$). There was no significant difference between the *antisocial/narcissistic* and *high-psychopathology* clusters on rates of reconviction: $\chi^2(1) = 1.19, p > .05$, Cramer's $V = .056$.

Violent reconviction. The clusters also differed in violent reconviction: $\chi^2(2) = 5.99, p < .05$, Cramer's $V = .109$. Men in the *low-psychopathology* cluster were significantly less likely to have a reconviction for violence than men in the *high-psychopathology* cluster ($\chi^2[1] = 5.62, p < .05$, Cramer's $V = .138$) or men in the *antisocial/narcissistic* cluster ($\chi^2[1] = 3.86, p < .05$, Cramer's $V = .108$). Men in the *high-psychopathology* cluster did not differ significantly from men in the *antisocial/narcissistic* cluster ($\chi^2[1] = 0.30, p > .05$, Cramer's $V = .028$) in violent reconviction.

Re-imprisonment. Men in the three clusters also differed significantly in rates of re-imprisonment: $\chi^2(2) = 11.04, p < .01$, Cramer's $V = .148$. Pairwise comparisons revealed that men in the *low-psychopathology* cluster were significantly less likely to be re-imprisoned than men in the *high-psychopathology* cluster ($\chi^2[1] = 8.68, p < .01$, Cramer's $V = .171$), or men in the *antisocial/narcissistic* cluster ($\chi^2[1] = 9.33, p < .01$, Cramer's $V = .168$). There was no significant difference between the *antisocial/narcissistic* and *high-psychopathology* clusters on rates of re-imprisonment: $\chi^2(1) = 0.00, p > .05$, Cramer's $V = .000$.

Cluster Differences in Survival Time. Due to high base rates for reconviction at longer follow-up periods, Kaplan-Meier survival analysis was used to compare clusters on rates of reconviction over time, taking into account the variable follow-up lengths.

Figure 3.1 shows that, on average, men in the *low-psychopathology* cluster achieved a longer time to reconviction (1060 days) than men in the *high-psychopathology* cluster (716 days) or the *antisocial/narcissistic* cluster (515 days). Log-rank tests for time to reconviction indicated that the survival curve for the *low-psychopathology* cluster was significantly different from the survival curve for the *high-psychopathology* cluster ($\chi^2[1] = 12.12, p < .001$) and the *antisocial/narcissistic* cluster ($\chi^2[1] = 22.26, p < .001$), but the survival curves for latter two clusters did not differ significantly ($\chi^2[1] = 1.74, p > .05$).

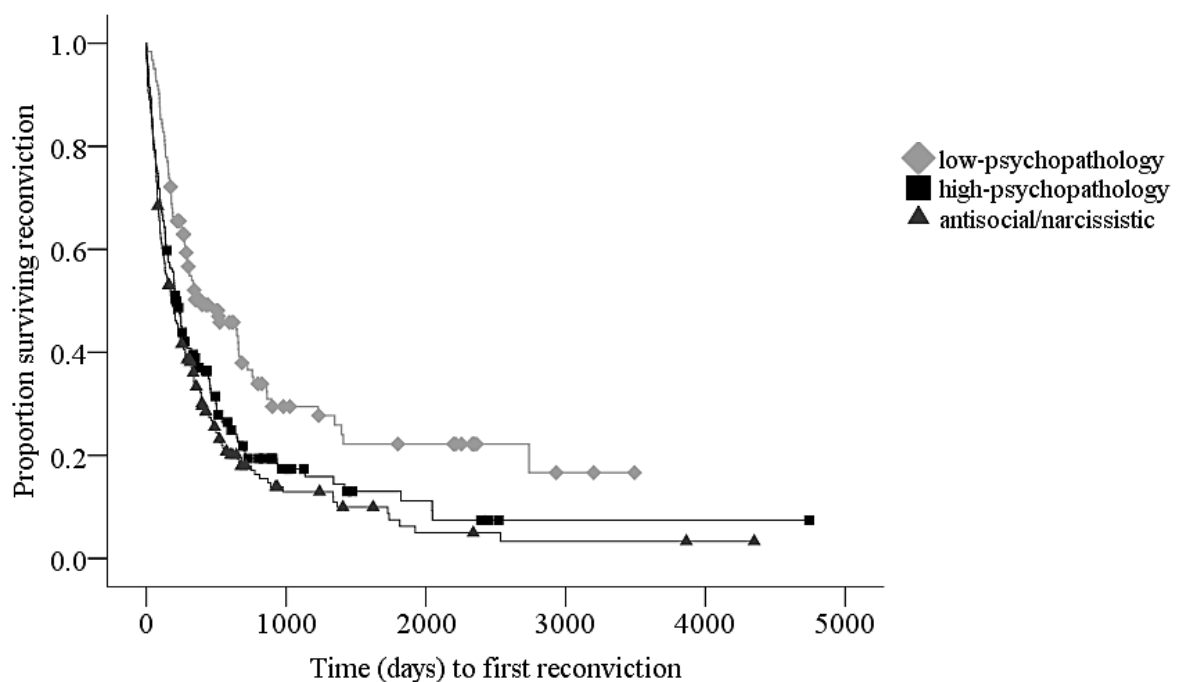


Figure 3.1. Survival analysis for reconviction.

A similar pattern of results was found when comparing clusters on rates of violent reconviction (Figure 3.2). Men in the *low-psychopathology* cluster achieved a longer time to reconviction (2670 days) than men in the *high-psychopathology* cluster (1897 days) or the

antisocial/narcissistic cluster (2426 days). Log-rank tests for time to violent reconviction indicated that the survival curve for the *low-psychopathology* cluster was significantly different from the survival curve for the *high-psychopathology* cluster ($\chi^2[1] = 8.27, p < .01$), and marginally different from the *antisocial/narcissistic* cluster ($\chi^2[1] = 3.30, p = .069$), but the survival curves for latter two clusters did not differ significantly ($\chi^2[1] = 1.24, p = .27$).

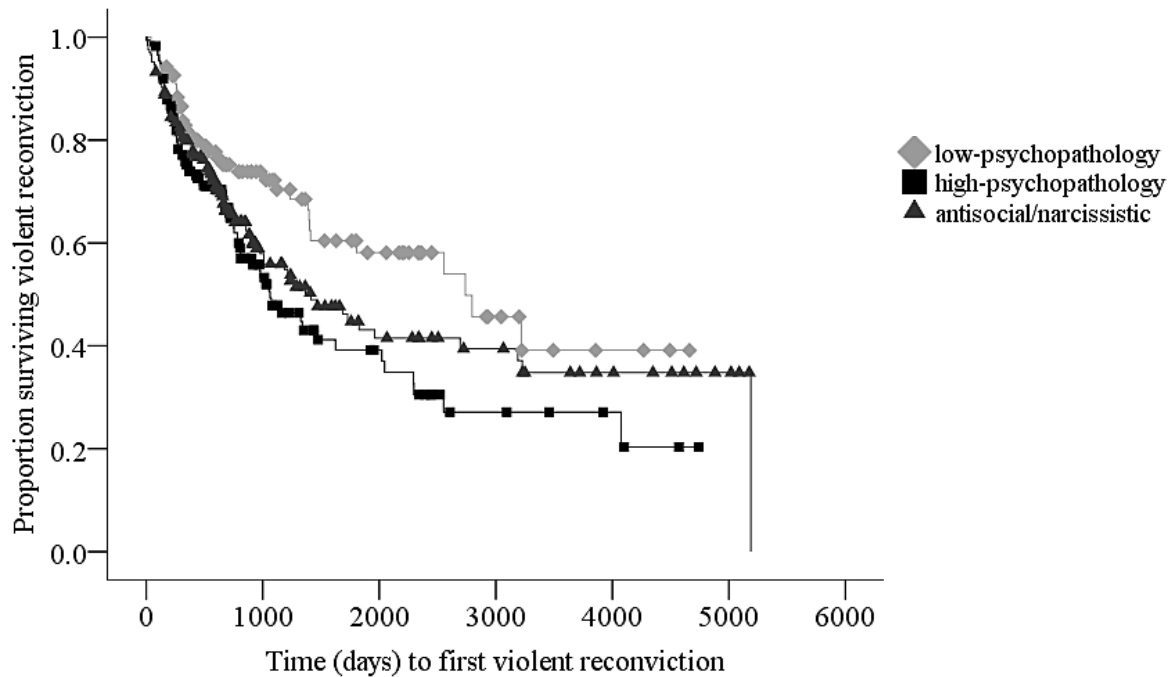


Figure 3.2. Survival analysis for violent reconviction.

Finally, for rates of re-imprisonment (Figure 3.3), men in the *low-psychopathology* cluster achieved a longer time to re-imprisonment (2891 days) than men in the *high-psychopathology* cluster (2028 days) or the *antisocial/narcissistic* cluster (2389 days). The survival curve for the *low-psychopathology* cluster was significantly different from the survival curve for the *high-psychopathology* cluster ($\chi^2[1] = 10.62, p < .01$), and from the *antisocial/narcissistic* cluster ($\chi^2[1] = 9.12, p < .01$), but the survival curves for latter two clusters did not differ significantly ($\chi^2[1] = 0.05, p = .82$).

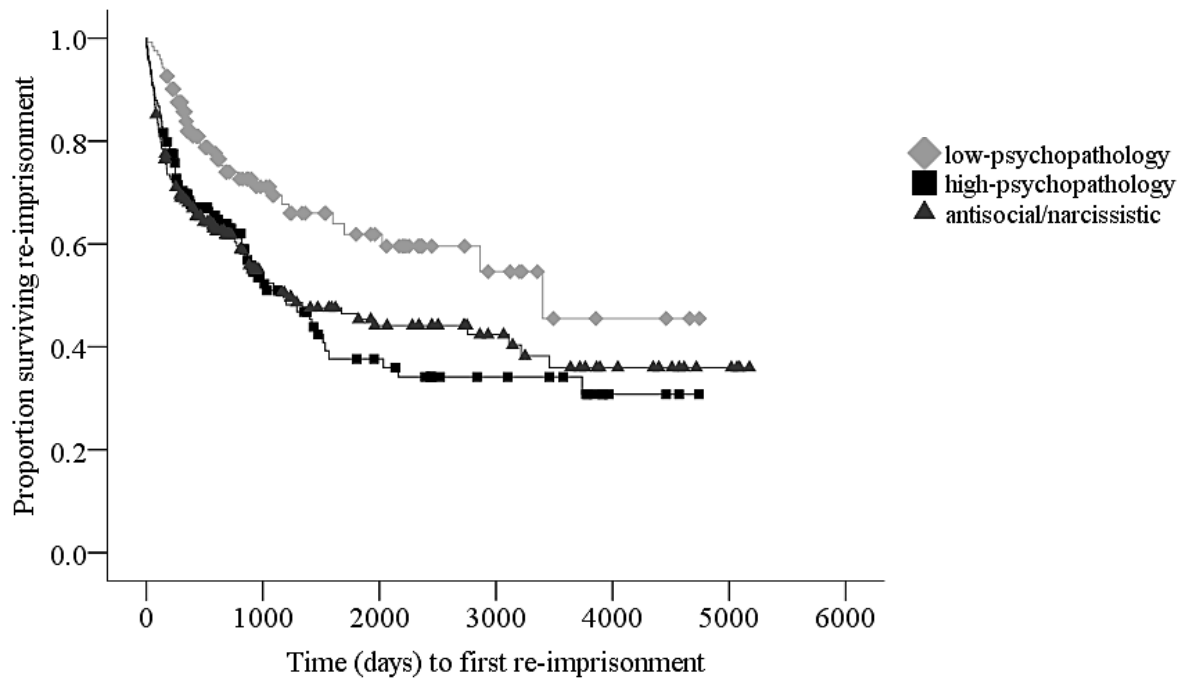


Figure 3.3. Survival analysis for re-imprisonment.

Cox Regression. The analyses in the current chapter and Chapter Two indicated that in addition to psychopathology profile, clusters also differed in age, number of previous convictions, and estimated static (RoC*RoI) and dynamic (VRS) criminal risk, all of which might explain cluster differences in rates of reconviction. To ensure that these variables did not better account for recidivism differences than psychopathology profiles, a series of cox regression analyses was used to control statistically for age, number of previous convictions, and criminal risk (RoC*RoI and VRS total scores) when comparing time to reconviction, violent reconviction, and re-imprisonment for the three clusters. Age, number of previous convictions, RoC*RoI and VRS scores were entered as covariates, followed by cluster allocation (Table 3.2).

Reconviction. Age, number of previous convictions, RoC*RoI, and VRS total score all significantly predicted survival time to reconviction above and beyond cluster membership. However, even when controlling for each of these variables in turn, the *low-*

psychopathology cluster continued to have lower rates of reconviction than both the *high-psychopathology* cluster and the *antisocial/narcissistic* cluster.

Violent Reconviction. Only age and VRS scores significantly predicted violent reconviction above and beyond cluster membership. The *low-psychopathology* cluster continued to have lower rates of violent reconviction than the *high-psychopathology* cluster when controlling for age, number of previous convictions, or RoC*RoI. Furthermore, the *low-psychopathology* cluster had lower rates of violent reconviction than the *antisocial/narcissistic* when controlling for the RoC*RoI. However, differences between the clusters were no longer significant when controlling for VRS scores.

Re-imprisonment. Finally, age, number of previous convictions, RoC*RoI, and VRS total scores significantly predicted re-imprisonment above and beyond cluster membership. When controlling for age, number of previous convictions, or RoC*RoI, the *low-psychopathology* cluster continued to have lower rates of re-imprisonment than both the *high-psychopathology* cluster and the *antisocial/narcissistic* cluster. However, when controlling for VRS total scores, the *low-psychopathology* cluster only had lower rates of re-imprisonment than the *antisocial/narcissistic* cluster.

Table 3.2.

Cox regression controlling for age, criminal history, and criminal risk

		Reconviction					Violent reconviction					Re-imprisonment					
		<i>N</i>	<i>B</i>	<i>SE</i>	Wald	<i>p</i>	<i>e</i> ^B	<i>B</i>	<i>SE</i>	Wald	<i>p</i>	<i>e</i> ^B	<i>B</i>	<i>SE</i>	Wald	<i>p</i>	<i>e</i> ^B
Age		503	-0.03	0.01	23.50	.000	0.97	-0.03	0.01	11.72	.001	0.97	-0.03	0.01	7.80	.005	0.98
Cluster	1vs.3		-0.51	0.14	13.47	.001	0.60	-0.25	0.20	1.60	.207	0.78	-0.47	0.19	6.09	.014	0.62
	2vs.3		-0.06	0.11	0.31	.578	0.94	0.25	0.16	2.57	.109	1.28	0.10	0.15	0.44	.507	1.10
	2vs.1		0.45	0.14	9.84	.002	1.56	0.49	0.20	6.37	.012	1.64	0.57	0.20	8.58	.003	1.77
# convictions		503	0.00	0.00	14.30	.000	1.00	-0.00	0.00	2.00	.157	1.00	0.01	0.00	21.98	.000	1.01
Cluster	1vs.3		-0.60	0.14	19.35	.000	0.55	-0.37	0.19	3.77	.052	0.69	-0.51	0.19	7.00	.008	0.60
	2vs.3		-0.19	0.11	2.85	.091	0.83	0.20	0.15	1.66	.197	1.22	-0.03	0.15	0.04	.847	0.97
	2vs.1		0.41	0.14	8.13	.004	1.51	0.57	0.20	8.43	.004	1.77	0.48	0.20	5.77	.016	1.61
RoC*RoI		499	1.44	0.30	22.95	.000	4.24	0.25	0.37	0.45	.502	1.28	2.74	0.46	35.13	.000	15.41
Cluster	1vs.3		-0.57	0.14	17.13	.000	0.57	-0.41	0.20	4.25	.039	0.67	-0.51	0.20	6.87	.009	0.60
	2vs.3		-0.14	0.11	1.53	.216	0.87	0.15	0.16	0.99	.319	1.17	0.04	0.15	0.07	.786	1.04
	2vs.1		0.43	0.14	9.09	.003	1.54	0.56	0.20	7.75	.005	1.75	0.55	0.20	7.54	.006	1.73
VRS total		300	0.03	0.01	12.83	.000	1.03	0.05	0.01	12.11	.001	1.05	0.03	0.01	4.54	.033	1.03
Cluster	1vs.3		-0.51	0.19	7.56	.006	0.60	-0.20	0.31	0.44	.505	0.82	-0.57	0.28	4.15	.042	0.57
	2vs.3		-0.08	0.15	0.28	.598	0.92	0.05	0.25	0.04	.850	1.05	-0.13	0.22	0.36	.551	0.88
	2vs.1		0.43	0.19	4.95	.026	1.54	0.25	0.32	0.62	.430	1.29	0.44	0.29	2.20	.138	1.55

Note. cluster 1 = low-psychopathology, 2 = high-psychopathology, 3 = antisocial/narcissistic

Discussion

This chapter sought to explore the relationship between psychopathology profiles and criminal risk. Based on previous research, I had anticipated that in general, greater levels of reported personality and clinical psychopathology would be associated with higher criminal risk, and that the *antisocial/narcissistic* and *high-psychopathology* profiles would be associated with higher criminal risk than the *low-psychopathology* profile.

Cluster Differences on Measures of Criminal Risk and Recidivism

The clusters in the current research differed on a number of variables related to their risk of criminal behaviour. Although the clusters did not differ in their average age of first conviction or number of previous violent convictions, the *high-psychopathology* cluster had significantly more previous convictions overall than either of the other two clusters. Compared to the *low-psychopathology* cluster, individuals in the *antisocial/narcissistic* and *high-psychopathology* clusters had significantly higher scores on a self-reported risk measure (SAQ), and an automated risk assessment measure primarily based on criminal history (RoC*RoI). Cluster differences on the static scale of the VRS followed the same pattern: the *high-psychopathology* and *antisocial/narcissistic* clusters had significantly higher scores than the *low-psychopathology* cluster. On the dynamic scale, only the *antisocial/narcissistic* cluster had significantly higher scores than the *low-psychopathology* cluster.

It is interesting that cluster differences on the PCL:SV were limited to factor two: the socially deviant/impulsive lifestyle features of psychopathy. Factor two items place a higher emphasis on previous antisocial behaviour than factor one items (Skeem et al., 2011), and factor two is a much stronger predictor of criminal recidivism than factor one (Leistico et al., 2008). It is therefore likely that cluster differences in PCL:SV scores reflect differences in criminal history and criminal risk, rather than differences in psychopathic personality per se.

One of the more noteworthy results was the difference between the clusters in rates of recidivism. Men in the *antisocial/narcissistic* and *high-psychopathology* clusters were more likely to be reconvicted—and were reconvicted more quickly—than men in the *low-psychopathology* cluster. In contrast, men in the *antisocial/narcissistic* and *high-psychopathology* clusters were reconvicted at a similar rate. Similar patterns were found with violent reconviction and re-imprisonment as outcome variables, although cluster differences in violent reconviction were not as great. Cluster differences in overall reconviction rates held even when controlling for other risk-related variables on which the clusters differed. The results suggest that self-reported psychopathology accounts for some independent variance in reconviction rates beyond what is currently measured by demographics and risk assessment measures. A mixed picture emerged from the cox regressions for violent reconviction and re-imprisonment, suggesting that psychopathology profiles are somewhat less informative in the prediction of more serious criminal outcomes.

Practice Implications and Future Research Directions

Overall, the cluster differences in reconviction suggest that psychopathology profiles hold potential as a source of psychologically-meaningful information on criminal risk. Future research should explore mechanisms behind the relationship between the psychopathology profiles and rates of recidivism: what is it about men with *antisocial/narcissistic* and *high-psychopathology* profiles that leads to their higher rates of reconviction? Answers to this question may have important practice implications.

One possibility is that the higher rates of reconviction are a direct result of psychopathology: high levels of psychological dysfunction predispose men in these clusters to criminal behaviour. This idea is supported by longitudinal research linking psychological traits measured early in development to subsequent criminal behaviour (Moffitt, Caspi, Harrington, & Milne, 2002), and reflected in multifactorial theories on the development of

criminal behaviour (e.g., Ward & Beech, 2006). An alternative hypothesis for the relationship between psychopathology profiles and criminal behaviour is that the two share aetiological roots without direct functional links between them. For example, childhood adversity predicts both psychopathology and criminal behaviour. Future longitudinal research is needed to determine whether cluster differences in risk reflect a direct relationship between psychopathology and criminal behaviour, a common aetiology, or a combination of the two.

Psychopathology profiles of offenders have also been studied as indicators of how an offender may progress in therapy. Because the sample in the current research is of men participating in an intensive rehabilitation programme, it is quite possible that differences between clusters in rates of recidivism reflect differential treatment effects. Put another way, the lower reconviction rates of the *low-psychopathology* cluster may result from greater responsiveness to treatment relative to the other two clusters. Psychopathology can present barriers to effective engagement in treatment: for example problems with motivation, therapeutic alliance, disruptive behaviour, and emotion regulation (Howells & Day, 2007). Given the extensive psychopathology of the *antisocial/narcissistic* and *high-psychopathology* clusters, intuitively, it would appear that individuals within these clusters would have difficulty in an intensive rehabilitation programme. Cluster differences in treatment engagement and treatment gain are explored further in Chapter Four.

In the current research, the largest differences found between the *antisocial/narcissistic* and *high-psychopathology* clusters were on self-reported measures of psychopathology (MCMI-III) and criminal risk (SAQ). These findings suggest that the *antisocial/narcissistic* and *high-psychopathology* profiles may be primarily differentiated by pre-treatment self-report style; the elevated narcissistic scores of the *antisocial/narcissistic* cluster suggests a pattern of positive self-presentation (Paulhus, Harms, Bruce, & Lysy, 2003). Alternatively, the extensive psychopathology reported by the *high-psychopathology*

cluster may reflect a pattern of debasement or help-seeking. Cluster differences in self-presentation style are explored further in Chapter Five.

Conclusion

The current research provides further evidence that *antisocial/narcissistic* and *high-psychopathology* patterns signal high levels of criminal risk and high rates of recidivism. Few studies have looked at psychopathology profiles in the prediction of criminal behaviour, but this study indicates that this may be a fruitful area for future research.

Chapter Four

Personality and Treatment Response

“We encourage assessors and service providers to seriously consider the personal characteristics of each and every offender prior to determining what approach is likely to work best with him or her”

(Andrews, Bonta, & Wormith, 2011, p.747)

A major strategy for reducing criminal risk is through offender rehabilitation. In rehabilitation, offender psychopathology is often assessed to identify characteristics that may negatively affect the treatment process, and that suggest whether an offender is likely to respond to an intervention. Compared to individuals with less psychopathology, individuals with significant personality and clinical psychopathology have been found to have poorer outcomes for a range of psychological interventions, including treatment for substance abuse (Staiger, Kambouropoulos, & Dawe, 2007; Verheul, 2001; Wagner et al, 2004), depression and anxiety (Reich, 2003), obsessive-compulsive disorder, and agoraphobia (Keeley, Storch, Merlo, & Goffken, 2008; Steketee, Chambless, & Tran, 2001). There is also some evidence that individuals with high levels of psychopathology have poorer outcomes from offender rehabilitation (Eckhardt et al., 2008; Huss & Ralston, 2008). The results of Chapter Three indicated that the *antisocial/narcissistic* and *high-psychopathology* profiles were associated with higher rates of criminal recidivism than the *low-psychopathology* profile. One possible interpretation of the results is that individuals with *antisocial/narcissistic* and *high-psychopathology* profiles have a poorer response to treatment. The current research explores the proposition that offender psychopathology profiles are associated with differences in the progress offenders make in rehabilitation programmes.

Offender psychopathology may present barriers to treatment engagement, resulting in minimal change and poor treatment outcomes (Howells & Day, 2007; Willmot & Tetley, 2011). In this chapter, I use the term *responsivity* to refer to the process of engagement and change over the course of treatment (e.g. Serin & Kennedy, 1997). Firstly, I will review the literature on offender treatment responsivity, and then explore issues of responsivity in the light of offender psychopathology. I will focus specifically on questions of treatment engagement, change, and outcome for individuals with different patterns of psychopathology.

Models of Offender Responsivity

Widespread interest in variables that mitigate the positive effects of treatment resulted from Andrews, Bonta, and Hoge's (1990) *Responsivity Principle* for effective offender rehabilitation. There were two components to the responsivity principle: *general* and *specific* responsivity. The general responsivity principle was the idea that offenders benefit most from structured cognitive behavioural approaches to treatment. The specific responsivity principle held that the effectiveness of different styles and modes of treatment depends on characteristics of the offender. Bonta (1995) described these client responsivity factors as "personal characteristics that regulate an individual's ability and motivation to learn" (p. 2). They include clinical (anxiety, depression, self-esteem, mental illness, personality disorder), interpersonal (social skills), demographic (age, gender, ethnicity), and cognitive (problem-solving, verbal skills) considerations (Andrews et al., 1990; Bonta, 1995).

The responsivity principle highlighted the need for research into factors that moderate the effects of treatment (Serin & Kennedy, 1997; Ward, Day, Howells, & Birgden, 2004). Serin and colleagues (Serin & Kennedy, 1997; Serin, Kennedy, Mailloux, & Hanby, 2010) saw treatment responsivity as a product of treatability (motivation, compliance and participation in treatment) and treatment effectiveness (gains made in treatment and post-release outcome). They identified a number of client characteristics thought to influence treatment responsivity: personality characteristics, motivation, cognitive deficits, and other demographic variables. Therapist and setting characteristics were also highlighted as important factors that influence treatment response.

More recently, Ward and colleagues integrated previous work on offender responsivity in their Multifactor Offender Readiness Model (MORM; Ward, Day, Howells & Birgden, 2004). They defined readiness for treatment as "the presence of characteristics (states or dispositions) within either the client or the therapeutic situation, which are likely to

promote engagement in therapy and which, thereby, are likely to enhance therapeutic change” (p. 647). The MORM divides client readiness characteristics into cognitive, affective, volitional, behavioural, and identity components. These client factors, together with contextual factors, influence how individuals are likely to progress in treatment: whether they engage—attend, participate, and form a good therapeutic alliance—and whether they make positive change on treatment targets. In their model, Ward and colleagues focus on treatment readiness as a precursor to successful treatment engagement and change. In contrast, Serin and colleagues focus on treatment responsivity, which comprises both treatment readiness and treatment performance (Serin, 1998). Similar models of treatment responsivity have been developed for substance abuse treatment (Simpson, 2004), and psychological treatment in general (Drieschner, Lammers, & Van der Staak, 2004).

The reviewed models of treatment responsivity suggest that client characteristics can influence engagement in treatment—including motivation for treatment and the therapeutic alliance—which in turn can influence the amount of change made in treatment, and post-treatment outcomes. The current study sought to determine whether self-reported personality and clinical psychopathology profiles are linked to differences in treatment responsivity. A basic model of the treatment responsivity processes considered in this research is presented in Figure 4.1.

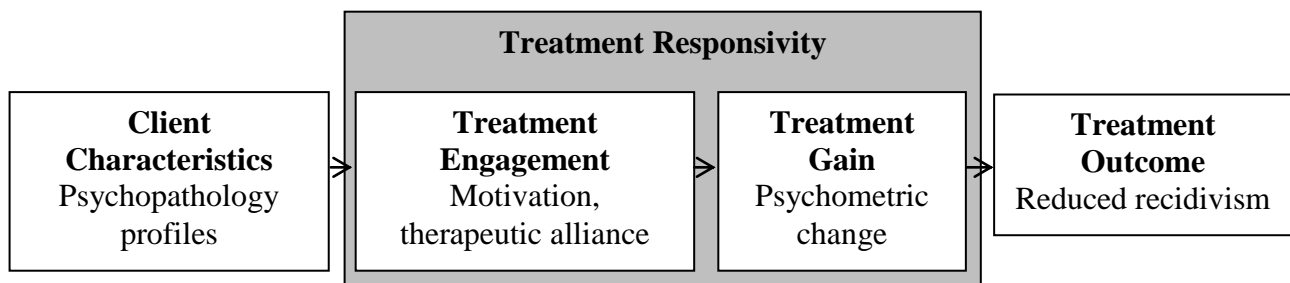


Figure 4.1. Simplified model of offender treatment responsivity.

Offender Psychopathology and Treatment Responsivity

The theoretical models suggest that psychopathology may be associated with greater initial problem severity (e.g. higher criminal risk, or more psychological dysfunction and substance abuse problems), little personal insight and lower motivation to change, the formation of poor therapeutic alliances, and a low capacity for change (Andrews et al., 1990; Casey, Day, Howells, & Ward, 2007; Drieschner et al., 2004; Serin & Kennedy, 1997). However, evidence that individuals with personality and clinical psychopathology actually experience these extensive barriers to treatment engagement and change is mixed. The following sections review empirical research that explores the effects of personality and clinical psychopathology on treatment engagement, treatment change, and treatment outcome.

Psychopathology and Treatment Outcome. A number of studies have found evidence that psychopathology is associated with poor treatment outcomes in incarcerated or community-based treatment samples. Among perpetrators of domestic violence, Huss and Ralston (2008) found that offenders with higher levels of psychopathology had higher rates of domestic violence convictions after treatment. Specifically, a generally violent/antisocial subtype—with antisocial and borderline traits—had the highest rates of domestic violence recidivism, followed by a borderline/dysphoric subtype. A family-only subtype who reported little psychopathology had the lowest rates of recidivism. Similarly, in another study of domestic violence perpetrators (Eckhardt et al., 2008), generally violent/antisocial and borderline/dysphoric subtypes had higher rates of rearrest after treatment compared to subtypes who reported less psychopathology.

These studies suggest that greater levels of psychopathology predict higher rates of recidivism after treatment, but they do not tell us whether this is due to the relationship between psychopathology and greater initial problem severity (in this case greater criminal

risk pre-treatment), or poor response to treatment. Stronger evidence that psychopathology can lead to poor response to treatment comes from a study reported by Listwan, Sperber, Spruance, and Van Voorhis (2004). Offenders categorised into personality subtypes using the Jesness inventory were compared on their rates of recidivism. They found that neurotic subtypes who had been treated had higher rates of recidivism than untreated neurotic subtypes, even when controlling for risk level, violence history, and a number of demographic variables. Antisocial, dependent, and situational subtypes improved slightly—but not significantly—over the course of treatment. This finding suggests that treatment may have a negative effect on the recidivism outcomes for some offender psychopathology subtypes.

There is considerably more research looking into the relationship between psychopathology and outcomes of psychological treatment that does not use offender samples. In a review of research into the effects of personality disorder on the treatment of anxiety and depressive disorders, Reich (2003) concluded that personality disorder can cause poorer treatment outcomes (less reduction in anxiety and depression). However, the effect of personality disorder was small, and varied depending on the personality disorders in question, and on the treatment approach. There is also evidence that personality disorder and major depression are associated with poorer outcomes for the treatment of obsessive-compulsive disorder and agoraphobia (Keeley et al., 2008; Steketee et al., 2001).

In the substance abuse treatment literature, there is again evidence that personality disorder is associated with poorer outcomes (Staiger et al., 2007; Wagner et al., 2004). However, as with the offender rehabilitation literature, poorer outcomes for individuals with personality disorder may be explained by their higher levels of problem severity when they begin treatment. There is some evidence that individuals with high psychopathology make an

equivalent amount of progress in substance abuse treatment as those with less (Verheul, 2001).

Psychopathology, Treatment Engagement and Treatment Change. The reviewed research indicates that higher levels of psychopathology are generally associated with poorer treatment outcomes, both in offender and community samples. This is consistent with findings in Chapter Three: the *high-psychopathology* and *antisocial/narcissistic* clusters reported more psychopathology and had higher rates of criminal recidivism than the *low-psychopathology* cluster. However, it is unclear whether the poorer treatment outcomes of individuals with psychopathology reflect greater initial problem severity (e.g. criminal risk), or poorer engagement and change in treatment.

Self-reported pre-treatment client characteristics (including attitudes, motivation, affect, self-efficacy, hostility, social conformity, risk taking, and empathy) have been found to predict later treatment engagement (therapeutic relationship, group cohesion, self-confidence, treatment participation, and treatment progress) in prison-based rehabilitation programmes (Casey et al., 2007; Pankow & Knight, 2012; Welsh & McGrain, 2008). Similarly, for offenders in community-based treatment there is evidence that the presence of multiple responsivity barriers (personality, intelligence, self-esteem, depression, and abuse history) is linked to less treatment change (Hubbard & Pealer, 2009).

It appears that some characteristics associated with personality and clinical psychopathology may limit engagement and change in treatment. However, there is also evidence that some aspects of psychopathology may actually improve treatment engagement/motivation for treatment. Gudjonsson and Main (2008) found that self-reported personality and clinical psychopathology (MCMI-III) predicted self-reported treatment compliance (eagerness to please and avoidance of conflict and confrontation). Their findings indicated that scores on scales characterised by anxiety—avoidant, dependent, passive-

aggressive, self-defeating, anxiety, dysthymia, and delusional—were associated with better treatment compliance. These findings are consistent with research by Tyrer, Mitchard, Methuen, and Ranger (2003), who distinguished between treatment-seeking and treatment-rejecting personality disorders. They found that individuals with cluster A and B disorders—paranoid, schizoid, dissocial (antisocial), impulsive, borderline, and histrionic—were less likely to seek psychological treatment in the community than individuals with cluster C disorders—anankastic (obsessive-compulsive), anxious, and dependent. Treatment-seeking individuals were more likely to recognise their personality abnormalities (i.e. have better self-awareness), and wish to change. It is interesting to note that the treatment-seeking disorders all featured high levels of distress, which would likely be ameliorated with psychotherapy. Distress associated with psychopathology may increase motivation for treatment if an individual believes that treatment will alleviate their distress. In contrast, individuals with disorders not characterised by distress may be less motivated for treatment. It is unclear whether distress would be equally motivating in offender rehabilitation, where treatment is more focussed on reducing criminal risk rather than reducing distress.

Overall, evidence is mixed as to the effects of psychopathology on treatment engagement and treatment change. The following section reviews the evidence that change measured over the course of treatment predicts post-treatment outcomes.

Treatment Change and Treatment Outcome. Logically, if offender rehabilitation is successful in reducing criminal risk, then individuals who change more in treatment will have lower rates of criminal recidivism in the community. However, there is surprisingly little research linking within-treatment change in offender rehabilitation programmes to rates of criminal recidivism (Beggs, 2010; Serin, Lloyd, Helmus, Derkzen, & Luong, 2010). While there is some evidence that change on a staff-rated measure of violence risk predicts violent and sexual recidivism (Lewis, Olver, & Wong, 2013; Olver & Wong, 2011), evidence for the

relationship between change on self-reported measures and criminal recidivism is weaker. A review conducted by Serin et al. (2010) found little evidence for a relationship, and highlighted the lack of studies in the area. However, a study by Beggs and Grace (2011) found that psychometric change over treatment (controlling for pre-treatment risk) significantly predicted sexual recidivism among sex offenders.

Research linking psychometric change to post-treatment outcomes is complicated for two reasons. First, offenders begin treatment with varying levels of criminal risk. If two offenders make the same amount of progress in treatment, the one who started treatment with greater criminal risk is still more likely to recidivate after release. This fact means that pre-treatment risk must be taken into account when considering treatment change. A second point to consider when assessing treatment change is that the effects of treatment are likely to play only a small part in the likelihood an offender reoffends after prison. Treatment effects are typically modest (Polaschek & Kilgour, 2013), offenders often remain in prison for some time after the programme, and they may be released into highly criminogenic environments. Even if rehabilitation is successful in encouraging motivation to change and teaching skills necessary for a pro-social life after prison, these effects may erode over time once the offender leaves the therapeutic environment. It is therefore important not to place too much weight on within-treatment change without taking into account pre-treatment risk and broader influences on long-term recidivism rates.

The reviewed research provides only limited support for the relationships between psychopathology and treatment engagement, change, and outcome proposed in models of offender treatment responsivity. Furthermore, a confounding variable in research into the treatment process for offenders is whether or not the offender completes treatment.

Treatment Non-completion. There is evidence that treatment attrition is relevant to every aspect of the treatment process: non-completers tend to be less engaged in treatment

than completers (Drieschner & Verschuur, 2010; Polaschek & Ross, 2010), make less change on risk-related variables (Polaschek & Ross, 2010), and have a greater risk of criminal recidivism (Eckhardt et al., 2008; Olver, Stockdale, & Wormith, 2011; but see Polaschek, 2010, for an exception). There is also some evidence that offenders with high levels of psychopathology have a greater risk of treatment non-completion (Eckhardt et al., 2008; Huss & Raslton, 2008). Treatment non-completion is therefore an important outcome variable for research into treatment responsivity.

The Current Research

The reviewed research on psychopathology and treatment responsivity suggests that higher levels of psychopathology may be linked to poor engagement, resulting in low levels of change over the course of treatment, and poorer outcomes, including treatment non-completion and higher rates of criminal recidivism. However, empirical evidence supporting these relationships for offenders in rehabilitation programmes is limited.

Treatment responsivity is a major concern in offender rehabilitation, and considerable effort is put into encouraging motivation for treatment, the formation of a good therapeutic alliance, and treatment retention (Polaschek & Kilgour, 2013). However, despite evidence for the efficacy of offender rehabilitation in general (McGuire, 2013), and for the programmes in this research (Polaschek & Kilgour, 2013), rehabilitation may not be equally effective for all offenders. The previous chapter found higher rates of recidivism in the *high-psychopathology* and *antisocial/narcissistic* clusters compared to the *low-psychopathology* cluster. This chapter explores whether the higher rates of recidivism reflects poor treatment responsivity for individuals with high levels of psychopathology. Specifically, this chapter tests whether individuals in the *antisocial/narcissistic* and *high-psychopathology* clusters formed poorer therapeutic alliances, were less motivated/engaged in the change process, made less progress

on self-reported and staff-rated measures of criminal risk, and were less likely to complete treatment than individuals in the *low-psychopathology* cluster.

Method

Measures

The treatment responsivity variables used in this chapter fell into two groups: treatment engagement variables and indices of treatment change. The treatment engagement variables assessed the therapeutic alliance (Working Alliance Inventory-Short Form) and engagement in the change process (average stage of change scores from the Violence Risk Scale). The treatment change variables included changes in self-reported risk (Self-Appraisal Questionnaire) and criminal cognitions (Criminal Sentiments Scale-Modified, Pride in Delinquency, Criminal Attitudes toward Violence), and in staff rated risk (dynamic items of the Violence Risk Scale). Information on programme completion and time in treatment was also included.

The Violence Risk Scale (VRS; Wong & Gordon, 2000). This study used two types of VRS data: dynamic scores and average stage of change (SOC) scores, both assessed at the beginning and at the end of the programme. The dynamic scores give an overall estimate of violence risk (post-programme scores are adjusted for change made over the course of the programme). Average SOC scores indicate the extent to which an offender was addressing their personal areas of criminal risk at the beginning and at the end of treatment.

Recall from Chapter Three that the VRS includes 20 dynamic risk items scored on a four-point scale from 0 to 3. For each dynamic risk item with a score of 2 or 3, a stage of change score (SOC) is calculated: an estimate of the extent to which an offender is pursuing change on that risk factor. These scores follow the five stages set out in the Transtheoretical Model of Change (Prochask, DiClemente, & Norcross, 1992): pre-contemplation, contemplation, preparation, action, and maintenance. At the pre-contemplation stage

offenders have no desire to change; either they are unaware of the problem, or they deny that they have a problem. At the contemplation stage the offender has expressed a wish to change, but there is no evidence of change in behaviour. At the preparation stage there is some indication of behavioural change, but change is recent and/or inconsistent. More stable evidence of behaviour change is observed in the action stage, and in the maintenance stage behavioural change is consistent and demonstrated across high-risk situations.

SOC scores were used in this study to indicate whether clusters differed in their current engagement in change. Engagement in change at the beginning and end of treatment was assessed by calculating the average SOC score across dynamic risk items for each offender. The manual recommends that the pre-contemplation and contemplation stages be assigned the same score, as neither stage involves behavioural evidence of change. However, a distinction between pre-contemplation and contemplation was considered relevant in the current research because it reflects problem recognition, which may be limited among offenders with personality pathology (Tyrer et al., 2003). Therefore, to compute average SOC scores, the raw SOC scores were rated on a 5-point scale from pre-contemplation (1) to maintenance (5).

The Working Alliance Inventory-Short Form (WAI-S; Horvath & Greenberg, 1989; Tracey & Kortovic, 1989). The WAI-S is a short form version of Horvath and Greenberg's (1989) Working Alliance Inventory, a measure of the therapeutic alliance between therapist and client. The WAI-S contains three subscales measuring the bond between therapist and client, agreement on the goals of therapy, and agreement on the tasks necessary to achieve those goals. Three rater perspectives were available in the current research: therapist-rated, client-rated, and observer-rated alliance¹⁰. Client and therapist versions of the WAI-S have been found to have excellent internal consistency ($\alpha > .90$) in a

¹⁰ The latter was developed by Ross (2008) by altering the pronouns in the WAI-S to reflect an observer perspective.

sample of partner violent men in treatment (Taft, Murphy, King, Musser, & DeDeyn, 2003). In the same sample, client and therapist WAI ratings were found to be negatively related to a self-report measure of psychopathy, and positively related to engagement in change (Taft, Murphy, Musser, & Remington, 2004).

The Self-Appraisal Questionnaire (SAQ; Loza, 1996). The SAQ was described in Chapter Three. Both pre- and post-programme SAQ scores were used in this study. Although there is evidence that the SAQ is able to predict general and violent recidivism (Loza, MacTavish, & Loza-Fanous, 2007), I was unable to find any research linking reductions in SAQ scores to reduced rates of recidivism.

The Criminal Sentiments Scale-Modified (CSS-M; Gendreau, Grant, Leipziger, & Collins, 1979; Shields & Whitehall, 1991). The CSS-M is a self-report psychometric measure of attitudes that support criminal behaviour. It contains 41 items rated on a 3-point Likert scale, grouped into five subscales: attitudes toward the law, attitudes toward the courts, attitudes toward the police, tolerance for law violations, and identification with criminal others. The CSS-M has been found to have adequate internal consistency and convergent validity when used with incarcerated offenders (Simourd, 1997), and scores predict future criminal behaviour (Simourd & Van de Ven, 1999).

The Pride in Delinquency Scale (PID; Shields & Whitehall, 1991). The PID is a 10-item self-report measure of an individual's pride in engaging in different criminal behaviours (e.g. selling drugs). Scores on each item range from -10 to +10, positive values indicate pride associated with the hypothetical behaviours, negative values indicate shame. Again, Simourd (1997) found evidence of acceptable internal consistency and convergent validity for this measure when used with offenders, and PID scores have been found to correlate with prior and subsequent criminal behaviour (Simourd & Van de Ven, 1999).

The Criminal Attitudes to Violence Scale (CAVS; Polaschek, Collie, & Walkey, 2004). The CAVS is a 20-item psychometric measure of attitudes to violent actions (e.g. “fighting between men is normal”). Items are rated on a 5-point Likert scale, from 1 (disagree a lot) to 5 (agree a lot). This measure has been found to have a high level of internal consistency ($\alpha = .95$) in a sample of incarcerated offenders. The ability of this measure to predict criminal recidivism has not been examined, but CAVS scores have been found to be higher for offenders with an index violent offence, and they correlated significantly with a static measure of criminal risk (Polaschek et al., 2004).

Data Analytic Plan

The analyses in this chapter were selected to explore the hypothesis that the poor treatment outcomes of the *high-psychopathology* and *antisocial/narcissistic* clusters found in Chapter Three reflect a poorer response to treatment for men in those clusters. The current chapter focuses on the following elements identified in treatment process models: (a) the therapeutic alliance, (b) the individual’s engagement in the change process, (c) the amount of change an individual makes on self-reported psychopathology, self-reported and staff-rated psychometric measures linked to criminal risk, and (d) treatment non-completion.

Results

Therapeutic Alliance

An important aspect of treatment engagement is the relationship between the offender and the therapist (Casey et al., 2007). Clusters were compared on the Working Alliance Inventory—Short Form (Tracey & Kokotovic, 1989). WAI-S data were rated at four time-points over treatment, and averages over time were calculated as I was primarily interested in long-term alliance quality irrespective of temporary fluctuations in the alliance. For each offender, WAI-S data were available from the client, therapist, and observer perspective. Intra-class correlation coefficients were calculated (a) between the two therapists’ ratings of

their alliance with the client, (b) between the client ratings of their alliance with each therapist, and (c) between ratings of the alliance between the client and each therapist made by an observer. Agreement between therapist ratings was only moderate ($ICC = .43$), however, agreement was excellent between client ratings ($ICC = .93$) and between observer ratings ($ICC = .87$)¹¹.

For the cluster comparisons, scores were averaged across the two raters for (a) client-rated alliance, (b) therapist-rated alliance, and (c) observer-rated alliance. However, caution is advised in interpreting the results of the therapist-rated data due to the poor agreement between raters. Three one-way ANOVAs revealed that against predictions, the three clusters did not differ significantly on the therapeutic alliance. The three clusters had similar WAI-S scores regardless of whether the alliance was rated by therapists, observers, or clients themselves¹². These results are presented in Table 4.1.

¹¹ Agreement was much lower when each time-point was considered separately, compared to when ratings had been averaged over time.

¹² The absence of cluster differences in WAI-S scores is unlikely to be explained by ceiling effects, as scores did not approach the maximum possible of 84. In addition, results were similar whether scores were averaged over time, or when time 1 and time 4 scores were considered separately.

Table 4.1

Cluster comparisons on the therapeutic alliance and engagement in change

		Cluster	<i>n</i>	<i>M</i>	<i>SD</i>	95% CI		ANOVA			Post-hoc comparison		
						Lower	Upper	<i>F</i>	<i>p</i>	η^2	cluster	cluster	<i>p</i>
Therapeutic Alliance	WAI-S Therapist	1	25	57.81	8.71	54.22	61.41	0.04	.960	0.001	1	2	.956
		2	15	58.70	8.98	53.73	63.67					3	.990
		3	22	58.18	10.65	53.46	62.90				2	3	.985
	WAI-S Client	1	19	73.73	8.81	69.49	77.98	0.58	.566	0.029	1	2	.610
		2	11	69.66	9.10	63.55	75.77					3	.693
		3	12	70.32	15.77	60.30	80.34				2	3	.989
	WAI-S Observer	1	25	56.44	7.22	53.46	59.42	1.26	.291	0.041	1	2	.936
		2	15	55.39	8.79	50.52	60.26					3	.275
		3	22	52.22	11.54	47.10	57.33				2	3	.570
Engagement in Change	Average SOC pre-programme	1	101	1.92	0.53	1.82	2.03	4.41	.013	0.023	1	2	.580
		2	117	1.99	0.46	1.90	2.07					3	.194
		3	154	1.82	0.45	1.74	1.89				2	3	.011
	Average SOC post programme	1	78	2.63	0.51	2.52	2.75	4.16	.017	0.028	1	2	.504
		2	94	2.73	0.53	2.62	2.84					3	.272
		3	116	2.51	0.56	2.41	2.62				2	3	.013

Note. Cluster 1 = *low-psychopathology*; cluster 2 = *high-psychopathology*; cluster 3 = *antisocial/narcissistic*.

Engagement in Change

Another way to assess treatment engagement is to look at what stage in the change process offenders are at on criminogenic treatment targets (e.g. interpersonal aggression, substance abuse). Clusters were compared on VRS Stage Of Change (SOC) scores at the beginning and at the end of treatment. Average SOC scores across dynamic treatment targets were calculated for each offender, and the three clusters were compared on these scores. I had anticipated that the clusters with more extensive psychopathology—the *high-psychopathology* and the *antisocial/narcissistic* clusters—would be significantly less engaged in change throughout treatment. However, one-way ANOVAs revealed that the *high-psychopathology* cluster was significantly more engaged in change than the *antisocial/narcissistic* cluster both before and after the programme, although the magnitude of the difference was small. There were no significant differences between the *low-psychopathology* cluster and either the *high-psychopathology* cluster or the *antisocial/narcissistic* cluster in their engagement in the change process. All three clusters began treatment just approaching the contemplation stage on average, and finished treatment somewhere between contemplation and preparation. These analyses are also presented in Table 4.1.

Psychometric Change

The psychometric change analyses used pre- and post-programme data to examine how scores on self-reported psychopathology (MCMI-III), self-reported psychometric measures linked to criminal risk (SAQ, CSS-M, PID, CAVS, AQ, STAXI-2), and staff-rated criminal risk (VRS) changed over the course of the programme. Treatment non-completers tend to be higher risk than completers, and are likely to differ on a number of the psychometric variables used in this research. Therefore, to ensure that treatment change on these measures does not simply reflect the fact that higher risk offenders did not have post-

programme data, only men with both pre- and post-programme data were included in these analyses.

Change in self-reported psychopathology may occur over time and as a function of treatment. The three clusters were compared on their change in MCMI-III scores over the course of the programme (Figures 4.2a - 4.2c).

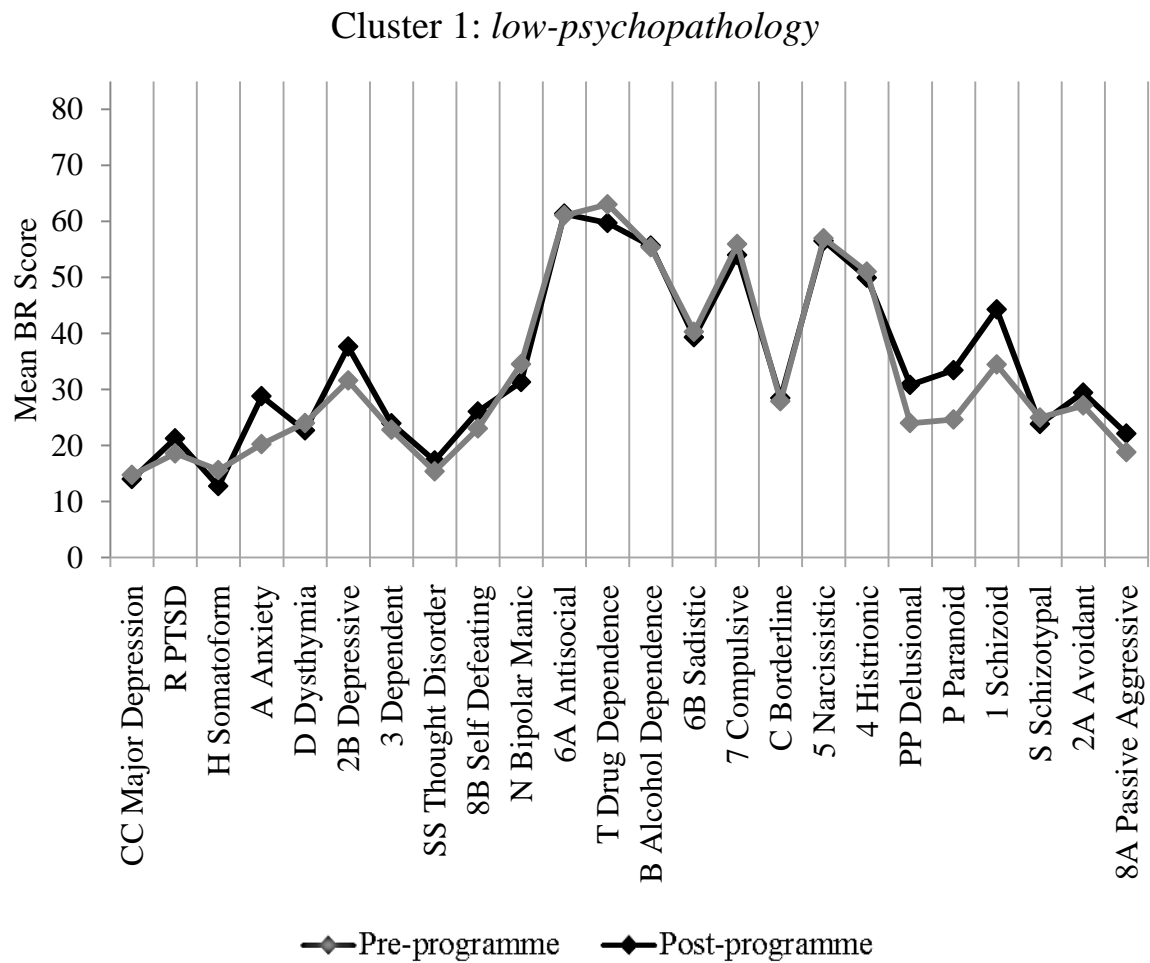


Figure 4.2a. Pre- and post-programme MCMI-III scores for the low-psychopathology cluster.

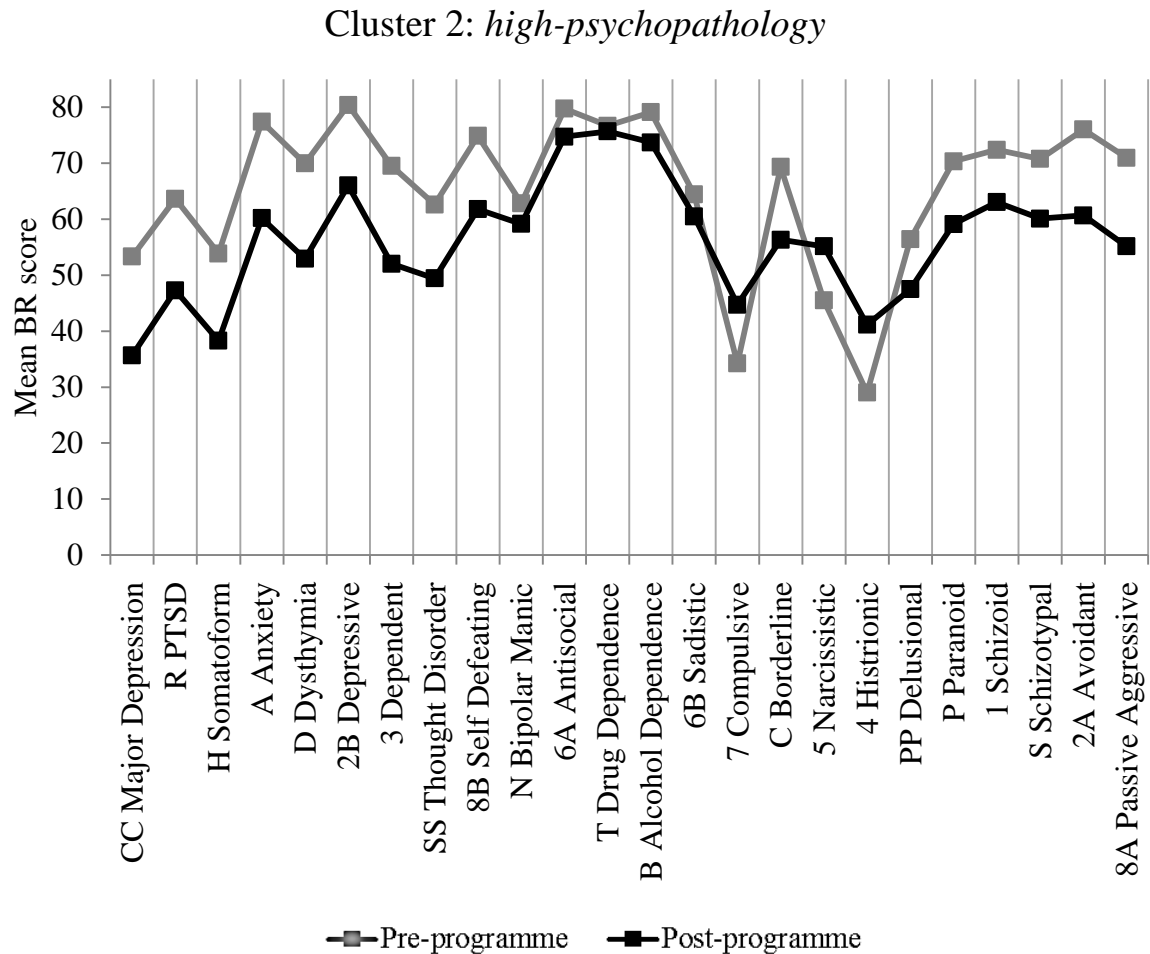


Figure 4.2b. Pre- and post-programme MCMII-III scores for the *high-psychopathology* cluster.

Paired-samples *t*-tests using the Bonferroni correction to adjust for multiple comparisons indicated that self-reported psychopathology changed little over the programme for the *low-psychopathology* cluster. However, scores on the paranoid and schizoid scales significantly decreased post-programme. More extensive change over the programme was shown by the *high-psychopathology* cluster. Scores increased significantly on the compulsive, histrionic, and narcissistic scales¹³, and while there was no change on the drug, bipolar:manic, and sadistic scales, scores on the other 18 scales significantly decreased.

¹³ Recall from the introduction that moderate scores on the histrionic, compulsive, and narcissistic scales have been linked to positive adjustment. Therefore, increases on these scales at the sub-clinical level are likely to reflect positive change.

Similarly, the *antisocial/narcissistic* cluster showed considerable change over treatment.

Scores increased on the compulsive scale, and while scores did not change significantly on the somatoform, anxiety, depressive, histrionic, and drug scales, scores decreased significantly on the other 17 scales.

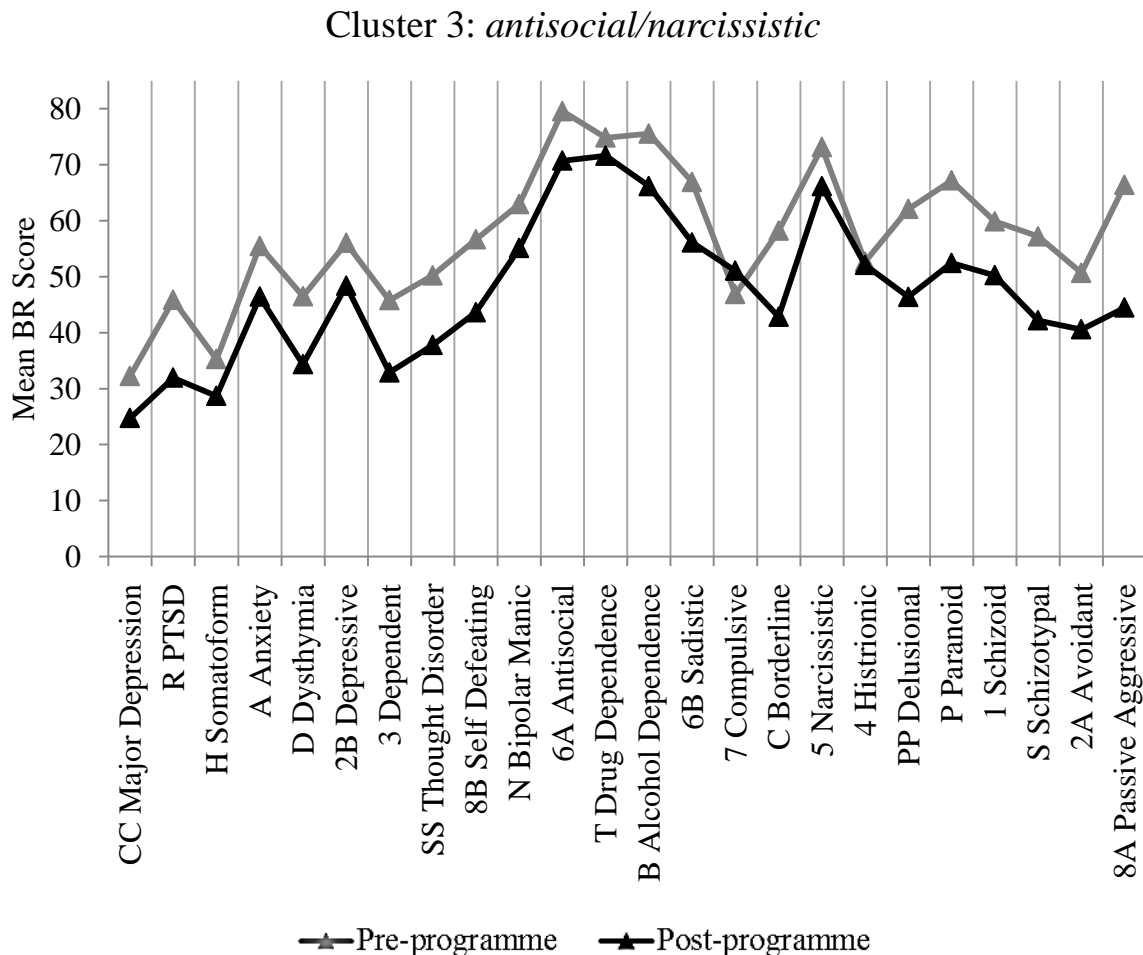


Figure 4.2c. Pre- and post-programme MCMI-III scores for the *antisocial/narcissistic* cluster.

Prison-based rehabilitation programmes seek to decrease criminal recidivism by addressing factors that predict criminal behaviour (e.g. impulsivity, substance abuse). A number of self-reported psychometric measures are used in rehabilitation programmes to provide information regarding the changes made on these criminogenic factors during treatment. The three clusters were compared on the change they made on measures of criminal risk (SAQ), and antisocial cognitions (CSSM; PID; CAVS). Repeated measures

ANOVAs revealed a significant interaction between time and cluster on all four self-report measures. I had anticipated that the *high-psychopathology* and *antisocial/narcissistic* clusters would make less change over the course of the programme than the *low-psychopathology* cluster, because their psychopathology would act as a barrier to treatment responsiveness. However, on all four measures the *low-psychopathology* cluster started treatment with lower scores than the *high-psychopathology* and *antisocial/narcissistic* clusters, but made *less* change over the course of treatment (Table 4.2 and Figure 4.3).

Table 4.2

Cluster comparisons in change in psychometrics.

			Cluster 1		Cluster 2		Cluster 3		Main Effects				Interaction	
			<i>low-</i>		<i>high-</i>		<i>antisocial/ narcissistic</i>		time		cluster		cluster*time	
	<i>n</i>		Pre	Post	Pre	Post	Pre	Post	<i>F</i>	<i>p</i>	<i>F</i>	<i>p</i>	<i>F</i>	<i>p</i>
SAQ	91	<i>M</i>	23.1	25.0	35.6	31.4	33.9	28.2	9.84	.002	13.73	<.001	8.34	< .001
		<i>SD</i>	7.2	7.9	9.1	11.4	8.5	7.1						
CSS-M	90	<i>M</i>	18.3	13.2	30.7	19.7	33.5	16.0	63.08	<.001	8.29	<.001	7.40	< .01
		<i>SD</i>	10.9	8.8	13.7	13.5	16.5	11.3						
PID	91	<i>M</i>	-64.8	-78.4	-19.1	-59.8	-20.7	-63.1	61.92	<.001	5.92	.004	12.83	< .001
		<i>SD</i>	32.7	20.9	43.9	43.0	33.6	34.7						
CAVS	134	<i>M</i>	31.2	24.4	52.3	33.7	49.1	29.4	108.65	<.001	21.87	<.001	8.62	< .001
		<i>SD</i>	11.5	8.1	18.4	14.0	17.8	12.2						

Note. Analyses only include programme completers.

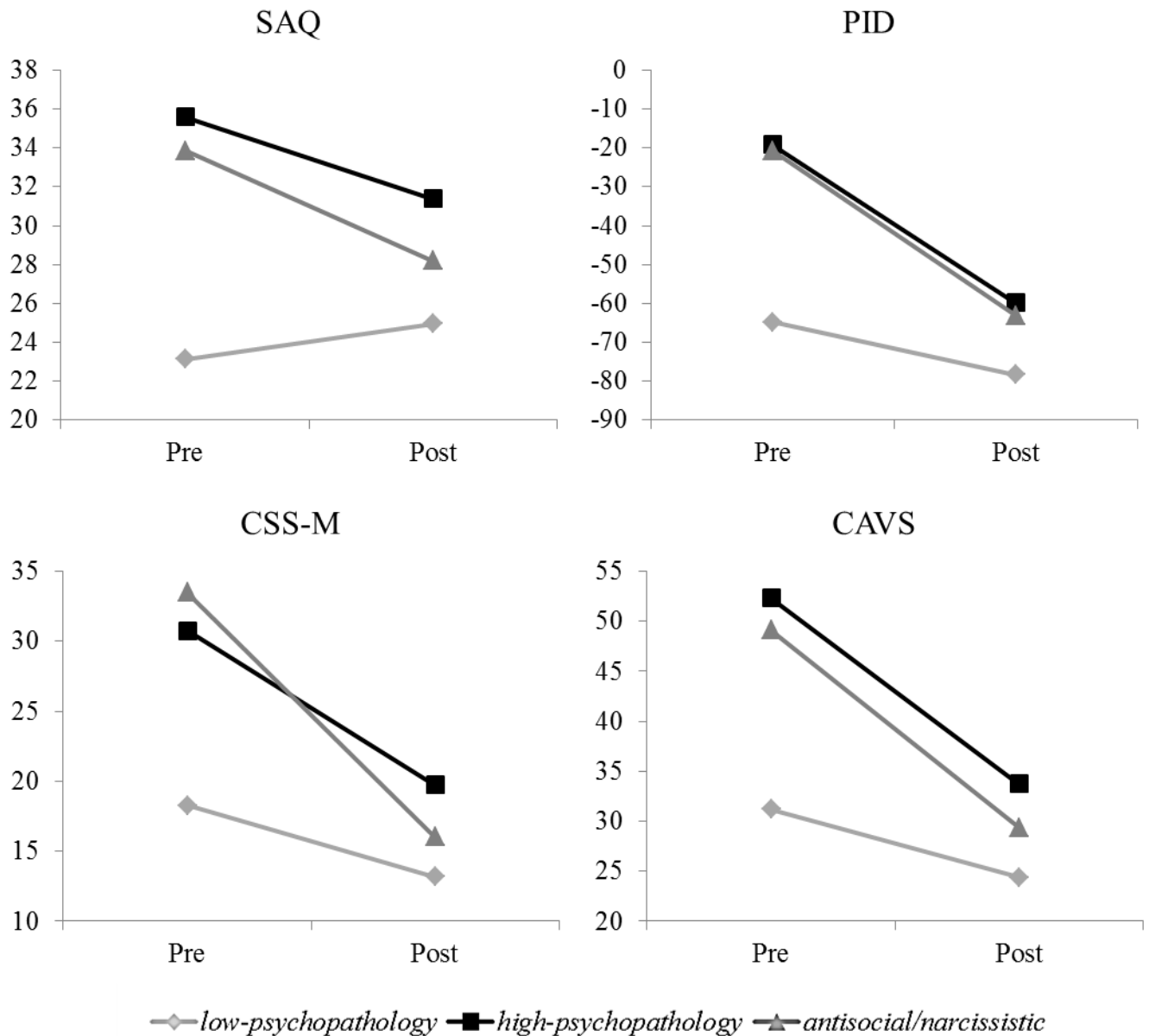


Figure 4.3. Cluster comparisons on pre- and post-programme self-report psychometrics.

It is possible that changes made on the self-report measures reflect changes in self-presentation style, rather than changes in criminal risk over the course of the programme. Therefore, clusters were also compared as to change on the dynamic items of the VRS. The pattern of results for VRS dynamic scores was slightly different from the self-reported measures. A repeated measures ANOVA indicated a main effect for time: VRS dynamic

scores decreased significantly over the course of the programme: $F(1) = 425.63, p < .001$ ¹⁴.

There was also a main effect for cluster: the *low-psychopathology* cluster had significantly lower VRS dynamic scores than the *antisocial/narcissistic* cluster: $F(2) = 5.26, p = .006$.

However, there was no significant interaction between cluster and time; all three clusters made a similar amount of change over the programme: $F(2) = 0.61, p = .544$. Cluster differences in VRS dynamic scores over treatment are presented in Figure 4.4.

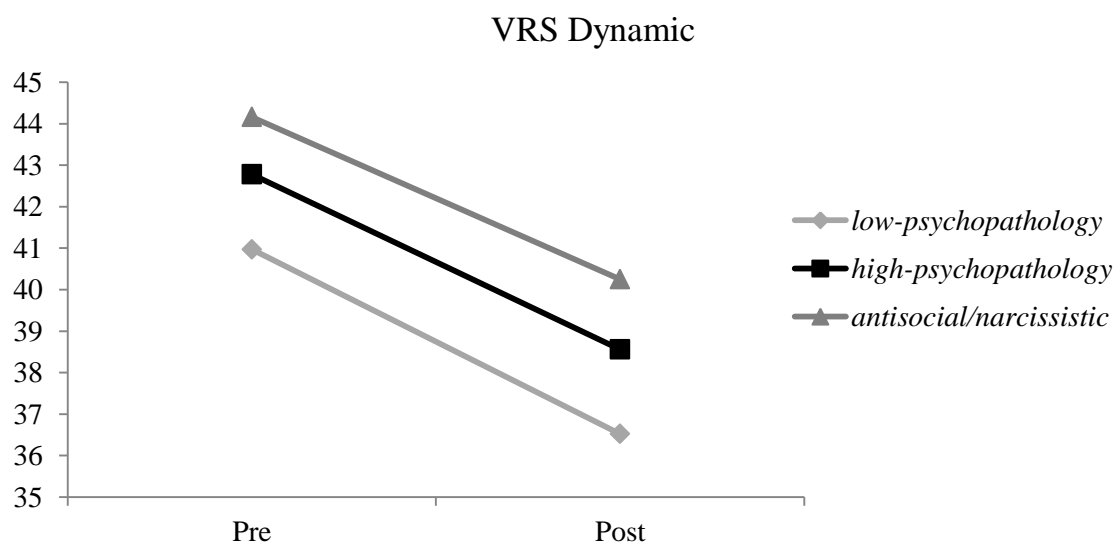


Figure 4.4. Cluster comparisons on staff-rated risk pre- and post-programme.

Treatment Non-completion

A final aspect of the treatment process that has received a large amount of attention is treatment non-completion. Treatment non-completion has been found to predict criminal recidivism in previous research (Olver et al., 2011), therefore it is possible that the higher rates of recidivism seen in the *antisocial/narcissistic* and *high-psychopathology* clusters in Chapter Three is a result of fewer men in these cluster completing treatment. For the sample as a whole, 73% completed treatment, and the average time in treatment was 192 days ($SD =$

¹⁴ Paired samples t -tests for each cluster separately indicated that VRS dynamic scores decreased significantly over the course of the programme.

74, $n = 617$). Furthermore, in the current research offenders who did not complete treatment were more likely to be reconvicted after release: $\chi^2(2) = 10.83, p < .001$, Cramer's $V = .146$, $n = 505$. Analyses of treatment completion rates are especially important given that the treatment change analyses in this chapter only included programme completers. A chi square test indicated that the three clusters did not differ in the proportion of individuals completing treatment: $\chi^2(2) = 1.54, p = .464$, Cramer's $V = .050$, $n = 623$. Furthermore, when time in treatment was treated as a continuous variable, a one-way ANOVA indicated that the three clusters did not differ significantly in the average time individuals spent in treatment: $F(2,616) = 0.69, p = .505, \eta^2 = .002, n = 617$. Cluster comparisons on rates of treatment completion and time in treatment are presented in Table 4.3. These results suggest that differences in treatment outcome could not be explained by cluster differences in treatment non-completion.

Table 4.3

Cluster comparison in rates of treatment completion

		1	2	3
Completed (Y)		73.0%	74.4%	69.4%
Days in programme	<i>M</i>	192.6	196.7	188.5
	<i>SD</i>	77.8	71.2	72.9

Discussion

Despite the common assertion in models of offender treatment response that psychopathology acts as a barrier to treatment engagement, there was little evidence in the current research that clusters with more severe psychopathology were less engaged, or made less progress in treatment. Clusters did not differ significantly in the therapeutic alliance, regardless of whether the alliance was rated by the therapist, client, or an observer. The only engagement variable on which the clusters differed was the VRS average stage of change: individuals in the *antisocial/narcissistic* cluster were rated as slightly less engaged in change

than those in the *high-psychopathology* cluster, both before and after the programme. For all three clusters, the average stage of change at the beginning of treatment was somewhere between pre-contemplation and contemplation, and by the end of treatment was somewhere between contemplation and preparation, so evidence of behavioural change on treatment targets was just starting to be apparent by the end of the programme.

Larger differences between clusters were seen in the amount of change made on psychometric measures during treatment. While the *antisocial/narcissistic* and *high-psychopathology* clusters tended to report less psychopathology by the end of the programme than at the start of the programme, there was little change in psychopathology reported by the *low-psychopathology* cluster. In addition, on all four self-report psychometric measures with criminal content the *low-psychopathology* cluster had the lowest scores pre- and post-programme, but there was an interaction between cluster membership and treatment change: on all measures the *low-psychopathology* cluster appeared to make less progress in treatment than the *high-psychopathology* cluster and the *antisocial/narcissistic* cluster. These results are surprising because they suggest that the clusters who reported high levels of personality and clinical psychopathology made *more* progress in treatment than the *low-psychopathology* cluster. However, two aspects of the results suggest that this may not be the entire picture. First, despite appearing to make little progress in treatment, individuals in the *low-psychopathology* cluster started and finished treatment with lower scores than the other two clusters on the majority of the MCMI-III scales, and all risk-related measures (SAQ, CSS-M, PID, CAVS, VRS dynamic). Floor effects may have partially explained the minimal change on these measure made by the *low-psychopathology* cluster compared to the *antisocial/narcissistic* and *high-psychopathology* clusters, who had considerably more room to change. Secondly, cluster differences on the self-reported risk measures (SAQ, CSS-M, PID, CAVS) pre- and post-programme did not match cluster differences on the therapist-

rated risk measure (VRS dynamic), on which all three clusters made an equal amount of progress over the course of the programme. It is possible that the *low-psychopathology* cluster was under-reporting crime-related content at the start of the programme, which may explain why they failed to show positive change on self-reported risk measures. In contrast, staff-rated VRS dynamic scores are likely to have been less influenced by positive self-presentation, so they may have given a more accurate picture of cluster differences in criminal risk pre- and post-programme. Cluster differences in self-report style are further explored in Chapter Five.

Overall, it appears from these results that offenders who report high levels of psychopathology on the MCMI-III do not show the extensive responsivity barriers suggested by treatment process models (Serin & Kennedy, 1997; Simpson, 2004). Furthermore, despite the extensive psychopathology reported by men in this sample and their high criminal risk, rates of non-completion were similar to those found in other offender rehabilitation programmes (Olver, Stockdale, & Wormith, 2011), and clusters did not differ in rates of non-completion. One reason why this might be the case is that therapists may already be addressing many of the treatment process issues presented by high-psychopathology individuals. The high levels of psychopathology reported by men in the current research suggest that in these programmes, personality and clinical psychopathology and associated affective, interpersonal, and behavioural difficulties are the norm, rather than the exception. Therefore it is likely that therapists have developed numerous techniques to engage these diverse, and often very difficult clients.

Another possible explanation for the good treatment engagement of *high-psychopathology* men despite their reported psychopathology is that although potentially disruptive in treatment, distress associated with psychopathology may be motivating (Tyrer et al., 2003). Supporting this hypothesis is evidence in the current research that

psychopathology decreased along with criminal risk over the course of the programme, especially on scales relating to distress. It is possible that treatment helped promote engagement by alleviating some of the distress associated with psychopathology experienced by some offenders, especially in the *high-psychopathology* cluster.

Change in Self-Reported Psychopathology

The reductions in self-reported psychopathology over treatment are perhaps surprising given the intent of treatment is to reduce criminal behaviour, not treat personality dysfunction. However, emotion regulation, impulse control, interpersonal skill, and self-awareness are central components of both offender rehabilitation and the treatment of personality dysfunction (Livesley, 2012; Polaschek & Kilgour, 2013), so it is likely that psychotherapeutic and criminogenic needs overlap substantially. The level of change in psychopathology—especially for the *antisocial/narcissistic* and *high-psychopathology* clusters—suggests that self-reported psychopathology profiles are somewhat dynamic; however, the characteristic *low-psychopathology*, *antisocial/narcissistic*, and *high-psychopathology* patterns were still evident post-programme, despite reductions in reported personality and clinical psychopathology for offenders in the *antisocial/narcissistic* and *high-psychopathology* clusters.

Practice Implications

Combined with previous research, the findings of the current chapter provide evidence that individuals who report high levels of psychopathology can make progress in treatment. The lack of cluster differences on engagement variables, and evidence of positive change on self-report and staff-rated risk measures for the *high-psychopathology* and *antisocial/narcissistic* clusters suggests that their higher rates of recidivism seen in Chapter Three are more likely to reflect higher pre-programme risk than poor treatment change. High levels of psychopathology are doubtless likely to make treatment much more difficult, but the

results of this chapter support persevering with the treatment of individuals who report high levels of psychopathology, especially because these same individuals tend to pose the greatest levels of criminal risk.

Limitations and Directions for Future Research

The research in this chapter is limited by our imperfect understanding of the treatment process with offenders, especially because offender treatment process models have typically drawn on research from outside offender rehabilitation. Until recently, the predominant question in offender rehabilitation research has been whether *anything* worked to reduce criminal risk for incarcerated offenders. It is only in the last decade that questions of *how* offender rehabilitation works, and whether it works better for some individuals than others has come to the foreground (Wormith et al., 2007). There are still few measures of treatment engagement and indices of treatment change that have been designed for use with offenders, and empirically validated with offender samples. With a better understanding of the variables that predict treatment engagement and treatment gain, we will be better placed to assess which offenders profit from treatment, and which—if any—may be better left untreated. It is possible that development in this area could in time reveal unmet treatment process issues that differ between the three clusters.

Another approach to identifying differential treatment gains taken in previous research is to compare offenders with each personality profile who have participated in the treatment programme to untreated controls with the same profile (Listwan et al., 2004). Higher recidivism rates among untreated controls would then suggest that the programme has been effective for individuals with that profile. Future research looking at treatment gains made by offenders with different psychopathology patterns could take this approach, as it would allow treatment gains to be assessed in the absence of well validated treatment responsivity measures.

The results of this chapter suggest that the high levels of psychopathology reported by the *high-psychopathology* and—to a lesser extent—the *antisocial/narcissistic* cluster do not appear to result in poor treatment engagement and gain for individuals in those clusters. Instead, their greater rates of criminal recidivism post-treatment are more likely to reflect higher criminal risk pre-treatment. These individuals appear to make at least as much change over the course of treatment as individuals who report less psychopathology. If anything, the results of the current study suggest that *high-psychopathology* and *antisocial/narcissistic* individuals could benefit from more intensive treatment, as they have further to change (Andrews & Bonta, 2010).

Chapter Five

Personality and Self-Report Validity

“chronic individual differences in self-presentation...constitute strong and pervasive aspects of personality”

(Paulhus & Trapnell, 2008, p. 492)

Many of the measures used in this research have been self-report measures completed by the offenders. A common concern expressed by specialists in offender assessment is that scores on self-report measures may be influenced by self-presentation style—a tendency to respond in a favourable or unfavourable light—which may limit their validity (Hanson & Bussiere, 1998; Kroner & Loza, 2001). Self-presentation style is likely to be an important consideration in the current research, as cluster differences in offender characteristics, risk, and treatment change tended to be greater on self-report measures than on staff-rated measures, suggesting that clusters differ in self-presentation style. There is also evidence that psychopathology clusters identified in previous research differed on measures of self-presentation (Blackburn, 1996; Johnson et al., 2006; Rothschild et al., 1997; Wales, 2005).

The research literature is divided as to how best to interpret individual differences in self-presentation style. Two major perspectives found in the literature view self-presentation style as (a), a source of psychometric error (the *psychometric error* perspective), and (b), indicative of positive or negative adjustment (the *adjustment* perspective). In the current chapter I use these two perspectives as a framework for exploring cluster differences in self-presentation style and the predictive validity of risk-related self-report measures in the prediction of criminal recidivism.

The Use of Self-Report with Offenders

Self-report measures are often used as a cost-effective way to assess offenders: they are quick to administer and can often be scored by staff who are not clinically trained. These measures may provide rich information on offenders' beliefs, self-perceptions, behaviour and psychological functioning not easily determined by an observer. When self-report measures are based on criminal constructs that have been theoretically and empirically linked to criminal behaviour—that is, they are content-relevant—they have been found to be as good at predicting criminal recidivism as risk prediction measures that do not rely exclusively on

self-report (Walters, 2006)¹⁵. Further, although there is little evidence that risk-related self-report measures explain *more* variance in criminal recidivism than externally-rated measures, there is some evidence that they explain *different* variance (Bonta, 2002; Walters, 2006). The best predictive models are therefore likely to involve a combination of risk-related self-report and externally-rated risk measures.

Relationship Between Risk-Related Self-Report and Criminal Behaviour

Self-report measures are often used to assess antisocial cognitions (Bonta, 2002). Beliefs, values, and attitudes are most easily assessed with self-report, and the relative anonymity of pen-and-paper self-report measures—compared to the greater social demands of interview-based measures—can encourage greater reporting of antisocial/criminal content (Simourd, 1997). A number of measures of antisocial cognitions have been found to be related to criminal history (Polaschek et al., 2004; Simourd, 1997), and to predict criminal recidivism (Mills, Kroner, & Hemmati, 2004; Simourd & Van de Ven, 1999; Walters, 2005).

Global criminal risk is often externally rated (Archer, Buffington-Vollum, Stredny, & Handel, 2006; Douglas & Skeem, 2005; Hanson, 2009). However, multifactorial self-report measures of criminal risk have also been developed (Loza, 1996; Motiuk, Motiuk, & Bonta, 1992). Only a small number of studies have looked into the predictive validity of these measures, but there is evidence that self-reported risk is related to externally-rated risk (Loza, Dhaliwal, Kroner, & Loza-Fanous, 2000; Motiuk et al., 1992), offenders' criminal history (Kroner, Mills & Morgan, 2007; Miller, 2006), institutional misconduct (Motiuk et al., 1992), and criminal recidivism (Miller, 2006; Mills, Loza, & Kroner, 2003; Motiuk et al., 1992).

Despite evidence that self-report measures are able to predict outcomes of interest, their relationship with criminal recidivism tends to be modest, and there are good reasons to be concerned with the validity of self-report measures with offenders. One factor that may

¹⁵ I will refer to these content-relevant measures as risk-related self-report measures, to distinguish them from other self-report measures used in offender assessment.

limit the validity of risk-related self-report is that offenders often have an incentive to appear to be low risk in order to secure more favourable treatment, such as a lighter sentence, or an early release from prison (Spidel, 2002). Offenders will be aware that admitting to antisocial cognitions, substance abuse problems, and risky behaviours is unlikely to improve their prospects. As a result, they may under-report antisocial/criminal content on self-report measures, and engage in positive self-presentation¹⁶.

In addition to external incentives for offenders to engage in positive self-presentation, a further concern is that compared to the general public, offenders may be more prone to lying in general (Marion et al., 2012; Schretlen & Arkowitz, 1990). This commonly held mistrust of offender self-report may partly reflect the fact that lying, dishonesty, and deception are common features of criminal offences. Hare (1985) went so far as to make the following claim:

“There is no reason to assume that a suspected criminal or prison inmate will reveal anything of real clinical significance about himself on a questionnaire or during an interview, or that his replies will be related to actual behavior in any consistent fashion” (p. 157).

As this quote illustrates, historically there has been a deep mistrust both in the accuracy of offender self-report, and in the ability of self-report to predict behavioural outcomes. Concern that self-presentation style may invalidate self-report measures forms the basis of the psychometric error perspective on self-report style.

Psychometric Error Perspective

This perspective holds that under certain conditions, individuals may wish to present themselves in an overly positive or negative light. This self-presentation bias is context-dependent, and results in inaccurate self-report with poor predictive validity. An example of

¹⁶ Negative self-presentation is also possible, however when risk-related self-report measures are completed as part of treatment or for a parole assessment, the major concern is with positive self-presentation (also called socially desirable responding).

this perspective is Paulhus' concept of impression management, which reflects deliberate attempts on the part of a respondent to present a positive social image. Paulhus proposed that impression management "will vary according to situational demands and transient motives and that variation may obscure the validity of the respondent's self-reports" (Paulhus, 1991, pp. 21-22).

There is evidence that the context under which self-report questionnaires are administered can influence offender self-report. For example McGrath, Cann, and Konopasky (1998) found that child sex offenders who were assured their responses would be anonymous reported more offending-related cognitive distortions than child sex offenders who were being assessed for a parole hearing. In addition, Gannon, Keown, and Polaschek (2007) found that child sex offenders reported more cognitive distortions when they believed they were connected to a lie detector, compared to their responses under standard conditions. These findings suggest that offenders are most likely to engage in positive self-presentation when they believe it is in their best interest, and when they believe they are unlikely to be detected. Positive self-presentation also tends to increase over the course of prison programmes (Mathie & Wakeling, 2011), which suggests that post-programme psychometric tests are more susceptible to positive self-presentation than pre-programme psychometric tests. Of course, interview-based assessment is also likely to be influenced by the effects of positive self-presentation, and may even encourage it (e.g. Simourd, 1997).

The psychometric error perspective suggests therefore that positive self-presentation is a type of psychometric error, and that the accuracy and predictive validity of self-report will increase when this error associated with self-presentation style is removed. Concern with the effects of self-presentation style on the validity of self-report psychometric measures has led to the development of a number of self-report psychometric measures designed specifically to detect positive self-presentation.

Measuring Positive Self-Presentation

Measures of positive self-presentation generally comprise a series of statements that are unlikely to be true for most individuals, but may be endorsed when an individual attempts to appear more virtuous or impressive. An example is an item in the Paulhus Deception Scale (PDS; Paulhus, 1998a) 'I never cover up my mistakes'. The validity of these measures is supported by evidence that (a) they are sensitive to changes in positive self-presentation demands (scores increase when individuals are instructed to 'fake good' on self-report measures compared to responding under standard instructions), (b) they correlate with the discrepancy between self-report and other-rated measures, and (c) they are associated with other indicators of response distortion, including over-claiming and self-inflation (Paulhus, 1998; Paulhus, Bruce, & Trapnell, 1995; Pauls & Crost, 2004).

Positive self-presentation measures have been used as a validity check in the development of self-report psychometric scales (Dyer, Bell, McCann, & Rauch, 2006; Paulhus, 1998a). A significant correlation between a measure of positive self-presentation and a self-report scale is thought to indicate that the scale is susceptible to the effects of positive self-presentation (Mathie & Wakeling, 2011; Simourd, 1997). A number of self-report scales used with offenders have incorporated self-presentation style subscales—or validity indices—into the scales to assess whether a respondent is presenting themselves in an overly positive or negative light (Ben-Porath & Tellegen, 2008; Millon et al., 1997; Walters, 2002). The MCMI-III contains three such validity indices: the disclosure and debasement subscales indicate negative self-presentation (exaggeration of psychopathology), and the desirability subscale indicates positive self-presentation (denial of psychopathology).

Problems with the Psychometric Error Perspective and Measures of Positive Self-Presentation

Central to the psychometric error perspective is the idea that if measures of positive self-presentation and validity indices accurately assess psychometric error resulting from positive self-presentation, then controlling for these measures—or discarding data from offenders with high scores on these measures—should increase the validity of other self-report measures. However, despite the widespread use of positive self-presentation measures, there is little evidence that controlling for these measures can increase the validity of self-report (Paulhus, 1991; Smith & Ellingson, 2002). In fact, Mills and Kroner (2006) found that statistically controlling for scores on a measure of positive self-presentation decreased the ability of risk-related self-report measures to predict criminal recidivism (although the decrease was not quite statistically significant). This finding is likely to reflect the fact that measures of positive self-presentation themselves can be predictive of criminal behaviour: offenders with high scores on these measures tend to be rated as having lower criminal risk, and have lower rates of recidivism (Mathie & Wakeling, 2011; Mills & Kroner, 2005; Tan & Grace, 2008). This relationship may partly reflect the fact that some measures contain items that are directly related to criminal behaviour¹⁷. Furthermore, it is likely to be adaptive to engage in some level of positive self-presentation (Uziel, 2010). Evidence that commonly used measures of positive self-presentation are contaminated with variance associated with psychological adjustment and criminal risk suggests that they are imperfect measures of psychometric error resulting from self-presentation style.

¹⁷ For example, the following is an item on the Paulhus Deception Scale: “I always obey laws, even if I’m unlikely to get caught”. Endorsement of this item is supposed to reflect positive self-presentation, however it is unlikely that incarcerated offenders would endorse this item, regardless of the impression they were trying to make.

Adjustment Perspective

A second theory of self-presentation style that better accounts for the relationship between measures of positive self-presentation, psychological functioning, and criminal behaviour is the adjustment perspective. This perspective holds that self-presentation style may carry important information about personality and psychological adjustment, so it cannot be separated out from adjustment-related self-report measures (Uziel, 2010). Research that has explored the relationship between self-presentation and psychological adjustment has linked positive self-presentation to a wide range of positive outcomes, including both self-reported and other-rated adjustment measures and a lower risk of criminal behaviour (Li & Bagger, 2006; Mathie & Wakeling, 2011; Millon et al., 1997; Paulhus, 1998b; Taylor & Brown, 1988; Uziel, 2010). This relationship is not surprising when we consider that positive self-presentation may partly reflect positive self-perception and interpersonal sensitivity (Paulhus & John, 1998), and that negative self-presentation is a key feature of depression (APA, 2000). Overall, the relationship between positive self-presentation and psychological adjustment lends support to the idea that self-presentation style has trait-like elements, rather than being simply a source of error on self-report measures.

However, for some individuals, positive self-presentation may not be indicative of psychological adjustment. An overly positive self-perception is a key feature of narcissism, (APA, 2000), and pathological lying and a tendency to con and manipulate others are considered to be central features of psychopathy (Hare & Neumann, 2008). Therefore, it may be difficult to determine whether positive self-presentation is indicative of adjustment, or whether it reflects an underlying pathology like narcissism or psychopathy. Paulhus suggests that self-deceptive enhancement—an unconscious favourability bias—is closely linked to narcissism, and reflects a lack of personal insight (Paulhus, 1998a).

There is evidence that measures of self-deceptive enhancement (unconscious trait self-enhancement) and impression management (deliberate self-enhancement) have different patterns of correlations with adjustment-related variables. For example, Li and Bagger (2006) found evidence that both impression management and self-deceptive enhancement are linked to emotional stability and conscientiousness, while impression management is additionally linked to agreeableness, and self-deceptive enhancement is linked to extraversion. Similarly, Paulhus (1998b) found that self-deceptive enhancement correlated positively with peer ratings of extraversion, agreeableness, and adjustment. Self-deceptive enhancement was also related to peer ratings of confidence, warmth, and intelligence. However, after a longer acquaintance correlations with agreeableness and warmth became negative, and self-deceptive enhancement positively correlated with hostility, arrogance, and a tendency to overestimate abilities. Paulhus concluded that self-deceptive enhancement was related to positive self-attitudes, which fostered confidence and extraversion, but over time might lead to maladaptive interpersonal styles.

Combining the Two Perspectives

Evidence that individuals engage in more positive self-presentation when they have an incentive to do so—and when they believe they are unlikely to be detected—suggests that psychometric error is a problem for self-report measures. However, a general tendency for positive self-presentation is also likely to be adaptive, so positive self-presentation may also be linked to variance in psychological functioning and criminal risk. It is likely that both the adjustment and psychometric error perspectives have something to add to our understanding of the self-report of offenders with different psychopathology profiles.

Existing measures of positive self-presentation are likely to confound variance associated with psychometric error with that associated with psychological adjustment (Uziel, 2010). For this reason, scores on these measures should not be used as the sole means for

determining whether self-report is likely to be valid. Rather, scores should be understood with reference to overall psychological adjustment, and only assumed to reflect psychometric error when there is converging evidence for reduced accuracy and/or predictive validity of self-report. With this in mind, I will describe evidence that psychopathology clusters are likely to differ in self-presentation style.

Psychopathology Clusters and Self-Presentation Style

The adjustment perspective suggests that clusters who have good psychological adjustment—little personality and clinical psychopathology—would engage in more positive self-presentation, and have better outcomes, including lower criminal risk¹⁸. When previous research with offender psychopathology clusters has looked at measures of self-presentation style, results have tended to support this relationship. Overall, research suggests that high levels of psychopathology are generally related to negative self-presentation, while low psychopathology and narcissism are related to positive self-presentation. For example, Rothschild et al. (1997) found that a cluster that reported high levels of psychopathology on the MCMI-II had higher scores on disclosure and debasement scales (indicating negative self-presentation) than two clusters that reported less psychopathology. The highest scores on the desirability scale (indicating positive self-presentation) came from the cluster that had the highest narcissism scores. Similarly, Johnson et al. (2006) found that two clusters characterised by high levels of psychopathology had lower scores on measures of positive self-presentation than two clusters characterised by low psychopathology and/or narcissism. Finally, Blackburn (1996) and Wales (2005) found that *secondary psychopaths* reported high levels of psychopathology, but had lower scores on measures of positive self-presentation compared to clusters that reported less psychopathology.

¹⁸ With the notable exception of narcissism, which may be linked to positive self-presentation.

These studies are broadly consistent with the adjustment perspective of self-presentation style. However, none of these studies looked at self-presentation style from the psychometric error perspective. The psychometric error perspective suggests that positive self-presentation may limit the validity of self-report, so the self-report of clusters that engage in positive self-presentation may not be as predictive. Previous research has not explored whether cluster differences on measures of positive self-presentation are accompanied by differences in the validity of their self-report.

The Current Research

There were two parts to the analyses in this chapter. The first part examined whether—as in previous research—the clusters identified in the current research differed in positive self-presentation. Previous research suggests that positive self-presentation is linked to positive adjustment, and clusters that report extensive psychopathology have lower scores on measures of positive self-presentation compared to clusters that report less psychopathology. These findings are consistent with the adjustment perspective of self-report style. I anticipated that the *low-psychopathology* cluster in the current research would have the highest scores on measures of positive self-presentation, and the *high-psychopathology* cluster would have the lowest. I expected the positive self-presentation scores of the *antisocial/narcissistic* cluster to fall between the other two clusters, because individuals in that cluster reported fairly high levels of psychopathology, but they also had high narcissism scores, which has been linked to positive self-presentation (especially self-deceptive enhancement).

Cluster differences in positive self-presentation may have implications for the validity of self-report psychometric measures. The psychometric error perspective of self-presentation style suggests that higher levels of positive self-presentation would be associated with poor self-report predictive validity. In offender assessment, a central concern is the prediction of

criminal behaviour after release from prison. Therefore, the second part of this chapter explored the relationship between risk-related self-report measures and criminal recidivism for the three clusters. Specifically, I sought to determine whether risk-related self-report measures completed by clusters who engaged in positive self-presentation were poorer predictors of criminal behaviour (convictions after release from prison) compared to measures completed by clusters who did not engage in positive self-presentation.

Method

Measures

The risk-related self-report measures used in this chapter appeared in previous chapters. Descriptions of the Criminal Sentiments Scale-Modified (Shields & Whitehall, 1991), Pride In Delinquency (Shields & Whitehall, 1991), and Criminal Attitudes to Violence (Polaschek et al., 2004) scales can be found in Chapter Four, and a description of the Self-Appraisal Questionnaire (Loza, 1996) can be found in Chapter Three. These four measures were developed specifically for use in offender assessment (Campbell, French, & Gendreau, 2007; Polaschek et al., 2004; Simourd, 1997). Two measures of self presentation style were also used: the Paulhus Deception Scales (Paulhus, 1998a), and the three validity indices from the MCMI-III (Millon et al., 1997).

The Paulhus Deception Scales (PDS; Paulhus, 1998a). The PDS is a psychometric scale designed to measure social desirability bias in self-report. The 40 items are each rated on a 5 point Likert scale, but ultimately scored dichotomously, giving a total score out of 40. There are two subscales: Self-Deceptive Enhancement (SDE; honest, but inflated self-descriptions), and Impression Management (IM; inflated self-descriptions to an audience), each with 20 items. Research with previous versions of the PDS have found negative correlations with risk-related self-report (Mills, Loza, & Kroner, 2003; Simourd & Mamuza, 2000), and scores increase when participants are instructed to ‘fake good’ in their responding

(Pauls & Crost, 2004). However, some studies have also found negative correlations with subsequent offending (Mills, Loza, & Kroner, 2003), which suggests that the scale may tap important criminogenic variance in addition to—or instead of—‘fake good’ responding.

MCMI-III Validity Indices (Millon, Davis, & Millon, 1997). In addition to the personality and clinical psychopathology scales, the MCMI-III contains three validity indices which are termed ‘modifying indices’: disclosure (X), desirability (Y), and debasement (Z). The disclosure index assesses the degree of psychopathology symptoms reported. High scores reflect either extensive psychopathology or symptom exaggeration, and low scores suggest symptom denial. The desirability index measures positive self-presentation: ‘an inclination to appear socially attractive, morally virtuous, or emotionally well composed’, while the debasement index measures negative self-presentation: ‘an inclination to deprecate or devalue oneself by presenting more troublesome emotional and personal difficulties than are likely to be uncovered upon objective review’ (Millon et al., 1997, pg. 118). BR scores of 75 or higher on the modifying indices indicate problematic responding¹⁹. In this range, X and Z indicate high disclosure and likely symptom exaggeration, while Y indicates positive self-presentation and denial of psychological difficulty. There is evidence that the three MCMI-III validity indices correlate highly with similar scales in the MMPI (Farkas, Rosenfeld, Robbins, & Van Gorp, 2006; Schoenberg, Dorr, Morgan, & Burke, 2004); however, evidence for the efficacy of these three scales in detecting biased responding is mixed. Daubert and Metzler (2000) found that instructions to ‘fake good’ yielded significantly lower disclosure (X) and debasement (Z) scores, and higher desirability (Y) scores among a sample of psychiatric outpatients. Furthermore, instructions to ‘fake bad’ yielded significantly higher disclosure and debasement scores, and lower desirability scores. However, other research has found

¹⁹ Recall that base rate (BR) scores on MCMI-III scales are calibrated so that scores above a general cut-off of $BR \geq 75$ indicate mild dysfunction, and scores above a more conservative cut-off of $BR \geq 85$ indicate a more severe problem.

little evidence that the three indices were able to discriminate between a student sample instructed to ‘fake bad’ and a psychiatric sample under standard instructions (Schoenberg, Dorr, & Morgan, 2003).

Data Analytic Procedure

To determine whether there were cluster differences in self-presentation style, ANOVA was used to compare the three clusters on the two PDS subscales and three MCMI-III validity indices, both before and after the programme. Next, to determine whether the predictive validity of risk-related self-report measures varied between the clusters, correlations were calculated between four self-report measures—the SAQ, CSS-M, PID, and CAVS—and reconviction after release from prison.

Results

Cluster Differences in Self-Presentation Style

As anticipated, there were differences between clusters on measures of self-presentation style, both before and after the programme (Table 5.1). On indices of positive self-presentation (SDE, IM, Desirability), the *low psychopathology* cluster scored the highest, and the *high-psychopathology* cluster scored the lowest at the start of the programme. This pattern was reversed on indices of negative self-presentation (Disclosure and Debasement). A similar pattern was found for post-programme scores: men in the *low psychopathology* cluster tended to engage in the most positive self-presentation, and men in the *high-psychopathology* cluster tended to engage in the most negative self-presentation²⁰. Scores on positive self-presentation measures tended to be higher at the end of treatment, especially on the PDS

²⁰ When individuals who completed treatment were compared to individuals who did not complete treatment, there were no significant differences between scores on any of the five measure of self-presentation style (IM, SDE, disclosure, desirability, and debasement). Pre- and post-programme cluster differences on these measures exclusively for programme completers are reported in Appendix 7.

scales. Furthermore, cluster differences were less pronounced on the MCMI-III validity indices at the end of treatment.

Interestingly, despite cluster differences on the SDE and IM scales, the mean scores for all three clusters did not strongly indicate positive self-presentation from any cluster before or after treatment. Although pre- and post-programme SDE scores for the *antisocial/narcissistic* and *low-psychopathology* clusters were above the average previously found for prison entrants, they still fell in the normal range ($T \leq 70$; Paulhus, 1998a). However, on the MCMI-III validity indices, mean scores of the *low-psychopathology* and *antisocial/narcissistic* clusters were indicative of positive self-presentation pre- and post-programme ($BR \geq 75$ on the desirability scale; Millon, Davis, & Millon, 1997), while mean scores of the *high-psychopathology* cluster were potentially indicative of negative self-presentation pre-programme ($BR \geq 75$ on the disclosure scale), which may suggest over-disclosure and symptom exaggeration.

Combined, the cluster comparisons on measures of self-presentation style indicate that men in the *low-psychopathology* cluster, and to a lesser extent the *antisocial/narcissistic* cluster, present themselves in a more positive light on self-report measures. Furthermore, men in the *high-psychopathology* cluster appeared to present themselves in a negative light.

Table 5.1

Cluster comparison on measures of positive self-presentation pre- and post-programme

			Cluster 1		Cluster 2		Cluster 3								
			<i>low-</i>		<i>high-</i>		<i>antisocial-</i>								
			<i>psychopathology</i>		<i>psychopathology</i>		<i>narcissistic</i>								
	Scale	Subscale	<i>n</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>F</i>	<i>p</i>	η ²	Cluster Comparison		
													1 vs. 2	1 vs. 3	2 vs. 3
Pre-	PDS		322												
Programme		SDE		5.8	4.2	3.4	2.9	4.2	3.3	11.9	<.001	.069	**	**	<i>ns</i>
		IM		7.1	3.1	4.5	2.9	5.5	3.2	17.2	<.001	.097	**	**	*
	MCMII-III		623												
		Disclosure		43.3	13.0	80.5	16.6	67.8	12.2	329.6	<.001	.515	**	**	**
		Desirability		76.6	11.9	50.3	14.5	76.3	10.7	311.4	<.001	.501	**	<i>ns</i>	**
		Debasement		26.0	20.0	66.8	11.1	50.6	11.0	397.5	<.001	.562	**	**	**
Post-	PDS		182												
Programme		SDE		6.2	3.6	3.5	2.9	5.5	3.5	11.1	<.001	.110	**	<i>ns</i>	**
		IM		8.7	4.0	6.1	3.9	5.9	3.5	8.7	<.001	.088	*	**	<i>ns</i>
	MCMII-III		305												
		Disclosure		41.6	16.0	68.9	21.2	57.9	17.9	44.7	<.001	.228	**	**	**
		Desirability		75.5	15.6	62.5	18.4	76.0	13.9	24.9	<.001	.141	**	<i>ns</i>	**
		Debasement		26.5	22.5	53.8	16.5	39.9	21.5	41.2	<.001	.214	**	**	**

Note. * $p < .05$. ** $p < .01$. SDE = Self-deceptive enhancement, IM = Impression management

Pre-programme data includes individuals who did not complete the full treatment programme.

Cluster Differences in the Predictive Validity of Risk-Related Self-Report

The previous analyses indicated that clusters differ in their tendency to engage in positive or negative self-presentation. These differences in self-presentation style may have implications for the way we interpret other self-report measures completed by men in the three clusters, especially risk-related self-report measures. Therefore, the following series of analyses explored the predictive validity of self-report for the three clusters. For each cluster, correlations with reconviction were examined for scores on four risk-related self-report measures: SAQ, CSS-M, PID, and CAVS (Table 5.2).

For the *low-psychopathology* cluster, none of the correlations reached statistical significance pre-programme, and the magnitude of the correlations was small (average r pre-programme = .03). Post-programme, there was a trend for higher correlations with reconviction (average r post-programme = .29), and the SAQ in particular was highly correlated with reconviction ($r = .57$).

The pattern of results was very different for the *high-psychopathology* cluster. All four risk-related self-report scales significantly predicted reconviction pre-programme (average r pre-programme = .49). The SAQ was a particularly strong predictor, explaining 42% of the variance in reconviction rates. Only CAVS significantly predicted recidivism post-programme, and the magnitude of the correlations was lower post-programme (average r post-programme = .39)²¹.

There was little evidence that pre-programme self-report measures were able to predict reconviction for the *antisocial/narcissistic* cluster (average r pre-programme = .08). However, post-programme SAQ scores significantly predicted reconviction, and there was a trend for correlations to be higher post-programme (average r post-programme = .27).

²¹ The statistical power to detect significant correlations was lower post-programme, which might explain why there were less significant predictors. However, the lower magnitude of the correlations suggests that the risk-related self-report measures were less predictive post-programme for this cluster.

The results indicate that compared to the *low-psychopathology* and the *antisocial/narcissistic* clusters, pre-programme self-reported scales completed by the *high-psychopathology* cluster were more predictive of reconviction. In particular, the SAQ scores of *high-psychopathology* offenders were significantly more predictive of reconviction than *low-psychopathology* or *antisocial/narcissistic* SAQ scores. This finding is especially interesting as the SAQ is the most empirically validated as a risk predictor for offenders (Walters, 2006). Post-programme there were no significant differences between clusters in the predictive validity of self-report. It appears that the lack of difference between clusters partially reflects the poorer predictive validity of the *high-psychopathology* scores and the improved predictive validity of the *low-psychopathology* and *antisocial/narcissistic* scores post-programme.

Table 5.2

Correlations between risk-related self-report measures and reconviction for the three clusters

		Cluster 1		Cluster 2		Cluster 3		Differences in correlation		
		<i>low-</i>		<i>high-</i>		<i>antisocial/ narcissistic</i>		magnitude (z)		
		<i>psychopathology</i>		<i>psychopathology</i>						
		<i>n</i>	<i>r</i>	<i>n</i>	<i>r</i>	<i>n</i>	<i>r</i>	<i>C1 vs. C2</i>	<i>C2 vs. C3</i>	<i>C1 vs. C3</i>
Pre-programme	SAQ	41	.202	26	.646**	42	.011	-2.13*	2.88**	0.85
	CSSM	42	-.201	26	.586**	42	.277 ^t	-3.33**	1.47	-2.16
	PID	42	-.002	26	.412*	42	.073	-1.67 ^t	1.39	-0.33
	CAVS	55	.101	48	.311*	65	-.043	-1.08	1.86 ^t	0.77
Post-programme	SAQ	29	.568**	19	.410 ^t	24	.414*	0.66	-0.01	0.7
	CSSM	29	.205	19	.424 ^t	24	.208	-0.77	0.73	-0.01
	PID	29	.142	19	.375	24	.247	-0.79	0.43	-0.37
	CAVS	38	.229	34	.350*	41	.203	-0.54	0.66	0.12

Note. ^t $p < .10$, * $p < .01$, ** $p < .05$

Discussion

This chapter explored the relationship between psychopathology profiles, self-presentation style, and the predictive validity of risk-related self-report. There were a number of reasons to look for cluster differences in self-presentation style. First, cluster differences in the previous chapters tended to be greatest on self-report measures. Second, there was evidence that offender psychopathology clusters identified in previous research differed in self-presentation style. Third, positive self-presentation has been linked to positive adjustment, so clusters that report lower psychopathology are likely to engage in positive self-presentation, and finally, self-presentation style is an integral feature of some psychological disorders, for example depression and narcissism. Results indicated that compared to the *high-psychopathology* cluster, the *low-psychopathology* cluster—and to a lesser extent the *antisocial/narcissistic* cluster—engaged in more positive self-presentation, especially at the start of the programme. There was also evidence that the three clusters differed in the extent to which risk-related self-report measures predicted criminal recidivism. Self-report measures completed by the *high-psychopathology* cluster pre-treatment appeared to be considerably stronger predictors of reconviction than those completed by the *low-psychopathology* and *antisocial/narcissistic* clusters. This pattern was especially strong for the SAQ, the most empirically validated of the four self-report measures in the prediction of criminal behaviour.

A review of relevant research suggested that self-presentation styles have been interpreted both as sources of psychometric error, and as evidence of psychological adjustment. The psychometric error perspective holds that positive self-presentation style may invalidate self-report, and reduce the predictive validity of self-report. In contrast, the adjustment perspective holds that positive self-presentation is related to positive adjustment,

and may be associated with lower criminal risk. The results of the current study provide mixed support for both perspectives.

Consistent with the psychometric error perspective, the predictive validity of risk-related self-report tended to be lower when scores on measures of positive self-presentation were high. For example, the *high-psychopathology* cluster had the lowest positive self-presentation scores of the three clusters pre-treatment, and their risk-related self-report was highly predictive of reconviction. However, by the end of treatment the *high-psychopathology* cluster had higher positive self-presentation scores, and the predictive validity of their risk-related self-report was lower.

Proponents of the psychometric error perspective have focussed on the way that positive self-presentation may limit the validity of self-report (e.g. Paulhus, 1998a), but have largely ignored the potential impact that negative self-presentation may have on self-report validity. In the current research there was some evidence that men in the *high-psychopathology* cluster engaged in negative self-presentation (indicated by high scores on the disclosure scale pre-programme). If this was the case, the fact that risk-related self-report was highly predictive of recidivism for men in this cluster would be problematic for the psychometric error perspective. It is possible that the high disclosure scores for individuals in the *high-psychopathology* cluster simply reflect their extensive personality and clinical symptomatology²², rather than indicating negative self-presentation. However, a second possibility is that the high disclosure scores of the *high-psychopathology* cluster pre-programme indicate that these individuals exaggerate their psychopathology, and may be prone to negative self-presentation more generally, perhaps as a cry for help (Millon et al., 1997).

²² Recall that the disclosure scale is calculated based on the level of psychopathology reported on the MCMI-III psychopathology scales.

A pattern of negative self-presentation and high reported psychopathology is more consistent with the adjustment perspective. When we consider the overall patterns of cluster differences in self-presentation style, self-reported psychopathology, and rates of criminal recidivism, it appears that to a certain extent, positive self-presentation is linked to better adjustment. Recall that the *low-psychopathology* cluster was characterised by the least psychopathology on the MCMI-III scales, had lower rates of criminal recidivism (see Chapter Three), and the highest positive self-presentation scores of the three clusters. In contrast, the *high-psychopathology* cluster was characterised by reports of extensive psychopathology, had high rates of criminal recidivism, and had the lowest positive self-presentation scores of the three clusters. The link between positive self-presentation and adjustment was less apparent for the *antisocial/narcissistic* cluster however; despite evidence of positive self-presentation (especially on the MCMI-III desirability scale), they also reported moderately high levels of psychopathology, and had high rates of criminal recidivism. These findings suggest that the relationship between positive self-presentation and adjustment may depend on both the nature of positive self-presentation and the types of psychopathology being considered. For example, while it may be true that there is a general relationship between positive self-presentation and psychological adjustment, there is some evidence that positive self-presentation associated with narcissism is not adaptive (Paulhus, 1998b).

The results suggest that a useful distinction to be made in future research is between the accuracy and the predictive validity of self-report. The current chapter indicates cluster differences in self-presentation style and in the predictive validity of self-report. A useful next step would be to determine whether cluster differences in the predictive validity of risk-related self-report can be attributed to differences in self-report accuracy (consistent with the psychometric error perspective), or whether there is another explanation, for example cluster

differences in risk factors. This research would require self-report measures of psychological adjustment and risk to be accompanied by externally-rated measures of the same constructs.

Two interesting aspects of the results in the current chapter may also be clarified by information on self-report accuracy. First, externally-rated measures of psychological adjustment and risk could indicate whether individuals in the *high-psychopathology* cluster exaggerate psychopathology and criminal risk (as indicated by their high disclosure scores pre-programme), or whether they accurately report a high level of dysfunction. There is some research to suggest that depressed individuals give more accurate self-assessments than non-depressed individuals (Taylor & Brown, 1988), although some subsequent studies have failed to replicate these findings (e.g. Colvin, Block, & Funder, 1995). Alternatively, the high predictive validity of risk-related self-report for individuals in this cluster may suggest that these men exaggerate risk to a similar extent (i.e. the rank order is maintained, despite exaggeration).

The availability of externally-rated risk measures may also clarify a second puzzling feature of the current results. Despite differences in self-presentation style, men in the *high-psychopathology* and *antisocial/narcissistic* reported similar levels of criminal risk (Chapters Three and Four), and had similar rates of criminal recidivism (Chapter Three). If men in the *antisocial/narcissistic* cluster had been underreporting criminal risk—as indicated by measures of self-presentation style—we would expect them to have lower scores on self-reported risk measures compared to the *high-psychopathology* cluster. Information on the accuracy of self-report might tell us whether positive self-presentation may be restricted to some aspects of functioning but not others.

In many ways, the analyses in this chapter highlight the complexity of research using SR measures. Questions of self-report style and the validity of self-report have received surprisingly little attention in previous research. Researchers tend to either (a) ignore the

complexities of self-presentation style in research using self-reported measures when the measures have been found to predict outcomes of interest, or (b) avoid using self-reported measures altogether because they are assumed to be too biased. Although I cannot hope to untangle all the different processes involved in understanding self-presentation style in this research, a few key findings from this chapter are likely to be important. First, positive self-presentation tended to be associated with psychological adjustment: clusters that reported extensive psychopathology engaged in less positive self-presentation. This finding is broadly consistent with the adjustment perspective of self-presentation style; however, as with previous research, narcissism appeared to have a positive—rather than a negative—relationship with positive self-presentation. Second, positive self-presentation tended to be accompanied by poor predictive validity of risk-related self-report. This finding is consistent with the psychometric error perspective of self-presentation style. Third, there was evidence that self-presentation style changed over the course of the programme; positive self-presentation appeared to increase for some clusters, and decrease for others. Finally, there was evidence that self-report could be highly predictive under some circumstances. The results of this chapter are likely to have relevance for interpreting results in the previous three chapters. These will be explored now.

Implications for Results Reported Earlier in the Thesis

One potential implication of the results is that the cluster differences in self-reported psychopathology and risk found in the previous chapters may—in part—reflect differences in self-presentation style. For example, in Chapter Three cluster differences on a staff-rated measure of criminal risk (VRS) tended to be smaller than cluster differences on self-reported risk-related measures (SAQ, CSS-M, PID, CAVS). Cluster differences in what offenders tell us about themselves may be as important to the current results as differences in their functioning as assessed by staff in treatment. However, it is unlikely that self-presentation

style alone can account for the three psychopathology profiles identified in Chapter Two, because similar clusters have been identified using clinician-rated measures (Blackburn & Coid, 1999).

The results of this chapter may also shed some light on the psychometric change analyses in Chapter Four. The patterns of treatment change were different for self-rated measures compared to staff-rated measures, and I mentioned that little research has found a link between change made on risk-related self-report psychometric measures over the course of treatment and post-treatment criminal behaviour. The results of the current chapter suggest that self-presentation style may change over the course of treatment for some individuals. In the current research it appeared that individuals in the *high-psychopathology* cluster engaged in less positive self-presentation at the beginning of treatment compared to at the end of treatment. Scores on measures of positive self-presentation did not change nearly as much for individuals in the *low-psychopathology* and *antisocial/narcissistic* clusters. Results like this suggest that for some individuals, self-report measures completed post-programme may be less valid than pre-programme self-report, and may explain why treatment change on risk-related self-report measures is not necessarily linked to decreases in criminal recidivism. Certainly, for the clusters in this research it appeared that pre-programme psychometrics were most predictive for the *high-psychopathology* cluster, while post-programme psychometrics appeared to be more predictive for the *antisocial/narcissistic* and *low-psychopathology* clusters. These results may indicate different mechanisms are at play. For example, over the course of treatment men in the *high-psychopathology* cluster may tone down their reported difficulties as they become more self-aware and more concerned with the impression they are making. In contrast, men in the *low-psychopathology* and *antisocial/narcissistic* clusters may be defensive when they begin treatment, but become more open over time as they start to trust the therapists. Overall, these results suggest that caution is needed when interpreting

post-programme psychometrics; the assumption that they are better predictors of recidivism than pre-programme psychometrics may not be true for all offenders.

Limitations and Directions for Future Research

As with all exploratory research, the results of this study are preliminary, and they require replication and further refinement. Although the sample used in the current research was large ($N = 623$), the subsample for which risk-related self-report and recidivism data were available was considerably smaller ($n = 109$ -168 pre-programme, $n = 72$ -113 post-programme). A larger dataset would allow for more confidence to be placed on the patterns of results identified in this chapter. Nevertheless, the results do suggest a number of promising directions for future research. Firstly, as mentioned earlier it would be interesting to compare self-reported risk and psychopathology to equivalent externally-rated measures. A number of personality measures are available that have both self-report and therapist-rated versions (e.g. Lee & Ashton, 2006). In addition, further research is necessary to determine whether there are specific aspects of self-reported psychopathology that lead to differences in predictive validity. Previous research suggests that positive self-presentation and a narcissistic personality style may limit self-report validity (Paulhus, 1998), but there is little research looking at the pattern seen here with the *high-psychopathology* cluster at the start of treatment: of negative self-presentation, extensive psychopathology, and highly predictive risk-related self-report.

One feature of the current research which may have affected the results is the use of pre-programme psychopathology for cluster identification. Recall that pre-programme scores were used as they were available early in treatment, and were expected to resemble MCMI scores of offenders not in treatment more than post-programme scores. However, all of the studies included in this thesis indicate that clusters changed over the course of the programme. An interesting area for future research would be to use post-programme

psychopathology scores for cluster identification. Using pre-programme scores in the current research, I found that the *high-psychopathology* cluster had surprisingly predictive pre-programme self-report. It would be interesting to investigate whether cluster differences in the predictive validity of risk-related self-report measures also occur when clusters are created using post-programme data, and therefore whether we can use post-programme psychopathology to identify whether an offender's post-programme self-reported risk is likely to be predictive of criminal recidivism.

While preliminary, the results of the current study suggest that self-reported personality and clinical psychopathology profiles are associated with differences in self-presentation style, and differences in the predictive validity of risk-related self-report. Self-reported psychopathology may have the potential to expand our understanding of self-presentation styles, and allow us to make more informed decisions about when to consider risk-related self-report and when not. Reassuringly, the results suggest that under some conditions, self-report can be highly predictive: self-reported risk measures completed by offenders who reported substantial psychopathology at the beginning of the programme were good predictors of criminal recidivism. Above all, the results emphasise the importance of considering self-presentation style and self-report validity when interpreting psychopathology clusters identified using self-report measures.

Chapter Six

General Discussion

The research presented in this thesis sits at the intersection of personality, personality disorder, clinical psychopathology, and self-presentation style. Together, the four studies indicate that identifying patterns of self-reported personality can provide useful information for the assessment and treatment of high-risk offenders, ranging from the types of psychopathology likely to be present in high-risk offender samples, to information regarding the relative validity of different offenders' self-reports on risk-related measures.

This chapter discusses the combined results of the previous chapters, and describes how they may build upon previous theoretical and empirical research. First, I discuss the overall prevalence and nature of personality and clinical psychopathology reported by the sample as a whole. Next, I describe the three personality patterns identified in this research in light of the primary dimensions that differentiate between clusters, and evaluate the extent to which the clusters resemble clusters identified in previous research. Third, I review the implications of the current results for offender risk assessment, treatment responsiveness, and self-report validity. Finally, I identify a number of limitations to the current research, and outline some promising areas for future research.

Prevalence of Psychopathology

The sample described in this research reported extensive personality and clinical psychopathology at the start of the programme. Over 90% of the sample reported trait-level dysfunction ($BR \geq 75$) on at least one MCMI-III scale. On average, individuals in the sample had trait-level scores on 5 of the 24 MCMI-III scales. Due to the high-risk nature of the sample, it is not surprising that among the most commonly reported disorders were antisocial personality disorder (60% of the sample), alcohol dependence (53%), and drug dependence (42%). These disorders tend to be more common among offenders compared to the general population (Gudjonsson, Wells, & Young, 2012; McCann et al., 2001; Schoenberg et al., 2004), and they are well-known predictors of criminal behaviour (Andrews, Bonta, &

Wormith, 2006; Wong & Gordon, 2006). These three disorders were reported more frequently in this high-risk sample than in a general prison population sample which likely included much lower risk offenders (Retzlaff et al., 2002).

Offenders in this research also reported high levels of anxiety: over 50% of the full sample reported trait-level anxiety at the start of the programme. The high levels of anxiety are consistent with previous research with offenders (Gudjonsson et al., 2012; Retzlaff et al., 2002), and suggest that offenders experience distress, and may struggle to cope in the prison environment. However, the levels of anxiety reported at the start of treatment tended to be higher than those reported at the end of treatment, which raises the possibility that offenders experienced initial difficulty adjusting to the therapeutic community: a setting that is likely to be very different from the broader prison environment. It would be interesting to compare the levels of anxiety reported by men in this sample pre- and post-programme to anxiety reported by men in the broader prison environment. This would enable us to determine whether high levels of pre-programme anxiety are a result of changing units and adapting to a therapeutic community, or whether offenders in prison normally report high levels of anxiety, and treatment successfully reduces this anxiety.

The assessment of psychopathology in the current research was limited by an exclusive reliance on a single self-report measure of personality and clinical psychopathology: the MCMI-III. Accurate assessment of the prevalence of psychopathology is difficult at the best of times. Even highly-trained professionals, using structured clinical interviews to diagnose personality disorder, frequently disagree as to the precise nature of personality dysfunction shown by individuals (Tyrer et al., 2007). Diagnostic consensus is even rarer when different methods of assessment are compared (Clark, Livesley, & Morey, 1997).

Due to the inherent difficulties in assessing personality and clinical dysfunction, it is unclear whether the high levels of psychopathology reported by the current sample reflect actual dysfunction, or whether estimates of psychopathology are distorted by over-reporting by a subset of the offenders (perhaps a cry for help), or over-diagnosis on the part of the measure. Despite the high levels of psychopathology reported overall, there were also indications in Chapter Five that some individuals may have underreported psychopathology. There is concern that underreporting may be rewarded in prison contexts (Spidel, 2002), as a means to obtain an early release and more favourable prison conditions. For these reasons, doubt may be cast on the accuracy of the MCMI-III as a diagnostic tool in the current research; however, it may give a good impression of some of the difficulties offenders face, and it may be loosely indicative of the types of personality and clinical dysfunction present in the sample.

Despite difficulty determining the prevalence of personality pathology in the current sample, it is informative to compare the levels of reported MCMI-III psychopathology to levels reported by other samples that have also completed the MCMI-III. These comparisons can tell us whether the reported psychopathology is unusual when compared to different populations. In general, the levels of psychopathology reported in the current research are greater than the levels reported by an undergraduate student sample (Schoenberg, Dorr, & Morgan, 2006) and by child custody examinees (McCann et al., 2001), but more comparable to other samples of incarcerated offenders (Gudjonsson et al., 2012; Retzlaff et al., 2002; Wilson et al., 2013) and opioid dependent outpatients (Ball et al., 2004). These comparisons suggest that the level of psychopathology reported by men in the current sample is likely to be high compared to the general population.

Patterns of Psychopathology

A central goal of this research was to identify naturally occurring patterns of personality pathology and associated clinical dysfunction among high risk offenders. Dimensions underlying responses on the MCMI-III were identified using principal components analysis, and scores on these dimensions were used in a cluster analysis.

Principal Components. A principal components analysis of the 24 clinical MCMI-III scales suggested that most of the variance in self-reported psychopathology could be summarised by four dimensions: internalising psychopathology, externalising psychopathology, admiration-seeking, and social withdrawal/eccentricity. Principal components analysis was primarily used as a data reduction technique, to ensure that the core dimensions underlying the MCMI-III scores in the current sample were equally represented in the cluster analysis. The four components bore a strong resemblance to recent structural models of personality and clinical psychopathology that have received considerable empirical and theoretical support (Andrews et al., 2009; Markon, 2010;). For example, Markon (2010) explored the structure behind personality and clinical psychopathology symptoms in a large community sample, and identified four superordinate dimensions: internalising (including symptoms of anxiety, depression, and somatoform), externalising (including hostility, antisociality, and substance abuse problems), thought disorder (including paranoia, schizoid characteristics, eccentricity, and hallucinations/delusions), and pathological introversion (social anxiety, unassertiveness, and dependence). The first three dimensions clearly resemble the internalising, externalising, and social withdrawal/eccentricity components identified in the current research. Furthermore, Markon's pathological introversion dimension could be thought of as the reverse of the admiration-seeking component in the current research. The components identified in this research also resemble clusters of psychopathology symptoms identified by Andrews and colleagues (2009). Their emotional,

externalising, and psychosis clusters resemble the internalising, externalising, and social withdrawal/eccentricity components identified in the current research.

Psychopathology Clusters. Scores on the four components were used in a cluster analysis to identify common patterns of psychopathology reported by offenders.

Three clusters were identified: a *low-psychopathology* pattern with very little reported psychopathology, a *high-psychopathology* pattern characterised by high levels of internalising and externalising psychopathology and social withdrawal, and an *antisocial/narcissistic* pattern of primarily externalising psychopathology and admiration-seeking. The intention of using PCA in the current research was to reduce data for use in CA. Supporting the principal component solution was the fact that the patterns of cluster differences on each of the four overarching components—internalising, externalising, admiration-seeking, and social withdrawal/eccentricity—tended to generalise to each of the MCMI-III scales that loaded on each of the components. For example, not only did the *high-psychopathology* cluster have the highest scores of the three clusters on the broad internalising component, they also had the highest scores on each scale within the component (major depression, PTSD, somatoform etc.).

Substantial differences in self-report psychopathology were found between the three clusters. These differences will be described in terms of the overall severity of reported psychopathology, and the types of dysfunction reported.

Severity. The *high-psychopathology* cluster reported the most severe personality and clinical dysfunction of the three clusters, and had the highest mean scores on 18 of the 24 MCMI scales. Men in this cluster reported trait-level psychopathology on 8 of the 24 MCMI scales on average. Severe personality pathology (borderline, paranoid, schizotypal) and severe clinical pathology (delusional disorder, thought disorder, and major depressive disorder) were primarily reported by this cluster: 64% reported at least one severe personality

disorder, and 19% reported at least one severe clinical disorder. In contrast to the *high-psychopathology* cluster, men in the *low-psychopathology* cluster had the lowest scores of the three clusters on 21/24 of the MCMI scales, and reported trait-level psychopathology on only 1 of the 24 MCMI scales on average. For the most part, psychopathology reported by the *antisocial/narcissistic* cluster fell between that reported by the *high-psychopathology* and *low-psychopathology* clusters. However, the three clusters were not simply differentiated by the severity of reported psychopathology. The clusters also differed in the prominence of different disorders in their overall personality profiles.

Profile. The three clusters were primarily differentiated by scales that reflected internalising psychopathology, and social withdrawal/eccentricity. Cluster differences on internalising psychopathology are especially interesting given that anxiety is considered to be an important source of heterogeneity among individuals diagnosed with psychopathy (Skeem et al., 2011). The relationship between the clusters found in the current research and different psychopathic subtypes is discussed later in the chapter.

Despite generally falling between the other two clusters, the *antisocial/narcissistic* cluster had the higher scores on the admiration-seeking component, and 40% reported trait-level narcissistic personality disorder. The higher narcissism scores in the *antisocial/narcissistic* cluster suggest that rather than simply being a less pathological version of the *high-psychopathology* cluster, they have a distinct pattern of personality pathology. Cluster differences in externalising psychopathology were generally smaller than on the other dimensions, as all three clusters tended to be high on externalising. However, the *high-psychopathology* and *antisocial/narcissistic* clusters tended to have higher scores on this dimension than the *low-psychopathology* cluster.

Pre-programme MCMI-III scores were used to identify psychopathology patterns in the current research. However, roughly half of the sample also had post-programme scores,

which enabled analysis of the change in psychopathology over the course of the programme. Self-reported psychopathology changed little over the course of the programme for the *low-psychopathology* cluster, which is likely a reflection of their already low levels of reported psychopathology at the start of the programme. In contrast, there were significant reductions in the psychopathology reported by individuals in the *high-psychopathology* and *antisocial/narcissistic* clusters during the course of the programme, primarily on scales relating to internalising psychopathology and social-withdrawal/eccentricity. These reductions may reflect treatment change, or reductions in distress as offenders became more accustomed to the therapeutic community. Despite reductions in psychopathology symptoms during treatment for the *high-psychopathology* and *antisocial/narcissistic* clusters, the general profiles of the three clusters—one with high reported psychopathology, one with low reported psychopathology, and one with an antisocial/narcissistic profile—were still able to be distinguished post-programme.

External Validity of the Personality and Clinical Psychopathology Profiles

Cluster analysis may produce different solutions depending on the sample, the clustering variables, and the cluster analytic procedure (Everitt et al., 2001). It is therefore important to determine whether the cluster solution resembles patterns found in previous research that has used similar samples, both in terms of the number of clusters identified, and the patterns of psychopathology.

Number of Clusters. Cluster analysis is a data reduction technique. A good cluster solution achieves a balance between retaining so few clusters that each cluster is considerably heterogeneous, and retaining so many clusters that the clusters serve little heuristic function. Previous cluster analytic research using offender samples has varied in the number of clusters identified. However, it appears that more clusters tend to be identified in risk-heterogeneous

samples, and fewer in exclusively high-risk samples (Blackburn & Coid, 1999; Hicks et al., 2004).

The selection of a three cluster solution in the current research was made primarily on empirical grounds, and once derived, was replicated when repeated with each of two subsets of the original dataset. Subsequent analyses with the whole sample comparing the three clusters on variables of interest suggested that all three clusters differed from the others in theoretically meaningful ways, and that important information would have been lost if fewer clusters had been identified. However, it is possible that further distinctions between clusters would result in even greater gains in our understanding of offender psychopathology patterns. For example, in their rapist typology, Knight and colleagues began by identifying a small number of clusters, and as knowledge about each cluster grew they increasingly made more fine-grained differentiations between subgroups (Knight & Prentky, 1990).

Patterns of Psychopathology. Recall that CA research of offender personality traits almost uniformly finds a *high-psychopathology* cluster that reports extensive internalising and externalising psychopathology, and an *antisocial/narcissistic* cluster with antisocial and narcissistic personality disorder, but less severe psychopathology overall (Beech et al., 2005; Blackburn, 1996; Blackburn & Coid, 1999; Wales, 2005; Weekes & Morison, 1993). Similar clusters have also been found in domestic violence and substance abuse samples (Hamberger et al., 1996; McMahon, 2008; Rothschild et al., 1997). A number of studies have also identified a cluster that resembles the *low-psychopathology* cluster in this research (Beech et al., 2005; Blackburn, 1996; Blackburn & Coid, 1999; Rothschild et al., 1997; Weekes & Morison, 1993). The three patterns of psychopathology apparent in the current research are especially similar to patterns found in a sample of rapists and sexual murderers (Beech et al.,

2005)²³. The convergence between the clusters found in this study with clusters found in previous research suggests that the psychopathology patterns are reliable across diverse datasets, methods of collecting psychopathology data, and analytic methods.

Psychopathy Subtypes. The results of the current research have implications for theories of psychopathy and psychopathic subtypes. Scores on a screening measure for psychopathy—the PCL:SV—were available for just under a third of the men in the dataset. Of these, almost 80% had scores in the psychopathic range (≥ 18). The high prevalence of psychopathy in the current research suggests the results may inform theories of heterogeneity between psychopathic subtypes.

Individuals with psychopathic traits—including callousness, irresponsibility, egocentricity—vary in the extent to which they have additional personality and clinical psychopathology (Skeem et al., 2011). Some early theoretical accounts of psychopathy specified that psychopaths must lack symptoms of psychosis and neurosis (Cleckley, 1976; Karpman, 1946). However, as the absence of neurotic or psychotic symptoms was not found to correlate with other features of psychopathy, neither were mentioned in the PCL-R or PCL:SV diagnostic criteria (Hare & Neumann, 2008). This omission has led to a situation where there is heterogeneity in neurotic and psychotic symptoms among offenders classified as psychopathic using the PCL-R or PCL:SV. This heterogeneity has increasingly become a topic of research in itself, with studies differentiating between *primary psychopaths* who have the core traits of psychopathy but lack broader psychopathology, and *secondary psychopaths*, who may be characterised by more anxiety, fear, or broader negative emotionality (for a review, see Skeem et al., 2011).

A number of previous studies have used measures of psychopathic traits and anxiety in a CA to identify subtypes of criminal psychopaths. Individuals with high levels of

²³ The MCMI-III scores of the three clusters found by Beech et al. (2005) are provided in Appendix 8 for comparative purposes.

psychopathic traits in the context of little anxiety are generally labelled as primary psychopaths, while individuals with primarily behavioural features of psychopathy in addition to anxiety are generally labelled as secondary psychopaths (e.g. Skeem et al., 2007; Swogger & Kosson, 2007; Vassileva et al., 2005).

The results of the current research are consistent with previous research in suggesting that there is heterogeneity in personality and clinical psychopathology among psychopathic offenders, and that some offenders with psychopathic traits therefore have neurotic and psychotic symptoms. The three clusters identified in the current research all had high PCL:SV scores, and although they differed hugely in self-report psychopathology, they did not differ significantly in overall PCL:SV scores. Comparisons between offender psychopathology clusters and theoretical variants of psychopathy have been made in previous research. For example, Blackburn (1986; 1996) interpreted the *antisocial/narcissistic* and *high-psychopathology* clusters found in his research as primary and secondary variants of psychopathy respectively. However, the *antisocial/narcissistic* and *high-psychopathology* clusters in the current research do not perfectly align with theoretical accounts of primary and secondary psychopathy. Although the *antisocial/narcissistic* cluster reported significantly less internalising psychopathology and psychosis than the *high-psychopathology* cluster, they were not free from neurotic and psychotic symptoms: fully 47.8% of the *antisocial/narcissistic* cluster reported trait-level anxiety, and 4.5% reported trait-level delusional disorder. Furthermore, the *antisocial/narcissistic* cluster had significantly higher scores than the *low-psychopathology* cluster on MCMI-III scales relating to internalising psychopathology and social withdrawal/eccentricity. These findings question the assumption that primary psychopaths—individuals with extensive psychopathic traits but no other psychopathology—are commonly found among high-risk offenders.

It is also interesting to compare the clusters identified in the current research to those identified using only measures of psychopathic traits and anxiety (e.g. Skeem et al., 2007). Unlike clusters identified using PCL subscales, the only statistically significant difference in psychopathic features between the clusters in the current research was that the *high-psychopathology* and *antisocial/narcissistic* clusters had significantly higher scores on factor two compared to the *low-psychopathology* cluster. However, the items in factor two place a high emphasis on antisocial/criminal behaviour (Skeem et al., 2011), suggesting that cluster differences on this factor are more likely to reflect differences in criminal risk, rather than core psychopathic features. Combined, these results suggest that personality and clinical psychopathology heterogeneity among criminal psychopaths is insufficiently captured by variation in psychopathic traits and anxiety. An interesting future direction for research on psychopathic subtypes would be to look at individual differences in broader psychological functioning among psychopaths—including interpersonal, behavioural, affective, and cognitive features—rather than focus exclusively on psychopathic traits and anxiety.

Clinical Utility of Personality and Clinical Psychopathology Profiles

Previous research on offender clusters has been primarily descriptive (Blackburn, 1986; 1996; Hicks et al., 2004; Weekes & Morison, 1993). Chapters Three, Four, and Five sought to examine the clinical utility of the cluster solution. To this end, a series of analyses was conducted to explore the relevance the three clusters have for understanding offender risk and treatment responsiveness.

Personality Profiles and the Prediction of Criminal Recidivism. The analyses in Chapter Three suggested that the identification of psychopathology profiles holds some promise for risk prediction. Compared to the *low-psychopathology* cluster, the *antisocial/narcissistic* and *high-psychopathology* clusters had higher estimated criminal risk at the start of treatment, and higher rates of criminal recidivism after release from prison.

Several features of psychopathology profiles make them attractive risk predictors. First, differences between clusters in rates of recidivism held, even when controlling for age, criminal history, and estimated criminal risk. This suggests that psychopathology profiles account for variance in criminal recidivism that is not already accounted for by existing risk predictors. Second, the analyses in Chapter Four indicated that self-reported psychopathology changed over the course of the programme, so psychopathology profiles may be considered to be dynamic—rather than static—risk predictors. Third, psychopathology profiles may provide treatment-relevant information on broader psychological functioning, for example distress and interpersonal style. Finally, they may also be suggestive of the origins of criminal risk (Moffitt, 1993).

The current research did not specifically explore the mechanism by which psychopathology profiles are linked to criminal recidivism. One possibility is that the higher levels of externalising psychopathology reported by the *high-psychopathology* and *antisocial/narcissistic* clusters results in higher rates of criminal recidivism for men in those clusters. Externalising psychopathology—antisocial and psychopathic personality disorder, alcohol and drug abuse—tends to predict criminal behaviour more strongly than emotional distress and major mental disorder (Andrews, Bonta, & Wormith, 2006), and is often assessed in risk prediction measures (including the VRS used in this research). However, even when controlling for VRS scores, differences between the profiles in rates of recidivism remained, suggesting there may be something about the broader psychopathology profiles that adds additional predictive validity. It is possible that the psychopathology profiles capture variance associated with emotional volatility, interpersonal problems, or an impulsive and inflexible behavioural style that is not sufficiently captured by the risk assessment measures in the current research.

Furthermore, the specific combination of personality problems may be important. For example, perhaps the combination of externalising pathology and emotional volatility is central to understanding risk for the *high-psychopathology* cluster, while the combination of entitlement and externalising pathology is more important for the *antisocial/narcissistic* cluster. Future research would be necessary to determine which particular features of the *high-psychopathology* and *antisocial/narcissistic* clusters are responsible for their higher rates of recidivism. This research could seek to identify distinct risk domains for each cluster by comparing clusters on items in multifactorial risk instruments like the Violence Risk Scale (Wong & Gordon, 2000), Level of Service Inventory-Revised (Andrews & Bonta, 1995), or the Dynamic Risk Assessment for Offender Re-entry (Serin, Mailloux, & Wilson, 2010). These instruments may reveal whether clusters differ on salient risk factors. For example, although substance abuse is likely to be a problem for individuals in all three clusters, it is possible that risk associated with substance abuse reflects attempts to relieve distress for the *high-psychopathology* cluster, but sensation-seeking for the *antisocial/narcissistic* cluster (Verheul & Van den Brink, 2005). Further, although all three clusters are at risk for future violence, clusters may differ as to whether they are more prone to reactive violence as a result of emotional volatility, or instrumental violence reflecting callous and egocentric personality traits (Ross & Babcock, 2009).

It is also possible that there are other differences between clusters beyond personality and clinical psychopathology that underlie the observed differences in rates of recidivism. For example, there might be something specific about the self-report method that adds predictive validity to psychopathology profiles beyond clinician-rated risk. Offenders are likely to have insight into some aspects of their psychological functioning that are difficult to assess from an observer perspective. Another possibility is that the *antisocial/narcissistic* and *high-psychopathology* clusters may have higher rates of recidivism because they are younger

(Blonigen, 2010). However, differences in rates of recidivism remained even when controlling for age, and individuals in the *high-psychopathology* and *antisocial/narcissistic* clusters also had a greater number of previous convictions. These findings suggest that the lower rates of recidivism among *low-psychopathology* offenders cannot simply be attributed to age-related desistance from criminal behaviour.

Regardless of the mechanism by which profiles predict recidivism, the results suggest that clusters who report more psychopathology tend to have higher rates of criminal recidivism, while a smaller group of offenders who do not report extensive psychopathology reoffend at a lower rate. In accordance with the risk principle of effective rehabilitation (Andrews, Bonta, & Wormith, 2006), intensive treatment should be prioritised for higher-risk offenders. Therefore, intensive treatment may be more often directed at offenders with *high-psychopathology* and *antisocial/narcissistic* profiles. Chapter Four explored the implications that the three psychopathology profiles had for treatment responsiveness.

Personality Profiles and Treatment Response. Models of offender responsiveness and treatment readiness hold that offender characteristics—including personality and clinical psychopathology—may influence treatment outcomes. Higher levels of psychopathology and associated functional and interpersonal impairments may hinder the development of a therapeutic alliance, and decrease treatment motivation, leading to less treatment change, and poorer treatment outcomes (Andrews, Bonta & Hoge, 1990; Howells & Day, 2007; Serin & Kennedy, 1997; Ward et al., 2004). The clusters with more severe psychopathology in this research had higher rates of recidivism compared to the smaller, *low-psychopathology* cluster. Chapter Four explored whether higher rates of recidivism were related to poor engagement (therapeutic alliance and engagement in change) and change during treatment for men in the *high-psychopathology* and *antisocial/narcissistic* clusters.

Although there were some differences between clusters on engagement and change variables, the current research found no evidence that poorer treatment outcomes reflected poorer engagement and change by clusters that reported extensive psychopathology. The three clusters did not differ in therapeutic alliance, regardless of whether rated by offender, therapist, or observer. There was also no difference between clusters in the rates of treatment non-completion, and despite the high levels of psychopathology reported by the sample, overall rates of non-completion were similar to rates of lower risk samples (Olver, Stockdale, & Wormith, 2011).

There were small differences between the clusters in their average stage of change on treatment targets pre- and post-programme. Individuals in the *antisocial/narcissistic* cluster were rated as significantly less engaged in change than individuals in the *high-psychopathology* cluster. This difference reflected fewer of the *antisocial/narcissistic* cluster reaching the contemplation stage, suggesting that men in that cluster were less likely to acknowledge their treatment needs, consistent with their general tendency for positive self-presentation on self-report (Chapter Five). The clusters also differed in self-reported change: the *antisocial/narcissistic* and *high-psychopathology* clusters reported more change over the course of the programme than the *low-psychopathology* cluster. However, there was no difference in therapist rated change: all three clusters were rated as having improved to a similar extent.

While the results of Chapter Four were promising for the successful treatment of offenders who report high levels of psychopathology, they need to be interpreted with caution. There is a distinct lack of research that links treatment engagement variables or indices of treatment change to rates of criminal recidivism after treatment (Beggs, 2010; Serin et al., 2010). This type of research rests on the premise that offender rehabilitation decreases criminal risk, and although there is now good evidence that treatment can be

effective (McGuire, 2013), there has been a delay in the development and empirical validation of treatment responsivity measures. An alternative way to assess global and enduring treatment change could be to compare the recidivism rates of treated men in the three clusters to matched untreated controls with similar psychopathology profiles (e.g. Listwan et al., 2004).

There may also be differences between clusters in more fine-grained treatment engagement variables that were not examined in this research. Men in the three clusters reported differences in many aspects of psychological functioning, and it is possible that the treatment engagement measures were not sensitive enough to pick up differences between the clusters in their engagement and progress in treatment. For example, individuals in the *high-psychopathology* and *antisocial/narcissistic* clusters may have required more therapist attention, and the emotional volatility reported by the *high-psychopathology* cluster may have resulted in frequent therapeutic alliance ruptures that were subsequently repaired (Muran et al., 2009). Perhaps barriers to engagement presented by individuals in the *high-psychopathology* and *antisocial/narcissistic* clusters were addressed by therapists in treatment, so they did not result in poorer treatment change and worse outcomes.

Another possibility is that cluster differences in self-reported psychopathology primarily reflected differences in self-perception and self-presentation style. If clusters had been identified using therapist-rated psychopathology there might have been clearer differences between clusters on engagement and change variables. The possibility that offender self-presentation style may have had an impact on results is consistent with the different patterns of results found depending on whether treatment change was assessed using self-report or staff-rated measures. The final study looked at cluster differences in self report style, and the predictive validity of self-report.

Personality Profiles and the Validity of Self-report. The analyses in Chapter Five indicated that the three clusters differed in self-presentation style before and after the programme. Offenders in the *low-psychopathology* cluster—and to a lesser extent the *antisocial/narcissistic* cluster—tended to present themselves in a positive light, while offenders in the *high-psychopathology* cluster engaged in significantly less positive self-presentation. There was also a general increase in positive self-presentation over the course of the programme, especially for individuals in the *high-psychopathology* cluster. Chapter Five explored whether these differences in self-presentation style had an impact on the predictive validity of self-report for individuals in the three clusters. Comparisons on the ability of self-report measures of risk and antisocial cognitions to predict criminal recidivism revealed differences between the three clusters pre-programme. Pre-programme self-reported risk for the *high-psychopathology* cluster was a significantly better predictor of recidivism than for the *low-psychopathology* and *antisocial/narcissistic* clusters. However, their self-reported risk was less predictive post-programme, and cluster differences were no longer significant. A similar trend was found for measures of criminal cognitions, but the differences between clusters pre-programme were less pronounced.

One interesting feature of the results was that there was a trend for self-reported risk to become more predictive over the course of the programme for individuals in the *low-psychopathology* and *antisocial/narcissistic* clusters, but less predictive for individuals in the *high-psychopathology* cluster. Intuitively, post-programme scores should be better predictors of outcome than pre-programme scores: they are obtained closer to release, they can take into account changes made during treatment, and offenders may develop a better understanding of their own criminal risk during the course of the programme. However, there are also likely to be threats to the predictive validity of post-programme self-report measures. There are likely to be greater demands for positive self-presentation post-programme as offenders seek to

show gains they have made during treatment. Furthermore, offenders may be unrealistically optimistic about their chances of maintaining a pro-social lifestyle once they leave the therapeutic community.

The results suggest that the predictive validity of self-report may vary between offenders and across treatment. Overall, the pre-programme self-reported risk of the *high-psychopathology* cluster best predicted criminal recidivism. However, these results clearly require replication, as to my knowledge no previous research has looked into the relationship between offender psychopathology profiles and the predictive validity of self-reported risk. It would be especially interesting to determine whether self-reported risk was able to add incrementally to therapist-rated risk for individuals in the *high-psychopathology* cluster; generally the use of self-reported measures with offenders has been criticised because offenders may distort their responses, and they may lack insight necessary for self-assessment (Walters, 2006). This research would require a larger sample, but it holds promise for increasing the predictive validity of risk assessment.

Cluster differences in self-presentation style and the predictive validity of self-reported risk have implications for the way we interpret the clusters themselves. Because clusters were derived using a self-report measure of personality and clinical psychopathology, cluster differences in psychopathology may reflect differences in self-report style in addition to substantive differences in psychopathology. However, self-presentation style alone is unlikely to fully account for cluster differences. Clusters that resemble the three identified in this research have also been found in previous research using non-self-report measures. For example, two of the three highest risk clusters identified by Blackburn and Coid (1999) using a structured clinical interview to diagnose psychopathology resembled the *high-psychopathology* and *antisocial/narcissistic* clusters from the current research. Further, the three clusters in the current research differed on non-self-report variables of clinical

interest—criminal history, staff-rated violence risk, engagement in change, and rates of criminal recidivism—suggesting that the cluster solution has clinical utility whether it reflects psychopathology, self-report style, or a combination of the two.

The results of Chapter Four suggest it is important to interpret offender self-presentation styles from both a psychometric error perspective and an adjustment perspective. Consistent with a psychometric error perspective, self-reported risk measures appeared to be less predictive of recidivism for clusters that engaged in positive self-presentation: the *antisocial/narcissistic* and *low-psychopathology* clusters. Positive self-presentation also appeared to be linked to adjustment: the *high-psychopathology* cluster engaged in the least positive self-presentation, reported extensive psychopathology, and had high rates of recidivism; while the *low-psychopathology* cluster engaged in the most positive self-presentation, reported the least psychopathology, and had lower rates of recidivism. However, results for the *antisocial/narcissistic* cluster indicated that positive self-presentation may be less adaptive when it is accompanied by high levels of narcissistic traits. This adjustment perspective has been receiving more attention lately, and research has increasingly focussed on trait-like aspects to self-presentation style (Uziel, 2010). For example, the HEXACO model of personality identifies *honesty/humility*—honesty, fairness, sincerity, modesty, and lack of greed—as one of six core dimensions of personality (Lee & Ashton, 2004).

Overall, the studies presented in this research suggest that there is value in considering patterns of clinical and sub-clinical psychopathology and self-presentation style among high-risk offender in rehabilitation programmes. Besides being informative about self-perceived psychological functioning, these profiles may provide information on risk assessment, treatment change, and self-report validity. The three profiles offer a parsimonious and integrated approach to understanding offender personality. However, as with a lot of

research, these studies have prompted as many questions as they have answered, and the research has a number of limitations with respect to the sample, measures and methodology.

Limitations and Directions for Future Research

Sample. The described research was a naturalistic study that used data collected from high-risk offenders in treatment. While the dataset provided a wealth of useful information on the offenders in the sample, analyses were necessarily limited to the data available. For example, notably absent in the current research was a clinician-rated measures of personality functioning, which would have provided further information on self-presentation style. In addition, data were incomplete for a number of the measures used in this research, as the data collected in the different programmes had varied over time.

Another important feature of the dataset used in this research was the treatment setting. I chose to focus mainly on pre-programme psychopathology because I believed it would more likely resemble the psychopathology patterns of offenders who were not in treatment. However, offenders in the current research agreed to be transferred to the programme, and they completed the MCMI-III in a therapeutic community setting, either of which could have had an effect on their scores. To determine how much the treatment setting influenced MCMI-III scores even before treatment had fully commenced, future research could compare the MCMI-III scores of offenders at the start of treatment to those of offenders who are not in treatment. Obtaining MCMI-III scores from offenders outside of treatment would also enable analysis of stability and change in psychopathology independent from the effects of treatment. There is some evidence that personality pathology decreases with age (Blonigen, 2010), so it is possible that some of the reductions in psychopathology seen over the course of treatment reflect normal maturation rather than treatment effects.

Measures. The MCMI-III, used in this research, had a number of advantages. It enabled a multidimensional assessment of personality psychopathology and associated

clinical dysfunction. However, it is primarily a measure of maladaptive personality styles, and may therefore not be sensitive to more adaptive/protective features of personality that may facilitate treatment responsiveness and lead to positive post-treatment outcomes. Future research could benefit from the inclusion of a general measure of personality rather than exclusively focussing on personality pathology. Further, the inclusion of a therapist-rated measure of personality to complement self-report would have enabled a better understanding of the influence self-presentation style had on the current results. For example, measures like the HEXACO include both self-report and therapist-rated versions (Lee & Ashton, 2006). Analysis of differences between therapist-ratings and self-report ratings could provide further information on self-presentation styles, and also highlight which symptoms are more likely to be identified by self-report, and which by therapists' ratings.

Another limitation concerns the use of pre-treatment psychopathology profiles to look at cluster differences in rates of recidivism (Chapter Three). Pre-programme data ignore the considerable change offenders may undergo during treatment and in the intervening period before and after release (Yesberg & Polaschek, 2013). The results of Chapter Four indicated that self-reported psychopathology was dynamic, so it would be interesting to determine whether psychopathology profiles are more strongly linked to criminal recidivism when MCMI-III scores are collected post-programme, closer to release, or when offenders are on parole.

It is also important to acknowledge that in Chapters Three and Five I relied exclusively on official records of criminal convictions as an indication of criminal behaviour after release from prison. Official records are problematic for a number of reasons. First, most criminal behaviour is not detected, so an offender who appears to have desisted from crime may instead have successfully evaded detection. Second, convictions may take a while to be processed. This may be especially true for more serious offences, and might lead to a

situation where an offender appears to have desisted, but is in reality awaiting sentencing for a crime committed soon after release. Future research could include the number of arrests after release from prison and self-reported estimates of criminal behaviour as supplementary indicators of post-release criminal behaviour. Finally, it would be interesting to consider other outcomes besides criminal behaviour—for example employment, relationships, and health outcomes—to get a broader view of adjustment after release from prison.

Method. There are a number of strengths and limitations corresponding to the methodology used in this research. Cluster analysis was used as an exploratory, person-centered tool to identify patterns of personality and clinical psychopathology and self-presentation style. A core strength of this technique is that it can integrate and summarise a large amount of information, and give a rich picture of the core personality features and broader psychological functioning of men in the sample. However, the technique is essentially correlational in nature, which means that we can only speculate about the mechanisms underlying the relationships identified in the research. For example, the results do not tell us why individuals in the *antisocial/narcissistic* and *high-psychopathology* clusters had a higher risk of recidivism, and reported more psychometric change over the course of treatment, or why individuals in the *high-psychopathology* cluster were found to have highly predictive self-report risk at the start of treatment. Future research could benefit from taking a more variable-centered approach to understanding these underlying mechanisms. For example, research could explore whether elevated levels of narcissism and/or admiration-seeking influence the predictive validity of self-report (Paulhus, 1998), and whether high levels of internalising and externalising psychopathology influence therapeutic alliance rupture and repair (Muran et al., 2009).

Above all, the results of this research would benefit from replication, with different samples, different measures, and different analytical techniques. By demonstrating the

reliability of these findings—and by exploring the broader clinical implications of the findings—we can have greater confidence in the results, and begin to understand the clinical significance of individual differences in personality and clinical psychopathology among high-risk offenders.

Conclusion

This thesis explored the extent and nature of personality and clinical psychopathology reported by a sample of high-risk offenders in rehabilitation programmes. The results indicated that distinct profiles of personality could be identified that resembled those found in previous research with offenders. These profiles were dynamic, and were associated with differences in risk for recidivism as well as distinct self-presentation styles. The research suggests that personality and clinical psychopathology—at least when self-reported—may not be exclusively a responsivity issue, and that considering offender personality pathology, clinical dysfunction, and self-presentation style both separately and in concert can advance our understanding of offender heterogeneity, and criminal risk.

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Appendix One

MCMI-III Personality and Clinical Scales and Descriptions

Personality Scales	Scale Descriptions
1 Schizoid	Detached and passive. Low experience of desire, pleasure, or pain. Apathetic, listless, distant, asocial. Minimal emotional needs.
2A Avoidant	Socially withdrawn, fears and mistrusts others. Longs for affection, but anticipates pain and anguish.
2B Depressive	Sense of hopelessness and despair. Inability to experience pleasure. Pessimistic and disheartened outlook.
3 Dependent	Depends heavily on others for leadership, nurturance, affection and security. Lacks initiative and autonomy, interpersonally passive.
4 Histrionic	Constantly seeking attention, stimulation, and affection. Overt confidence masks an inner need for acceptance and approval.
5 Narcissistic	Self-focussed, with an inflated sense of superiority. Arrogant, self-assured, may use others to their own advantage.
6A Antisocial	Mistrusts others, anticipates victimisation, so acts out in an impulsive and interpersonally insensitive manner. Desires autonomy and control.
6B Sadistic	Humiliates others for pleasure and satisfaction. Aggressive, hostile, dominating, and malicious. Has little regard for the feelings of others.
7 Compulsive	Controlled and perfectionistic. Conflicted between hostility toward others, and fear of disapproval. Disciplined and self-restrained.
8A Passive-aggressive	Alternately compliant and oppositional. May be explosive and stubborn, then withdrawn and guilty. Feels dependent, mistrusts others.
8B Self-defeating	Self-sacrificing, encourages others to take advantage. Feels comforted by own pain. Pessimistic, dwells on misfortune. Exaggerates deficits.
S Schizotypal	Cognitively dysfunctional, and interpersonally detached. Self-absorbed and eccentric, disorganised thought patterns. Avoids social interaction.
C Borderline	Affectively labile: alternately dejected, angry, anxious, or euphoric. Poor sense of identity, interpersonal neediness mixed with anger.
P Paranoid	Defensive, and mistrustful of others. Anticipates criticism and deception. Fiercely independent, rigid thought patterns.

Appendix One cont.

Clinical Scales	Scale Descriptions
A Anxiety	Apprehensive, tense, and indecisive. May report somatic complaints relating to over-arousal.
H Somatoform	Preoccupied with health, somatic complaints include pain and fatigue. Hypochondriac tendencies, ailments a call for attention.
N Bipolar: Manic	Mood swings. Has periods of elation in which overactive, restless, optimistic and impulsive.
D Dysthymia	Sad, pessimistic, introverted. Has low self-esteem and a loss of interest in pleasurable activities.
B Alcohol Dependence	History of problem drinking. Failed attempts to reduce/stop drinking. Associated social/occupational problems.
T Drug Dependence	History of drug abuse, impulsive and hedonistic. Associated social/legal/occupational problems.
R Post Traumatic Stress	Fear and helplessness resulting from an intense life-threatening event. Experiences intrusive images and emotions, flashbacks and anxiety.
SS Thought Disorder	Thoughts are disorganised and bizarre. Schizophrenic symptoms, with confusion and withdrawal.
CC Major Depression	Severe, intrusive depression. Pessimistic, ruminating, somatic symptoms, and low self-esteem.
PP Delusional Disorder	Acutely paranoid, has irrational delusions. Hostile and suspicious.

Note. Adapted from *MCMI-III Manual 2ed.* (pp. 15-24), by T. Millon, R. Davis, and C. Millon, 1997, Minneapolis: National Computer Systems.

Appendix Two

Previous Cluster Analytic Research with Offenders

Psychopathology subtypes Clustered by psychopathology measures.	Psychopathy subtypes Clustered by psychopathy features, anxiety, substance abuse measures.	Domestic Violence subtypes Clustered by frequency/severity of physical violence, and psychopathology measures.
Pattern 1		
<i>High-psychopathology</i> Main features: extensive psychopathology, especially reflecting social withdrawal (avoidant, schizoid), hostility (antisocial, passive-aggressive), substance abuse, and distress (anxiety, borderline, depression). Examples: <i>secondary psychopaths</i> [1][2]; <i>cluster 3</i> [3]; <i>cluster 1</i> [4]; <i>cluster 1</i> [5]; <i>cluster 3</i> [6].	<i>Secondary Psychopaths</i> Main features: Moderate interpersonal, affective features of psychopathy, high lifestyle features of psychopathy, high anxiety and substance abuse. Examples: <i>secondary psychopaths</i> [7][8][9].	<i>Borderline/Dysphoric</i> Main features: Frequent/severe interpersonal violence, extensive psychopathology, especially reflecting low mood (passive-aggressive, avoidant, antisocial, borderline, depressive, dependent, substance abuse). Examples: <i>impulsive</i> [10]; <i>borderline/dysphoric</i> [11][12].
Pattern 2		
<i>Antisocial/Narcissistic</i> Main features: moderate psychopathology, especially reflecting impulsivity, hostility, and self-absorption (antisocial, narcissistic, histrionic, substance abuse). Examples: <i>primary psychopaths</i> [1][2]; <i>cluster 1</i> [3]; <i>clusters 3 & 4</i> [4]; <i>cluster 2</i> [5]; <i>cluster 2</i> [6].	<i>Primary Psychopaths</i> Main features: High interpersonal, affective, and lifestyles features of psychopathy, low anxiety. Examples: <i>primary psychopaths</i> [7][8][9].	<i>Generally Violent/Antisocial</i> Main features: Frequent/severe interpersonal violence, moderate psychopathology (antisocial, narcissistic, and sadistic). Examples: <i>instrumental</i> [10]; <i>generally violent/antisocial</i> [11][12].
Additional Patterns		
<i>Controlled</i> [1][2][5]; <i>Inhibited</i> [1][2][5]; <i>clusters 2, 4, 5 & 6</i> [3]; <i>clusters 2 & 5</i> [4]; <i>Cluster 1</i> [6].	<i>Low psychopathology criminals</i> [7]; <i>criminals with negative affect</i> [7]; <i>non-psychopathic criminals with alcohol and drug problems</i> [8]; <i>criminals with features of psychopathy</i> [8].	<i>Family Only</i> [11][12]; <i>Low-level Antisocial</i> [12].
[1] Blackburn, 1986 [2] Blackburn, 1996 [3] Blackburn & Coid 1999 [4] Weekes & Morison, 1993 [5] Wales, 2005 [6] Beech et al., 2005	[7] Swogger & Kosson, 2007 [8] Vassileva et al., 2005 [9] Skeem et al., 2007	[10] Tweed & Dutton, 1998 [11] Huss & Ralston, 2008 [12] Eckhardt et al., 2008

Appendix Three
Correlations Between MCMI-III Scales

	1	2A	2B	3	4	5	6A	6B	7	8A	8B	S	C	P	A	H	N	D	B	T	R	SS	CC	PP
1 Schizoid	-	.60	.46	.34	-.50	-.06	.31	.33	-.28	.48	.45	.56	.42	.52	.39	.45	.36	.48	.31	.19	.44	.49	.43	.44
2A Avoidant	.60	-	.62	.55	-.60	-.25	.31	.40	-.37	.56	.64	.65	.55	.57	.53	.51	.43	.57	.34	.25	.53	.53	.47	.42
2B Depressive	.46	.62	-	.60	-.51	-.29	.32	.38	-.44	.55	.65	.57	.60	.51	.58	.54	.44	.72	.35	.25	.67	.58	.53	.38
3 Dependent	.34	.55	.60	-	-.40	-.29	.24	.32	-.41	.50	.58	.50	.53	.43	.53	.47	.46	.57	.33	.19	.51	.50	.47	.32
4 Histrionic	-.50	-.60	-.51	-.40	-	.53	-.06	-.19	.47	-.34	-.41	-.49	-.44	-.38	-.43	-.39	-.17	-.48	-.19	-.09	-.45	-.41	-.42	-.26
5 Narcissistic	-.06	-.25	-.29	-.29	.53	-	.11	.17	.27	.01	-.18	-.08	-.15	.05	-.14	-.13	.08	-.22	.01	.02	-.14	-.04	-.20	.20
6A Antisocial	.31	.31	.32	.24	-.06	.11	-	.66	-.49	.52	.38	.29	.54	.38	.31	.21	.45	.27	.64	.68	.27	.35	.18	.32
6B Sadistic	.33	.40	.38	.32	-.19	.17	.66	-	-.48	.64	.40	.45	.59	.60	.40	.34	.58	.40	.51	.52	.38	.46	.28	.46
7 Compulsive	-.28	-.37	-.44	-.41	.47	.27	-.49	-.48	-	-.56	-.43	-.41	-.63	-.42	-.40	-.39	-.40	-.47	-.42	-.35	-.43	-.46	-.38	-.29
8A Passive Aggressive	.48	.56	.55	.50	-.34	.01	.52	.64	-.56	-	.60	.59	.73	.71	.50	.48	.60	.60	.47	.35	.54	.63	.44	.55
8B Self Defeating	.45	.64	.65	.58	-.41	-.18	.38	.40	-.43	.60	-	.55	.65	.51	.54	.50	.45	.65	.42	.28	.58	.55	.52	.35
S Schizotypal	.56	.65	.57	.50	-.49	-.08	.29	.45	-.41	.59	.55	-	.60	.68	.58	.53	.54	.61	.31	.24	.60	.71	.53	.58
C Borderline	.42	.55	.60	.53	-.44	-.15	.54	.59	-.63	.73	.65	.60	-	.55	.62	.48	.63	.63	.51	.41	.65	.68	.53	.44
P Paranoid	.52	.57	.51	.43	-.38	.05	.38	.60	-.42	.71	.51	.68	.55	-	.49	.48	.53	.55	.35	.29	.49	.59	.43	.72

Note: Significant correlations are in bold.

Appendix Three cont.

	1	2A	2B	3	4	5	6A	6B	7	8A	8B	S	C	P	A	H	N	D	B	T	R	SS	CC	PP
A Anxiety	.39	.53	.58	.53	-.43	-.14	.31	.40	-.40	.50	.54	.58	.62	.49	-	.52	.50	.60	.35	.29	.81	.65	.54	.46
H Somatoform	.45	.51	.54	.47	-.39	-.13	.21	.34	-.39	.48	.50	.53	.48	.48	.52	-	.40	.63	.30	.16	.58	.54	.80	.36
N Bipolar Manic	.36	.43	.44	.46	-.17	.08	.45	.58	-.40	.60	.45	.54	.63	.53	.50	.40	-	.48	.41	.35	.45	.62	.38	.46
D Dysthymia	.48	.57	.72	.57	-.48	-.22	.27	.40	-.47	.60	.65	.61	.63	.55	.60	.63	.48	-	.35	.23	.70	.65	.66	.41
B Alcohol Dependence	.31	.34	.35	.33	-.19	.01	.64	.51	-.42	.47	.42	.31	.51	.35	.35	.30	.41	.35	-	.46	.34	.37	.30	.28
T Drug Dependence	.19	.25	.25	.19	-.09	.02	.68	.52	-.35	.35	.28	.24	.41	.29	.29	.16	.35	.23	.46	-	.26	.30	.15	.21
R PTSD	.44	.53	.67	.51	-.45	-.14	.27	.38	-.43	.54	.58	.60	.65	.49	.81	.58	.45	.70	.34	.26	-	.64	.64	.40
SS Thought Disorder	.49	.53	.58	.50	-.41	-.04	.35	.46	-.46	.63	.55	.71	.68	.59	.65	.54	.62	.65	.37	.30	.64	-	.52	.58
CC Major Depression	.43	.47	.53	.47	-.42	-.20	.18	.28	-.38	.44	.52	.53	.53	.43	.54	.80	.38	.66	.30	.15	.64	.52	-	.32
PP Delusional Disorder	.44	.42	.38	.32	-.26	.20	.32	.46	-.29	.55	.35	.58	.44	.72	.46	.36	.46	.41	.28	.21	.40	.58	.32	-

Note: Significant correlations are in bold.

Appendix Four
PCA Three Component Solution

	1	2	3
S Schizotypal	.84		
D Dysthymia	.82		
R Post Traumatic Stress Disorder	.80		
H Somatoform	.79		
CC Major Depression	.79		
SS Thought Disorder	.77		
2A Avoidant	.75		
2B Depressive	.74		
A Anxiety	.73		
P Paranoid	.70		
1 Schizoid	.68		
4 Histrionic	-.66		.43
8B Self Defeating	.64		
3 Dependent	.64		
PP Delusional	.63		.54
8A Passive Aggressive	.57		
C Borderline	.55	.46	
N Bipolar Manic	.46		
6A Antisocial		.93	
T Drug Dependence		.84	
B Alcohol Dependence		.73	
6B Sadistic		.66	
7 Compulsive		-.54	
5 Narcissistic			.84

Note: Average of communalities = .64 (range = .45-.82)

Appendix Four cont.
PCA two component solution

	1	2
D Dysthymia	.84	
2B Depressive	.82	
R Post Traumatic Stress Disorder	.81	
CC Major Depression	.79	
4 Histrionic	-.78	
2A Avoidant	.78	
H Somatoform	.76	
S Schizotypal	.75	
A Anxiety	.74	
8B Self Defeating	.73	
3 Dependent	.72	
SS Thought Disorder	.71	
C Borderline	.67	
1 Schizoid	.61	
P Paranoid	.58	
8A Passive Aggressive	.58	.45
7 Compulsive	-.52	
PP Delusional	.43	
6A Antisocial		.81
6B Sadistic		.73
T Drug Dependence		.66
5 Narcissistic	-.49	.57
B Alcohol Dependence		.57
N Bipolar Manic	.44	.49

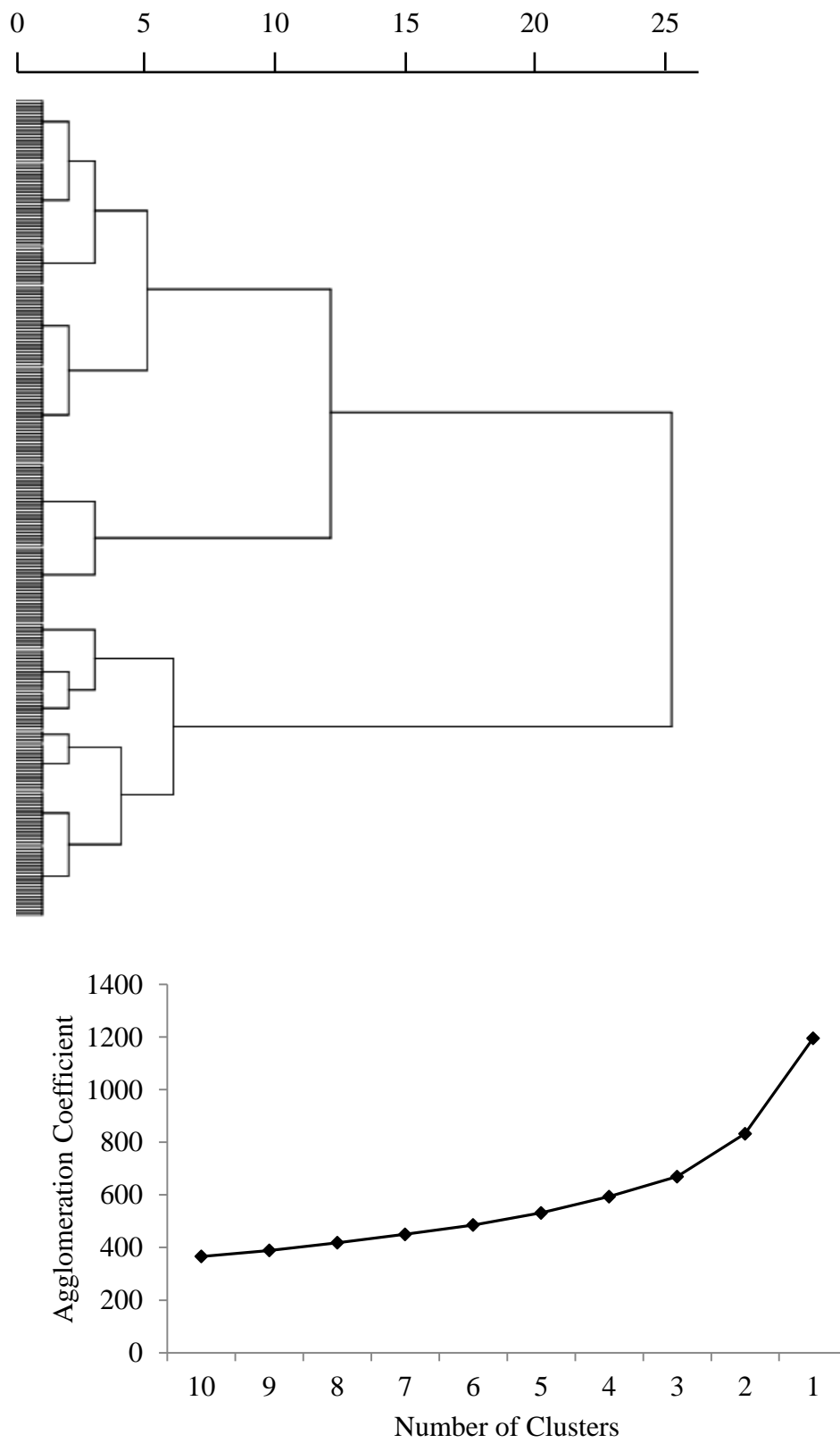
Note. Average of communalities = .58 (range = .40-.71)

Appendix Four cont.
PCA one component solution

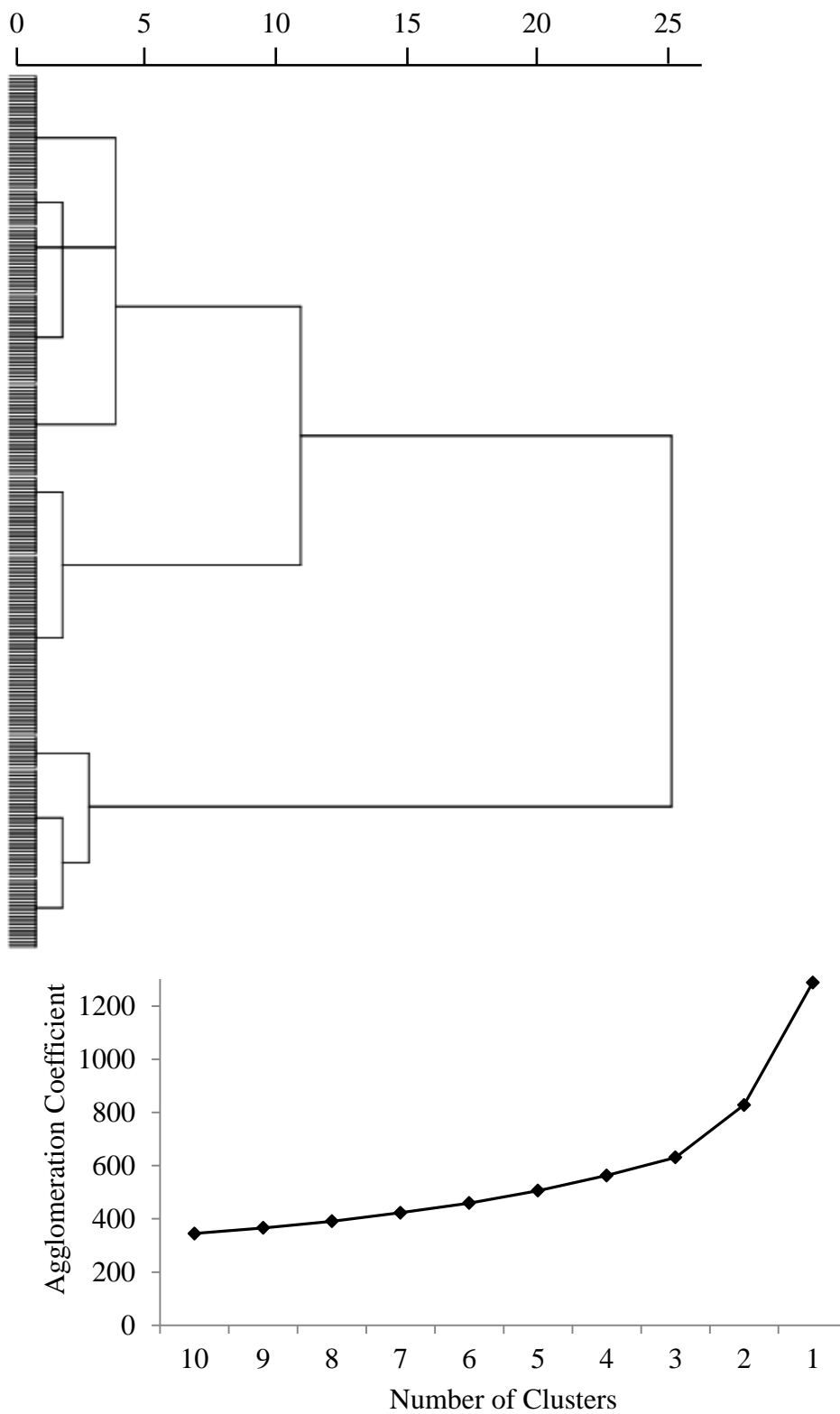
	1
C Borderline	.84
SS Thought Disorder	.81
8A Passive Aggressive	.81
D Dysthymia	.81
S Schizotypal	.79
R Post Traumatic Stress Disorder	.78
2B Depressive	.78
8B Self Defeating	.76
P Paranoid	.76
A Anxiety	.76
2A Avoidant	.75
H Somatoform	.70
CC Major Depression	.69
N Bipolar Manic	.69
3 Dependent	.68
6B Sadistic	.65
7 Compulsive	-.64
1 Schizoid	.64
PP Delusional	.62
4 Histrionic	-.57
B Alcohol Dependence	.56
6A Antisocial	.54
T Drug Dependence	.44
5 Narcissistic	

Note. Average of communalities = .57 (range = .03-.70)

Appendix Five
Dendrogram and Scree Plot for Subset One ($n = 311$).



Appendix Five cont.

Dendrogram and Scree Plot for the Subset Two ($n = 312$).

Appendix Six
Cluster Comparison on MCMI-III clinical scale scores (N = 623).

	Cluster			ANOVA		Tukey HSD		
	<i>M (SD)</i>			<i>F</i>	η^2	1vs.2	1vs.3	2vs.3
	1	2	3					
Major Depression	14.5 (20.8)	52.9 (19.0)	33.1 (24.9)	143.6*	0.317	*	*	*
PTSD	19.8 (23.3)	65.0 (15.2)	44.5 (25.0)	203.1*	0.396	*	*	*
Somatoform	14.3 (22.8)	54.3 (17.6)	36.3 (26.4)	143.8*	0.317	*	*	*
Anxiety	26.3 (29.1)	78.4 (19.7)	56.6 (30.0)	178.1*	0.365	*	*	*
Dysthymia	17.7 (22.1)	70.0 (10.7)	46.0 (25.4)	302.5*	0.494	*	*	*
Depressive	32.5 (26.6)	80.3 (11.3)	56.4 (24.5)	229.4*	0.425	*	*	*
Dependent	25.1 (19.2)	69.5 (16.9)	45.5 (23.5)	226.3*	0.422	*	*	*
Thought Disorder	16.6 (19.7)	62.6 (12.8)	49.8 (20.7)	310.9*	0.501	*	*	*
Self Defeating	26.3 (26.8)	75.0 (12.1)	57.2 (23.2)	246.2*	0.443	*	*	*
Bipolar Manic	35.9 (21.0)	64.6 (12.7)	62.8 (10.4)	218.4*	0.413	*	*	<i>ns</i>
Antisocial	60.4 (16.8)	78.5 (10.4)	79.4 (10.9)	132.0*	0.299	*	*	<i>ns</i>
Drug	59.7 (19.5)	76.1 (14.1)	74.9 (13.7)	61.7*	0.166	*	*	<i>ns</i>
Alcohol	57.6 (19.3)	79.2 (12.6)	75.4 (14.2)	103.8*	0.251	*	*	<i>ns</i>
Sadistic	39.8 (18.2)	65.9 (11.5)	66.6 (11.6)	228.7*	0.424	*	*	<i>ns</i>
Compulsive	55.4 (11.1)	34.8 (12.9)	47.3 (10.7)	152.7*	0.330	*	*	*
Borderline	28.1 (17.4)	70.0 (13.2)	57.2 (16.0)	349.1*	0.530	*	*	*
Narcissistic	57.8 (10.1)	46.9 (14.0)	73.0 (15.1)	215.4*	0.410	*	*	*
Histrionic	52.1 (11.8)	30.1 (12.9)	51.6 (10.5)	239.7*	0.436	*	<i>ns</i>	*
Delusional	22.8 (24.9)	57.6 (20.3)	61.7 (14.3)	216.2*	0.411	*	*	<i>ns</i>
Paranoid	29.0 (24.8)	71.3 (15.3)	66.4 (14.7)	295.4*	0.488	*	*	<i>ns</i>
Schizoid	40.3 (24.0)	71.8 (14.4)	62.1 (16.8)	141.3*	0.313	*	*	*
Schizotypal	22.2 (24.1)	70.4 (13.0)	56.9 (19.7)	308.0*	0.498	*	*	*
Avoidant	25.6 (22.3)	75.1 (11.9)	52.5 (22.7)	298.7*	0.491	*	*	*
Passive Aggressive	20.7 (17.4)	72.4 (17.3)	62.7 (21.7)	369.8*	0.544	*	*	*

Note. *comparison statistically-significant at the Bonferroni adjusted level: $p < .0021$.

Appendix Seven

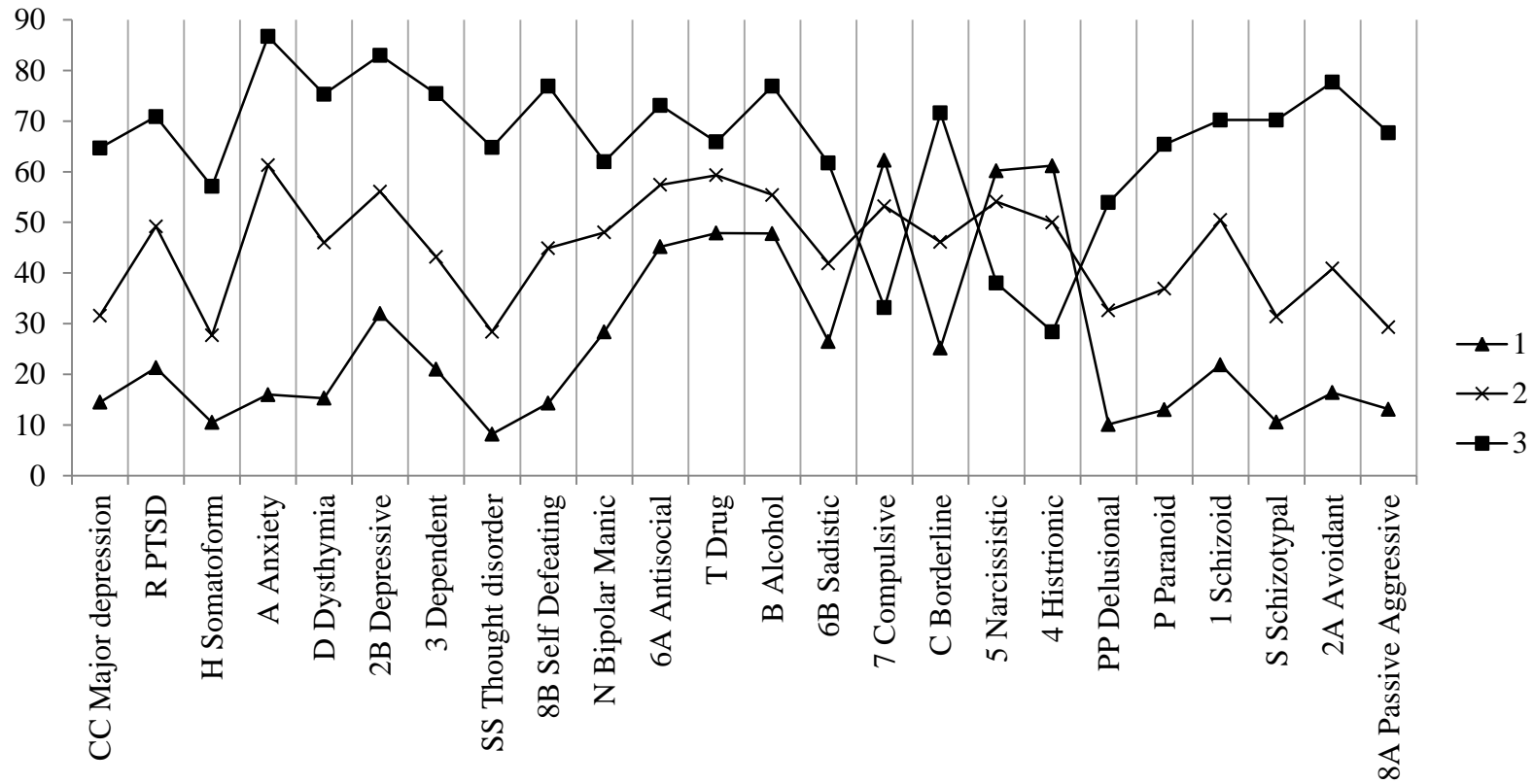
Cluster comparison on measures of positive self-presentation over time

		Cluster 1		Cluster 2		Cluster 3		Main Effects				Interaction		
		<i>low-</i>		<i>high-</i>		<i>antisocial/</i>								
		<i>psychopathology</i>		<i>psychopathology</i>		<i>narcissistic</i>		time		cluster		cluster*time		
	<i>n</i>		Pre	Post	Pre	Post	Pre	Post	<i>F</i>	<i>p</i>	<i>F</i>	<i>p</i>	<i>F</i>	<i>p</i>
SDE	172	<i>M</i>	5.5	6.2	2.9	3.4	4.3	5.4	6.97	.009	13.95	<.001	0.44	<i>ns</i>
		<i>SD</i>	4.2	3.6	2.7	2.9	3.2	3.6						
IM	172	<i>M</i>	6.8	8.7	4.7	5.9	5.6	5.8	12.94	<.001	10.79	<.001	2.63	.075
		<i>SD</i>	3.3	4.1	2.7	3.8	3.2	3.5						
Disclosure	305	<i>M</i>	42.5	41.6	79.1	68.9	66.9	57.9	46.42	<.001	120.35	<.001	7.35	.001
		<i>SD</i>	13.9	16.0	12.3	21.2	10.3	17.9						
Desirability	305	<i>M</i>	73.8	75.5	48.4	62.5	77.1	76.0	23.55	<.001	101.11	<.001	25.79	<.001
		<i>SD</i>	14.4	15.6	15.6	18.4	10.8	13.9						
Debasement	305	<i>M</i>	29.7	26.5	66.3	53.8	50.8	39.9	60.78	<.001	111.27	<.001	5.29	.006
		<i>SD</i>	19.5	22.5	11.7	16.5	10.8	21.5						

Note. Analyses only include programme completers.

Appendix Eight

Beech et al. (2005) MCMI-III clusters among sexual offenders



Note. Adapted from *STEP 4: The Sex Offender Treatment Programme in prison* (pp. 168-169), by A. Beech, C. Oliver, D. Fisher, and R. Beckett, 2005, Birmingham: University of Birmingham.