An Exploration of the Relationship between Psychopathy and the MMPI-2

by

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ABSTRACT

Psychopathy has traditionally been viewed as a discrete taxon (Cleckley, 1941); however, more recent research suggests that psychopathy should be considered heterogeneous (Lykken, 1995). Evidence suggests that psychopathy comprises of different facets (e.g., Cooke & Michie, 2001) yet the nature of those facets remains a contentious point in the literature (Patrick, Fowles & Krueger, 2009). One problem with investigating these facets is that they often depend on the tools used to measure or identify psychopathy. For example, the Psychopathic Deviate scale of the Minnesota Multiphasic Personality Inventory - 2 (MMPI-2; Butcher, Dahlstrom, Graham, Tallegen & Kaemmer, 1989) was originally designed to capture the construct of psychopathy; however, the scale is poorly correlated with overall psychopathy (Lilienfeld, 2001). One system in particular that relies on MMPI-2 scores for classifying criminal offenders is the Megargee system, which is a well validated categorical system (Megargee & Bohn, 1977, 1979). The overall aim of this thesis was to further examine the concept of psychopathy, to help clarify some of the inconsistencies within the psychopathy literature, with a particular focus on MMPI-2 scores and the Megargee classification system. The three more specific aims were: (1) to investigate subtypes of psychopaths within a forensic psychiatric setting using their MMPI-2 profiles, (2) to determine the applicability of various scales of the MMPI-2 in regards to psychopathy, and (3) to determine how the varying facets of psychopathy relate to the Megargee subtypes. Three studies were conducted to examine each of these aims in turn. The results of Study 1 demonstrated that some of the scales of the MMPI-2 correlated with some of the varying underlying facets of psychopathy. Specifically, they suggested that the MMPI-2 subscales are able to measure the
behavioural/impulsive aspect of psychopathy, but are unable to capture the “core features”. The results of study two showed that within a forensic psychiatric setting respondents tend to cluster into various subgroups, based on their MMPI-2 profile. In addition, some of these clusters may be related to the components of psychopathy. Finally, the results of Study 3 indicated that some of the Megargee subtypes are more strongly related to psychopathy than others. These findings call into question the view that psychopathy consists of a discrete taxon and provide further evidence that heterogeneity of psychopaths exists, particularly within a forensic psychiatric population. Clinical implications of the findings are discussed
Chapter 1: Psychopathy

Criminal offenders are a heterogeneous group. Not only do they differ in the frequency and nature of their anti-social behaviour, they differ widely in personality and psychiatric characteristics. It is likely that different subgroups of offenders have different etiological mechanisms involved in the development of anti-social behaviours, and as a result have different treatment needs. Several approaches to classify offenders into more homogeneous groups have been proposed (Clements, 1996; Nagin, Farrington, & Moffitt, 1995).

Most offender taxonomies highlight a subset of offenders who commit a disproportionate number of crimes, such as those who have been diagnosed with psychopathy, sociopathy and anti-social personality disorder (ASPD). For example, ASPD is very common in offender populations, with research suggesting that between 50 – 75% of all prison inmates satisfy the criteria for a diagnosis of ASPD (Hare, Hart, & Harpur, 1991). A smaller proportion of inmates (20-30%) meet the criteria for psychopathy (Hare, 1999). Given the high prevalence of ASPD in prison settings, it has been argued that psychopathy is more useful than ASPD in classifying criminal offenders (Flint-Stevens, 1993). Furthermore, psychopathy is related to the onset, frequency, and course of anti-social behaviour in criminal offenders (Roberts & Coid, 2007).

In the criminal justice system, personality disorder (and psychopathy in particular) has largely been used as an exclusion criterion for the services offered. Given the importance of psychopathy, both in its prevalence in the offender population and its ability to limit access to services, the aim of the current chapter is to provide a critical review of the literature surrounding the clinical construct of psychopathy. It will examine the differences between ASPD and psychopathy
before describing the history of psychopathy and the most widely used tool to measure psychopathy, The Psychopathy Checklist (PCL-R; Hare, 2003). Next, the many historical and current controversies that surround the concept of psychopathy will be described. More specifically, the chapter will review the literature surrounding the numerous debates that relate to psychopathy or the PCL-R. These include the role of anti-social behaviour within psychopathy, the role of psychopathy in risk assessment, the field reliability of the PCL-R, psychopathy as a label, and whether psychopathy can be defined as a discrete taxon or existing on a continuum. Subsequently, this thesis will consider the issues inherent within labeling someone a “psychopath”, as well as whether individuals high on psychopathy are amenable to treatment. In addition, the debate regarding whether psychopathy is a unitary syndrome or subgroups of individuals classified as psychopaths will be explored. The final section of the chapter will consider the differing models of psychopathy that have been proposed.

**ASPD and Psychopathy**

The labels ASPD and psychopathy are often used interchangeably despite referring to different constructs. ASPD is a category listed in the Diagnostic Statistical Manual - 5th edition (DSM-IV; APA, 2000), and is conceptualized as a disorder in which an individual displays the following characteristics:

- Evidence of conduct disorder before the age of 15
- Pervasive pattern of disregard for, and violation of, the rights of others since the age of 15 years, as indicated by three or more of the following
1. Failure to conform to social norms with respect to lawful
   behaviours, as indicated by repeatedly performing acts that are
   grounds for arrest;
2. Deceitfulness, as indicated by repeated lying, use of aliases, or
   conning others for personal profit or pleasure;
3. Impulsivity or failure to plan ahead;
4. Irritability and aggressiveness, as indicated by repeated physical
   fights or assaults;
5. Reckless disregard for safety of self or others;
6. Consistent irresponsibility, as indicated by repeated failure to
   sustain consistent work behaviour or honor financial obligations;
   and
7. Lack of remorse, as indicated by being indifferent to or
   rationalising having hurt, mistreated or stolen from another.

Unlike ASPD, psychopathy is more related to personality than behaviour. Therefore, tools that assess psychopathy include information about the individual in other situations, and cannot be judged purely on behavioural observations.

The construct of psychopathy embodies most, if not all of the above ASPD characteristics. Individuals scoring highly on measures of psychopathy, however, are more accurately described as “remorseless predators who use charm, intimidation and, if necessary, impulsive and cold blooded violence to attain their ends” (Hare, 1996, pp. 1). Almost all individuals who meet the diagnostic criteria for psychopathy according to the Psychopathy Checklist Revised (PCL-R; Hare, 1991) also meet the DSM-IV-TR criteria for ASPD. However, because the criteria
for diagnosing psychopathy are stricter than those of ASPD, most individuals with ASPD do not meet the criteria for psychopathy (Hare, 1991).

Given the higher prevalence of ASPD than psychopathy in prison settings, it has been argued that the diagnosis of ASPD is not sufficiently discriminating, and that psychopathy may be more useful for classifying criminal offenders (Flint-Stevens, 1993). The main difference between the two constructs is that ASPD can be defined primarily in terms of observable criminal behavior, whereas psychopathy includes the affective and interpersonal characteristics that may more adequately define a personality disorder. In addition, psychopathy has been shown to have greater predictive utility for important outcome measures, such as serious reoffending and treatment failure (Walters, 2003). Therefore, the focus in this thesis will be on psychopathy.

History of psychopathy

Psychopathy was the first personality disorder to be recognised in psychiatry (Millon, Simonsen, Birket-Smith & Davies, 2003). Descriptions of individuals who displayed characteristics consistent with the modern construct of psychopathy have been found in historical writings. For example, Maughs (1941) discusses the evolution of psychopathic personality as a concept and notes that the term “manie sans delire”, meaning mania without confusion of the mind, was coined in the 1700s. This term referred to individuals of normal intellect, but who exhibited deviations in “moral” behaviour. Over the years, a number of different labels have been used to describe individuals who present as what would now be considered psychopathic. These terms include moral insanity, moral imbecility, degenerate constitution, congenital delinquency, psychopathic personality, anti-
social personality disorder, dissocial personality disorder and psychopathy. All of these terms are generally pejorative and have negative implications (Ogloff, 2006).

The most widely recognised origin of the description of psychopathy is in *The Mask of Sanity*, written by American psychiatrist Hervey Cleckley (1941). He identified 16 characteristics of psychopathy drawn from the literature and clinical experience. These characteristics are:

1. Superficial charm and good intelligence.
2. Absences of delusions and other signs of irrational thinking
3. Absences of ‘nervousness’ or psychoneurotic manifestations
4. Unreliability
5. Untruthfulness and insincerity
6. Lack of remorse or shame
7. Inadequately motivated anti-social behaviour
8. Poor judgment and failure to learn from experience
9. Pathological egocentricity and incapable of love
10. General poverty in major affective reactions
11. Specific loss of insight
12. Unresponsive in general interpersonal relations
13. Fantastic and uninviting behaviour; with drink and sometimes without
14. Suicide rarely carried out
15. Sex life impersonal, trivial and poorly integrated
16. Failure to follow any life plan
Drawing on Cleckley’s (1941) work, Hare (1980; 1991; 2003) developed what is now recognised as the most widely used tool for measuring psychopathy, the Hare Psychopathy Checklist (PCL) and the Psychopathy Checklist Revised (PCL-R). In addition to the PCL and the PCL-R, various authors have developed other tools that utilise self-report methods to identify psychopaths.

Assessment of psychopathy

Psychopathy Checklist Revised (PCL-R)

This checklist was developed in the 1980s to measure the extent to which an individual meets the criteria for psychopathy. Hare (1980) based the PCL on Cleckley’s (1941) criteria; however, he also drew from other sources, including his own clinical experience (Hare & Neumann, 2008). In 1991, this measure was revised and published as the 20-item PCL-R (Hare, 1991). The PCL was further revised in 2003, becoming the Psychopathy Checklist – Revised, 2nd edition. Given that none of the items changed between the PCL-R and the PCL-R, 2nd edition, both the PCL-R and the PCL-R, 2nd edition are used interchangeably throughout the literature and are referred to as the PCL-R. The PCL-R is a 20-item measure of psychopathy, which breaks the construct into two correlated factors. Factor 1 measures the interpersonal or affective aspects of personality that are related to psychopathy. Factor 2 measures the symptoms relating to anti-social behaviour. The 20 items that make up the PCL-R are listed below.

1. Glibness / superficial charm
2. Grandiose sense of self worth
3. Need for stimulation
4. Pathological lying
5. Conning / Manipulative
6. Lack of remorse or guilt
7. Shallow affect
8. Callous / lack of empathy
9. Parasitic Lifestyle
10. Poor behavioural controls
11. Promiscuous sexual behaviour
12. Early behavioural problems
13. Lack of realistic goals
14. Impulsivity
15. Irresponsibility
16. Failure to accept responsibility
17. Many short term relationships
18. Juvenile delinquency
19. Revocation of conditional release
20. Criminal versatility

The Psychopathy Check List: Screening Version (PCL: SV; Hart, Cox & Hare, 1995) is a 12 item screening version of the PCL-R that maintains the internal consistency and facets of the PCL-R with almost half of the number of items (Cooke, Michie, Hart & Hare, 1999).

A notable difference between the current conceptualization of the psychopathy construct and the construct proposed by Cleckley (1941) is the absence of positive social adjustment items in the PCL-R (for example, no mention of ‘good intelligence’). This point has been recognised and suggestions
offered that there may be different presentations of psychopathy (Patrick, Fowles & Krueger, 2009; Vassileva, Kosson, Abramowitz & Conrod, 2005).

The PCL-R provides a score of the extent to which an individual possesses characteristics consistent with psychopathy (Hare, 2003). The PCL-R is therefore a dimensional measure of the traits of psychopathy, and very few individuals possess enough of the characteristics to be considered ‘psychopathic’. An estimated 1% or fewer people in the general community might be considered psychopathic (Hare, 2003).

Furthermore, the PCL-R is a widely researched tool, with more than 100 peer-reviewed studies examining its reliability and validity (Ogloff, 2006). While some research demonstrating the reliability and validity of the PCL-R is based on the relationship between PCL-R scores and the risk of recidivism, research has also been conducted in a variety of contexts inside and outside the criminal justice system (Hare, 2003). The PCL-R is associated in useful and theoretically meaningful ways with a broad range of anti-social and criminal behaviours (for example, high rate of offending, early onset of offending, poor treatment outcomes and consistent criminal behaviours) (Hare, 2003). Additionally, psychopathy has been related to a range of behaviours associated with psychiatric concerns (including use of seclusion and restraint, suicidal gestures and psychiatric hospitalisations). Despite using different measures, such as official indices, self-report indices, behavioural ratings coded by correctional staff, clinicians and research assistants, research findings have been consistent; that is, they support the usefulness of the PCL-R for a number of reasons. Even though this has been demonstrated, there is some controversy surrounding the PCL-R,
psychopathy and the degree to which anti-social behaviour is part of the construct of psychopathy (Skeem & Cooke, 2010).

**Psychopathy and the PCL-R**

As noted in the previous discussion, there is a lack of consensus regarding what constitutes psychopathy. The PCL-R was originally developed based on Cleckley (1941) criteria, however has now moved away from this description. This has occurred most noticeably through the inclusion of criminal behaviour and the absence of positive adjustment items, such as low trait anxiety (which is observed in the boldness of the triarchic model). Notably, Cleckley (1941) did not view criminal behaviour as a defining feature of psychopathy, rather he viewed criminal behaviour as a rare expression of psychopathy (Cleckley, 1988). Other measures, such as the Psychopathic Personality Inventory (PPI; Lilienfeld & Andrews, 1996) focus primarily on different facets of psychopathy, and less on criminal behaviour. The discrepancies between these tools further conflate the issue regarding the make-up of psychopathy.

Whilst the PCL-R was originally developed to capture the Clecklyen view of psychopathy, the authors have acknowledged their view of the PCL-R, that it measures an “evolutionary psychology perspective psychopathy as a heritable life strategy in which a central feature is the early emergence of antisocial behaviour, including aggressive sexuality” (Hare & Neumann, 2005, p. 58). This view has been criticised, however, with researchers claiming that it rests on little evidence (Skeem & Cooke, 2010). Therefore, the theory that underlies the concept of psychopathy as identified in the PCL and PCL-R is still in contention. Indeed, some authors have gone as far as to claim that no clear theory underpins the PCL-
R (Skeem & Cooke, 2010). It is suggested that the PCL-R model is inconsistent with its roots in Cleckleyan conceptualisation. Whilst the evolutionary model fits the PCL-R derived psychopathy to a greater extent, Skeem and Cooke (2010) argue that fitting a theory to an already derived model is unhelpful and contrary to the way models should be developed.

Given these issues, it is useful at this point to make the distinction between the psychopathy as a construct and the tool used to measure it. Measurement tools are unable to perfectly capture the construct they are attempting to measure. Given that the PCL-R has been viewed as the gold standard measurement of psychopathy for some time, however, authors have suggested that the field is beginning to conflate the construct of psychopathy with the tool used to measure it (Skeem & Cooke, 2010). It is noted that psychopathy as defined by the PCL-R is somewhat different from other measures and theories of psychopathy (Cleckley, 1941; Lilienfeld & Andrews, 1996; Patrick et al., 2009; PPI). Given the differences between the PCL-R defined psychopathy and other psychopathy measures, it is likely that the PCL-R is both under and over inclusive of individuals who are classified as psychopathic.

It has been suggested that the PCL-R is over inclusive in that it not only identifies true, or primary psychopaths, but also a range of other, etiologically different presentations. Specifically, individuals with a long criminal history, but without factors that are traditionally associated with psychopathy (for example, fearlessness and low trait anxiety) may still score highly on the PCL-R given the high focus on criminal behaviour (Lilienfeld, 1994).
In contrast, it has been suggested that the PCL-R is under inclusive of individuals who present with attributes associated with primary psychopathy, but for a number of reasons (for example high intelligence) have avoided contact with the legal system (Lilienfeld, 1994). Specifically, the PCL-R does not capture the positive adjustment factors associated with psychopathy. As such, it is unclear the extent to which the PCL-R measures psychopathy. Therefore, it is important to consider not only personality attributes that are measured by the PCL-R, but also other attributes that have been considered to relate to psychopathy throughout its history.

**Controversies surrounding psychopathy and the PCL-R**

Within the literature, there are debates surrounding the construct of psychopathy and the use of the PCL-R. These debates include the exact nature of the extent to which the PCL-R measures the construct of psychopathy, the relationship between anti-social behaviour and psychopathy, whether the PCL-R should be used as a tool to predict risk assessment, and whether psychopaths are able to benefit from psychological treatment. These issues will be discussed in more detail in the following section.

**Anti-social behaviour and psychopathy**

It is accepted that psychopathy’s distinctive personality characteristics are associated with anti-social behaviour (Hare & Neumann, 2010; Hare, 2003). However, the extent to which anti-social behaviour is an inherent part of psychopathy, or more a consequence of the disorder, has been a topic of debate (Hare, 2003; Skeem & Cooke, 2010). For example, Cooke, Michie and Hart (2006) argued that the anti-social behaviours measured by items on the PCL-R are
merely consequences of central psychopathic traits. However, other authors have argued that the development of traits and behaviours is interactive and reciprocal (e.g., Hare & Neumann, 2005).

In relation to this debate, it has been shown that most of the predictive power of the PCL-R comes from the factors that measure anti-social behaviour and criminal history (Gendreau, Goggin & Smith, 2002; Guy, Edens, Anthony & Douglas, 2005; Hemphill, Hare & Wong, 1998; Leistico, Salekin, DeCoster & Rogers, 2008). One potential reason for this power is that Hare (1991) developed the PCL-R using a sample of offenders and that Factor 2 of the PCL-R is largely related to criminal behaviour. The finding that the majority of the predictive validity of the PCL-R lies within factors related to criminal behaviour has led some authors to argue that the personality construct of psychopathy is not related to criminal behaviour. Furthermore, that the predictive validity of the instrument relies solely on the items that relate to criminal history and a general propensity towards violence (Skeem, Polaschek, Patrick & Lilienfeld, 2011). Although it has been shown that Factor 2 of the PCL-R contains some items that index criminal behaviour, debate still exists regarding whether Factor 1 shows predictive validity of violence (Hare, 2003; Yang, Wong & Coid, 2010). It has been demonstrated that after removing items from the PCL-R that reflect criminal behaviours, high PCL-R scores are still associated with recidivism (Hare, 1998). Therefore, the difference in recidivism between psychopaths and non-psychopaths cannot be attributed solely to past criminal behaviour. Given that the PCL-R has shown predictive validity in relation to recidivism, it has been recommended as a useful risk assessment tool.
PCL-R as a risk assessment tool

The use of the PCL-R in offender risk assessment is a contentious issue (Gendreau, et al., 2002; Hart, 1998; Salekin, Rogers, & Sewell, 1996). Salekin et al. (1996) have claimed that the PCL-R is “unparalleled as a measure for making risk assessments” (p.211). Similarly, Hart (1998) argued that failing to consider psychopathy when considering risk may constitute professional negligence. In contrast, other researchers have suggested that different tools may be more useful in risk assessment. For example, Gendreau et al. (2002) noted that the Level of Service Inventory – Revised (LSI-R; Andrews & Bonta, 2002), “notably surpasses the PCL-R in predicting general … and violent recidivism” (p. 397). Although the LSI-R and other purpose-built risk assessment tools make superior predictions of risk than the PCL-R, the PCL-R measures a construct that has further-reaching theoretical and practical implications for the criminal justice system (Hemphill & Hare, 2004). Furthermore, proponents of the PCL-R suggest that the PCL-R’s utility and exploratory power extend well beyond the assessment of risk (Hemphill & Hare, 2004).

Research that has examined the relationship between risk of recidivism and psychopathy needs to be better evaluated before any conclusions can be drawn. Formal avenues through which anti-social behaviour can be identified, such as criminal convictions, are notoriously insensitive measures of anti-social and criminal behavior. Therefore, investigators need to examine behaviours that conceptually relate to recidivism with a broader scope. One study in particular highlights this issue (Wilson & Bakker, 2000). The authors attempted to predict risk of recidivism based on scores on the PCL: SV and found that the scores had a strong positive correlation with re-convictions ($r = .50$). However, they then
attempted to study the 32 individuals who had been classified as high on the PCL: SV and did not re-offend. Of these 32, two had died, two were remanded for committing a crime, and one was in witness protection. Out of the remaining 27 individuals, 91% had convictions for violent crimes but had not returned to prison. This study highlights the difficulty in measuring outcomes of offenders based solely on reconvictions.

Although there remains debate around whether high scores on the PCL-R are related to recidivism, it has been acknowledged that psychopathy as a personality trait is a considerable risk factor for recidivism (Gendreau et al., 2002; Hemphill & Hare, 2004). It is for that reason that the PCL-R is included in several purpose-built risk assessment tools including the Historical, Clinical, Risk-20 (HCR-20; Webster, Douglas, Eaves & Hart, 1997) and the Violence Risk Appraisal Guide (VRAG; Quinsey, Harris, Rice & Cormier, 1998). The PCL-R is not designed to compete with these instruments; instead, it provides unique information that assists clinicians in better understanding their clients. Despite the usefulness of the construct of psychopathy, assessment using the PCL-R is a time-consuming process, which can only be done by specifically trained professionals.

To examine the utility of commonly-used risk assessment tools, Yang, Wong and Coid (2010) conducted a meta-analysis on nine such tools. They included studies that compared more than one tool and were published between 1999 and 2008. The results indicated that all nine tools predicted risk at about the same level. While the PCL-R overall was comparable to that of other tools, the authors concluded that Factor 1 of the PCL-R “predicted violence at only a chance level among men” (p. 740). This finding further strengthens the argument
that the majority of the predictive power of the PCL-R is related to Factor 2 (which measures anti-social behavior). The core personality attributes (Factor 1) of psychopathy were found to be largely unrelated to future risk of violence in males.

As previously mentioned, research suggests that the predictive utility of the PCL-R is driven more by its measurement of past antisocial behaviour and impulsivity (Factor 2), as opposed to the assessment of the interpersonal and affective traits of psychopathy (Skeem, Miller, Mulvey, Tiemann & Monahan, 2005). Consistently, meta analyses suggest that Factor 2 predicts violence to a greater extent than Factor 1 (Walters, 2003; Walters, Knight, Grann & Dahle, 2008). Given that it is accepted that Factor 2 of the PCL-R has stronger predictive validity compared to Factor 1, research has moved to determining if having the core psychopathic traits multiplies the already high risk of violence among impulsive individuals with a history of antisocial behaviour.

In a meta-analysis conducted by Kennealy, Skeem, Walters and Camp (2010) 32 effect sizes were examined to determine if the interpersonal and affective features of psychopathy interacted with the antisocial behaviour and impulsivity factors to predict violence. Consistent with previous work they found that Factor 2 was a stronger predictor of violence compared to Factor 1. The authors also found, however, that the two scales did not interact to improve the predictive future violence. Their conclusion was that the interpersonal and affective factor of the PCL-R adds little by the way of predicting future violence.
Field Reliability

More recently, the PCL-R has come under some criticism regarding the reliability of the measure, in particular when the PCL-R is utilised within the justice system (for a review see Edens, Magyar & Cox, 2013). A number of studies have suggested that within the criminal justice system, the legal counsel that hired the expert (defence or prosecutor) led to discrepant results with regards to PCL-R ratings. Research has suggested that prosecution retained experts rated offenders as having higher scores on average compared to defence retained experts (Murrie, Boccaccini, Johnson & Janke, 2008; Murrie, Boccaccini, Turner et al., 2009; Rufino, Boccaccini, Hawes & Murrie, 2012). This phenomenon has been referred to adversarial allegiance. In addition to adversarial allegiance, some research has suggested that even when PCL-R examinations are conducted independently, the interrater reliability is small. For example, Miller, Kimonis, Otto, Kline & Wasserman, 2012 examined independently conducted PCL-R scores for 132 sexually violent predators and found that overall the PCL-R exhibited low levels of interrater reliability (ICC = .60). Furthermore, when examining the factors, the authors found that the interpersonal and affective facets of the PCL-R showed even lower levels of interrater agreement. In addition, Sturup et al., (2014) examined the reliability of the test within the Swedish court system. This is an inquisitorial system, meaning that PCL-R raters have not been retained by either counsel. They found the interrater reliability to be lower (ICC = .70) than reported in the manual by Hare (2003), where ICC = .87. This research leads to the growing concern regarding the use of the PCL-R for the purpose of risk assessment.
In addition to criticism regarding the interrater reliability of the PCL-R, some studies have raised questions regarding the test-retest stability of the PCL-R items. Research has suggested that PCL-R scores can change appreciably over the course of 1-2 years (Rutherford, Cacciola, Alterman, McKay & Cook, 1999; Tyrer et al., 2005). These findings suggest that either PCL-R scores are more malleable over time than thought by some authors (e.g. Gacono, 2000), or reflect measurement error. This may suggest that both temporal and rater aspects of the PCL-R are sources of error. The temporal instability of the PCL-R and the lack of interrater reliability have caused some authors to question the use of the PCL-R in risk assessment (Sturup, Edens, Sorman, Karlberg, Fredriksson & Kristiansson, 2014).

**Difficulties in using the PCL-R**

The two main criticisms regarding the use of the PCL-R are in its administration and the use of a cut-off score. With respect to administration, it has also been argued that the PCL-R is not user-friendly, in that it requires considerable administration time and can only be administered by specifically trained professionals (Hart, Cox & Hare, 1995). The time taken to complete the PCL-R generally ranges from 2-4 hours (Hart et al., 1995). Therefore, if clinicians were required to complete a PCL-R on all offenders it would become a time consuming process. If aspects of other, easier to administer personality measures could be used as screening measures for identifying people who are potential high on psychopathy, the PCL-R could then be used to confirm this classification. Ultimately this could save time and be more cost effective for the criminal justice system.
The second problem is that identifying psychopathic individuals can pose a challenge for clinicians. Although PCL-R scores are continuous, the classification is made using a cut-off score. The accepted score for an individual to be classified as psychopathic within a clinical sense is 33 (Hare, 2003). However, as with any measurement score there is a standard error of measurement, which for the PCL-R is approximately two (Hare, 2003). This means that a score of 30 has a 95% Confidence interval of 26-34, which makes accurate classification more complex.

*Psychopathy as a label*

Typically, individuals classified as psychopathic are viewed as fundamentally dangerous and different from the rest of humanity. Popular portrayals of psychopaths in movies and books are diverse and at times conflicting. They range from uncommonly impulsive and violent criminal offenders to corporate figures that callously and skillfully maneuver their way to the highest rungs of the corporate ladder. Despite the diversity of individual perspectives as to what constitutes a psychopath, it has been argued that clinicians should avoid using the term “psychopath” as it has negative connotations and may lead to the stigmatization of offenders (Gendreau et al., 2002). While this may be true, proponents of the term argue that many diagnostic terms carry negative connotations but are necessary, because they convey important information about a particular disorder. The term psychopath should be no different. In addition to the stigma associated with being labeled a psychopath, some authors have suggested that psychopaths are untreatable and should not be included in treatment programs (Ogloff, Wong & Greenwood, 1990).
Boccaccini, Murrie, Clark & Cornell (2008) manipulated vignettes to include or omit the term ‘psychopath’ then gave the vignettes to jury pool members. They found that having the term ‘psychopath’ in the vignette led jurors to believe that the individual posed greater risk of re-offending and deserved a stronger punishment. This further supports the notion that labeling someone as psychopathic can have far-reaching consequences. Additional research found that a sample of undergraduate students were more likely to recommend the death penalty if an individual was described as psychopathic (Edens, Colwell, Desforges & Fernandez, 2005).

Furthermore, to determine whether clinicians in the juvenile justice system are affected by the label of psychopathy, Rocket and Murrie (2007) asked 109 justice clinicians to respond to a mock psychological evaluation of a juvenile, with varied psychopathic features and diagnosis (psychopathy and conduct disorder). They found that a label of psychopathy led to a higher risk rating of reoffending, which suggests that the label may influence clinicians working within this setting. However, a psychopathy label did not appear to impact the clinicians view of the treatability of the youths described. This suggests that some optimism exists within clinicians regarding the treatability of individuals high on psychopathy measures.

_Treatability of individuals high in psychopathy_

To date there is little evidence to support the success of conventional psychological treatment approaches with psychopaths. However, it has been suggested that the research assessing the efficacy of treatment has been largely deficient and that it may be possible to treat psychopaths (Salekin, 2002). In a
review, Wong (2000) found that only two studies were methodologically sound enough to consider, and even these employed traditional treatment approaches, which may not be beneficial to psychopaths.

One study in particular highlights the difficulties of treating psychopaths using conventional treatment approaches. This study evaluated the progress of 80 male prisoners who attended a therapeutic community to treat personality-disordered criminals (Ogloff et al., 1990). Individuals were placed into high, medium or low psychopathy groups based on their PCL-R scores and provided traditional treatment approaches. Outcome measures included individuals’ degree of motivation, length of stay in the treatment program and therapeutic improvement (as judged by clinicians). The offenders in the high psychopathy group scored significantly worse on all outcome measures compared to the other two groups (specifically, they remained in the program for shorter periods of time, exhibited less motivation and less improvement). Furthermore, a follow-up study found that individuals in the high psychopathy group were two times more likely to be reconvicted (83%) compared to individuals in the other groups, indicating that traditional treatment approaches for psychopaths do not have the desired effect (Hemphill, Hare & Wong, 1998).

In addition to traditional treatments’ lack of effectiveness with psychopaths themselves, having these individuals in a traditional treatment group may detrimentally affect group cohesion and dynamics (Ogloff, 2006). Therefore, when considering offenders for conventional psychological treatments, they should ideally be screened for psychopathy. Those with high PCL-R scores may require modified intervention approaches rather than being mixed in with offenders low on psychopathy. Despite Factor 2 on the PCL-R showing the
strongest predictive validity for recidivism, there is some evidence to suggest that Factor 1 is related to disruptive behaviour during therapeutic groups and poor therapeutic change (Hughes, Hogue, Hollin & Champion, 1997).

One final point to note regarding the inclusion of psychopaths in conventional treatment programs is that clinicians may be ill-equipped to determine the efficacy of the treatment and therefore may place the offenders at a lower level of risk. For example, in one study, clinicians rated offenders as either ‘good’ or ‘poor’ in regards to treatment change (Seto & Barbaree, 1999). Participants were also judged to have ‘low’ or ‘high’ levels of psychopathy. Participants in the low psychopathy group had low rates of recidivism and their re-offence rate was unrelated to the clinicians’ judgment of treatment change. However, participants in the high psychopathy group showed a significant correlation between clinician-rated change scores and re-offending, although in the opposite direction than predicted. That is, individuals in the high psychopathy group who also received ‘good’ treatment ratings had the highest rates of re-offending; even higher than those in the high group who received ‘poor’ treatment ratings. The re-offence rate for individuals in the high group whom clinicians thought had shown improvement in treatment was four times higher than all other offenders. These findings were replicated by Looman, Abracene, Serin and Marquis (2005) with a sample of high risk, high need sexual offenders.

Taken together, these results suggest that clinicians may find it difficult to accurately judge therapeutic change in psychopaths. These results further suggest that psychopaths may have different criminogenic needs compared to non-psychopaths. They also highlight the importance of specifically targeted treatment programs, such as the one developed by Wong and Hare (2005). This specific
treatment approach focused on behaviour change and control as opposed to targeting traditional treatment modules such as emotional control, cognitive factors or victim empathy (Wong & Hare, 2005); however, this new approach is yet to be evaluated. In conjunction with specifically targeted treatment programs, it might be useful to further split psychopaths on the basis of their Factor 1 and Factor 2 scores. It has been suggested that only individuals high on Factor 1 of psychopathy are disruptive in group settings (Hughes et al., 1997).

**Taxonomy or continuum**

Questions have been raised about whether psychopathy—and all personality disorders in general—can be classified as distinct taxons or whether it is more useful to consider them on a continuum. A taxon refers to a group of individuals who are judged to be different to the normal population. Some early empirical evidence supported the notion of psychopathy being a discrete taxon. For example, Harris, Rice and Quinsey (1994) found that psychopathy scores were not normally distributed. In this study, the authors applied taxometric analysis to psychopathy and 50 other variables reflecting antisocial childhood, adult criminality and criminal recidivism. They found support for two underlying normal distributions, and suggested that this provided evidence for psychopathy to be considered as a taxon. Specifically, the authors claimed that psychopaths formed their own distinct distribution on the basis of PCL-R scores. However, these results have not been replicated.

In contrast to these results, more recent evidence suggests that psychopathy, and indeed all personality disorders, are more likely to exist on a dimensional framework, as opposed to a categorical framework (Haslam, Holland
& Kuppens, 2012). In this large meta-analysis, with a combined sample size of 533,377, the authors examined 177 articles and 311 distinct findings and found that there was little evidence for discrete taxons when examining personality disorders. The authors employed taxometric analysis techniques to determine whether personality constructs exist as taxons or on continuums. The taxometric analysis they conducted was designed to test between the two approaches (discrete or continuous), which is becoming a popular method in the statistical literature (Ruscio, Haslam & Ruscio 2006). While the authors found some evidence for schizotypal personality disorder existing as a taxon, all other personality disorders—including psychopathy—were considered continuous. Despite early support for the view of psychopathy as a taxon, the current state of the literature supports the notion of psychopathy as a continuous variable (Haslam et al., 2012).

_Unitary syndrome or distinct subgroups_

In addition to the question of psychopathy being a discrete taxon or on a continuum, there is also a question regarding whether it is a unitary syndrome or reflects different subgroups. The viability of any psychopathological construct is based on a range of evidence. A pre-requisite is the existence of a coherent syndrome, that is, a cluster of symptoms that occur together and are distinct from other clusters (Blashfield & Draguns, 1976). The defining characteristics of psychopathy are diverse and entail interpersonal, behavioural and affective traits. The diversity of these traits may be contraindicative of a universal coherent syndrome, suggesting that there are different factors that make up the construct of psychopathy. Furthermore, given the high number of combinations of PCL-R items that could give an individual a score of greater than 30, thus identifying
them as psychopathic, it is unlikely that all psychopaths have the same presentation.

While some authors suggest psychopathy is a unitary syndrome (for example, Cleckley, 1941; Harris, Rice & Quinsey, 1994), factor analysis has suggested that at least two distinct dimensions within the construct of psychopathy exist (Hare, 1991). Other researchers have proposed that there are three or even four dimensions of psychopathy (Patrick et al., 2009; Hare, 1991). This research has led to varying models being proposed. In the following section, these models will be reviewed.

*Models of psychopathy*

The early research in the area of psychopathy focused on the role of anxiety as a defining characteristic of the disorder. More specifically the focus was on differentiating two subtypes on the basis of anxiety. The two proposed subtypes are referred to as *primary* and *secondary psychopaths*.

*Anxiety*

Debate surrounds whether all psychopaths experience a lack of affective experience (Hare, 2003; Patrick et al., 2009). It has been suggested that individuals with psychopathic features can be differentiated using their levels of anxiety. More specifically, *primary* psychopaths can be characterized by a lack of anxiety and *secondary* psychopaths may appear psychopathic, yet experience substantial anxiety and negative affect (Blackburn, 1998). However, there have been mixed findings regarding the role of anxiety in psychopathy. Many offenders who obtain very high scores on the PCL-R also present with negative
emotionality and anxiety, while other high PCL-R scorers exhibit a more classic presentation entailing low anxiety (Skeem et al., 2011). The issue centres on whether both of these presentations are considered psychopaths.

At this point, it is important to distinguish between anxiety and fear (Barlow, 2000; 2002). Anxiety is cognitive in nature and its defining feature is worry or apprehension about the inability to control future threats, combined with a hypervigilance regarding potential threat. In contrast to anxiety, fear constitutes an activation of the autonomic nervous system in order to deal with imminent threat. Psychopaths may not have low anxiety, but rather be better conceptualised as having low fear (Lykken, 1995). This distinction may account for some of the inconsistent findings regarding anxiety and psychopathy in the literature.

Primary versus secondary psychopathy

Whilst the focus of the following section is on the distinction between primary and secondary psychopathy as two distinct subtypes, as previously stated recent research suggests that psychopathy is dimensional rather than a categorical construct (Haslam et al., 2012). Therefore, variants of psychopathy are likely to also be dimensional with overlapping characteristics when applied to the real world. Consequently, the distinction between primary and secondary psychopathy is best viewed as a proto-typical distinction, with each variant showcasing an idealized representation of the primary or secondary construct (Skeem et al., 2011). In reality, it is likely that the borders between the subtypes of psychopathy are unclear and that differentiating between the two may be difficult.

While Cleckley (1941) originally conceptualised psychopathy as a single, unitary syndrome, it was also proposed at that time by Karpman (1941, 1955) that
two different variants of psychopathy existed. The first of these variants, *primary psychopathy*, related strongly to Cleckley’s conceptualization of psychopathy. The second variant, *secondary psychopathy*, did not entail all the aspects that Cleckley defined. Karpman (1955) drew on a psychodynamic perspective and proposed that primary psychopaths are both with an emotional deficit whereas secondary psychopaths acquire an emotional disturbance based on exposure to adverse life events. Since that time, four different authors have suggested varying theories differentiating primary and secondary psychopathy. These theories are described briefly below.

Lykken (1995) claimed that a biological predisposition towards both variants of psychopathy existed. Specifically, he viewed primary psychopaths as having an innately fearless temperament, whilst secondary psychopathy reflected an innate elevation in reward sensitivity, suggesting that these individuals’ urges often overcome their inhibitions. Blackburn (1998; 2006) proposed an interpersonal theory of psychopathy, which posited that primary psychopaths possess a fearless temperament and elevated reward sensitivity, whilst secondary psychopaths possess an elevated reward sensitivity, but also an elevated fear sensitivity. Furthermore, he proposed that psychopathic patterns are largely shaped by learning.

Porter (1996) hypothesized that environmental factors play a greater role in the development of secondary psychopathy, whilst he viewed primary psychopathy as largely innate. More specifically, Porter (1996) suggested that individuals acquire secondary psychopathy as a result of some form of trauma. He proposed that children learn to de-activate their capacity to form emotional bonds
with others. Eventually, according to Porter’s model, the secondary psychopath is basically indistinguishable from the primary psychopath.

The final theory comes from an evolutionary perspective. Mealey (1995) suggested that secondary psychopaths pursue a life course that involves frequent anti-social behaviour, largely because they are disadvantaged in their ability to mate or obtain resources (due to factors such as low socio-economic status, inconsistent discipline and exposure to violence). Mealey (1995) suggested that primary psychopaths manifest more of the interpersonal and affective features of psychopathy (Factor 1 of the PCL-R), whilst secondary psychopaths more often engage in anti-social behaviour (Factor 2 of the PCL-R).

Whilst these theories share some overlap in their conceptualisations regarding the distinction between primary and secondary psychopathy, there are some fundamental differences that have made defining primary and secondary psychopathy difficult (Skeem et al., 2011). One area of inconsistency between the two models is whether the PCL-R Factors 1 and 2 relate to primary and secondary psychopathy. While two of the theories discussed suggest that primary psychopaths should have higher scores on Factor 1 and secondary psychopaths should have higher scores on Factor 2 (Blackburn, 1998; Mealey, 1995), the other three theories suggest that primary and secondary psychopaths should have similar scores for Factor 1 (Karpman, 1955), Factor 2 (Lykken, 1995), or both factors (Porter, 1996).

While theoretical debate is ongoing as to whether primary and secondary psychopathy can be differentiated based on the two factors of psychopathy identified by the PCL-R, there is some evidence for the discriminant validity of
the two factors. Research has suggested that the two factors of psychopathy differ across a range of variables (Edens et al., 2000; Harpur, Hare & Hakstian, 1989; Hart & Hare, 1989; Patrick, 1994, 2001; Smith & Newman, 1990; Verona, Patrick & Joiner, 2001). Furthermore, research suggests that after controlling for shared variance, the two factors of psychopathy exhibit divergent relationships with a variety of external measures. Factor 1 has been shown to negatively correlate with measures of anxiety, neuroticism and negative emotionality, whereas Factor 2 has shown a positive relationship with these variables (Verona et al., 2001). Factor 2 is positively associated with impulsivity, sensation seeking and is negatively correlated with conscientiousness and constraint, whilst Factor 1 has shown no relationship with these constructs (Hare, 1991). In addition, substance use and suicide attempts are correlated with PCL-R total scores, but this relationship is entirely accounted for by Factor 2 (Smith & Newman, 1990; Verona et al., 2001).

Thus, theories that propose primary and secondary psychopaths and vary on the basis of the two factors of the PCL-R, suggest that secondary psychopaths are higher in impulsivity and drug and alcohol use, while primary psychopaths present with lower levels of anxiety.

Some research examining the distinction between the subtypes of psychopathy focused on only individuals with high scores on the PCL-R. Results suggest that even within individuals who may be classified as “psychopaths”, scores comprise of at least two distinct “subtypes” (Hicks et al., 2004). The first subtype is a group low on anxiety, akin to the type described by Cleckley (1941). The second subtype consists of a larger, more aggressive, unconstrained, socially detached group. These subtypes were determined using cluster analysis. The two distinct groups of psychopaths also differed significantly on other measures of
personality, such as levels of emotional control. Hicks et al. (2004) were able to reliably place two-thirds of the sample into one of the two subgroups. These findings suggest that even within individuals who are classified as psychopaths, some heterogeneity exists. These findings also support the theories of Lykken (1995) and Blackburn (1998; 2006) who proposed that primary and secondary psychopaths could be differentiated on the basis of anxiety and impulsivity.

Lastly, it has been proposed that secondary psychopaths present with a higher psychopathology when compared to primary psychopaths and are therefore more likely to be distinguishable on personality measures (Harpur et al., 1989). Some authors have suggested that primary psychopaths are emotionally stable, which may mean that they are less distinguishable on personality measures compared to secondary psychopaths. Generally, specific aspects of self-report measures such as the MMPI-2 have correlated with anti-social behaviours, yet have weak or negligible associations with the core affective and interpersonal features of psychopathy (Harpur et al., 1989).

However, despite the theoretical link, and some studies supporting the notion that psychopaths can be differentiated on the basis of anxiety, the relationship between psychopathy and anxiety in the literature remains inconsistent. Some studies have found that the two underlying factors of psychopathy correlate in opposite directions with anxiety (Hale, Goldstein, Abramowitz, Calamari & Kosson, 2004; Hicks & Patrick, 2006). Others have failed to find any relationship between measures of anxiety and the dimensions of psychopathy (Schmitt & Newman, 1999). Further research examining the underlying facets of psychopathy comes from Vassileva et al. (2005). These authors found evidence for the existence of at least two specific facets of
psychopathy, with secondary psychopathy relating to higher levels of anxiety and substantial alcohol and drug dependence. These secondary psychopaths also showed higher levels of social deviance, which is consistent with theories of qualitatively different subgroups of psychopaths. Furthermore, the authors proposed that primary and secondary psychopathy could be differentiated based on levels of fearlessness and hostility/aggression.

**Factor structure**

Further conflating the difficulty with understanding what elements of psychopathy constitute primary or secondary psychopathy, there is no current consensus regarding the underlying factor structure of psychopathy. Different authors have suggested that the construct of psychopathy may contain two, three or four factors (Cooke & Michie, 2001; Hare, 2003; Lilienfeld & Andrews, 1996; Patrick et al., 2009).

Given the dominance of the PCL-R in assessing psychopathy in correctional centers over the last 20 years, the majority of theories regarding the factor structure of psychopathy have been based on the items in the PCL-R and subsequent factor analysis of those items. More recently however, Patrick et al. (2009) offered a model that was not based on the PCL-R, which they propose integrates the competing theories related to psychopathy. They further suggested that the PCL-R fails to measure some of the psychopathy construct. In the next section, the different factor models of psychopathy will be described in more detail, including those based on the PCL-R and the newer triarchic model.
The two factor, four facet model of psychopathy

The first model proposed was the two-factor model, with the factors labeled Factor 1 and Factor 2 (Hare, 1993). The following table shows the items of the PCL-R and where they sit in the two-factor structure of psychopathy.
The Two-Factor Structure of Psychopathy, measured by the PCL-R

<table>
<thead>
<tr>
<th>Factor 1: Interpersonal / Affective</th>
<th>Factor 2: Social Deviance</th>
<th>Items that do not load on the two factors</th>
</tr>
</thead>
<tbody>
<tr>
<td>5. Conning / manipulative</td>
<td>12. Early behavioural problems</td>
<td></td>
</tr>
<tr>
<td>6. Lack of remorse or guilt</td>
<td>13. Lack of realistic, long term goals</td>
<td></td>
</tr>
<tr>
<td>7. Shallow affect</td>
<td></td>
<td></td>
</tr>
<tr>
<td>16. Failure to accept responsibility for own actions</td>
<td>18. Juvenile delinquency</td>
<td></td>
</tr>
<tr>
<td>19. Revocation of conditional release</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

This two-factor model was extended to a four-facet model of psychopathy that attempted to further differentiate between the factors by breaking them each
into two sub-factors (Hare, 1993). Below is the position of the items of the PCL-R in each of the four facets.

Table 1.2

**The four facet model of psychopathy**

<table>
<thead>
<tr>
<th>Factor 1: Interpersonal-Affective scale</th>
<th>Factor 2: Anti-Social scale</th>
</tr>
</thead>
<tbody>
<tr>
<td>Facet 1: (Interpersonal)</td>
<td>Facet 2: (Affective)</td>
</tr>
<tr>
<td>Glibness / superficial charm</td>
<td>Lack of remorse / guilt</td>
</tr>
<tr>
<td>Grandiose sense of self-worth</td>
<td>Shallow affect</td>
</tr>
<tr>
<td>Pathological lying</td>
<td>Callousness / lack of empathy</td>
</tr>
<tr>
<td>Conning / manipulative</td>
<td>Failure to accept responsibility for own actions</td>
</tr>
<tr>
<td></td>
<td>Impulsivity</td>
</tr>
<tr>
<td></td>
<td>Irresponsibility</td>
</tr>
<tr>
<td>Facet 3: (Impulsive)</td>
<td>Facet 4: (Anti-social)</td>
</tr>
<tr>
<td>Need for stimulation / proneness to boredom</td>
<td>Poor behavioural controls</td>
</tr>
<tr>
<td>Parasitic lifestyle</td>
<td>Early behavioural problems</td>
</tr>
<tr>
<td>Lack of realistic / long term goals</td>
<td>Juvenile delinquency</td>
</tr>
<tr>
<td>Revocation of conditional release</td>
<td>Criminal versatility</td>
</tr>
</tbody>
</table>
**Three factor model**

More recently, factor analytical research examining the factor structure of psychopathy led to the development of a three-factor model (Cooke & Michie, 2001). This model (outlined in Table 1.3) involves three factors underlying one superordinate factor (psychopathy). This model is similar to the four factor model, however removes the anti-social factor. This pattern of fit has been replicated by Hare and Neumann (2006) as well as Hicks, Nichol and Krueger (2007). Table 1.3 shows how the items on the PCL-R relate to the three facets.
Table 1.3

*Items of the PCL-R and their position in the three-factor structure proposed by Cooke and Michie (2001)*

<table>
<thead>
<tr>
<th>Factor 1 (IS): Arrogant and deceitful interpersonal style</th>
<th>Factor 2 (AE): Deficient affective experience</th>
<th>Factor 3 (BS): Impulsive and irresponsible behavioural style</th>
<th>Items that did not load on to the 3 facets</th>
</tr>
</thead>
<tbody>
<tr>
<td>Glibness / superficial charm</td>
<td>Callous / lack of stimulation / empathy</td>
<td>Lack of remorse / boredom</td>
<td>Poor behavioural controls</td>
</tr>
<tr>
<td>Grandiose sense of self-worth</td>
<td>Proneness to boredom</td>
<td>Failure to accept responsibility for own actions</td>
<td>Failure to accept responsibility for own actions</td>
</tr>
<tr>
<td>Pathological lying / pathological lying</td>
<td>Impulsivity</td>
<td>Parasitic lifestyle</td>
<td>Many short term marital relationships</td>
</tr>
<tr>
<td>Conning / manipulative / responsibility for own actions</td>
<td>Irresponsibility</td>
<td>Early behavioural problems</td>
<td>Juvenile delinquency</td>
</tr>
</tbody>
</table>

1. Glibness / superficial charm
2. Grandiose sense of self-worth
3. Need for stimulation / boredom
4. Pathological lying
5. Conning / manipulative / responsibility for own actions
6. Lack of remorse / boredom
7. Shallow affect / empathy
8. Callous / lack of stimulation / empathy
9. Parasitic lifestyle / accept
10. Poor behavioural controls
11. Promiscuous sexual behaviour
12. Early behavioural problems
13. Lack of realistic, long term goals
14. Impulsivity
15. Irresponsibility
16. Failure to accept responsibility for own actions
17. Many short term marital relationships
18. Juvenile delinquency
19. Revocation of conditional release
20. Criminal versatility
This three-factor model places less emphasis on the criminal behaviour items that are captured by the PCL-R than the aforementioned two-factor models. In fact, six of the seven items not included in the three-factor model relate to criminal behaviour. The lack of these items suggests that this model captures the underlying personality attributes of the construct, rather than behaviours associated with the construct. Indeed, Cooke and Michie (2001) argued that criminal behaviour occurs as a consequence of psychopathy, as opposed to being an inherent part of psychopathy. One other important feature of the model is that the three underlying factors are interrelated, and are all a part of the one unitary construct. In contrast, other three-factor models of psychopathy have been proposed that have three distinct individual constructs, with distinct etiological pathways.

It would be beneficial at this time to consider the development of the competing models of psychopathy, all underpinned by the PCL-R. That is, the two-factor model, three-factor model and the four-facet model (as an extension from the two-factor model).

*Development of different models*

The original development of the two-factor model utilised both exploratory factor analysis (EFA) and the statistical method of congruence coefficient. The technique involves the use of an index of the similarity between the factors that have been derived in a factor analysis. Within this approach, values higher than .95 are seen as evidence of factor similarity, whilst values lower than .90 are taken to suggest noneligible incongruities (Van de Vijver & Poortinga, 1994).
A decade after the publication of the PCL-R, Cooke and Michie (2001) failed to replicate the structural validity of the two-factor model and therefore attempted to develop a new model. They applied both EFA and confirmatory factor analysis (CFA) techniques to evaluate the validity of the two-factor model. After an analysis of the loading plots for the two-factor solution, they did not rotate, as all the points were in an arc of 90 degrees. Cooke and Michie (2001) then completed CFA to identify the widely used factor structure and found that the two factor model did not provide an acceptable fit (AIC = 1386.7; RMSEA = .10). The researchers subsequently concluded that the two-factor structure was not an adequate structural model of psychopathy.

Subsequently, Cooke and Michie (2001) developed a new model taking into account theoretical considerations regarding the nature of psychopathy and utilised a combination of statistical techniques that explicate the dimensional construct of psychopathy. In addition, they utilised a hierarchical structure, in line with general models of personality (maladaptive forms of common personality traits) (Widiger & Lynam, 1998). The first analysis conducted was a top-down approach, in which they extrapolated 5 underlying factors. Following this they examined the factor structure of the PCL-R using a bottom-up approach derived from item response theory (Embretson, 1996). They utilised local dependence, a phenomenon that occurs when two or more items are more highly associated than what can be explained by their relationship with the underlying latent trait (Steinberg & Thissen 1996), which in their case was psychopathy. The researchers then grouped items that had a local dependence score higher than the cut off, measured as Q3. Items that pooled together were referred to as testlets. They then utilised these values as proximity measures in a group-average
agglomerate cluster analysis. This analysis suggested that the items agglomerated into 3 distinct clusters of items.

The authors then used this understanding (and the theoretical underpinnings) to build a new model. They started with 5 factors that had an eigenvalue greater than 1, with 17 of the 20 items loading of .40 or greater. This model provided an adequate fit. They then examined two factors of variation, utilising 10 of the items and found that this was an acceptable fit. Next, on the basis of theoretical and empirical findings (related to the items of local dependence), they modified the two factor model by adding another level to the hierarchy, a level that specified the testlets. This model represented a statistically improved model. This model did not include three items that are central to the diagnosis of psychopathy, however: superficial charm, manipulative and pathological lying. As such, they modified the model to include these three items, and took into account the cluster analysis of the items. This suggested that items in the traditional two factor solution (considered as Factor 1) clustered into two distinct areas. The researchers therefore introduced a third factor into the model, which resulted in a 13 item, three factor model. The chi squared indices, AIC and CAIC indices indicated that the model was a substantial improvement over the two factor model $\chi^2 (1, N = 1018) = 131.8, p < .001$.

In the new model, examination of factor 1 indicated that it was measured by two testlets: superficial charm and grandiosity, and manipulativeness and pathological lying. Factor 1 was subsequently labelled arrogant and deceitful interpersonal style. Factor 2 was identified by two further testlets, the first relating to shallow affect and a lack of empathy and the second defined by lack of remorse
and a failure to accept responsibility. They labelled this factor deficient affective experience. Finally, Factor 3 was represented by two testlets. The first was defined by three items (proneness to boredom, impulsivity and irresponsibility) and the second defined by two items (parasitic lifestyle and a lack of long term goals). The third factor was labelled impulsive and irresponsible behavioural style.

Statistical considerations in the model-building process

The four-factor model retains the discarded criminality items as an additional factor. These items were included based on the theoretical argument that removal of the criminality items may hinder the clinical utility of the PCL-R (Weaver, Meyer, Van Nort & Tristan, 2006). Hare (2003) criticised the apparent empirical stability of the three-factor model, noting that the procedures used were "somewhat selective and misleading" (p. 79). Hare (2003) further criticised this model, noting that Cooke and Michie (2001) retained three items in the three factor model on the basis of clinical experience, as well as previous Item Response Theory (IRT) evidence (despite these items failing to converge on the IRT analysis in their own study). Hare (2003) refers to this as theoretical bias, and indicates that the IRT data of some of the discarded items that relate to criminality are as good as items that were included, yet were not included. On the basis of this critique, Hare (2003) obtained the two-factor model in the PCL-R, and included the four-factor model (that aligns with the two-factor model). However, there is limited evidence obtaining to the superiority of the four-factor model (Weaver et al., 2006). Further complicating things, Hare (2003) refers to the four factor model as the two-factor, four-facet model.
In a large study examining the different models, Weaver et al. (2006) found that all three of the models either met or approached a good fit, supporting the validity of the PCL-R. Purely in regard to statistical fit, they observed the three-factor model to be superior.

Despite ongoing debate and confusion regarding the differences in the models, overall, these differences are not overly large. The two-factor/four-facet model is merely an additional division of the original two-factor model, and the three-factor model merely removes one of the facets. As such, it seems that the overall difference rests on the decision to include the items that relate to criminality or not. This issue will be discussed later in the chapter.

*Development and Factor structure of the PPI*

Whilst the previous section discussed the factor structure of psychopathy, as measured by the PCL-R, several researchers have identified limitations to the use of the PCL-R, especially in non-incarcerated settings (Lilienfeld & Fowler, 2006). Two main concerns with the PCL-R are the time and detailed records that are required for administration and the high focus on criminal history. One alternative developed to address these concerns is the Psychopathic Personality Inventory (PPI; Lilienfeld & Andrews, 1996).

The PPI is a 187 item self-report questionnaire that assesses the personality traits related to psychopathy with a decreased emphasis on criminal conduct. The PPI has demonstrated promising convergent and discriminate validity in forensic and non-forensic settings (Lilienfeld & Fowler, 2006).
The PPI is divided into 8 subscales, seven of which have been shown to load onto two higher order factors (Benning, Patrick, Hicks, Blonigen & Krueger, 2003). The following table shows the subscales of the PPI and their position on the two factor structure.

Table 1.4

*The factor structure of the PPI*

<table>
<thead>
<tr>
<th>Factor 1 Fearless Dominance</th>
<th>Factor 2: Impulsive Antisociality</th>
<th>Subscales that do not load Machiavellian Egocentricity Social Potency Fearlessness</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Impulsive non-conformity</td>
<td>Coldheartedness</td>
</tr>
<tr>
<td></td>
<td>Conformity</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Carefree nonplanfulness</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Blame externalisation</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Stress Immunity</td>
<td></td>
</tr>
</tbody>
</table>

Whilst the PPI and the PCL-R are both designed to measure the same construct (psychopathy), there are some differences that are important to note. Specifically, the PPI places less emphasis on criminal behaviour compared to the PCL-R, whilst placing a greater emphasis on the positive adjustment features that have been associated with psychopathy (boldness of the triarchic model).

People have criticized the PPI and other self-report measures, claiming that the inherent dishonesty of individuals high on psychopathy means the assessment of psychopathy is difficult via self-report measures. The following
section will examine the utility of assessing aspects of psychopathy via self-report measures.

*Self-report measures of psychopathy*

The notion of assessing psychopathy via self-report methods appears paradoxical. Asking an individual, with a personality characterised by distrust and pathological lying, to be honest on a self-report measure appears pointless. Despite this, a long history of attempting to capture psychopathy via self-report measures exists (Lilienfeld & Fowler, 2006). Other measures of psychopathy include scales that can be found embedded in well-known personality tools such as the MMPI-2. Early research demonstrated low correlations between self-report psychopathy measures and clinician-rated psychopathy measures (Hundleby & Ross, 1977). Lilienfeld and Fowler (2006) identify at least four potential problems in using self-report measures to assess psychopathy: (1) psychopaths lie frequently, and the characteristic dishonesty is therefore likely to extend to responses on psychological tests, (2) psychopaths lack insight into the nature and extent of their psychological problems and therefore are at risk for underreporting these problems, (3) psychopaths have a tendency to mislabel affective experience (“semantic aphasia”; Cleckley, 1988) and thus may not report their affect or lack thereof appropriately, and (4) the saturation of many self-report measures with negative emotionality reduces the discriminant validity of these measures and makes it difficult to differentiate between psychopathy and other psychological conditions that are marked by anti-social behaviour. Given these problems, self-report measures appear ill suited to assess psychopathy. Indeed, Edens, Hart, Johnson, Johnson and Olver (2000) have suggested that using self-report measures to assess psychopathy could be considered a method-mode-mismatch.
That is, the method used (self-report) is not the optimal method for assessing the construct (psychopathy).

Although there appears to be a number of disadvantages to assessing psychopathy with self-report methods, Patrick (2006) identified three misconceptions that appear throughout the literature. These misconceptions may have contributed to misunderstandings regarding the potential uses and misuses of self-report measures, and may have led some authors to prematurely discount the potential of self-report measures. The first misconception is that self-report measures require honest responding to be valid (Lilienfeld, 1994). This misconception is based on the notion that the inherent dishonesty and lack of insight of the psychopath will lead to inaccurate responding. However, it has been suggested that factually accurate responding is not required in self-report measures to offer diagnostically helpful information (Meehl, 1945). To highlight this point, an example of a statement from the PPI (Lilienfeld & Andrews, 1996) will be used. The statement is “I often get blamed for things that aren’t my fault”. In this case, a true response is a valid indication of psychopathy even though it is likely to be factually inaccurate. Specifically, most psychopaths are probably not blamed enough for the things that they do, however a true response provides useful information regarding the well-known propensity of psychopaths to externalise blame (Hare, 1991).

The second misconception identified relates to the capacity of psychopaths to engage in positive impression management when responding to self-report questionnaires (Patrick, 2006). Research has suggested, however, that psychopathy and positive impression management indices tend to be negatively correlated (Hare, 1982; Lilienfeld & Andrews, 1996). One explanation for these
findings is that psychopaths may hold different conceptions regarding what is socially desirable in comparison to non-psychopaths (Patrick, 2006). This means that psychopaths often report accurately on items relating to anti-social behaviour, hostility and impulsivity (Lilienfeld, 1994).

The final misconception identified was that individuals high on psychopathy have an increased aptitude for malingering (Patrick, 2006). The belief is that people high on psychopathy will have greater skills when attempting to deceive on self-report measures compared to individuals low on psychopathy. This notion has not been supported in the literature; on the contrary, preliminary research has found no correlation between psychopathy scores and the ability to mangle (Edens, Buffington & Tomicic, 2000).

These three misconceptions may have contributed to the willingness to discount self-report measures of psychopathy. It is important to note, however, that in more recent times there has been a resurgence of interest in self-report measures designed to assess psychopathy. In particular, the PPI has shown to have high validity when compared to the PCL-R (Lilienfeld & Andrews, 1996). The PPI offers a different factor structure of psychopathy compared to the PCL-R and will be discussed in more detail in the factor structure section.

Jones and Miller (2012) examined the relationship between self-report and informant report psychopathy measures and their ability to predict externalising behaviours. This study examined 64 individuals from a community, non-forensic sample and asked them to complete several psychopathy self-report measures. In addition, they had three informants (individuals who knew the subject well) complete the same measures, to obtain informant reports of psychopathy indices.
Overall, the authors found that both self and informant reports of psychopathy traits showed significant correlations with a range of externalising behaviours including substance use, antisocial behaviour, intimate partner violence and gambling. They found that generally the self-report measures and informant report measures displayed a consistent relationship with externalising behaviours. However, this research focused on a community sample, where the individuals had less motivation to respond in a deceitful way. It is likely that within a forensic setting, individuals would have greater motivation to be more guarded in their reporting, or more likely to ‘fake good’. Despite this limitation, this study suggests that individuals do have insight into their psychopathic traits and furthermore are able to report honestly on them. This research strengthens the view that psychopathy can be examined utilising self-report measures.

The triarchic model of psychopathy

In response to the various misconceptions, and a lack of consensus regarding the factor structure of psychopathy, a more recent development was the triarchic model of psychopathy (Patrick et al., 2009). In an attempt to integrate historical and contemporary conceptualizations of psychopathy, Patrick et al. (2009) developed a framework for reconciling competing and occasionally contradictory perspectives. The triarchic model proposes that psychopathy can be conceptualised in terms of three distinct but interrelated constructs: disinhibition, boldness and meanness. These elements are proposed not as elements of a unitary higher-order psychopathy construct, but rather as phenotypic building blocks for alternative conceptualizations of psychopathy. The authors suggested that these three phenotypic constructs represent the key understanding of psychopathy in its varying manifestations.
In the triarchic model, disinhibition entails proneness towards impulsivity. It includes a lack of planning or foresight, impaired regulation of affect and urges, insistence on immediate gratification and deficient behavioural restraint. In personality terms, disinhibition represents impulsivity and negative emotionality (Krueger, 1999). Behaviorally, it presents as irresponsibility, impatience, distrust, emotional volatility, untrustworthiness, a proneness to alcohol and other drug abuse issues and illegal activities (Krueger, Markon, Patrick, Benning & Kramer, 2007).

It is worth noting that disinhibition or externalizing involves a number of behaviours that are inconsistent with the traditional view of psychopathy. Specifically, disinhibition is related to heightened negative affectivity, as opposed to an absence of anxiety or fear. Furthermore, externalizing behaviours are associated with an increased, rather than reduced, incidence of internalizing problems in childhood (Achenbach & Edelbrock, 1978), and with a higher, rather than lower, incidence of suicidal behaviour in adult offenders (Verona & Patrick, 2000). Therefore, it is when externalizing tendencies are paired with boldness or meanness that a diagnosis of psychopathy would be warranted. Patrick et al. (2009) suggested that the traditional view of the “secondary psychopath” (Karpman, 1941) is consistent with the presentation of the high externalizing individual.

With regards to the PCL-R, disinhibition is proposed to relate more strongly to the social deviance facet of psychopathy, and less strongly to the interpersonal component (Krueger et al., 2007). Historical conceptualisations of psychopathy have emphasised this externalizing component to varying degrees. Research regarding the disinhibition construct of psychopathy suggests that
disinhibition involves an impairment in higher brain functioning which serves to impair emotional responses (Patrick, 2006; Patrick & Bernat, 2009).

The term **boldness** is proposed to describe a personality style involving a capacity to remain calm and focused in situations involving pressure or threat, an ability to recover quickly from stressful events, high social efficacy and a tolerance for dangerous situations. In personality terms, boldness is displayed as social dominance, low stress reactivity and sensation seeking (Benning, Patrick, Blonigan, Hicks, & Iacano, 2005). Behavioural manifestations of boldness include social poise, assertiveness, persuasiveness and bravery. Items theoretically related to boldness in the PCL-R are in Factor 1, most notably item 1 (superficial charm/glibness) and item 2 (grandiose sense of self-worth). Factor 1 as a whole in the PCL-R, however, appears to encapsulate meanness more so than boldness. Whilst research into the constructs that underpin the triarchic model is still in infancy, preliminary thoughts are that boldness is an adaptive adaptation of fearlessness (Lykken, 1995).

Individuals presenting with high levels of **meanness** may present with deficient empathy, a lack of close attachments, high levels of rebelliousness, excitement seeking, exploitativeness and empowerment through cruelty. Related terms include callousness, cold-heartedness and antagonism. In personality terms, meanness is akin to high dominance, low affiliation and low neuroticism (high emotional stability). Meanness can be expressed through arrogance, defiance of authority, absence of close personal relationships, physical cruelty towards people or animals and strategic aggression. Items in the PCL-R that are proposed to directly relate to meanness include item 7 (shallow affect), item 8 (callous/lack of empathy), item 6 (lack of remorse or guilt), item 4 (pathological
lying), and item 5 (manipulativeness). The affective–interpersonal items are proposed to correlate highly with meanness (Patrick et al., 2009). Meanness can be viewed as a personality style in which individuals actively pursue valued goals without regard for the impact of their actions on others. Whilst meanness is suggested to relate to low anxiety, diminished response to aversive stimuli and a pathological expression of the lack of fear response (Krueger et al., 2007).

One of the main advantages of the triarchic model of psychopathy is that it provides a theoretically meaningful framework that may explain different etiological pathways towards psychopathy. That is, the three related constructs may not all have the same etiological mechanisms. This interpretation is consistent with the findings that some psychopaths fail to show the normal startle response to negative pictures (Herpertz, Werth, Lukas et al., 2001). These results suggest that the boldness aspect of psychopathy has a biological component. Furthermore, the fact that not all psychopaths presented with the same deficiency suggests other mechanisms are in place.

There has been some empirical support when considering the three triarchic domains and their relationship with other psychopathy measures. For example, Sellbom and Phillips (2013) found that between 51-75% of the variance of various psychopathy measures were associated with the three triarchic domains in theoretically expected directions. In addition, the authors completed an exploratory factor analysis and found that psychopathy traits across the different measures confirmed to a three factor structure that closely resembled the triarchic conceptualisation. Moreover, Drislane, Patrick and Arsal (2014) found that differing self-report psychopathy measures captured some aspect of the three triarchic domains. The study showed that both meanness and disinhibition are
strongly represented by exiting psychopathy measures. Regarding boldness, the authors found that boldness related to some elements of the interpersonal facet of the PCL-R (manipulative, callous, grandiosity), and also found that it related to some adaptive traits (achievement, charm, stress immunity).

Further research involving youths suggests that meanness and disinhibition have different etiological substrates (Frick & Morris, 2004). It is suggested that disinhibition comes from a diminished fear capacity whereas meanness comes from impairments in inhibitory control.

The factors suggested by Cooke and Michie (2001) and Patrick et al. (2009) appear to have somewhat overlapping constructs. The disinhibition factor proposed by Patrick et al. (2009) appears to relate to the impulsive and irresponsible behavioural style. Boldness appears to overlap with deficient affective experiences and meanness appears to relate to the facet of arrogant and deceitful interpersonal style.

In summary, recent research suggests that there at least two, possibly three or four, factors underlying psychopathy. Research has also shown that within individuals who are classified as psychopathic, different subtypes exist. Taken together, these results suggest that psychopathy is not a unitary construct, but rather has different mechanisms underlying the different facets of psychopathy.

Negative emotionality and emotional regulation in psychopathy

Given the importance of emotional responses (or lack thereof) in psychopathy, it has been an extensively studied area in relation to the different facets of psychopathy. Two important areas of emotion related to psychopathy are
negative emotionality and emotional regulation. Negative emotionality refers to the tendency to experience unpleasant emotional states (Hicks & Patrick, 2006). Traditional descriptions and theories of psychopathy suggest that psychopaths present with low negative emotionality and have difficulty experiencing unpleasant emotions (Cleckley, 1941). However, research has demonstrated that the relationship between negative emotionality and psychopathy is inconsistent (Hale, Goldstein, Abramowitz, Calamari, & Kosson, 2004; Harpur, Hare, & Hakistan, 1989; Shine & Hobson, 1997). These inconsistent findings may be due to the multifaceted nature of both negative emotionality and psychopathy (Hicks & Patrick, 2006). Based on the results of their study, Hicks and Patrick (2006) suggested that Factor 1 is negatively associated to emotional distress (similar to trait anxiety) and is largely unrelated to fearlessness and anger-hostility. In contrast, they proposed that Factor 2 is positively related to all facets of negative emotionality.

The second important area related to the concept of negative emotionality is emotional regulation. Emotional regulation refers to the ability of an individual to reduce feelings of distress, but due to the complexity of this phenomenon no consensus has been reached for this definition (Heinzen, Koehler, Smeets, Hoffer & Huchzermeier, 2011). As a result, current definitions are broad and it is difficult to understand the underlying mechanisms. For example, Barrett and Gross (2001) defined emotion regulation as encompassing all strategies that are directed at modifying a current emotional state. It has also been debated whether the processes required for emotional regulation are activated automatically or require conscious attention. Most recently it has been suggested that both conscious and unconscious processes are involved (Eisenberg, 2004).
Consequently, research has focused on both conscious and unconscious components of emotional regulation (Barrett & Gross, 2001; Heinzen et al., 2011).

Emotional regulation strategies have been categorised according to their effectiveness in modifying an unwanted mood state. Thus, the strategies have been classified as adaptive (strategies that are successful in reducing negative emotions) or maladaptive (strategies that are not effective in reducing negative emotions). This approach to classifying strategies has been shown as valid in predicting subjective well-being and psychological adjustment (Eisenberg & Morris, 2002). Furthermore, an individual’s tendency to use maladaptive strategies in an attempt to regulate emotions has been shown to be related to impulsivity, reward-seeking, and insensitivity to punishment (Eisenberg & Fabes, 1990; Koskelainen, Sourander & Kaljonen, 2001; Kostiuk & Fouts, 2002).

Whilst research into the proposed relationship between psychopathy and emotional regulation is only in infancy (Heinzen et al., 2011), it has a strong theoretical base. Impulsive and irresponsible behaviour is one facet of psychopathy (Cooke & Michie, 2001) that has consistently been related to a high degree of negative emotions and maladaptive emotional regulation (Danziger, Faillenot & Peyron, 2009). This relationship has been explained through a heightened reactivity to negative emotional stimuli combined with a tendency to react in an impulsive and maladaptive way. Contrary to an impulsive and irresponsible behavioural style, grandiosity and manipulative behaviours (Factor 1 from Cooke and Michie’s (2001) model) and callousness with a lack of emotion (Factor 2 from Cooke and Michie’s (2001) model) may be related to low levels of negative emotions (Hicks & Patrick, 2006). It has been proposed that individuals
with these traits are unable to process stimuli that provoke negative emotions due to neurological deficits (Cappadocia, Desrocher, Pepler & Schroeder, 2009). On this basis, it may be expected that the grandiose self-perception (a feature of Factor 1) might act as a protective mechanism that guards against negative emotions, and therefore maladaptive emotional regulation. Furthermore, it has been suggested that the callous, unemotional aspect of psychopathy (Factor 2) is likely to be associated with inadequate emotional regulation (Cappadocia et al., 2009). Consistent with this theory, previous research has suggested that high scores on Factor 2 are related to low emotional symptoms (Heinzen et al., 2011). As of yet, however, research has been unable to differentiate between psychopathy scales and facets of emotional regulation.

One notable finding was that individuals who scored highly on Factor 1 (arrogant and impulsive interpersonal style) exhibited high levels of both adaptive and maladaptive coping strategies (Heinzen et al., 2011). As a result of this, it has been suggested that it may be more useful to examine the externalising/internalising distinction as opposed to the adaptive/maladaptive distinction in individuals high on this facet of psychopathy. Overall, the research suggests that some psychopaths present with high levels of negative emotionality, consistent with the traditional notion of a secondary psychopath. Others will present with lower levels of emotional regulation, which is more consistent with the traditional concept of psychopathy.

Summary

Given the rigorous debate within the field regarding the assessment of, and indeed how to construct psychopathy, it is useful to clarify the position of this
thesis. Overwhelming research suggests that psychopathy is best viewed on a continuum, rather than as a discrete taxon (Haslam et al., 2012). In addition, there is varying levels of support that the underlying personality attributes of psychopathy are best considered as comprising three underlying personality attributes (e.g. Cooke & Michie, 2001; Patrick et al., 2009). Consistent with the view of Skeem, Cooke and others, this thesis will take the standpoint that criminal behaviour is not a central feature of psychopathy, and instead focus on the personality attributes of psychopathy. Furthermore, consistent with the views of many theoretical perspectives, it is considered that Factor 1 of the PCL-R, boldness and meanness of the triarchic model are the core, or primary features of psychopathy, while the other components (disinhibition/impulsive or antisocial lifestyle), represent a general antisocial disposition. Therefore, the thesis is focusing on the PCL-R’s ability to measure the ‘core’ personality attributes of psychopathy.

The assessment of psychopathy remains a contentious issue. However, throughout this thesis, psychopathy will be viewed as a dimensional construct, with a high level of variation existing within individuals who score highly on the PCL-R. This thesis is utilising the PCL-R, however the extent to which the PCL-R is capturing the various elements of psychopathy remains in dispute. It is likely that the PCL-R is missing some aspects of psychopathy (boldness in the triarchic conceptualisation), and placing greater emphasis on less relevant personality attributes (impulsive and antisocial behaviour, or disinhibition within the triarchic conceptualisation). This is acknowledged, however for the sake of research, this thesis will focus on psychopathy as measured by the PCL-R.
The current chapter summarised the large body of literature that exists in relation to the construct of psychopathy. Whilst there has been an abundance of research examining psychopathy, there are still many controversies relating to this construct. Debate still exists regarding the factor structure of psychopathy, the treatability of psychopaths, the assessment of psychopaths via self-report measures, the role of anxiety in psychopathy, the distinction between primary and secondary psychopathy. The PCL-R is considered the ‘gold standard’ measure when discussing psychopathy, however there are criticisms of the PCL-R which should be acknowledged. Specifically, it has been suggested that the PCL-R attempts to classify a heterogeneous group of individuals as homogenous. Given the conceptualisation of psychopathy as a constellation of extreme levels of normal personality traits (Lynam, 2002), authors have attempted to utilise personality measures to understand the personality attributes that relate to psychopathy. One of these measures is the Minnesota Multiphasic Personality Inventory (MMPI). The following chapter discusses the MMPI, a measure with a long clinical and forensic history. Specifically, the chapter will look at the MMPI in the context of psychopathy.
Chapter 2: Minnesota Multiphasic Personality Inventory and Minnesota Multiphasic Personality Inventory (2nd Edition)

This chapter will describe the research surrounding the Minnesota Multiphasic Personality Inventory (MMPI; Hathaway & McKinley, 1943) and the Minnesota Multiphasic Personality Inventory-2 (MMPI-2; Butcher, Dahlstrom, Graham, Tallegen & Kaemmer, 1989), with a specific focus on its use within a forensic setting. The MMPI is a widely researched tool designed to measure personality (Graham, 2012; Megargee, Carbonell, Bohn & Sliger, 2001). This chapter will begin by discussing its history, followed by a brief description of the tool and how it is used. Following this, the use of the MMPI-2 in legal and forensic settings will be discussed. Additionally, the chapter will explore the Megargee system (Megargee & Bohn, 1977, 1979), which was developed using the MMPI and is used to classify criminal offenders. Finally, it will describe the ways in which the MMPI-2 relates to the construct of psychopathy.

History

First published in 1942, the MMPI was a standard personality inventory containing 566 true-false items. It was originally created to assist in psychiatric diagnosis and, by 1970, it had become the world’s most widely-used objective personality assessment instrument with a variety of applications (Megargee, Carbonell, Bohn & Sliger, 2001). In an attempt to strengthen elements of the MMPI that had been identified as potential weaknesses, a re-standardisation process was undertaken, resulting in the production of the MMPI-2 (Butcher et al., 1989). The MMPI-2 is similar to the MMPI in most ways, in that the rich
research base used to develop and support the MMPI was captured in the MMPI-2 (Graham, 2012). Since its original introduction, the tool has been successfully used in the assessment of offenders (Megargee et al., 2001).

Development and Description of the MMPI and MMPI-2

The original MMPI had four validity scales and 10 basic scales, whereas the MMPI-2 has five additional validity scales in addition to a number of supplementary and content scales. The validity scales provide important information about the test-taking attitude of the individual (Graham, 2012). If the validity scales are too extreme—which suggests that an individual is either under or over-reporting symptomology—it can invalidate the test results. After the profile has been determined to be valid, the next step in interpretation is to examine the clinical scales. The clinical scales give information about personality and psychopathology on the dimensions that each scale assesses (Graham, 2012). Table 2.1 provides a description of the MMPI-2 validity and clinical scales.

Table 2.1

<table>
<thead>
<tr>
<th>Scale</th>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td><strong>Validity Scales</strong></td>
<td></td>
</tr>
<tr>
<td>Cs</td>
<td>Cannot Say</td>
<td>Number of items the test taker omits or marks both “true” and “false”.</td>
</tr>
<tr>
<td>VRIN</td>
<td>Variable Response Inconsistency</td>
<td>Indicates inconsistent and possible random responding.</td>
</tr>
<tr>
<td>TRIN</td>
<td>Description</td>
<td>Notes</td>
</tr>
<tr>
<td>------</td>
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</tr>
<tr>
<td>TRIN</td>
<td>True Response</td>
<td>Indicates a general tendency to agree or disagree with the items regardless of content.</td>
</tr>
<tr>
<td>Inconsistency</td>
<td></td>
<td></td>
</tr>
<tr>
<td>F</td>
<td>Infrequency</td>
<td>Items infrequently answered in keyed direction which may indicate random responding, or malingering or psychopathology.</td>
</tr>
<tr>
<td>Fb</td>
<td>Infrequency Back</td>
<td>Items infrequently answered on the latter part of the test.</td>
</tr>
<tr>
<td>Fp</td>
<td>Psychopatholgy F</td>
<td>Measures items that are infrequently endorsed by those with severe psychopathology.</td>
</tr>
<tr>
<td>L</td>
<td>Lie</td>
<td>Measures unsophisticated attempts by respondents to present themselves favourably or make a good impression.</td>
</tr>
<tr>
<td>K</td>
<td>Correction</td>
<td>Assesses a defensiveness test-taking attitude.</td>
</tr>
<tr>
<td>S</td>
<td>Assesses defensive responding and a tendency to present oneself in an extremely favourable light.</td>
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**Clinical scales**

1 (Hs) Hypochondriasis | Reflects abnormal concerns over bodily functions and preoccupation with physical complaints. |
2 (D) Depression | Indicates a pessimistic worldview, feelings of hopelessness, and possible clinical depression. |
3 (Hy) Hysteria | Assesses tendency to repress conflicts or use physical symptoms to deal with stress. (High
| 4 (Pd) | Psychopathic Deviate | Assesses disregard for social conventions or laws, conflicts with authorities, hedonism and inability to profit from experience. The most commonly elevated scale among offenders. |
| 5 (Mf) | Masculinity | Bipolar scales assessing the tendency toward stereotypical feminine or masculine attitudes and roles. |
| 6 (Pa) | Paranoia | Reflects abnormal suspiciousness, mistrust of others, hypersensitivity and feelings of being persecuted. |
| 7 (Pt) | Psychasthenia | Indicates anxiety and maladjustment. High scorers may ruminate and worry obsessively. |
| 8 (Sc) | Schizophrenia | Reflects unusual or bizarre thinking and behaviour, withdrawal from others, social alienation and inappropriate affect. |
| 9 (Ma) | Hypomania | Reflects high activity and energy level without productivity, emotional agitation and possible euphoria. |
| 0 (Si) | Social Introversion | Bipolar scale indicates shyness, social withdrawal, introversion vs extroversion, social participation and gregariousness. |
In the construction of the MMPI and the MMPI-2, the items composing the 10 clinical scales were selected from an initial pool of over 1000 possible items, through atheoretical, empirical means. The MMPI was initially normed on a group of carefully defined clinical patients, including patients with depression and patients with schizophrenia, whose responses were compared and contrasted with the typical responses of a non-clinical population (Hathaway & McKinley, 1943). The items that consistently differentiated between the clinical and non-clinical group were retained. Therefore, elevated scores on the specific scales suggest that the test-taker might resemble the clinical group used to derive those scales. For example, an elevated score on scale 4 (Psychopathic deviate) suggests that the person taking the test might manifest feelings, attitudes and behaviour similar to the group of juvenile delinquents used to derive the scale. That is, the test-taker may be impulsive, hedonistic, break rules, engage in illegal behaviour and be antagonistic to authorities. The MMPI-2 scores are converted to T-scores to increase the ease of interpretation. These T scores are in reference to a normative sample. A T-score greater than 65 indicates clinical significance on a specific scale (Graham, 2012).

**Interpreting the MMPI-2**

Interpreting MMPI-2 scores is a relatively complex process. Clinicians need to understand the idiosyncrasies of the test. When interpreting the MMPI, clinicians need to consider the overall configuration or pattern of the profile. In addition, clinicians should consider the subscales and supplementary scales (Graham, 2012). Graham (2012) suggested that aspects of the profile requiring consideration are as follows:
1. The overall elevation of the scales: the higher the elevation the more deviant the profile.

2. The rank order of the various scales: The highest scale or scales gets special consideration, especially when the elevation is above T65.

3. One or two point code types: Certain patterns of highly elevated scales and pairs of scales have reliably been associated with certain attributes and behaviours.

Further developments of the MMPI-2 related to the measurement of Psychopathy

Over the years there have been a number of attempts to improve the scales of the MMPI-2. These have included the addition of personality disorder subscales (Morey, Waugh & Balshfield, 1985; Levitt & Gotts, 1995), content scales (Butcher, Graham, Williams & Ben-Porath, 1990), the Personality Psychopathology Five (PSY-5 scales; Harkness, McNulty & Ben-Porath, 1995) and the restructured clinical (RC) scales (Tellegen et al., 2003). The aforementioned scales, as well as research that examines the relationship between psychopathy and some of the content, will be reviewed in the subsequent section.

Content Scales

The content scales were developed to address the issue of heterogeneity within the original clinical scales; they were designed to help clinicians identify origins of scale elevations (Butcher, et al., 1990). The scales were developed rationally and empirically. There were 15 scales developed, however for the sake of brevity and relevance, only the content scales that theoretically or empirically relate to psychopathy will be discussed. The following scales have been theoretically or empirically linked to psychopathy: Fears, Antisocial Practices and
Negative Treatment indicators. For a comprehensive explanation of all scales refer to Nichols (2011).

**Antisocial Practices Scale (ASP)**

The Antisocial Practices (ASP) content scale was developed to assess the antisocial behaviours often associated with psychopathy, and may be beneficial in delineating between psychopaths and non-psychopaths (Lilienfeld, 1996). Butcher et al. (1995) rationally developed this scale by selecting a composite of MMPI items assessing anti-social ideas and practices. The correlations between the overall Psychopathic Deviate scale and the ASP scale was significant but moderate ($r = .37$; Butcher et al., 1995). In addition, the ASP scale has been shown to correlate significantly with reports of illegal drug use, legal problems, threats and dishonesty (Lilienfeld, 1996).

There is some evidence that the ASP scale correlates positively with measures that relate to psychopathy, such as machiavellianism, fearlessness, aggression, externalisation of blame and impulsivity (Lilienfeld, 1996). Furthermore, high correlations have been noted between the ASP scale and the Machiavellian Egocentricity scale on the PPI. Machiavellian Egocentricity is characterised by looking out for one’s own interests before others. This finding shows that the ASP scale may be capturing some facets of the construct of psychopathy (Lilienfeld, 1996).

**Fears (FRS)**

The FRS scale reflects general fearfulness. The word fear and its derivates are present in more than 75% of the items that load onto this scale (Nichols &
Kaufman, 2011). Low scorers on this item relate to a sense of bravado. It has been suggested that the fearlessness component of psychopathy may relate to this scale (Sellbom, Ben-Porath, Lilienfeld, Patrick & Graham, 2005).

**Negative Treatment indicators (TRT)**

A theoretical relationship exists between the variants of psychopathy and treatment (see previous chapter). Specifically, individuals more closely presenting with the traits of a secondary psychopath would be more likely to benefit from treatment. Therefore, it may be suggested that the TRT scale aims to provide an indication of an individual’s responsiveness to treatment. The TRT scale is proposed to measure an individual’s capacity and motivation to engage in psychological treatment. However, the scale has been criticised regarding its ability to predict treatment engagement and outcomes (Nichols & Kaufman, 2011). Specifically, the scale is highly correlated with the Depression scale, reflecting a range of dysphoric feelings and attitudes, including hopelessness about the future, specifically related to effecting change or reaching goals. However, given the shared variance with depression, it has been suggested that individuals scoring highly on this scale may be motivated to engage in treatment due to the high levels of negative emotionality felt. It is therefore doubtful that high scores will be able to accurately predict treatment (Greene, 2000). The scale has also been criticised regarding the extent to which low scores will predict positive treatment outcomes, as low scorers may present as grandiose and overconfident. There is a lack of evidence for the validity of this scale and its ability to predict treatment outcomes (Nichols & Kaufman, 2011). Furthermore, the scale is likely to be less useful when considering psychopathy given that primary psychopathy (viewed as less responsive to treatment) likely embodies
grandiosity and confidence, which according to this scale would present as motivated for treatment.

**PSY-5 subscales**

Following the development of the content scales, the PSY-5 scales were developed based on a dimensional model of personality pathology, incorporating five broad personality components (Arnau, Handel & Archer, 2005). The developers utilised principle component analysis to develop 13 component scales, which subsequently loaded onto five higher order scales replicating the PSY-5 personality structure. It has been suggested that some of these scales may be relevant to the assessment of psychopathy (Sellbom et al., 2005); namely, Aggression, Disconstraint and Neuroticism/Negative Emotionality.

*Aggression (AGGR)*

The AGGR scale reflects predatory aggression and the hostile urge to dominate others. One third of the items directly measure assertiveness (Arnau, Handel & Archer, 2005). This scale is more likely to reflect cruelty rather than rage and individuals scoring highly are likely to appear calculating and cold (Nichols & Kaufman, 2011). The description of this scale appears consistent with various aspects of psychopathy, such as grandiose view of self, interpersonal dominance, and callousness. Research regarding the AGGR scale and psychopathy suggests that the AGGR scale is associated with the PCL-SV global measure of psychopathy, as well as the underlying facets (Wygant & Sellbom, 2012). The authors found that the AGGR scale significantly correlated ($r = .42$) with overall psychopathy scores. Regarding the various factors of psychopathy,
the strongest correlation was between Factor 2 of the PCL: SV \((r = .43)\), however it also correlated significantly with Factor 1 \((r = .34)\).

*Disconstraint (DISC)*

The DISC scale reflects a broad dimension of behavioural under-control, and also includes admission of delinquent conduct. In addition, this scale looks at sensation seeking, impulsivity and disinhibition. The DISC scale was constructed to assess a stable personality trait associated with anti-social personality disorder and psychopathy (Harkness, McNulty & Ben-Porath, 1995). Theoretically, this scale appears to relate to the impulsive or antisocial component of psychopathy (Factor 2 of the PCL-R). It has also been found that DISC is superior to scale 4 (Pd) when assessing overall psychopathy, as measured by the PCL: SV (Sellbom, Ben-Porath & Stafford, 2007). DISC was correlated with overall psychopathy \((r = .33)\), the behavioural facets of psychopathy (Factor 2 as measured by the PCL-R: SV) \((r = 0.36)\) and less strongly with the interpersonal/affective component of psychopathy (Factor 1 of the PCL: SV; \(r = .025\); Wygant & Sellbom, 2012).

*Neuroticism/Negative emotionality (NEGE)*

This factor is highly related to the anxiety content scale and reflects general worry or anxiety. It has been proposed that this PSY-5 scale may relate to the fearlessness component of psychopathy. In a study conducted by Wygant and Sellbom (2012), there was a significant negative correlation between NEGE and the interpersonal/affective component of psychopathy \((r = -.23)\). This finding suggests that low scorers on this scale are more likely to display the affective and interpersonal aspects of psychopathy.
Restructured Clinical (RC) scales

The development of the RC scales has been perhaps the most controversial of all the developments of the MMPI. The RC scales were developed to address issues with the original tool, including high inter-correlations between the scales (attributed to the empirical approach used to distinguish psychiatric populations from the normal population), inclusion of questionable items (attributed to the fact that in the original development, items were included based solely on empirical data, with the absence of rationale), and item overlap, where items contribute to more than one scale and a lack of theoretical underpinnings of the original scales. It was suggested that the use of an empirical approach to develop the tool led to non-specific, redundant items that differentiated between psychiatric patients in general from non-psychiatric patients, but provided little discriminant validity (Tellegen et al., 2003). To combat these criticisms, Tellegen et al. (2003) removed various items that measure a common construct labelled “demoralisation”. This refers to general psychological distress. He then identified the remaining core concepts captured by the clinical scales. Demoralization was defined as “a broad affectively-coloured dimension represented to some degree in each of the Clinical Scales” (Tellegen et al., 2003 p1). The authors concluded that the RC scales had improved convergent and discriminant validity.

The rational for removing the demoralisation component of the scales was that whilst it was considered clinically significant, it was not believed to assess the specific core component of any single clinical scale. Instead, it was believed to be responsible for a major portion of the variance that consistently inflated the correlations between the clinical scales (Tellegen et al., 2003). The authors constructed the restructured clinical (RC) scales based on a series of empirical
analyses generated by four clinical samples of men and women in residential substance abuse treatment and men and women receiving inpatient psychiatric treatment.

When developing the RC scales, factor analyses of each scale yielded a two-factor solution with one factor representing demoralization and the other factor revealing the scale’s core feature (Tellegen et al., 2003, p. 15). Overlapping and non-discriminant items were removed to form “Seed Scales” (Tellegen et al., 2003, p. 15). Following this, the full pool of 567 MMPI-2 items were correlated with the Seed Scales. Items meeting the inclusion criteria were added, forming the RC scales. These analyses resulted in nine RC scales: demoralization (RCd), somatic complaints (RC1), low positive emotions (RC2), cynicism (RC3), antisocial behaviour (RC4), ideas of persecution (RC6), dysfunctional negative emotions (RC7), aberrant experiences (RC8), and hypomanic activation (RC9). Tellegen et al. (2003) did not include the clinical scales masculinity-femininity (Mf) or social introversion (Si) in their RC scales. The authors reported that their RC scales displayed noticeable improvement regarding discriminant validity as well as comparable or, in some cases, improved convergent validity. Tellegen et al., (2003) concluded that “as intended, the RC Scales predict as well as or better than their Clinical Scale counterparts the variables that are linked conceptually to the core constructs of these scales” (p. 33).

The development of these scales has led to several critical analyses and research studies questioning both their development and their basis (Butcher, Hamilton, Rouse & Cumella, 2006; Butcher & Williams, 2009; Nichols, 2006; Ranson, Nichols, Rouse & Harrington, 2009). The criticism regarding the scales generally relates to four underlying points. Firstly, it is suggested that the scales
remove clinically relevant information, such as a person’s distress. For example, it is suggested a depressed person’s distress is likely to be clinically different from an anxious person’s distress. Secondly, it has been shown that the RC scales are more strongly correlated with the content scales than they are with the clinical scales (Tellegen & Ben-Porath, 2008). This has led to suggestions that the RC scales were restructured towards the content scales and away from the clinical scales. Furthermore, some authors suggest that the scales are redundant, with the content scales providing the same information (Nichols, 2006). Thirdly, it has been proposed that the scales are obvious in what they are measuring. The RC scales are more homogenous, with the items having a higher level of face validity. As a trade-off to greater face validity, the test becomes more obvious and as such is more likely to be under or over-reported. This may be especially problematic when considering anti-social behaviour and psychopathy, as incarcerated individuals in general (and psychopaths more specifically) are likely to be more motivated to attempt to be deceptive in their responding. Finally, it has been suggested that with the exception of scales 4 and 8 (the two clinical scales that have the most heterogeneity) the removal of items that now constitute the “demoralization” scale, did not actually remove much general distress from most of the clinical scales.

In a review examining research surrounding the RC scales and their clinical counterparts, Nichols and Kaufman (2011) concluded that “the trend of the evidence accumulated so far suggests that they are likely to underperform clinical scales in assessment contexts where sensitivity to psychopathology is desirable” (p 15). It is likely that as these individuals are deceitful by nature, when assessing psychopathy having a measure that provides increased sensitivity
and questions that are less obvious would be beneficial. Nichols (2011) present the contentious statement that that the majority of the support for the RC scales is driven by the authors of the scales, or researchers associated with them. Authors of one recent instructional text on the clinical use of the MMPI-2 and the The Minnesota Multiphasic Personality Inventory-2 Restructured Form (MMPI-2-RF: Ben-Porath & Tellegen, 2008) oscillate somewhat, acknowledging both the strengths of the RC scales contained in the MMPI-2RF while stating that more research is needed to fully support their efficacy. They advise clinicians to administer all 567 items of the MMPI-2 to allow for both the traditional and the RC clinical scales to be derived (Friedman, Bolinskey, Levak & Nichols, 2015).

The MMPI-2-RF

The Minnesota Multiphasic Personality Inventory-2 Restructured Form (MMPI-2-RF: Ben-Porath & Tellegen, 2008) is a shortened and modified version of the MMPI-2 that is associated with modern theories of personality and psychopathology. The MMPI-2-RF differs from both the MMPI and the MMPI-2, in that it does not include scales that are comparative to the basic scales that the MMPI was developed with. Rather, the MMPI-2-RF incorporates the RC scales, as previously discussed.

Antisocial Behaviour (RC4)

The scale from the MMPI-2RF that is most clearly related to the assessment of psychopathy is the Antisocial Behaviour scale (RC4). The items on this scale relate to substance use, delinquent (and at times criminal) conduct, early behavioural issues and unpleasant family relationships. Research has indicated that RC4 outperforms the traditional clinical scale 4 when measuring psychopathy.
(Sellbom, Ben-Porath, Lilienfeld, Patrick & Graham, 2005; Sellbom, Ben-Porath & Stafford, 2007). It has been proposed that this was due to the original scale 4 also capturing elements of distress (Tellegen et al., 2003), meaning that the revised scale does not capture the affective/interpersonal components of psychopathy. However, these studies have looked at overall scale elevations of the clinical scale 4, without considering whether RC4 is able to outperform the Harriss and Lingoes (1955) subscales. Caldwell (2006) argues that the heterogeneity within the clinical scale 4 may be a strength when assessing psychopathy, as the construct of psychopathy is also considered heterogeneous.

Criticisms exist regarding the use of the RC scales to measure a personality construct associated with anti-social behaviour, such as psychopathy (Caldwell 2006). For example, there is evidence to suggest that RC4 is less sensitive compared to clinical scale 4, even within a forensic setting. Megargee (2006) reported on a large sample of over 2000 convicted offenders and found that all of the RC scales were below T-Score of 56, including RC4. In addition, McCullaugh, Pizitz, Stolberg & Kropp (2009) in a sample of convicted male stalkers found that RC4 had a mean score of 51.7, more than one standard deviation below the original scale 4. These results are surprising given that the scale is labelled the Antisocial Behaviour scale, and is proposed to measure antisocial behaviour. These findings may suggest that RC4 moves away from what was originally captured within clinical scale 4. One possible reason that has been cited for this is that RC4 has a high proportion of questions that tap into substance use.
Psychopathic Deviate (Pd) scale (Clinical Scale 4)

A significant amount of research has examined the relationship between individual scales (specifically the Pd scale), criminal behaviour and psychopathy. The Pd scale of the MMPI was originally designed to assess the construct of “psychopathic personality, asocial and amoral type” (Hathaway & McKinley, 1943, p. 167). However, research suggests that the overall Pd scale is a poor measure of the construct of psychopathy (Lilienfeld, 1999). It appears to be an especially poor predictor of Factor 1 of psychopathy, including the interpersonal and affective aspects. For example, Harpur et al. (1989) found only small correlations between Factor 1 of the PCL-R and the Pd subscale ($r = .05 - .11$). In fact, the overall correlation between the Pd scale and psychopathy was small ($r = .34$; Graham, 2003). It has been suggested that the scale may correlate with the behaviours of the construct, rather than the underlying core personality traits (Lilienfeld, 1999). There is ample evidence to suggest that elevations on the Pd scale do not differentiate between the personality attributes of the psychopath and the behavioural attributes (Graham, 2012).

A common problem that clinicians experience with the Pd scale is its multi-factorial nature (Graham, 2012). As a result of heterogeneity of the scale, high elevations can reflect several problem areas and are often ambiguous in meaning. For example, an individual may score highly on this scale because they have a high degree of mistrust for authority, but present with no antisocial behaviour. In an attempt to rectify this ambiguity, the Harris and Lingoes (1955) subscales were developed to allow clinicians to determine the source(s) of the elevations on the Pd scale (and several other scales, however, the focus is on the Pd scale in this thesis). It has been proposed that these subscales may assist
clinicians with the important task of identifying causally separable or distinct subgroups of anti-social individuals; for example, individuals who meet the criteria for psychopathy (Graham, 2012).

Harris and Lingoes (1955) originally described four subscales of the Pd scale. However, subscale 4 was subsequently split into two to make five subscales. Subscale 1 (Pd1; familial discord) measures familial issues and has been shown to correlate with the personality predictor of “feelings of struggle against family control” (Rawat, 2006, p. 104). Subscale 2 (Pd2; authority problems) relates to an individual’s issues with authority. This subscale has been shown to relate to “past delinquent behaviour, legal involvement and trouble with authority” (Rawat, 2006, p. 105). Subscale 3 (Pd3; social imperturbability) reflects a strong tendency toward extraversion, however, individuals scoring high on this scale typically do not need approval from others (Rawat, 2006). Subscale 4 (Pd4; social alienation) is associated with lowered mood and isolation from others. Specifically, high scorers on Pd4 have a pervasive mistrust in others (Rawat, 2006). Finally, subscale 5 (Pd5; self-alienation) is related to extreme feelings of guilt and excessive rumination (Rawat, 2006). Subscales Pd4 and Pd5 have individually been shown to positively correlate with trait anxiety (Graham, 2003).

Surprisingly, within the literature, there are only a small number of studies that have examined the relationship between the Pd subscales and psychopathy. Lilienfeld (1999), who used the Psychopathic Personality Inventory (PPI) to examine the relationship between psychopathy and the Harris and Lingoes (1955) subscales, conducted the most relevant research. His findings supported the construct measured by the Harris-Lingoes subscales of the MMPI-2 and
suggested that certain subscales are more strongly related to the construct of psychopathy than other scales. Specifically, he found that the authority problems subscale was consistently the strongest correlate of different measures of psychopathy. He also found evidence that other Psychopathic Deviate subscales were positively correlated with specific psychopathy indices. The specific findings are outlined below. However, this study involved only undergraduate university students and the findings may not be generalisable to offender populations.

Scores on the authority problems subscale correlated with the psychopathy factor of Coldheartedness (designed to assess callousness traditionally associated with psychopathy). This relationship may indicate that this subscale captures some element of the construct of boldness, as defined by Patrick et al. (2009). Furthermore, other Pd subscales did not correlate with Coldheartedness, meaning that high scorers on the other subscales may not possess the core affective deficits of psychopathy. These findings highlight that only the authority problems subscale captures traits of individuals related to a deficient affective experience or boldness.

An additional finding was that the social imperturbability subscale was the only one to correlate with the psychopathy traits of social potency and stress immunity. This subscale may tap into the interpersonal poise and low anxiety proneness that the prototypical psychopath possesses. Therefore, it is possible that this subscale taps into some of the construct of the arrogant or deceitful personal style facet of psychopathy as defined by Cooke and Michie (2001). The familial discord, social alienation, and self-alienation subscale scores correlated with Blame Externalisation, but no other facet of psychopathy. These results, when
combined with the finding that social alienation and self-alienation correlated negatively with Coldheartedness and Stress Immunity, suggest that they may not be assessing the core features of psychopathy, and are more likely related to the behavioural or impulsive aspects.

A similar study was conducted using a sample of inmates acquitted due to mental impairment. Meloy and Gacono (1995) conducted a study on the Harris-Lingoes subscales in relation to psychopathy (as measured by the PCL-R). They found that the only subscale that significantly correlated with the total PCL-R scores was Pd2 (authority problems). Although significant, the relationship was modest ($r=.31$).

A consistent finding from Lilienfeld (1999) and Meloy and Gacono’s (1995) research is that the Pd2 (authority problems) subscale of Pd is significantly correlated with psychopathy as measured by the PCL-R and the PPI. In these studies, this subscale contributed to the assessment of psychopathy above and beyond the other Psychopathic Deviate subscales, indicating that it provided unique information in the measurement of these variables. Furthermore, these studies demonstrated that the Pd3 (social imperturbability) subscale showed a negligible relationship with global psychopathy. The authority problems subscale correlated strongly with anti-social measures of psychopathy, however it also correlated moderately with measures of the core features of psychopathy (as measured by the PPI). These findings suggest that the authority problems subscale is likely capturing some aspects of psychopathy, while the social imperturbability subscale is largely unrelated to the construct. An alternate explanation for the negligible relationship found between psychopathy and Pd3 relates to an idiosyncrasy specific to Pd3. The maximum elevation of Pd3 in males is $T=64$. 
Therefore, it is possible that the restricted range of this scale, especially when considering clinical samples imposes limitations on the correlations found. Further, the Pd1 (familial discord), Pd4 (social alienation), and Pd5 (self-alienation) subscales are likely capturing the behavioural and impulsive aspect of psychopathy.

As discussed, there have been numerous scales derived from the MMPI-2 item pool in the assessment of psychopathy. However, based on the articles from Caldwell (2006) and Nichols (2006) this thesis has chosen to consider the original MMPI-2 Clinical Scale 4 (Pd), the ASP scale and the RC4 scale based on previous research outlined above.

*Research base of MMPI/MMPI-2*

The MMPI-2 and the original MMPI are the most widely researched personality assessment instruments. There is a research base of over 15,000 published books and articles that explore the different applications of these tests (Graham, 2012). A large number of studies have assessed the reliability of the interpretation of MMPI profiles. They have demonstrated reliable differences between people who present with different profiles in terms of their attitudes, behaviours and clinical symptoms (For a review see Graham, 2012). However, most of the research has been conducted in in-patient settings or with participants from the general population, such as college students. It has been suggested that the clinical configurations can take on different meanings when applied to offender populations in the criminal justice system (Megargee et al., 2001).
Advantages of using the MMPI-2 in the criminal justice system

Most assessments within corrections include three main areas: mental health assessment, risk assessment and needs assessment (Graham, 2012). Megargee (2006) described three main advantages of using the MMPI-2 in a correctional setting for such assessments: the volume of cases, the degree of legal accountability required, and the nature of the offender population. In terms of volume, there were 6,219 prisoners housed in correctional facilities across the state of Victoria, Australia, as of June 2015 (Department of Justice, 2015). Offenders who are detained or incarcerated must be screened for a number of issues upon entry including mental health difficulties, self-destructive behaviours and aggressive behaviours. Megargee (2006) argued that the MMPI-2 should be used as a screening tool for offenders when entering prison due to its ease of administration, and the rich array of information obtained.

Psychologists working within correctional settings are legally accountable for their evaluations and assessments as they may be called to testify about them in court. If this occurs, the psychologist may be required to explain their findings and defend the use of any tests administered. Given the large body of research accompanying the MMPI-2, it has been argued that it should be used in all forensic evaluations (Megargee, 2006).

Finally, one of the most significant differences between individuals in a correctional setting and other settings is the anti-social nature of the individuals in correctional settings. In the majority of other settings, it may be assumed that the individual being assessed will be at least somewhat co-operative and have a desire to complete an accurate assessment. In turn, the clinician shares the basic goal of
developing an accurate picture of the client to help with his or her treatment. This co-operation is not usually the case with prisoners, as they may be motivated to act in a devious manner. Therefore, the clinician may need to adapt the tests that are used in this setting. It is argued that due to the high number of validity scales, the MMPI-2 is perfect for use in correctional settings (Megargee, 2006).

While not currently routinely used in correctional settings in Australia, there is still a relatively large amount of research conducted on the MMPI and the MMPI-2 in this type of setting. The following section will outline the main findings to date.

*MMPI and MMPI-2 research with offenders*

Early studies demonstrated that the MMPI could differentiate adult offenders and juvenile delinquents from non-offenders (for example, Hathaway & Monachesi, 1957). Furthermore, previous research has shown that the MMPI can be useful in differentiating between groups of criminal offenders (Haven, 1970). However, more recent research has not always been able to replicate these results (Hume, Kennedy, Patrick & Partyka, 1996). Recent research involving sex offenders suggested that high risk sex offenders were associated with a greater degree of psychopathology when compared to a low risk sex offender group, as measured by the MMPI-2. However, only 4 of the 26 measured points of difference in relation to the MMPI-2 were significant (Coxe & Holmes, 2009). Findings in this area have been inconsistent, and it is unclear if the MMPI-2 is able to reliably differentiate between different groups of offenders, or different levels of risk based on overall elevations of their MMPI-2 profiles.
In summary, research concerning the MMPI-2 and offenders has shown inconsistent findings, and the relationship between certain scales and anti-social behaviour/psychopathy remains unclear. These inconsistent findings led to the development of the Megargee system for classifying criminal offenders (Megargee & Bohn, 1977, 1979).

The Megargee system

The Megargee system is the most widely researched classification system for classifying offenders according to their MMPI-2 profiles. Developed by Megargee and Bohn (1977, 1979), this system was originally developed based on the MMPI, however it was refined to make it applicable with the MMPI-2. The Megargee system is an objective measure designed to classify offenders into one of ten distinct subtypes based on their MMPI-2 profile. It is useful to classify offenders into these subtypes in order to tailor treatment to their specific needs. This particular system is useful because the ease of administration and scoring of the MMPI makes classifying offenders a rapid process. The MMPI system makes it possible to provide accurate quantifiable data; cross-cultural research suggests that if an MMPI system can be reliably developed it may be broadly generalisable. A more detailed description of the Megargee classification system can be found in Study 3.

Research using the Megargee system

The Megargee system has been extensively researched using offender populations (Anderson & Holcombe, 1983; Booth & Howell, 1980; Megargee et al., 2001; Megargee & Bohn, 1977; Megargee & Dorhout, 1977). Most studies examining the reliability of the Megargee system in prison populations have
incorporated the use of cluster analysis. That is, they have found evidence for clusters of offenders within prison settings that match the Megargee types or subgroups (Megargee et al., 2001; Mrad, Kabacoff & Duckro, 1983). Analyses conducted in different settings have suggested that individuals who are not in the prison system do not present with similar clusters. For example, Moss and Werner (1992) conducted a cluster analysis on the MMPI profiles of individuals with a history of cocaine abuse who had received no formal contact with the criminal justice system. The clusters found bore no resemblance to the subtypes proposed by Megargee et al. (2001), which indicates that these subtypes are specific to offender populations.

Many studies have demonstrated that the offenders assigned to different subtypes differ in age, race, marital status, family background and characteristics. In addition, studies have also found differences in education, intelligence, vocational history, employment, social functioning, physical health, psychiatric history, criminal history, juvenile history, types of offence, attitudes and values between subtypes (for a review, see Megargee et al., 2001). These findings indicate that the subtypes capture certain characteristics of offenders and that the subtypes differ on a range of external measures. This indicates that the classification system is useful in differentiating between offender sub-groups.

The aim of the current thesis was to expand our knowledge of the relationship between MMPI-2 profiles and PCL-R (psychopathy) scores. In Study 1, the relationship between individuals’ scores on the Psychopathic Deviate (Pd) subscales and the different underlying constructs of psychopathy as defined by Patrick et al. (2009) and Cooke and Michie (2001) will be examined. Study 2 explores whether distinct subtypes of psychopaths exist based on individuals’
MMPI-2 profiles. Finally, Study 3 examines whether the Megargee system for classifying criminal offenders can reliably differentiate between individuals who score highly on different underlying facets of psychopathy.

These studies are important as they have clinical implications for individuals working within the field of forensic psychology. If certain facets of psychopathy can be captured through the Harris and Lingoes (1955) scales of the MMPI-2, it could therefore be used as a screening measure to help clinicians determine which offenders may require a PCL-R. In addition, ‘psychopaths’ are currently treated as a homogenous group, and may be excluded from treatment programs. Although, if this research supports heterogeneity within psychopathy, it may indicate that some individuals who are classified as psychopathic may still benefit from treatment.
CHAPTER 3: The current thesis

The previous two chapters highlighted a number of ongoing controversies that exist within both the academic and clinical domains, when utilising the MMPI-2 and the PCL-R in the assessment of psychopathy. The following three chapters will examine three different applications of the MMPI-2 in the assessment of psychopathy. This chapter will attempt to summarise the controversies, clarify the position of the current thesis and outline the rational for considering the applicability of the MMPI-2 within the assessment of psychopathy.

Many of the controversies regarding the assessment of psychopathy (as outlined in chapter one) fall under two related, overarching themes. Both themes stem from a lack of clarification regarding what constitutes psychopathy. The first is a lack of consensus regarding the best assessment tool to measure psychopathy. The second concerns the factor structure that underpins psychopathy, or, what are the core constructs that relate to the overarching term ‘psychopathy’? Whilst these academic disagreements have been ongoing and are likely to continue for some time, this thesis is utilising the PCL-R as the measure of psychopathy, whilst considering the two factor, four facet model of psychopathy the most useful factor structure for this purpose. The reasons for these decisions are as follows. Given the multitude of prior research on the validity and reliability of the PCL-R, this tool is considered the ‘gold standard’ measure of psychopathy. In addition, within the current clinical and forensic assessment of psychopathy, the PCL-R is utilised most often, and is even included in other risk assessment based tools (for example the HCR-20). Therefore, given the high level of reliability and validity, as well as the direct application to clinical practice, this thesis suggests that the PCL-R is the
most beneficial measure of psychopathy to study. However, it should be noted that this tool is not synonymous with psychopathy and any considerations based on the following studies should keep in mind that the PCL-R is measuring one conceptualisation, or factor structure of psychopathy.

The second point to consider relates to the factor structure of psychopathy, within the PCL-R. The sole difference between the two dominant approaches (Cooke & Michie, 2001; Hare, 2003) to classifying items of the PCL-R is the inclusion or omission of items that relate to criminality (see Chapter 1 for a review). Essentially, the three and four factor structures of the PCL-R, proposed by Cooke and Michie (2001) or Hare (2003) are the same, with the four-facet model including a further facet that relates to antisocial behaviour. This thesis will first run a confirmatory factor analysis (CFA) to determine if one of the models provides a superior fit for the data. It is suggested, however, that beyond statistical consideration, the four-facet model is more beneficial to study. The decision to utilise all four facets, as opposed to other theories that purport various other factor structures, was based on general inclusiveness and theoretical grounds. That is, given the somewhat exploratory nature of the studies, this theory is inclusive of more items on the PCL-R, compared to the two- or three-factor model. In addition, this theory was developed in conjunction with the PCL-R. However, it should be noted that this factor structure is not universally accepted as measuring all aspects of psychopathy.

As discussed in the preceding chapter, there have been a number of avenues through which the MMPI-2 has been incorporated into the assessment of psychopathy. Historically, it was believed that the MMPI was unable to capture the construct of psychopathy (Hundleby & Ross, 1977). However, more recent
advances have suggested that some elements of psychopathy may be able to be captured via self-report measures such as the MMPI-2-RF (for example, see Sellbom, 2014). Given these more recent findings, it may be useful to consider the manner in which standard personality assessment measures, such as the MMPI-2, can add value to the assessment of psychopathy. The current thesis will examine three distinct ways that the MMPI-2 may be utilised to aid in the assessment of psychopathy. First, by examining the correlation between various scales of the MMPI-2 and psychopathy. Second, to help understand different variants of psychopathy, and how they may differ on their MMPI-2 profiles. Lastly, to consider an already well-developed tool to classify offenders utilising the MMPI-2, and how this may relate to the assessment of psychopathy.

The first study will examine the correlation between various scales of the MMPI-2 and psychopathy. Since the inception of the MMPI, there have been numerous attempts to consider various scales and their relationship to the construct of psychopathy. Most notably the ASP, Pd, Pd subscales and more recently RC4 scales have shown to capture some element of psychopathy. Therefore, it would be beneficial to examine these four scales in more detail, and consider how they may relate to the four factors of psychopathy described by Hare (2003).

The second study aims to build on existing research to further understand various subtypes of offenders, and how they may relate to psychopathy. The theory of primary versus secondary psychopathy has existed within the literature nearly as long as psychopathy has been measured (Karpman 1941, 1955). There are various theories in existence, however, which make an exact definition of either primary or secondary psychopathy difficult to ascertain (see Chapter 1 for a
review). Generally, these theories purport that at least two distinct variants of psychopathy exist, with variations either in their etiology, motivation or application of the constructs related to psychopathy. While there has been a myriad of prior research examining various subtypes of psychopathy, the second study attempts to add to this research, considering the various different concepts that underlie psychopathy to be continuous in nature, as opposed to taxonometric. This approach allows the consideration of variants of psychopathy, as opposed to subtypes, which allows for a more exploratory approach to understanding the different presentations of psychopathy.

Finally, to date, the most cohesive attempt to classify offenders into groups is known as the Megargee system (Megargee and Bohn 1977, 1979). However, no study has attempted to understand these groups in terms of their relationship to the various facets of psychopathy. Despite the lack of empirical research, the descriptions of the various groups appear to relate to some of the underlying facets of psychopathy. The final study of this thesis will empirically examine the Megargee subtypes, with a specific focus on how they relate to the construct of psychopathy.
Chapter 4: STUDY 1: The relationship between psychopathy, the Psychopathic deviate subscales, the ASP scale and Restructured Clinical Scale 4.

The preceding chapters introduced the concept of psychopathy as well as the tool typically used to measure it (the PCL-R). Furthermore, the factor structure of psychopathy as measured by the PCL-R was discussed with two-, three- and four-factor models all finding some support in the literature. Importantly, the three and four-factor structures seemed to have the most significant support and were aligned with the theoretical concept of psychopathy. Cooke and Michie (2001) proposed this three-factor structure of psychopathy. They removed the majority of the items on the PCL-R that related to criminal behaviour from their analyses and attempted to capture the core personality structures associated with psychopathy. Their factor analysis provided evidence for three factors: 1) Arrogant and deceitful interpersonal style, 2) Deficient affective experience and 3) Impulsive or irresponsible behavioural style. These three personality factors are proposed to be building blocks for the construct of psychopathy. In contrast to this three-factor model, Hare (2003) proposed a four-factor model of psychopathy based on the items in the PCL-R. The four-factor model is similar to the three-factor model in that the questions from the PCL-R that are related to Factors 1, 2 and 3 in the Cooke and Michie (2001) model can also be asked of the four-factor model. However, the labels are slightly different. That is, Factor 1 is referred to as the interpersonal facet, Factor 2 is called the affective facet, and Factor 3 is called the impulsive, or lifestyle facet. In addition to these three facets, the fourth facet included in the model is an antisocial facet. Essentially the three-factor and four-facet model differ in the amount they
measure antisocial behaviour, with the fourth facet primarily focusing on antisocial behaviour. Questions remain in the literature, however, about the best structural fit for the construct of psychopathy.

Controversies around the ability of self-report measures to accurately capture aspects of psychopathy were also raised, with particular focus on the MMPI-2 as the most widely used and researched personality tool. Based on prior research, the scales derived from the MMPI-2 item pool of most significance to psychopathy were introduced and included.

These scales include the Psychopathic deviate (Pd) subscale. The Psychopathic deviate (Pd) scale was originally designed to assess the psychopathic personality; however, research has shown weak or negligible correlations between the scale and overall psychopathy measures (Lilienfeld, 1999). To remove some of the ambiguity related to the multi-factorial nature of the original Pd scale, Harris and Lingoes (1955) identified five subscales, labeled Pd1 through to Pd5, related to the Psychopathic deviate scale. They were rationally derived and designed to assist clinicians in determining the source of the elevation on the psychopathic deviate scale. These subscales may assist in determining causally separable individuals who present with anti-social beliefs. The five subscales are labeled Familial Discord (Pd1), Authority Conflict (Pd2), Social Imperturbability (Pd3), Social Alienation (Pd4) and Self-Alienation (Pd5); information pertaining to what these subscales measure is outlined in the previous chapter. It is worth noting that these subscales were slightly modified when the MMPI transitioned to the MMPI-2 (Butcher et al., 1989).
Two further attempts to remove the ambiguity of the clinical scales are relevant to this study: the development of the Content scales (Butcher et al., 1990) and subsequently the RC scales (Tellegen et al., 2003).

As described in chapter two, the content scales were developed to address the issue of heterogeneity within the clinical scales by helping to understand the origins of the scale elevations (Butcher et al., 1990). Related to psychopathy specifically, the Antisocial Practices (ASP) content scale was rationally developed to assess antisocial ideas and practices. The items on the ASP scale reflect a cynicism and insensitivity towards the motives of others. It is also suggested that high scorers are likely to present with past rule breaking and problems with authority (Nichols & Kaufman, 2011). Research has suggested that the ASP scale correlates with psychopathy (Lilienfeld, 1996).

As previously described, the RC scales were developed by removing aspects of the clinical scales that relate to a general psychological distress (Tellegen et al., 2003). Therefore, it is proposed that RC4 has less ‘noise’ compared to the psychopathic deviate scale. In other words, the scale is proposed to be a truer measure of antisocial behaviour and subsequently psychopathy. RC4 is labeled antisocial behaviour and measures the degree of antisocial behaviour an individual engages in. However, some authors have been critical of the RC scales, with specific criticisms being made in reference to RC4. The arguments suggest that heterogeneity within the Pd scale acts as a strength when measuring psychopathy, as psychopathy is also a heterogeneous construct (Caldwell, 2006). In other words, considering overall elevations of the psychopathic deviate scale, and the Pd subscales may be able to more accurately measure the various
components of psychopathy. Despite this criticism, research has shown that both the RC4 scale outperform the overall Pd scale in the assessment of psychopathy (Sellbom, et al., 2007).

The relationship between psychopathy and the scales of the MMPI-2

Based on prior research, tentative support has been found for relationships between the established factors of psychopathy and the above scales from the MMPI-2.

The Pd subscales

Relatively little is known about the construct validity of the Pd subscales. The research to date has shown mixed results. Early research on offenders using the Psychopathic deviate subscales suggested that offenders exceeded the psychiatric norms on Pd4 (social alienation) and Pd5 (self-alienation) scales (Panton, 1959). Others have suggested that the scales are irrelevant and do not add to the interpretation of the clinical scale elevation (Faust, 1997). For example, Faust (1997) argued that the Pd subscales may be unnecessary and irrelevant based on the assumption that the diagnosis of psychopathy can best be judged by referring to the overall score. Faust (1997) also argued that it is irrelevant “exactly where on the net examinees are caught” (p. 338). However, the majority of the research suggests that total Psychopathic deviate subscale scores do not differentiate between the core personality attributes of the primary psychopaths and the anti-social behaviour of offenders (Hare & Cox, 1978). The Psychopathic deviate subscales may therefore be helpful in distinguishing between the core personality attributes of psychopathy that can be captured with the MMPI-2.
The relationship between the Pd subscales and psychopathy in the literature is inconsistent. In one study, using an inmate sample, Edinger, Reuterfors, and Logue (1982) found that several Psychopathic deviate subscales discriminated among a number of Megargee and Bohn’s (1977, 1979) empirically derived criminal types. Additionally, in a sample of inmates acquitted by the insanity verdict, Pd2 was the only MMPI-2 Psychopathic deviate subscale to correlate significantly \((r = .31)\) with the total score on the PCL-R (Bayer et al., 1985; Meloy & Gacono, 1995). This finding suggests that Pd2 captured some aspect of psychopathy in this sample.

The most relevant research in relation to the current study involved four separate samples of undergraduate college students. Lilienfeld (1999) measured psychopathy using the Psychopathic Personality Inventory (PPI), a self-report measure of psychopathy, and has been shown to correlate significantly with the PCL-R (Lilienfeld & Andrews, 1996). In this study, participants each completed the section of the MMPI-2 related to the overall Psychopathic deviate clinical scale, and self-report measures of psychopathy, in an attempt to determine which Psychopathic deviate subscales were most strongly related to the construct of psychopathy. Lilienfeld also measured varying components of psychopathy to determine if different underlying psychopathy facets were assessed especially well by certain subscales of the Psychopathic Deviate scale of the MMPI-2.

The most consistent findings across these four samples were that Pd1, Pd2, Pd3 and Pd5 were significantly correlated with psychopathy total scores. However, the majority of the correlations were small \((r = .20—.30)\), with the exception of Pd2. Pd2 showed a significant moderate correlation with total PPI scores across all four of the samples, ranging between \((r = .49—.57)\). This research
suggested that Pd2 was the strongest predictor of psychopathy scores in undergraduate college samples.

In regards to the varying underlying components of psychopathy, Lilienfeld (1999) found some interesting results. Social potency, as measured by the PPI, was significantly correlated with Pd3 across all four of the samples, with a large relationship ($r = .62–.65$). Social potency (for example, “when others are upset with me I can usually win them over with my charm”) is included in the fearless/dominance factor of psychopathy as defined by the PPI, which is related to Factor 1 of the PCL-R (Ross, Benning, Patrick, Thompson & Thompson, 2009). It is likely that high scorers on Pd3 possessed much of the interpersonal poise traditionally associated with psychopathy. Social potency as measured by the PPI appeared similar to the *arrogant and deceitful interpersonal style* factor of psychopathy defined by Cooke and Michie (2001). Therefore, these findings suggest that Pd3 (social imperturbability) may be related to that specific factor of psychopathy in an undergraduate sample. The current study attempted to replicate this finding within a sample of psychiatric inmates.

An additional finding was that the ‘Machiavellian Egocentricity’ subscale was correlated significantly with Pd2 in all four of the samples, with the effect size ranging from $r = .28–.41$. This egocentricity subscale also correlated significantly with Pd5 in three of the four samples. Machiavellian Egocentricity is related to an aggressive personality style. Additionally, cold-heartedness was related to Pd2. These two findings suggest that Pd2 may be capturing some elements of affective factor of psychopathy.
Pd3 appeared to capture very little of global psychopathy, however, it was positively correlated with the social potency and stress immunity factors of psychopathy, as measured by the PPI. These unique findings suggest, that while Pd3 appears unrelated to the whole construct of psychopathy, it may be related to the interpersonal facet of psychopathy defined by Cooke and Michie (2001) and Hare (2003).

It is worth noting that in Lilienfeld’s (1999) study Pd1, Pd4 and Pd5, all acted in a similar fashion. Specifically, they all correlated significantly and positively with blame externalisation, which is a measure of alienation. The strongest correlation was with Pd4 ($r = .63$). These results suggest that Pd1, Pd4 and Pd5 may capture similar aspects of psychopathy and may not add any additional information individually. Furthermore, Pd4 and Pd5 were generally negatively correlated with coldheartedness and stress immunity, suggesting that they do not assess the core affective features of psychopathy in undergraduate samples.

Taken together, Lilienfeld’s (1999) findings suggest that Pd2 is likely to be an important subscale when considering psychopathy. It is also likely that Pd3 captures one facet of psychopathy, while Pd1, Pd4 and Pd5 capture the behavioural aspect of the construct rather than the core personality attributes.

The Lilienfeld (1999) study utilised the PPI, a self-report measure of psychopathy. There has been some criticism in the literature of tools which utilise self-report to assess for psychopathy (Edens et al., 2000) Therefore, the current study will determine whether similar correlations between psychopathy and the Pd subscales exist when using a clinician-rated psychopathy measure (PCL-R).
The ASP and RC4 scales

There is evidence to suggest that both the ASP (Lilienfeld, 1996) and the RC4 (Sellbom et al., 2007) scales relate to psychopathy. In a study using undergraduate students and the PPI as a measure of psychopathy, Lilienfeld (1996) found that the ASP scale correlated significantly with the machiavellian egocentricity scale of the PPI (characterised by putting one’s own needs in front of others). Whilst this scale is part of the fearless dominance component of the PPI, and considered a primary attribute of psychopathy, this is not directly measured by the PCL-R. As such, it is unclear whether the ASP will capture any of the primary features of psychopathy as measured by the PCL-R.

Sellbom et al. (2007) utilised the PCL:SV as a measure of psychopathy and found that RC4 had significantly higher convergent validity in predicting psychopathy compared to the Pd clinical scale. However, previous research comparing the Pd scale with the ASP and RC4 scales focused on the Pd scale as a whole, and has not considered the various Pd subscales. As such, the argument that the Pd scale would be a better measure of psychopathy compared to the narrower RC4 scale – are yet to be considered from the perspective of the Pd subscales.

Despite these empirical studies, there is still much to be gained by a more fine-grained analysis of these relationships. The benefits of establishing whether well validated self-report measures such as the MMPI-2/MMPI-2RF can give insight into the nature of psychopathy are significant, as it could be useful to understand the personality constructs associated with psychopathy in more detail.
**Aims and hypotheses**

The current study has four aims. The first aim was to determine which of the Pd subscales were related to global psychopathy (as measured by the PCL-R) in this sample. The second aim was to determine if some components of psychopathy were captured especially well with certain Pd subscales when assessed using a clinician-rated tool rather than a self-report measure. The final aim was to determine if the Pd subscales possessed adequate construct validity in this sample of psychiatric forensic inmates.

There are five hypotheses.

1. It was hypothesised that Pd2 should have the strongest relationship with global psychopathy scores. That is, Pd2 should have a stronger correlation with total PCL-R scores in this sample of forensic psychiatric patients than any other subscale.

2. It was hypothesised that the overall Pd scale would not correlate with psychopathy, as measured by the PCL-R, due to the heterogeneity of the scale.

3. It was hypothesised that Pd1, Pd4 and Pd5 should show negligible correlations with both the core interpersonal and affective facets of psychopathy.

4. It was hypothesised that Pd3 would correlate significantly with the interpersonal facet of psychopathy.

5. It was hypothesised that scale RC4 and the ASP content scale would both correlate with overall psychopathy scores, and show a significant correlation to the impulsive and antisocial facets of psychopathy.
Method

Participants

Study participants were selected from the Atascadero State Hospital (ASH), located in California, America. ASH is one of five state hospitals in the California Department of Mental Health. It is the maximum security forensic facility which houses approximately 1,200 judicially committed male patients from the state’s criminal justice system.

Two hundred and seventy-two cases were initially included in the data set. From those cases, 13 cases were removed based on missing data. Of the 259 participants remaining, the age range was between 34 and 88. Following, cases with TRIN>80, VRIN>80 and Fp>90 were removed due to invalid profiles. Given the population of the sample, forensic psychiatric facility, and the assumption of more severe pathology compared to the standard population, scales L, K and F were not used to exclude cases from the sample. The average age was 55.03 years (SD = 9.21) and all participants were male. In regard to race, 62.5% were white, 21.6% were African American and 8.9% were Hispanic. Data regarding individuals’ primary diagnosis was unavailable. However within the ASH, the distribution of primary diagnoses consists of 61% psychotic disorders (mostly schizophrenia and schizoaffective) and 26% sexual disorders (mostly paraphilias). The remaining 13% are mainly a mixture of mood and substance abuse disorders, often with psychotic features. Data was collected cumulatively as patients were tested between approximately 1993 and 2003. Specific testing dates were unavailable within this sample.
The patient population at ASH includes the following commitment types:

1. **Sexually Violent Predators** represent 39% of the 1034 patients in residence; they have an average resident length of stay of 874 days. The commitment criteria of sexually violent predators include: 1) conviction of sexually violent predatory offences against two or more victims who were either strangers to the offender or where the relationship was developed primarily for the purposes of victimization, 2) presence of a diagnosable mental disorder, and 3) likelihood of engaging in sexually violent criminal behavior as a result of the diagnosed mental disorder. The criteria exclude incest offenders and all offenders with a single conviction.

2. **Mentally Disordered Offenders** constitute 29% of the population; they have an average resident length of stay of 523 days. This commitment includes prison inmates who are incarcerated for violent offences and have severe mental disorders that are not in remission or cannot be kept in remission without treatment. In addition, the mental disorder needs to be one of the causes of, or an aggravating factor in, the commission of the crime for which the person was sentenced to prison. Finally, these inmates are deemed to represent a substantial danger of physical harm to others by reason of severe mental illness. These inmates are committed to ASH for treatment when they become eligible for parole; that is, they are paroled to ASH rather than to the community.

3. **Mentally Ill Prison Transfers** represent 17% of the population; they have an average resident length of stay of 210 days. Patients in this category have been convicted of a criminal offence, sent to state prison, and are subsequently
transferred to ASH for treatment of their mental illness during their term of incarceration.

4. Individuals judged *Incompetent to Stand Trial* represent 7% of the population; they have an average resident length of stay of 100 days.

5. Individuals judged *Not Guilty by Reason of Insanity* make up 6% of the population; they have an average resident length of stay of 600 days.

6. Individuals in the Other category include several less common civil commitments. They make up 2% of the population and their average resident length of stay varies greatly.

*Apparatus*

Participants routinely completed a battery of assessment tools as part of the assessment process at the ASH. Furthermore, their demographic information, including age and sex were recorded. The specific assessment tools used for this study were the PCL-R and the MMPI-2.

*Psychopathy Checklist – Revised.*

The PCL-R is a 20-item tool used to measure the construct of psychopathy. To score a PCL-R, a clinician rates the individual on the 20 items, with scores ranging from 0 to 2, thus the PCL-R scores range from 0 to 40. PCL-R data used for the current study were collected by staff psychologists trained and certified in the use of the instrument. All scores were based on a clinical interview with the patient and a review of clinical records. The PCL-R was completed on all sexually violent predator patients at the point they agree to participate in assessment and treatment. The PCL-R is completed on other commitment types
on a case by case basis, as indicated for treatment planning and forensic evaluations. The resulting scores were entered into a computer database maintained by the hospital’s Department of Evaluation and Outcome Services. The available PCL-R data are therefore from non-random samples for each patient commitment category. For this study, the PCL-R was broken into two, three or four facets based on previous theoretical work (Cooke & Michie; 2001, Hare, 2003)

*Minnesota MultiphasicPersonality Inventory (2nd edition) (MMPI-2).*

The MMPI-2 is a self-report personality assessment tool that contains 567 true/false test items and takes approximately 60 to 90 minutes to complete. An example of a question asked in the MMPI-2 is “I am sure I get a raw deal from life”. For the current study, the MMPI-2 was administered as needed upon referral by the treating psychologist on the patient’s residential unit within the hospital. The instrument is typically administered in a centralized assessment centre at ASH by staff trained in the administration of such self-report measures. The resulting test protocols were then computer scored, and the profile of results forwarded to the referring psychologist for interpretation. An electronic copy of all completed MMPI-2 protocols is maintained in a computer database by the hospital’s Department of Evaluation and Outcome Services. Whilst only the Psychopathic deviate scale, the Pd subscales, the RC4 scale and the ASP scale were used for this study, all participants completed a full MMPI-2. The ASP subscale scores were not available from the data set, as such they were not included in the discussion or analysis.
Procedure

Permission to use the data was obtained from the original custodian (see Appendix A). An ethics exemption application was submitted to the Deakin University Human Research Ethics Committee (see Appendix B). The exemption was approved (see Appendix C) and the data set was obtained. All data was de-identified before it was provided. Data was screened and analysed using correlational analysis in SPSS 21.0. Furthermore, Confirmatory Factor Analysis (CFA) was completed in AMOS to determine which model provided the greatest level of fit for the data.

Results

The results of Study examined the relationships between the facets and the Psychopathic deviate subscales were examined.

Relationships between the Psychopathic deviate subscales and the facets of psychopathy

First, the data was cleaned and cases with missing MMPI-2 data were deleted. There were 28 cases removed due to a lack of the MMPI-2 data required for the analysis. A further 23 cases were removed due to invalid profiles, specifically any profile showing a VRIN>80, TRIN >80 or Fp>90 were removed. Following, the 20 items of the PCL-R items were measured for their internal consistency ($\alpha = .79$). There was no reliability data available for the MMPI-2 items, as the author did not have access to individual item responses. Items of the PCL-R were grouped into facets of psychopathy based on their alignment to the four underlying facets described by Hare (2003). The four variables that
corresponded to the proposed facets of psychopathy were labeled Interpersonal, Affective, Impulsive and Antisocial respectively. For a review of the items and how they load onto the four facets refer to Table 1.2.

Bivariate correlational analyses were run to determine the relationships between these four facets and the Psychopathic deviate subscales. Table 3.1 shows the correlations between the Psychopathic deviate subscales, the overall PCL-R scores, and the four facets of psychopathy: Interpersonal, Affective, Impulsive and Antisocial.
Table 4.1

*The correlations between the Psychopathic deviate subscales, overall psychopathy scores and the three facets of psychopathy*

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* = p < .05; ** = p < .01.

*Note: Pd = Psychopathic deviate subscale; Pd1 = Familial discord; Pd2 = Authority conflict; Pd3 = Social imperturbability; Pd4 = Social alienation; Pd5 = Self-alienation; ASP = Antisocial Practices; RC4 = Structured Scale 4; In = Interpersonal; Af = Affective; Im = Impulsive and As = Antisocial.*
Table 4.1 shows that Pd2 had the strongest relationship of all the Psychopathic deviate subscales to the total PCL-R scores. Pd2 was also positively and significantly correlated with the interpersonal, impulsive and anti-social facets. The total Psychopathic deviate scale was not significantly correlated with the total PCL-R scores, indicating that the scale was a poor measure of overall psychopathy within this sample. Furthermore, the only other Psychopathic deviate subscale to correlate with the overall PCL-R score was Pd1. No other subscales were significantly correlated with the overall PCL-R scores, suggesting that Pd1 and Pd2 are the only Psychopathic deviate subscales that are related to overall psychopathy scores.

The ASP and RC4 scales were both significantly correlated with total PCL-R scores. Additionally both the ASP and RC4 scales correlated with the Impulsive and Antisocial facets of psychopathy. However, neither the ASP nor the RC4 scale significantly correlated with either the Interpersonal or the Affective facets of psychopathy, as measured by the PCL-R.

The Interpersonal facet was positively correlated with Pd2 and Pd3, and negatively correlated with Pd5. The Affective facet did not correlate with any of the Psychopathic deviate subscales. This suggests that the Psychopathic deviate subscales are poor measures affective facet of psychopathy. The impulsive facet, on the other hand, positively correlated with Pd1, Pd2, and Pd5. Finally, the Antisocial facet of psychopathy was significantly, positively correlated with Pd1, Pd2, Pd5 the ASP and RC4 scales.
Discussion

The findings of the current study partially support the construct validity of the Psychopathic deviate subscales of the MMPI-2. Certain subscales were more highly related to the construct of psychopathy—as measured by the PCL-R— than others. All of the hypotheses were supported by the analyses and were generally consistent with previous research. Consistent with the first hypothesis, Pd2 emerged as a correlate of global psychopathy, as measured by the PCL-R, in this sample of individuals from a forensic psychiatric setting.

Based on previous research conducted by Lilienfeld (1999), the Psychopathic deviate clinical scale did not significantly correlate with the overall measure of psychopathy, supporting the second hypothesis. Furthermore, the overall scale failed to correlate significantly with any of the facets of psychopathy identified by Cooke and Michie (2001). This suggests that the overall Psychopathic deviate scale is likely to be a poor indicator of psychopathy in a forensic psychiatric setting.

In relation to the third hypothesis, none of the Psychopathic deviate subscales correlated with the affective facet of psychopathy. These results suggest that the Pd subscales are poor measures of what has traditionally been seen as the core features of psychopathy (i.e., lack of empathy/remorse, shallow affect etc.). This result is similar to previous research conducted by Lilienfeld (1999), which demonstrated that only Pd2 correlated with the psychopathy facet of coldheartedness (measured by the PPI). Coldheartedness and the affective scale appear to both measure the ‘core’ features of psychopathy. These findings suggest
that high scorers on this facet of psychopathy do not typically show elevations on any of the Psychopathic deviate subscales.

The fourth hypothesis was also supported, in that Pd3 was significantly correlated with the arrogant and deceitful interpersonal style facet of psychopathy. Notably, it was not significantly correlated with any other facet of psychopathy. This finding suggests that Pd3 is able to somewhat capture the interpersonal aspect of psychopathy, whilst having no relationship to the other facets of psychopathy as described by Cooke and Michie (2001).

Consistent with the final hypothesis, both the RC4 and the ASP scale behaved similarly in terms of their correlations with psychopathy and related facets. Both ASP and RC4 correlated significantly with overall PCL-R scores and with the impulsive and antisocial factor of psychopathy, however both failed to correlate with the other two facets of psychopathy described by Hare (2003).

Additional findings were also discovered, separate from the aforementioned hypotheses. These results indicated that different Psychopathic deviate subscales were positively correlated with specific psychopathy indices. The following section will discuss the five separate subscales and their specific findings.

*Pd2 (Authority Conflict)*

It has previously been suggested that individuals who score highly on Pd2 will present as resentful and rebellious (Harris & Lingoes, 1955). In the current study, Pd2 correlated with the overall psychopathy measure and it also significantly correlated with three of the four facets of psychopathy defined by
Hare, 2003). These three factors were the interpersonal facet, the impulsive factor and the antisocial facet. This finding suggests that Pd2 captured some of the interpersonal, impulsive and antisocial elements of psychopathy.

The finding that Pd2 had the strongest relationship to overall psychopathy scores is consistent with previous work (Lilienfeld, 1999). Thus, the current research adds to previous findings, providing evidence and hence strengthening the argument that this relationship is true across individuals from a forensic psychiatric setting as well. Clinicians interpreting the Psychopathic deviate subscales should place more emphasis on the Pd2 elevations, compared to other subscales, when considering psychopathy. Despite Pd2 being the strongest correlate to overall psychopathy, it failed to correlate with the deficient affective experience facet of psychopathy.

While Pd2 had the strongest relationship to psychopathy in this sample, the other Psychopathic deviate subscales provided additional information in regards to certain aspects of psychopathy. This demonstrates that while clinicians should perhaps place greater emphasis on the Pd2 subscale compared to the other subscales as indicators of psychopathy, they should still consider the other subscales to improve validity.

**Pd3 (Social Imperturbability)**

It has been suggested that high scorers on Pd3 present with a lack of social anxiety and are friendly but somewhat manipulative (Harris & Lingoes, 1955). Furthermore, research assessing the reliability of the Psychopathic deviate subscales in a forensic psychiatric sample showed that Pd3 correlated negatively with measures of anxiety (Rappaport, 1978). This description is similar to the
interpersonal facet of psychopathy (i.e., Superficial Charm, Conning / manipulative). As a result of this, the Pd3 scale was hypothesised to have the strongest relationship with the interpersonal facet of psychopathy. This hypothesis was supported and, in addition, Pd3 had no significant correlations with either of the other three facets of psychopathy. These findings indicate that Pd3 may be unrelated to other aspects of psychopathy, although it has captured some of the interpersonal facet of psychopathy. Clinicians interpreting the Psychopathic deviate subscales of the MMPI-2 in relation to psychopathy should consider scores on scale Pd3 and their relationship to the interpersonal facet of psychopathy.

_Pd1 (Familial discord)_

Individuals scoring high on this scale are proposed to view the home or family life as unpleasant. Pd1 showed a significant correlation with the impulsive and anti-social facet of psychopathy. However, it did not significantly correlate with either of the other two facets. These findings are generally consistent with the previous work of Lilienfeld (1999). It is likely that this scale is capturing the behavioural and antisocial aspect of psychopathy, but is largely unrelated to the core personality attributes that are typical of psychopathy.

_Pd4 (Social alienation) and Pd5 (Self-alienation)_

Theoretically, individuals scoring high on Pd4 should alienate themselves from others, while individuals scoring high on Pd5 should present as brooding and apathetic (Harris & Lingoes, 1955). In the current study, Pd4 showed no significant correlations with any of the facets of psychopathy. Pd5 had a significant negative relationship with the interpersonal facet of psychopathy, and
showed a significant positive correlation with the impulsive and antisocial facets. The negative relationship between Pd5 and the interpersonal facet is not surprising, as Pd5 is proposed to measure individuals who withdraw from others and prefer their own company, whilst the interpersonal facet of psychopathy is designed to measure charming, manipulative individuals. Pd4 and Pd5 appear to offer little unique information to the interpretation of psychopathy, beyond what the other Psychopathic deviate subscales offer.

As stated previously, none of scales measured correlated with the affective facet of psychopathy. This finding suggests that individuals who present with the features of psychopathy may not have increased Psychopathic deviate subscale, ASP or RC4 scores. This finding is consistent with the long-held view that self-report measures are typically poor at capturing the core features of psychopathy. Furthermore, these results provide support for the hypothesis that primary psychopaths, who theoretically have more of the ‘core features’, may be more difficult to determine via self-report measures (Harpur, Hare & Hakstian, 1989). Clinicians should be aware of this when using the MMPI-2 scales to inform views of psychopathy.

In contrast to the affective facet of psychopathy, both the impulsive and antisocial facet showed similar correlations to the various scales measured. That is, the impulsive and antisocial faces of psychopathy showed significant positive correlations with Pd1, 2, 5, ASP scale and RC4. These relationships indicate that the scales of the MMPI-2 may be better at capturing the impulsive and antisocial aspects of psychopathy than the core personality attributes. It has been hypothesised that the impulsive and antisocial facets of psychopathy are more strongly related to secondary psychopaths than primary psychopaths (Karpman,
1955; Lykken, 1995). Therefore, it is possible that the Psychopathic deviate subscales, the ASP and the RC4 scales are more inclined to show elevations for secondary as opposed to primary psychopaths.

Pd2 and Pd3 both significantly correlated with the interpersonal facet of psychopathy. However, the correlation between Pd2 and Pd3 themselves was not significant. Taken together, these results suggest that Pd2 and Pd3 may capture different elements of the interpersonal facet of psychopathy. Further research is necessary to investigate this relationship.

The intercorrelations between the different Psychopathic deviate subscales were consistent with previous research conducted on incarcerated individuals (Bayer et al., 1985) and undergraduate students (Lilienfeld, 1999), which provides further support for the reliability of these results. For example, the correlation between Pd1 and Pd4 was positive and moderate, while the correlation between Pd1 and Pd3 was negative. Furthermore, consistent with previous research, the correlation between Pd4 and Pd5 was positive and significant. These findings suggest that the Psychopathic deviate subscales act consistently across a range of samples.

*ASP scale*

The Antisocial Practices (ASP) content scale was developed to assess the antisocial behaviours often associated with psychopathy, and research has suggested a correlation between the scale and psychopathy (Lilienfeld, 1996). The results from this sample are generally consistent with previous research on the ASP scale in that the ASP scale correlated significantly with overall PCL-R scores, with the impulsive and antisocial facets of psychopathy. No significant
correlations were found, however, between ASP and the two facets that are proposed to measure the more primary psychopathy traits. This finding is inconsistent with previous research that showed that the ASP scale correlated significantly with the Machiavellian Egocentricity scale of the PPI (Lilienfeld, 1996). This would suggest that the scale is measuring some of the primary characteristics of psychopathy.

One explanation for this inconsistent finding is that the Lilienfeld (1996) study utilised a self-report psychopathy measure, whilst the current study looked at a clinician rated measure. Therefore, using a self-report psychopathy measure and the MMPI-2 may inflate the correlations due to a shared method variance. Another possible explanation for the inconsistent finding may be the sample the two studies were derived from. Specifically, the Lilienfeld (1996) sample was based on undergraduate students, whilst the current sample consisted of individuals in a forensic psychiatric unit. It may be that the primary psychopathy features are more difficult to capture with the ASP scale in this setting. A final explanation for the inconsistent finding concerns the two different psychopathy measures used. As described in the introduction, the PPI and the PCL-R measure overlapping constructs, however it is suggested they measure different aspects of psychopathy (PPI focuses on boldness, whilst PCL-R more related to meanness/antisocial behaviour). It may be that the ASP scale is capturing some element of boldness, beyond what the PCL-R measures.

**RC4 scale**

In several studies, the RC4 scale has shown to correlate stronger than clinical scale 4 to the construct of psychopathy (Sellbom et al., 2007; Sellbom et
al., 2005). This is due to the multi-factorial nature of the Pd scale. However, this study is unique, as previous research could not be found comparing the RC4 scale to the Psychopathic deviate subscales in the assessment of psychopathy. There has been controversy regarding the use of the RC scales, with not all researchers or clinicians embracing their use (Caldwell, 2006; Nichols, 2006).

Consistent with previous research, the current study RC4 scale significantly correlated with the overall psychopathy scores, whilst the overall Pd scale did not. This suggests that overall RC4 has a stronger relationship to global psychopathy. However, when considering specific psychopathy indices and the Psychopathic deviate subscales the findings are less compelling. Specifically, RC4 correlated significantly with the impulsive and antisocial facets of psychopathy, however showed no significant correlation with either the interpersonal or affective components of psychopathy. In contrast to this, both Pd2 and Pd3 showed significant correlations with the interpersonal style facet of psychopathy. One explanation for this is that RC4 holds a higher degree of face validity compared to the Psychopathic deviate subscales (that is, the questions more obviously relate to the antisocial behaviour). Given that psychopathy is related to dishonesty (and one of the items on the PCL-R directly measures dishonesty), the propensity of individuals high on psychopathy to deceive may mean more obvious questions of the RC4 scale are less likely to be endorsed by individuals high on the primary attributes of psychopathy. It is worth noting that five of the eight items used to measure Pd2 also appear on RC4, whilst the other three items of Pd2, overlap with Pd3 and relate to social potency. This may explain why both Pd2 and Pd3 relate to the interpersonal facet of psychopathy, whilst RC4 does not. These findings suggest that examining the Psychopathic
deviate subscales offers unique understanding to the assessment of psychopathy compared to only examining the RC4 and/or the ASP scales.

Overall, the correlations found in the current study were similar to previous research conducted by Lilienfeld (1999), Lilienfeld (1996) and Sellbom et al. (2007). These samples used undergraduate students and forensic clients, and employed a self-report or clinician rated measure of psychopathy respectively. The current findings suggest that the relationships between psychopathy facets and the scales of the MMPI-2 measured can also be found in a forensic psychiatric setting. Furthermore, this research suggests that correlations between psychopathy and the various scales of the MMPI-2 are similar using clinician-rated and self-report measures of psychopathy.

Clinical implications

The results of the current study have at least four clinical implications. First, these findings show that the Psychopathic deviate subscales act much the same in relation to psychopathy in a sample of individuals from a forensic psychiatric setting, when compared to previous research using different populations. Thus, the current results were generally similar to those found by Lilienfeld (1999) and Bayer et al. (1985) in different samples (undergraduate and prison populations respectively). This is an important finding, as it suggests that the Pd subscales show reliability across different settings. Second, this study was consistent with the work of Lilienfeld (1996) and Sellbom et al. (2007); showing that both RC4 and the ASP scales correlated more strongly with overall psychopathy measures. However, both Pd2 and Pd3 appeared to capture some of the variance that was not captured by the ASP or the RC4 scale. That is, it appears
that both Pd2 and Pd3 add to the assessment of psychopathy unique to what is shown through the ASP and the RC4 scales, particularly when considering Factor one.

The third implication is that the results suggest that certain Psychopathic deviate subscales, especially Pd2 and to some extent Pd3, may be better markers of the interpersonal personality attributes of psychopathy than others. Several scales, specifically, Pd4, Pd5 and to a lesser extent Pd1, ASP and RC4 tended to show weak, negligible or even negative correlations with the primary personality attributes of psychopathy. Previous research has indicated that poor treatment outcomes are typically associated with the primary personality attributes of individuals who score highly on psychopathy, as opposed to the behavioural aspects (Hare, 1993). As a result, it is possible that individuals with elevated scores on only ASP, RC4, Pd4 and Pd5 may be more responsive to treatment when compared to individuals who have elevations on Pd2 and Pd3. However, it is important to remember that this research did not measure treatment targets and therefore further research assessing the ability of the Psychopathic deviate subscales to measure treatment response and engagement is needed.

Finally, these findings may have implications for the ability of clinicians to distinguish between subtypes of psychopaths. Different theories suggest that not all individuals who score high on the PCL-R are alike (Blackburn, 1998; Karpman, 1958; Lykken, 1995; Porter, 1996). That is, heterogeneity exists amongst individuals who score highly on psychopathy measures. This research may be helpful in distinguishing between individuals who have traditionally been referred to as primary psychopaths or secondary psychopaths (Karpman, 1958; Lykken, 1995). Given the proposed difference in the prognosis for individuals
classified as primary or secondary psychopaths, this is a useful area of research. It appears that indices such as Pd2 and Pd3 may be used as markers of specific personality traits, which may imply that treatment could be more difficult. The extent to which Pd2 or Pd3 contributes to the prediction of prognosis above and beyond what is already known remains to be determined.

**Limitations**

Some limitations to the current research are acknowledged. First, as all of the results described were derived from a sample of individuals from a forensic psychiatric setting, their generalisability to the wider population (or to a purely forensic population) remains to be established. Nevertheless, as all individuals in this sample had a forensic history, the results may be relevant to individuals with a high level of anti-sociality.

Notably, the significant correlations found between the certain facets of psychopathy, overall psychopathy and the Pd subscales were considered low. Furthermore, Pd1, 4 and 5 appear to be measuring much the same thing in regards to psychopathy. As a result, overall elevations on any of the scales do not indicate psychopathy and could be due to a number of reasons, such as impulsiveness, social isolation or negative emotionality. It remains to be determined if any of the Psychopathic deviate subscales, the ASP or RC4 scales can contribute to the prediction of psychopathy above and beyond other self-report measures.

A further limitation to acknowledge is that the author did not have access to individual item responses, and as such was unable to provide reliability information for the Harris-Lingoes subscales. This may mean that the effect sizes have been attenuated due to excessive measurement error.
Whilst the results of the current study were similar to previous research, the correlations within the current study were generally of a smaller magnitude compared to previous research (Bayer et al., 1985; Lilinefeld, 1999). This may be indicative of the sample utilised – a forensic psychiatric sample (compared to a prison or undergraduate sample). It may be that given the nature of the clientele within a forensic psychiatric facility, scores on the MMPI-2 scales are less robust, leading to smaller correlations. Finally, the heterogeneity of the sample may mean that certain specific findings may have been overlooked. The sample included individuals with a wide range of mental health issues. Some had traditional forensic, psychiatric concerns, whilst others were in hospital due to unhealthy sexually-based fantasies. As the data was de-identified, correlations between the differing populations within the sample were unable to be assessed. However, given the similar findings within this sample, and other samples from different settings, it is likely that these correlations should remain consistent regardless of the reason that the individuals were in the state hospital.

In summary, the findings reported here reiterate the importance of examining the specific facets of psychopathy when interpreting scales that have been linked to psychopathy. It was also found that Pd2 and Pd3 were the two scales that correlated with the more primary psychopathy features. However, it is necessary to note that none of the scales measures significantly correlated with the affective facet of psychopathy, suggesting this is a difficult facet to capture via the MMPI-2. In future research, it will be beneficial to examine the extent to which the scales measured predict performance on other variables relevant to psychopathy (such as treatment engagement, prognosis, and family history). However, further research is required to determine whether any of the
Psychopathic deviate subscales offer any further predictive validity towards measures of psychopathy.

Study 1 examined the relationship between the varying facets of psychopathy and the scales of the MMPI-2 that have been linked to psychopathy. It highlighted that the varying facets of psychopathy correlate differently and therefore may measure different components of psychopathy. It has been proposed that individuals who score high on psychopathy can be classified into subtypes based on their varying levels of these underlying facets (e.g., Karpman, 1941). Study 2 examined subtypes of individuals who scored high on psychopathy based on their MMPI-2 profile, focusing on the varying characteristics in which the subtypes may differ.
Chapter 5: STUDY 2: Subtypes of psychopaths based on self-report personality measures

Psychopathy has traditionally been viewed as a single discrete taxon, consisting of individuals who are similar in their behaviour and personalities (Cleckley, 1941). However, more recent research suggests that there may be a degree of heterogeneity within the construct (Patrick, 2006). In other words, varying degrees or different subtypes of psychopathy may exist. Study 2 will expand previous research surrounding psychopathic subtypes, or variants of psychopathy. In this chapter, psychopathy will first be defined, with a specific focus on the proposed underlying facets and different variants that exist within the construct of psychopathy. Second, the issues identified when labeling psychopaths as a homogenous group will be discussed. Third, the MMPI-2 and its relationship to the different variants of psychopathy will be discussed. Throughout this chapter it will be argued that considering variants of psychopathy is clinically advantageous, whilst treating all individuals who score highly on the PCL-R is likely to pose significant theoretical and practical challenges.

Psychopathy

The Psychopathy Checklist–Revised (PCL-R; Hare, 1993) is the most commonly used tool when diagnosing or researching psychopathy. To be diagnosed as psychopathic according to the PCL-R, the test-taker needs a score of 30 or above. However, more recently, a number of research studies (described in chapter one,) view the construct of psychopathy as a continuous variable. Therefore individuals who score higher on the PCL-R are being viewed as ‘more
psychopathic’ than individuals who score lower on this measure. Debates still remain regarding the degree to which individuals scoring highly will present with similar underlying personalities. That is, whether these individuals are defined as a homogenous group, or additional variants exist. The underlying factor structure of psychopathy has been debated and different authors have proposed two-factor, three- and four-facet conceptualisations (Cooke & Michie, 2001; Hare 2003; Patrick et al., 2009). The results from Study 1 suggested that a three-factor model was the most appropriate for the psychiatric forensic population that was examined.

Issues with heterogeneity

It is important to consider different variants of psychopathy, as viewing and treating heterogeneous groups of individuals as homogenous has far-reaching clinical implications. These implications are predominately within the areas of assessment and treatment, but there are additional legal and ethical implications. For most people the term psychopath conjures up an image of someone who lacks any ability to feel empathy, is callous, manipulative and cold (Patrick, 2006). Given some research that suggests psychopaths do not benefit from traditional treatment programs (Ogloff et al., 1990), there are a number of organisations that alter the treatment pathway of individuals scoring highly on the PCL-R. Furthermore, labeling someone a psychopath suggests to others that this individual has a very high risk of re-offending. If not all psychopaths are alike, however, the implication is that some individuals classified as psychopathic may have a different underlying etiology from the traditional psychopath and therefore possess different motivation for acting anti-socially. Thus, these individuals may
benefit from traditional treatment programs, which they may have been refused access to because of the “psychopath” label that does not necessarily fit.

Two of the largest problems associated with treating a heterogeneous group of individuals as homogenous relate to treatment and etiology. One of the major advantages of theories that distinguish between Cleckley’s (1941) conceptualization of the psychopath and other variations of psychopathy is that they offer the opportunity for varying types of treatment and varying etiological pathways towards psychopathy. Research suggests that biological, environmental and social factors all contribute to the etiology of psychopathy (Patrick, 2006). Furthermore, there is evidence that a specific externalising component of psychopathy has a largely biological etiology (Patrick et al., 2009). Other aspects may have different etiologies, which suggest that they will have different treatment needs. Therefore, a diagnosis of “psychopath” based on a PCL-R score may be unhelpful to clinicians attempting to develop a treatment plan for an individual, as individuals diagnosed as psychopathic likely present with differing treatment needs. To date, the majority of research on etiological mechanisms underpinning psychopathy has viewed psychopathy as a homogenous construct. However, it is becoming increasingly more accepted within the literature that there are likely different underlying etiological mechanisms related to different presentations of psychopathy (Patrick et al., 2009). If psychopaths are a heterogeneous group, then generalisations regarding etiology, treatability or risk will need to be revisited.
History of subtyping

It is necessary to make a distinction between the subtypes of psychopathy and the different variants of the underlying facets, before reviewing the history of subtyping in further detail. As previously discussed, traditionally psychopathy has been viewed as a taxon, which led early researchers to look for ‘subtypes’ within the taxon of psychopathy. However, more recently psychopathy is being viewed as a continuous construct (Haslam et al., 2012). It is likely that the variants of psychopathy also exist on the continuous spectrum. Therefore, more recent research has considered psychopathy from this respect; looking for variants within psychopathy at all levels. The following section will discuss the research from both angles, to subtype psychopaths and to consider different variants of the underlying constructs.

Karpman (1941) made the first attempt to divide individuals into subtypes when he made a distinction between primary and secondary psychopaths. Primary psychopaths are viewed as emotionally stable individuals, who have a distinctly lower risk for suicide. Secondary psychopaths are considered to be anxious, dysphoric, hostile, impulsive and withdrawn. They are considered to have a high risk of suicide and suicide-related behaviour. A number of different theorists have differentiated between primary and secondary psychopaths on varying bases. Karpman (1941) originally differentiated between the two types of psychopaths on the basis of motivation. He proposed that primary psychopaths displayed no conscience or guilt and that the anti-social behaviour of the secondary psychopath was underlined by neurotic or psychotic conflicts arising from parental rejection (Karpman, 1948). Lykken (1995) suggested that primary psychopaths present with a fearless temperament (in contrast to the more fearful secondary
psychopaths). Furthermore, he proposed that elevated reward sensitivity influenced the development of psychopathic features. Individuals with a high sensitivity for reward might find their internal restraints fail due to powerful urges that overwhelm normal inhibitions and result in anti-social or immoral behaviour.

As noted in chapter one, an alternative differentiation between primary and secondary psychopaths was made by Mealey (1995). Using an evolutionary model, she proposed a genotype for socially deviant behaviour that makes people less responsive to cues from socialisation. In her distinction, most upper class sociopaths would be classified as primary psychopaths whilst secondary psychopaths are more likely to be from lower class or a more disadvantaged background. According to Mealey (1995), Factor 1 of the PCL-R represents primary psychopathy whilst Factor 2 represents secondary psychopathy.

In contrast to this view, Porter (1996) distinguished two etiological pathways. Specifically, Porter suggested that primary psychopathy is innate, whilst secondary psychopathy comes about as a result of trauma or parental mistrust. Porter proposed that secondary psychopaths learn to de-activate their emotional bonds with others and thus learn a lack of emotional capacity. Porter further suggested that the presentations of primary and secondary psychopaths are basically indistinguishable.

One of the primary issues within the research on subtypes of psychopaths is that these distinctions have only superficial similarities (Skeem et al., 2011). These varying conceptualisations of the primary and secondary distinction differ on the etiological contributions of genetics and development. In addition, the theories vary on whether Factor 1 and Factor 2 of the PCL-R should be able to
differentiate between the two subtypes. Some of the theories suggest that Factor 1 is more strongly related to primary psychopathy, and Factor 2 more strongly related to secondary psychopathy (Mealey, 1995), whilst others suggest that both presentations of psychopaths will score equally on Factor 1 and Factor 2 (Porter, 1996).

Another issue that may confound the existence of primary and secondary psychopathy is that researchers have had difficulty finding evidence for only two distinct subtypes of psychopaths. This difficulty suggests that the primary and secondary distinction may be too simplistic. For example, some authors have found empirical support for the primary and secondary subtypes of psychopaths, with additional third and fourth clusters of individuals classified as psychopathic (Herve & Hare, 2004). The following section will discuss other attempts to differentiate between different subtypes of psychopaths using different measures.

**Differentiating subtypes**

Since the early distinction made by Karpman (1941), there have been a number of empirical proposals about the ways in which psychopaths can be differentiated. It has been suggested that subtypes may be distinguished using their levels of arousal in response to distressing stimuli, suicide potential, drug and alcohol use, levels of intelligence and anxiety (Gottman, 2001; Helibrun & Helibrun, 1985; Lykken, 1955). However, research findings in these areas are mixed, without extensive empirical support for any of these particular suggestions (Patrick, 2006). One possible reason for these mixed findings is that different research methods have been used when attempting to classify psychopaths into differing subtypes. These methods have included the use of moderating variables,
cluster analysis, theory, and other personality measures. Each of these methods is described in more detail below.

**Moderating variables**

Some researchers have used moderating variables to examine potential subtypes. For example, IQ has been found to moderate the relationship between psychopathy and violent crime (Heilbrun & Helibrun, 1985). Psychopaths with lower IQs were shown to have impaired impulse control and therefore were more likely to engage in violent crime. In this study, there were eight times as many violent than non-violent psychopaths among the low IQ group while there were the same number of violent and non-violent psychopaths in the high IQ group. Interestingly, the moderating effect of IQ on violence was not present in the non-psychopathic group within this study. This result suggests that IQ moderates the use of violence in psychopaths but not in the general population of offenders.

Another potential moderator variable is anxiety (Murphy & Vess, 2003; Vassileva et al, 2005). Some researchers suggested that low scores on anxiety scales reflect the interpersonal-affective deficits emphasised by Cleckley (1941), and have thus identified primary psychopaths as those who exhibit lower levels of anxiety (e.g., Fagan & Lira, 1980). Newman, MacCoon, Vaughn and Sadeh (2005) found that two clusters of psychopaths could be reliably differentiated on the basis of anxiety, suggesting the group with lower levels of anxiety were consistent with the primary psychopath. In contrast to this finding, Schmitt and Newman (1999) found that PCL-R Factor 1 and Factor 2 (proposed to partially encapsulate the two facets of psychopathy) scores were both unrelated to anxiety.
Thus it can be seen that the relationship between anxiety and psychopathy is somewhat inconsistent in the literature.

*Cluster analysis*

Another research method used to examine subtypes of psychopaths has focused on classifying psychopaths into subtypes based on their PCL-R profile scores. For example, Herve, Ling and Hare (2000) selected 202 federal inmates who scored 27 or greater on the PCL-R. Their profiles were used to compute scores for the three facets described by Cooke and Michie (2001): deficient affective experience, impulsive and irresponsible behavioural style, and arrogant and deceitful interpersonal style. The data showed that a four-cluster solution was the best fit. The four clusters or subtypes found were labeled macho, manipulative, prototypical and secondary (originally referred to as sociopaths).

In the Herve et al. (2000) study, the *macho group* (PCL-R $M = 31$) were characterised by elevations on the deficient affective experience and the impulsive and irresponsible behavioural style facets, with more moderate scores on the arrogant and deceitful interpersonal style facet. In comparison, *manipulative psychopaths* (PCL-R $M = 29$), displayed elevated scores on both the deficient affective experience and the arrogant and deceitful interpersonal style facets, with moderate scores on the impulsive and irresponsible behavioural style facet. Not surprisingly, the *prototypical group* displayed marked elevations on all three PCL-R facets ($M = 33$). However, the *sociopaths* (PCL-R $M = 28$) obtained moderate elevations more exclusively on the impulsive and irresponsible behavioural style facet. While these subtypes have yet to be replicated extensively and demonstrated that they show different patterns of responses on external
measures, this is a promising area of research. Interestingly, using these subtypes, research has suggested that the secondary psychopathic group engaged in as much or more anti-social and violent behaviours as prototypic psychopaths (Herve & Hare, 2004).

More recently, Sellbom (2014) has utilised factor mixture modelling (FFM) to identify varying subgroups based on their MMPI-2-RF profile interpretation. FFM is an advanced cluster analysis technique and was utilised to address issues that arose from the development of the Megargee system. The work of Sellbom (2014) showed three factors, with five underlying classes. Relevant to the current study, the different classes differed in their expression of psychopathy indices. For example, they identified an emotionally stable group, who presented with lower levels of psychopathology and with higher levels of fearless-dominance psychopathy traits (such as coldheartedness). Sellbom (2014) also found a class that presented with higher levels of Machiavellian Egocentricity, higher on aggression and disinhibition facet of psychopathy. Whilst the current study is not examining the classes identified by Sellbom (2014) directly, the Sellbom study demonstrated that several groups of individuals identified by their MMPI-2-RF profiles could have different levels of varying psychopathy facets, which the current study is attempting to replicate.

Theory

A third approach used to differentiate potential subtypes of psychopathy is to break down the construct into theoretically relevant subtypes. The scores from individuals within these subtypes are then correlated with external measures. For example, in research not directly looking at psychopathy, Alterman et al. (1998)
examined anti-sociality, whilst also looking at a vast array of external measures. They broke anti-sociality down into four variables: conduct disorder, adult anti-social behaviour, socialisation (from the California Psychological Inventory) and psychopathy (PCL-R scores). Males in a methadone program (n=252) completed measures associated with the four variables, and from these scores the authors derived six reliable and stable subtypes, three of which showed relatively high PCL-R elevations. Out of the three clusters that had high PCL-R scores, two were relatively similar across the other three measures (Type 1 and 2), the only exception being that Type 1 individuals had significantly higher conduct problems as children. Therefore, the authors labeled Type 1 as *early onset high anti-sociality* and Type 2 as *late onset high anti-sociality*. These two subtypes both had significant correlations with a range of external measures, including serious involvement in crime, high negative emotionality, moderately high guilt, high levels of alcohol consumption and high levels of hostility. Type 5 (the other subtype that had high PCL-R scores) showed relatively few drug, alcohol, and familial problems, less negative emotionality and hostility and the lowest level of guilt of all the subtypes. Type 5 appeared more consistent with the notion of the primary psychopath and appeared to exhibit signs of a shallow affective experience as described by Cooke and Michie (2001). The authors argued that Type 5 captured the core features of psychopathy.

**Personality measures**

One final way in which researchers have attempted to classify individuals into subtypes is by using PCL-R scores to select a sample of psychopathic individuals, and then using other personality measures as a basis for cluster analysis. In the work of Hicks et al. (2004), for example, the authors chose to
apply clustering techniques to break the sample into homogenous groups based on
the participants’ profiles on a personality measure. This technique relies on the
assumption that psychopathy is an extreme example of normal personality traits.

Using the PCL-R as a screening tool, Hicks et al. (2004) identified 96
male prison inmates with PCL-R scores greater than or equal to 30. Scores on the
brief form of the Multidimensional Personality Questionnaire, Brief Form (MPQ)
(Patrick, Curtin & Tellengen, 2002) were used as clustering variables to identify
homogenous groups among the individuals. They found strong evidence for at
least two distinct groups. One group had their most extreme score in the negative
direction on the scale labeled “stress reaction”; this group was labeled emotionally
stable psychopaths. The second group had their most extreme score in the positive
direction on the scale labeled “aggression”; this group was labeled aggressive
psychopaths.

Another finding from this study was that the emotionally stable group
showed, on average, less deviation from the mean score (T = 50) across the scales
of the MPQ (Hicks et al., 2004). The emotionally stable group showed, on
average, a deviation from the mean of 3.71 (T score). In contrast, the aggressive
group showed an average deviation across the 11 MPQ scaled scores of 6.61.
Therefore, the emotionally stable group showed a less deviant profile score. In
interpreting these results, Hicks et al. (2004) suggested that the emotionally stable
group is similar in many ways to the primary psychopathy group. They based this
suggestion on the low anxiety, socially dominant, fearlessness and non-
impulsivity of the members of this group. In contrast, traits of the aggressive
group included aggressiveness, difficulty establishing or maintaining relationships
with others and greater impulsiveness. Furthermore, and consistent with the
secondary psychopath proposal, the authors found that the aggressive psychopaths reported significantly more fights, had higher scores on alcohol abuse, lower socialization scores and higher trait anxiety than did the emotionally stable psychopaths. The advantage of this research design is that it avoids clustering exclusively on the basis of psychopathy scores and therefore is less biased on the personality attributes that cluster together. Study 2 will use similar clustering methods based on individuals’ MMPI-2 profiles.

*The current study*

The first aim of Study 2 was to build on previous research conducted in this area and further extrapolate classes of individuals within a forensic psychiatric facility through latent class analysis (which is further explained below). The second aim of the study was to conduct further analyses on the groups identified to determine if they differed on the basis of PCL-R scores (including the varying psychopathy facets). It was hypothesised that individuals scoring high on psychopathy will be reliably clustered based on different variables of their MMPI-2 profiles. Furthermore, consistent with the work of Hicks et al. (2004), it was proposed that one class, scoring highly on psychopathy, should present as emotionally stable while another class should be characterised by higher levels of psychiatric distress (as shown by MMPI-2 profiles). It was further hypothesised, consistent with the primary and secondary distinction proposed by Blackburn (1998), that the class presenting as emotionally stable will score higher on the arrogant and deceitful interpersonal style, whilst the other classes will present with higher levels of the impulsive and irresponsible behavioural style facet of psychopathy.
Method

Participants

Study participants were selected from a sample of Atascadero State Hospital (ASH) patients who had completed the MMIP-2. 236 participants met the inclusion criteria for the study. This sample was the same sample used in Study 1, and met the same inclusion criteria.

Apparatus

Participants routinely completed a battery of assessment tools as part of the assessment process at the ASH. Furthermore, their demographic information; age and sex were completed. The specific assessment tools used in this study were the MMPI-2 and the PCL-R. PCL-R scores were scored by clinicians specifically trained and certified in the administration of the instrument. 

Psychopathy Checklist – Revised. 

The PCL-R is a 20-item tool used to measure the construct of psychopathy as described in Study 1.

Minnesota Multiphasic Personality Inventory (2nd edition) (MMPI-2). 

The MMPI-2 is a personality assessment tool as described in Study 1. The ten clinical scales of the MMPI-2 were used for Study 2 and were used as clustering variables. The clinical scales offer standardised scores by the way of T scores, with a mean of 50 and a standard deviation of 10. T scores are considered clinically relevant if they are greater than 65.
Procedure

After obtaining ethics approval from Deakin University Human Research Ethics Committee, the data set was obtained from ASH. All data were de-identified. Data were screened and analysed using latent class analysis (LCA), utilising the computer program Mplus (Muthen & Muthen, 1998-2015).

*Latent class analysis* is a form of *Cluster analysis*, a broad group of analyses that identify groups in data by determining which objects or individuals in a sample are similar. The following summary of cluster analysis has been adapted from several sources, including Gan, Ma and Wu (2007), Kaufman and Rousseeuw (2005), Romesburg (1984) and Sambandam (2003). Cluster analysis attempts to identify homogeneous subgroups of cases when the number of groups in a population is unknown, and is implemented by attempting to identify a set of groups that minimise within-group variation and maximise between-group variation on a set of pre-specified variables.

Latent class analysis (LCA; McCutcheon, 1987) as with all cluster analyses attempts finding meaningful groups of individuals that are similar based on their responses to measured variables (Muthen, 2004), but with some advantages over the clustering methods used in the past. The advantages of LCA over traditional clustering techniques are: 1) it utilises maximum likelihood estimation (where cases are assigned to classes based upon membership probabilities estimated directly from the model), and 2) the variables can be continuous, categorical or any combination of such. To expand on point 1, traditional clustering methods utilise “unsupervised” classification algorithms that group cases that are near each other according to an ad-hoc definition of “distance”. As a result, these methods are likely to force clusters, even if none
exist within the data. Magsidon and Vermunt (2004) have shown that LCA outperforms traditional k-means cluster analysis. The assumption behind this type of analysis (LCA) within the current application is that certain distinct classes exist within the sample, and that these individuals can be clustered into a certain number of latent classes based on their MMPI-2-RC scale.

The statistical method most frequently used to determine differences between classes is known as a chi squared differences test, which is the context of latent classes is referred to as a likelihood ratio test. However within its simplest form this test cannot be applied due to regularity conditions not being met, because the likelihood ratio difference will not have a chi-squared distribution (Nylund, Asparouhov & Muthen, 2007). Therefore the differences between the k and the k-1 clusters is not a chi squared distribution (McLachland & Peel, 2000) and standard difference testing is not applicable. Two tests that have attempted to account for this are the Lo-Mendell-Rubin (LMR) (Lo, Mendell & Rubin, 2001) and the bootstrap likelihood ration test (BLRT). Whilst these two tests are not an exhaustive list of tests that compare fit between different models, they have both shown to be robust measures (Lo et al., 2001). The LMR test compares the improvement of fit between neighbouring class models and provides a p value that is used to determine if there is a statistically significant improvement in the fit for one or more class. Whilst it has been claimed that there is a flaw in the mathematical proof of this test (Jeffries, 2003), simulation studies show that the LMR may be a useful tool in determining the true number of classes within the data.

The other technique commonly used to compare the nested LCA models is the BLRT (McLachland & Peel, 2000). The BLRT uses bootstrap samples to
estimate the distribution of the log likelihood difference test statistic. That is, the
BLRT empirically estimates the distance distribution (Nylund et al., 2007).
Similar to the LMR, the BLRT gives a p value to determine if the solution is a
better fit than the k-1 solution.

In a comparison study, Nylund et al., (2007) considered a number of
different approaches for determining the optimal number of clusters and
concluded that the BIC method for determining goodness of fit and the BLRT
method for comparing models were the two most robust measures.

Latent class analysis was conducted on the sample, utilising the 8
restructured clinical scales of the MMPI-2, in an attempt to select the most
parsimonious and clinically meaningful method of clustering psychopathic
offenders. The following RC scales were used:

(1) RC1 Somatic complaints (som) indicates a high number of psychical complaints
    and a preoccupation with bodily functions.
(2) RC2 Low Positive Emotions (lpe) reflects a lack of positive emotional
    management in life, a lack of energy and may indicate passivity.
(3) RC3 Cynicism (cyn) is a bipolar scale, with high scorers presenting as
    untrustworthy and exploitive, whilst low scores reflect a naivety and gullibility.
(4) RC4 Antisocial Behaviour (asb) assesses a difficulty to confirm to societal norms,
    high scorers are often seen as critical, argumentative, aggressive and angry.
(5) RC6 Ideas of Persecution (per) indicates that high scorers feel targeted, controlled
    and victimised by others.
(6) RC7 Dysfunctional Negative Emotions (dne) assesses anxiety, insecurity, and
    sensitivity to perceived rejection. Furthermore, high scorers may have intrusive,
    unwanted thoughts.
(7) RC8 Aberrant Experiences (abx) indicates sensory, perceptual, cognitive and motor disturbances that may be suggestive of psychosis.

(8) RC9 Hypomanic Activation (hpm) reflects high energy levels, racing thoughts, heightened mood and irritability. High scorers may be impulsive and aggressive.

Latent Class analysis was used to determine the number of groups, or classes, participants formed on the basis of their profile of their eight MMPI-2 restructured clinical scales. The restructured clinical scales are given as T-scores, with a mean of 50 and a standard deviation of 10. In general a score is considered clinically significant if the participant scores t>65. The T scores were treated as ordinal.

Despite some controversy between the use of the RC scales and the general clinical scales (see Chapter 2), the decision to utilise the RC scales to cluster the sample was made based on two reasons. Firstly, due to the sample type. More specifically, given that the sample is from a forensic psychiatric unit, and therefore psychologically unwell, it is likely that many of the participants would score highly on the general distress factor (which has been removed within the RC scales). Therefore the RC scales should offer greater discriminant validity and be able to differentiate between the classes better than the original clinical scales. Secondly, the RC scales have no item overlap, therefore clustering scales will be based solely on actual relationships between the constructs measured. Latent class analysis aims to extrapolate the smallest number of clusters that accounts for the most variance between the associations of the variables. One advantage of LCA is that the posterior possibility can be obtained for each individual, with participants subsequently allocated to the cluster with the highest probability (Nylund et al., 2007).
Results

Within the current sample, latent class models were fitted successively, starting with a two class model and then adding another cluster for each successive model. A number of different fit indices were utilised to determine the optimal number of classes based on both fit indices and statistical measures that determined whether the current model was statistically better than the previous (k-1) model. The various outputs of these fit indices for the 2-10 cluster models can be found in Table 5.1.

After beginning with a 2 class model, the addition of further classes improved the fit of the model up to a 2, or 8 class solution, depending on the goodness of fit test used. Specifically, the fit tests continued to improve as the number of clusters increased, whilst the LMR test became insignificant at the 2 versus 3 class solution, whilst the BLRT test was significant until the 8 v 9 class solution. However, within the 8 class solution, 2 of the classes identified had less than 5% of the sample assigned to them. As such, the 3 class solution was identified as the most parsimonious solution. Table 5.1
Table 5.1

Comparison of fit indices on various number of classes, and log likelihood significance tests

<table>
<thead>
<tr>
<th>Classes</th>
<th>LLx2</th>
<th>AIC</th>
<th>BIC</th>
<th>A-BIC</th>
<th>LMR (k-1)</th>
<th>BLRT (k-1)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>p</td>
<td>p</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>-7111.52</td>
<td>14273.04</td>
<td>14359.64</td>
<td>14280.40</td>
<td>.0000</td>
<td>.0000</td>
</tr>
<tr>
<td>3</td>
<td>-7022.21</td>
<td>14112.42</td>
<td>14230.19</td>
<td>14122.43</td>
<td>.05</td>
<td>.0000</td>
</tr>
<tr>
<td>4</td>
<td>-6987.56</td>
<td>14061.12</td>
<td>14210.06</td>
<td>14073.77</td>
<td>.26</td>
<td>.0000</td>
</tr>
<tr>
<td>5</td>
<td>-6959.45</td>
<td>14022.90</td>
<td>14203.02</td>
<td>14038.20</td>
<td>.10</td>
<td>.0000</td>
</tr>
<tr>
<td>6</td>
<td>-6932.93</td>
<td>13987.85</td>
<td>14199.147</td>
<td>14005.80</td>
<td>.34</td>
<td>.0000</td>
</tr>
<tr>
<td>7</td>
<td>-6909.64</td>
<td>13959.29</td>
<td>14201.76</td>
<td>13979.88</td>
<td>.30</td>
<td>.0000</td>
</tr>
<tr>
<td>8</td>
<td>-6888.36</td>
<td>13934.72</td>
<td>14208.36</td>
<td>13957.96</td>
<td>.37</td>
<td>.0000</td>
</tr>
<tr>
<td>9</td>
<td>-6863.36</td>
<td>13902.72</td>
<td>14207.54</td>
<td>13928.61</td>
<td>.32</td>
<td>.67</td>
</tr>
<tr>
<td>10</td>
<td>-6842.58</td>
<td>13879.15</td>
<td>14215.14</td>
<td>13907.69</td>
<td>.12</td>
<td>1.000</td>
</tr>
</tbody>
</table>

Note LLx2 = Log Likelihood chi squared; AIC = Akaike’s Information Criterion; BIC = Bayesian Information Criterion; Adjusted BIC; LMR = Lo-Mendell-Rubin; BLRT Bootstrap likelihood ratio test

Given the 3 cluster solution was chosen, a graphical representation of the various groups, over the different RC scales is depicted below. When Mplus assigned people to their final classes, of the total sample; 134 (56.8%) were members of latent class 1; 74 (31.3%) were members of latent class 2; and 28 (11.8%) were members of latent class 3.
Following the decision to utilise a 3 class solution, a series of planned comparisons were conducted to determine whether the groups differed significantly on either PCL-R total scores or the 4 facets of the PCL-R facets. The four facets are labeled interpersonal, affective, impulsive and antisocial. Below is a table of the means of the 8 classes on total PCL-R scores and the four facets of the PCL-R.
Table 5.2

Pairwise comparisons of the 3 classes identified.

<table>
<thead>
<tr>
<th>Class</th>
<th>Interpersonal</th>
<th>Affective</th>
<th>Impulsive</th>
<th>Antisocial</th>
<th>PCL-R total</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>3.79 (0.21) (^a)</td>
<td>4.81 (0.18) (^a)</td>
<td>5.42 (0.18) (^a)</td>
<td>5.54 (0.23) (^a)</td>
<td>21.49 (0.60) (^a)</td>
</tr>
<tr>
<td>2</td>
<td>3.08 (2.70) (^b)</td>
<td>4.89 (0.24) (^a)</td>
<td>6.00 (0.27) (^ab)</td>
<td>6.20 (0.33) (^ab)</td>
<td>21.99 (0.85) (^a)</td>
</tr>
<tr>
<td>3</td>
<td>3.42 (0.32) (^ab)</td>
<td>5.33 (0.33) (^a)</td>
<td>6.29 (0.32) (^b)</td>
<td>6.79 (0.48) (^b)</td>
<td>23.81 (1.05) (^a)</td>
</tr>
</tbody>
</table>

Note: Superscripts in common within each facet indicate nonsignificant differences in means.

Table 5.2 shows the pairwise comparisons completed after the 3 classes were identified. There were a total of 3 significant findings between the different classes. Within facet 1 of the PCL-R the significant finding was; class 1 was significantly larger compared to class 2 \((\chi^2 = 3.97, p = .046)\). There were no significant findings between any of the classes on facet 2 of the PCL-R.

Regarding facet 3, class 1 was significantly smaller compared to class 3 \((\chi^2 = 5.61, p = .018)\). Within facet 4, class 1 scored significantly lower compared to class 3 \((\chi^2 = 5.44, p = .021)\). There were no significant differences between any of the classes identified on PCL-R total scores.

Overall, it appeared that class 1 was significantly larger compared to class 2 on the interpersonal facet of psychopathy. In addition, class 1 was significantly lower compared to class 3 on the impulsive and antisocial facets.

**Discussion**

This study utilised LCA to extrapolate various classes of individuals within a forensic psychiatric setting based on their scores on the RC scales of the MMPI-
2. The aim of the study was to determine if the different classes deduced would differ in their presentation of psychopathy features (based on the PCL-R). Fit indices suggested that a 3-class model was the best fitting model for the data. As expected, the 3 classes found differed in a range of ways with regards to their MMPI-2 RC scales. The corresponding MMPI-2 RC scales profiles suggested that the groups would vary regarding their psychopathological and personality presentation. Variations were found within all the RC scales used to perform the analysis. The results were consistent with previous research suggesting that different classes of individuals exist regarding MMPI-2 profiles (Megargee and Bohn 1977, 1979; Sellbom, 2014). The second hypothesis was partially supported; some of the groups differed from other groups in theoretical and logical ways based on their PCL-R facet scores. In this discussion, the classes will be examined and discussed with a specific focus on their PCL-R differences. Following this, the clinical and theoretical implications of the results will be discussed. Lastly, the limitations of the study will be outlined.

**Classes**

Consistent with previous work in the area (Hicks et al., 2004), one of the classes displayed low elevations across all scales. This suggested a lack of overall psychopathology. Within at least two previous studies, these classes appear similar to groups labelled “emotionally stable” (Hicks et al., 2004; Sellbom, 2014). Class 1 was the largest class identified, accounting for over 50 percent of the sample.

Examination of the PCL-R profiles of this class revealed that class 1 scored significantly higher compared to class 2 on the interpersonal facet of
psychopathy, whilst scoring significantly lower compared to class 3 on the impulsive and antisocial facets of psychopathy. There are two possible explanations for these differences. Given the lack of scale elevation compared to the other classes, it is possible that members of class one engage to a greater extent with other people, thus increasing their scores on the interpersonal facet of psychopathy. However, it is also possible that these individuals are more manipulative (one of the items used to measure the interpersonal facet of psychopathy) compared to other groups, and as such are capturing some of the interpersonal facet of psychopathy.

Class 1 appear to have a similar profile to the emotionally stable class identified by both Sellbom (2014) and Hicks et al. (2004). Within the Sellbom (2014) study, the emotionally stable class displayed the highest levels on the fearless dominance measure of psychopathy, cold-heartedness and lowest scores on empathy. The fearless dominance component of the PPI overlaps with the interpersonal facet of psychopathy, as measured by the PCL-R, further strengthening the argument that individuals with this presentation may have more traits of the interpersonal facet of psychopathy. However, inconsistent with the results from the Sellbom study, this class did not show elevations on the affective facet of psychopathy (which would be expected to measure cold-heartedness and a lack of empathy). This suggests that the PCL-R and the PPI are capturing different aspects of psychopathy. The lower scores on the impulsive and antisocial facets of psychopathy may indicate that members of this group are more able to regulate internal processes when compared to some of the other groups.
The composite profiles of individuals assigned to class 2 revealed a moderate overall scale elevation, with a spike on the Antisocial scale, and a secondary spike on the Ideas of Persecution scale. The remainder of the profile was within normal limits, suggesting members of this group are likely presenting with some antisociality and paranoia. This class comprised 31.3% of the sample. Regarding the psychopathy facet scores; class 2 scored significantly lower compared to class 1 on the interpersonal facet of psychopathy. No other significant differences were found.

The profile of class 3 comprised of a spike on the abberent experiences scale, and showed a large overall scale elevation, across all items. Given the high scores on a number of scales it could be argued that this group of individuals lack behavioural controls, and are likely to act somewhat impulsively and aggressively. Furthermore, given that the low positive emotions scale falls within normal limits, this group appears relatively content with their current presentation. Regarding previous research, Class 3 appears similar in profile (low on negative emotions and higher on impulsivity) to a class discovered by Sellbom (2014). This group may represent an aggressive, paranoid and externalising group of individuals. These individuals may be consistent with the secondary psychopathic group that has been discussed previously. Class 3 displayed significantly higher scores on the impulsive and antisocial facet of psychopathy, compared to class 1.

Of interest, it was found that no significant differences existed between any of the groups on the affective facet of psychopathy, nor overall PCL-R scores. The affective facet comprises, what many suggest, the ‘core’ psychopathy features including lack of remorse and lack of empathy. In addition to the results
of Study 1, the lack of significant findings here may suggest that the MMPI-2 is a poor measure of the affective facet of psychopathy.

Implications of these findings to past research

Previous research has suggested that groups of forensic individuals can be meaningfully separated into groups on the basis of their personality style (Megargee, 2001; Sellbom, 2014). It has also been demonstrated that psychopathy is a continuous (Haslam et al.,) heterogeneous (Blackburn, 1998) construct, comprising a number of underlying continuous facets. This suggests that a number of variants of psychopathy will exist, scoring different levels of the facets of the PCL-R. Therefore, this study attempted to determine if natural variations on personality facets, judged by the MMPI-2 RC scales, would relate to different presentations of the clinical construct of psychopathy (as measured by the PCL-R). The results were partially successful. The study did find that a number of latent classes of individuals exist within a forensic psychological setting. This supports a number of previous contentions and clinical implications regarding psychopathy (as measured by the PCL-R) and the MMPI-2.

Psychopathy

The most commonly cited distinction between types of psychopathy is between the primary and secondary psychopathy. Primary psychopathy is proposed to embody most of Cleckley’s (1941) traditional conceptualisation of psychopathy. Alternatively, secondary psychopathy presents with a higher level of anxiety, higher negative emotionality, less social poise and lower levels of self-esteem. Two of the groups in the current study appear consistent with some of the features of the primary/secondary distinction proposed in the literature.
Specifically, class 1 appears to have some consistencies with general definitions of the primary psychopath, while class 3 appears to have some consistencies with secondary psychopathy. It should be noted, however, that no succinct definition of primary or secondary psychopaths exists, as different authors have varied interpretations (Blackburn, 2009). In addition, while class 1 scored higher on the interpersonal facet, there were no significant differences on the affective facet of psychopathy (the facet that more closely resembles primary psychopathy) across groups. This non-significant finding suggests that it may be difficult to differentiate between variants of psychopathy specifically to do with the affective facet based on an individual’s MMPI-2 scores. Conversely, the non-significant finding may mean that the PCL-R is not capturing elements of psychopathy related to fearlessness, and to a lesser extent boldness, as well as other measures of psychopathy.

Overall, the small mean differences within the groups suggests that individuals scoring highly on the PCL-R may present with any personality profiles, or a combination thereof. Therefore, it is suggested that the RC scales of the MMPI-2 are poor measures of the construct of psychopathy. Given that there were no mean differences between the groups on the affective facet of the PCL-R, it appears the RC scales of the MMPI-2 are especially poor measures of this facet.

With regard to the assessment of individuals who may be considered psychopathic, these findings promote the belief that psychopathy is a heterogeneous construct. It is recommended that clinicians routinely administer a personality test alongside a PCL-R. Due to the fact that “pathological lying” is a trait on the PCL-R, it has been argued that individuals high on psychopathy cannot be trusted to complete self-report measures, which has led to the
reluctance of clinicians to employ such measures with individuals who are considered to have psychopathic traits. However, personality self-report measures (such as the MMPI-2) are less concerned about eliciting facts than eliciting beliefs about oneself (Hogan & Nicholson, 1988). Self-reports should therefore be considered a guide to one’s identity.

Consistent with previous research, the implications of these findings highlight that heterogeneity within psychopaths is likely to be useful to clinicians and researchers attempting to understand the link between aggression, violence and psychopathy. Different variations of psychopathy may differ in the amount of violence in which they engage, which may help clinicians to determine the risk for future violence. The subtypes may also differ in their use of violence within institutions. Finally, there may be qualitative differences between the types of violence used by different variants of psychopaths. It has previously been suggested that primary psychopaths may be more likely to engage in instrumental violence, whilst secondary psychopaths may be more likely to engage in reactive violence given their propensity for negative emotionality (Skeem, Johansson, Andershed, Kerr & Louden, 2007). However, this may be an overly simplistic view, given that many acts of violence involve both a reactive and instrumental component (Bushman & Anderson, 2001).

These findings pose questions regarding the use of the PCL-R as the gold standard measure of psychopathy. The PCL-R was originally developed to measure Cleckley’s (1941) conceptualisation of psychopathy. However, within this study the PCL-R was unable to differentiate between any of the groups on the affective facet of psychopathy. Previous research has suggested that the groups differ on levels of empathy and cold-heartedness (utilising the PPI). If we are to
assume that the different presentations do vary in their ability to feel empathy, show remorse and feel negative emotionality in general (which is likely given the profiles), it would suggest that the PCL-R as a tool is not capturing these elements of psychopathy.

Furthermore, Cleckley (1941) suggested that psychopaths would present with an absence of delusions and other thought disorders, whilst some groups clearly exhibited higher levels of thought disorders when compared to the normal population. Therefore, it should be expected that these individuals score lower on the PCL-R affective facet when compared to the more emotionally stable groups. This was not the case, as there were no significant PCL-R score differences between the groups. This finding suggests that PCL-R scores are unable to determine which group is more psychopathic and indicates that the PCL-R does not measure psychopathy as defined by Cleckley.

Finally, the heterogeneity within psychopathy is likely to have clinical implications in regards to treatment. Karpman (1955) initially proposed that primary and secondary psychopaths would differ in their response to treatment. It is possible that psychopaths differing personality and clinical factors would affect not only their amenability to treatment, but also their responsiveness to the available treatment methods. Skeem et al. (2007) suggested that secondary psychopaths are more likely to form a therapeutic alliance and may have problems that are more amenable to treatment than primary psychopaths. It has been argued that secondary psychopaths could be helped with a range of problems using a range of different treatment modalities (Wong & Hare, 2005). These problems include symptoms of Axis I anxiety and trauma-related disorders as well as problems with hostility and anger control. Secondary psychopaths are
more prone to emotional dysregulation, problems with coping and low self-efficacy when compared to primary psychopaths. The treatment approach with primary psychopaths is suggested to require a structured approach that focuses on cognitions precipitating violence and providing constructive ways to meet the individuals’ needs (Blackburn, 2009). It is likely that previous research into the treatment outcomes of psychopaths has been hindered because it has treated psychopaths as a homogenous group, when it is becoming clearer that this is not the case. This has likely contributed to some of the inconsistent findings within the literature regarding the treatability of psychopaths.

In addition to clinical implications, the results from the current study (and other research demonstrating heterogeneity within psychopathy) may have implications to policy makers and correctional systems in general. It is proposed that primary and secondary psychopaths are inherently different in regards to their treatability. As a result, it is likely that primary psychopaths will be at an increased risk of re-offending and as such require a higher degree of external monitoring compared to other offenders.

**Limitations**

The first limitation relates to the size of the sample that was used. Analysis suggested that an 8 class solution would have been more robust, however this was unable to be used due to the small number of cases assigned to some of the classes. It is possible that even greater heterogeneity exists within this population, which was unable to be captured due to limited statistical power.

Another limitation concerns the heterogeneity within the sample. Individuals in the hospital from which the sample was taken were admitted for
different reasons, which were related to a variety of psychiatric concerns or difficulty controlling sexual desires. Unfortunately, this study was unable to differentiate between these groups, as the classes may have been representative of different presentations. The findings here, while important, only show a preliminary step in the identification of variants of psychopathy. This process still needs to be subjected to construct validation, which includes the correlation between the different subtypes and external measures such as behaviour, treatment engagement, interpersonal ratings, or laboratory experiments determining biological differences (Hogan & Nicholson, 1988).

In conclusion, the current findings strengthen the argument that psychopathy is not a homogenous construct. The findings suggest that a number of different personality profiles can score highly on measures of psychopathy. Given these findings it is unlikely that MMPI-2 profiles can be used to determine different variants of psychopathy. The prospect that subtypes of psychopaths exist has far-reaching legal, ethical, clinical and research implications. The findings from Study 2 further highlight the importance of considering the varying facets of psychopathy, as opposed to considering psychopathy as a single construct. The final study (Study 3) further explored the relationship between the varying facets of psychopathy and the MMPI-2, using a widely used classification system, the Megargee classification system (Megargee & Bohn, 1977, 1979).
CHAPTER 6: STUDY 3: Psychopathy and the Megargee system for classifying criminal offenders

The current prison population in Victoria, Australia is expanding. Between 2007 and 2012 the prison population has risen from 4100 to 5024 (Victorian Auditor-General, 2012). This trend is consistent with global research, as the number of people currently incarcerated in the United States exceeding 2.3 million (U.S. Department of Justice, 2011). Limited resources in conjunction with growing prison populations require ongoing development of more informed, relevant, time-saving and effective classification systems (Gacono, 2000). One of the goals of any classification system is to determine a subset of offenders who commit a disproportionate number of crimes, and it has been suggested that psychopaths fall into this category (Hare, 2003). The classification system with the strongest research base regarding offenders is the Megargee classification system (Megargee & Bohn, 1977, 1979). However, research is yet to evaluate the relationship between the subtypes proposed by Megargee and psychopathy. This chapter will describe the emerging conceptualization of the construct of psychopathy and how it may relate to the Megargee classification system. Furthermore, the use of the classification system within a forensic psychiatric setting will be discussed.

Psychopathy has been extensively discussed in previous chapters and therefore will only briefly be discussed here. The main contention relevant to the current study is whether psychopathy can be detected using self-report measures. This has been debated in the literature, but more recent measures of psychopathy,
such as the PPI, suggest that it is possible to identify psychopathy based on self-report measures (Lilienfeld & Andrews, 1996).

The Megargee system

The Megargee system for classifying criminal offenders was originally developed by Megargee and Bohn (1977, 1979). It was designed to be used as an objective measure within the criminal justice system. This system is used to classify criminal offenders into groups based on their MMPI-2 profiles. The Megargee system has been widely researched within the offender population (Anderson & Holcombe, 1983; Booth & Howell, 1980; Megargee et al., 2001; Megargee & Bohn, 1977; Megargee & Dorhout, 1977). While the original system was developed based on the MMPI, the system was updated to coincide with scores on the MMPI-2 (Megargee et al., 2001). Research indicates that the clusters proposed by Megargee are reliable and that individuals classified within the different groups are shown to differ across a range of external measures (Megargee et al., 2001). It should be noted that these subtypes have yet to be replicated by other authors.

The ten subtypes, labeled with neutral, alphabetical names, can be classified into three different levels, signifying varying levels of deviation of the offender’s profile from the mean. The lowest level is comprised of four groups: Item, Easy, Able and Baker. The middle level is comprised of groups George, Delta and Jupiter. Finally, the highest level is made up of groups Foxtrot, Charlie and How. Table 5.1 summarizes the ten different sub-types and the general presentation of offenders classified into each type.
### Table 6.1

*A brief summary of the subtypes, MMPI-2 profile and general presentation*

<table>
<thead>
<tr>
<th>Group</th>
<th>MMPI-2 Profile</th>
<th>Presentation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Item</td>
<td>No scale elevated</td>
<td>Absence of psychopathology</td>
</tr>
<tr>
<td>Easy</td>
<td>Modest elevations on 3, 1 and 4</td>
<td>Repressive tendencies- well adjusted</td>
</tr>
<tr>
<td>Able</td>
<td>Highest scores on scales 4 and 9</td>
<td>Extroverted, outgoing, ambitious, dominant</td>
</tr>
<tr>
<td>Baker</td>
<td>Elevations on scales 0,4 and 6 secondary elevations on 2</td>
<td>High alcohol abuse</td>
</tr>
<tr>
<td>George</td>
<td>Elevations on scales four and 2</td>
<td>Controlled/ conforming/ quiet</td>
</tr>
<tr>
<td>Delta</td>
<td>Scale 4 highest</td>
<td>Intrinsically criminal</td>
</tr>
<tr>
<td>Jupiter</td>
<td>Elevations on scales 6,8,9, and 7</td>
<td>Anxious moody demanding isolated vulnerable</td>
</tr>
<tr>
<td>Foxtrot</td>
<td>Prominent elevations on scales 9, 4 and 8 (9 generally the highest)</td>
<td>Socially deviant / egocentric / high self-esteem / deny anxiety</td>
</tr>
<tr>
<td>Charlie</td>
<td>Elevations on scales 4,6,8</td>
<td>Maladjustment and high psychopathology</td>
</tr>
<tr>
<td>How</td>
<td>Large overall elevation</td>
<td>Depressed, angry, anxious, tense (Negative emotionality)</td>
</tr>
</tbody>
</table>
It is beyond the scope of this chapter to detail all previous research on the Megargee system, therefore this chapter will focus on the subgroups which have a theoretical and conceptual link with the construct of psychopathy.

*Megargee system within in a forensic psychiatric setting*

Whilst the Megargee classification system was originally developed to be used in a purely forensic setting, some research has supported its use within a forensic psychiatric setting (Hutton, Miner & Langfeldt, 1993). It has also been found that the percentage of individuals assigned to each group differs within the forensic psychiatric setting. The percentages reported in Table 6.2 are from a psychiatric forensic sample researched by Hutton et al. (1993) compared to those from a purely forensic sample (Megargee & Dorhout, 1977).

One of the most consistent findings within the psychiatric forensic setting has been that a higher proportion of individuals are assigned to Group How compared to a purely forensic population (Hutton et al., 2003; Wrobel, Wrobel & McIntosh, 1988). This finding is not surprising given the method used to assign individuals to Group How and the nature of the forensic psychiatric population. Group How is characterised by an overall large T-score elevation (See Appendix D). Therefore, the assumption is that members of this group are less psychologically stable than the members of other groups. Given the nature of the clientele within a forensic psychiatric setting compared to a purely forensic setting, the higher proportion of individuals assigned to Group How could be expected. Overall, the research suggests that the types remain valid and reliable within a forensic psychiatric setting.
Table 6.2

*Distributions of Megargee types in a forensic psychiatric and a forensic sample*

<table>
<thead>
<tr>
<th>Group</th>
<th>Percentage of sample assigned</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Forensic Psychiatric Hospital</td>
</tr>
<tr>
<td>Able</td>
<td>9.66</td>
</tr>
<tr>
<td>Baker</td>
<td>2.81</td>
</tr>
<tr>
<td>Charlie</td>
<td>11.07</td>
</tr>
<tr>
<td>Delta</td>
<td>13.04</td>
</tr>
<tr>
<td>Easy</td>
<td>5.91</td>
</tr>
<tr>
<td>Foxtrot</td>
<td>7.22</td>
</tr>
<tr>
<td>George</td>
<td>10.04</td>
</tr>
<tr>
<td>How</td>
<td>19.32</td>
</tr>
<tr>
<td>Item</td>
<td>15.48</td>
</tr>
<tr>
<td>Jupiter</td>
<td>0.75</td>
</tr>
<tr>
<td>Unclassified</td>
<td>4.69</td>
</tr>
<tr>
<td>Total</td>
<td>100</td>
</tr>
<tr>
<td>Sample size</td>
<td>1066</td>
</tr>
</tbody>
</table>

Despite the large amount of research conducted on the different groups, research is yet to examine the relationship between the groups and the varying
underlying facets of psychopathy. There are a number of reasons why it is useful
to consider the concept of psychopathy, when classifying individuals within a
purely forensic, or forensic psychiatric setting. First, it has been shown that
individuals scoring highly on psychopathy measures are at an increased risk of
reoffending compared to individuals who score low on psychopathy measures
(Hare & Neumann, 2008). Second, it has been suggested that individuals higher
on measures of psychopathy require different treatment dosages, and may be less
responsive to traditional treatment approaches (Ogloff et al., 1990). Third,
psychopathy has also been found to be associated with an increased risk of
institutional misconduct and violence (Skeem, Polaschek, Patrick & Lilienfeld,
2011). Finally, it has been suggested that individuals high on psychopathy may
offend for different reasons compared to individuals who core low on
psychopathy measures, that is, their etiological pathways towards offending are
somewhat different (Lykken, 1995). From the literature, there are three groups
that logically and theoretically relate to the underlying facets of psychopathy.
These groups are Group Delta, Group Able, Group How, and Group Foxtrot.
These three groups will be described in more detail below.

**Group Delta**

Group Delta is characterised by a spike on the Psychopathic deviate scale
(scale 4) of the MMPI-2, which was originally designed to measure the
psychopathic personality (Hathaway & McKinley, 1943). Megargee et al. (2001)
suggested that this group is likely to include the majority of psychopaths. Group
Delta has been defined as the most ‘intrinsically criminal’ group (Hawk, 1983),
scoring highly compared to other groups on levels of juvenile convictions.
Furthermore, they were more likely than other groups to have a prior criminal
record before entering prison (Megargee & Dohrout, 1977). Members of Group Delta have also been described as impulsive and sensation seeking (Megargee et al., 2001). Group Delta individuals present with a slightly above average IQ (Anderson & Holcombe, 1983). Individuals in Group Delta typically reported the poorest results in regards to family cohesiveness (Megargee & Bohn, 1977, 1979).

In addition, individuals in Group Delta scored high on dominance and low on passivity within interpersonal relationships (Megargee & Bohn, 1977, 1979). Consistent with these findings, members of Group Delta will present as a manipulative predatory group. Individuals classified to Group Delta have been described as aggressive, hedonistic, impulsive, self-centred, demanding and determined to get their way. Furthermore, members of Group Delta generally see themselves in a favourable light, while psychologists may view them as selfish or irresponsible (Megargee et al., 2001). Members of Group Delta had the most serious criminal histories, and were more likely than most of the other groups to re-offend (Booth & Howell, 1980). Psychologists tend to assess members of Group Delta as outgoing and free from anxiety (Megargee et al., 2001).

Hutton et al. (1993) suggested that Group Delta members who presented within a psychiatric forensic setting contained a larger number of married individuals and had the tendency to have intermittent employment. Individuals in this group showed great criminal versatility and were most likely convicted of rape, theft and drug violations. Furthermore, they tended to have a higher number of juvenile incarcerations (Hutton et al., 1993). In addition, Group Delta displayed the highest number of personality-disordered offenders. Members of Group Delta were more likely to have problems on release and to deny their offending. Finally,
members of Group Delta were most likely to enter the hospital due to anti-social behavior (Hutton et al., 1993).

The previous research suggests that many of the attributes of Group Delta may be consistent with aspects of psychopathy. Specifically, these attributes include a manipulative interpersonal style, a heightened sense of self, above average intelligence, a higher number of juvenile convictions, impulsiveness and sensation seeking. In contrast, members of Group Delta experience moderate levels of anxiety. This can be related back to the concept of primary and secondary psychopathy. As discussed previously, it is suggested that primary psychopaths present with an absence of anxiety, whilst secondary psychopaths may present with moderate levels of anxiety. Thus, this group may encapsulate one aspect of the construct of psychopathy, but not the whole construct. Based on the previous research and descriptions of individuals meeting the criteria for this group, it is possible that this group is made up of individuals high on the behavioural facets of psychopathy.

Group Able

Members of Group Able are characterised by moderate elevations on the Psychopathic Deviate (scale four) and Hypomania (scale nine) scales. This group of individuals tends to present as more outgoing and extroverted than the other groups and are more likely to respond with aggression (Megargee et al., 2001). Members of this group scored the highest on measures of dominance, which highlights that they are a group of individuals who are manipulative in social situations (Megargee & Bohn, 1977). Research suggests that this group adapts to new environments more easily than other groups as a result of strong
interpersonal skills and forcefulness, or a disregard for others (Megargee et al., 2001). In addition, further studies indicate that individuals in this group have high self-esteem and are self-centered. They have been described as more likely to seek attention from others and to manipulate others (Megargee & Bohn, 1977).

Research findings are mixed regarding the number of arrests or prior incarcerations of individuals who belong to Group Able. Some studies have suggested that these individuals typically have a high number of prior arrests and incarcerations (Megargee & Bohn, 1977), whilst other studies suggest that they have an average or below average number of arrests or re-arrests (Booth & Howell, 1980). Members of this group have high substance use histories and typically present with anti-social tendencies (Megargee et al., 2001).

The previous research described has been conducted on Group Able within a purely forensic setting. Research conducted within a forensic psychiatric setting suggests that Group Able presented with the highest level of education out of the groups. Further, it was shown that members of Group Able were the most likely to be convicted of assault with a deadly weapon (Hutton et al., 2003). Overall, this sub-type appears to encapsulate the psychopathy facet related to an arrogant interpersonal style. Given the relationship between impulsivity and problematic substance use (Acton, 2002), as members of this group present with higher levels of substance use, it is possible that members of this group will score highly on the impulsive and antisocial facets of psychopathy, evidenced by problematic substance use and high levels of anti-social tendencies.
Group How

Group How has been defined as a group consisting of “poorly functioning psychopaths” (Hawk, 1983, p. 118). They have the most elevated and deviant MMPI-2 profile of any of the ten sub-groups. Members of Group How have been classified as socially inept (Megargee et al., 2001). They generally come from families with low socio-economic status (Megargee & Bohn, 1977) and are likely to have poor social skills and present as withdrawn. They also present with a lot of psychiatric concerns, such as high rates of anxiety, depression, difficulty concentrating, disturbed thought, hallucinations, obsessional behaviours, somatic complaints and higher rates of suicidal ideation (Megargee et al., 2001). Members of Group How have also been described as individualistic, unfriendly, hostile and self-centred and generally present as alienated from others. They are uncertain, unambitious, hostile and unstable, and have low self-esteem (Megargee & Bohn, 1977).

Members of this group do not typically have an extensive criminal history, as they are more likely to have committed a serious and violent crime. Research into members of Group How within a forensic psychiatric setting suggest that they are the least likely to be employed out of all of the groups. Further, it has been found that their primary offence is likely to be robbery or theft (Hawk, 1983). Of all the groups, members of Group How were most likely to have been committed to an institution as prisoners with major mental disorders and they had the highest incidence of diagnosis of a psychotic disorder.

Overall, research suggests that members of Group How have poor social skills, are psychologically unwell and tend to respond impulsively to situations.
Therefore, it is likely that this group of individuals will present with low levels of the interpersonal facet of psychopathy, whilst having higher levels of the impulsive behavioural facet of psychopathy.

*Group Foxtrot*

Group Foxtrot is one of the more uncommon MMIP-2 types, with research suggesting that only between 3 and 7% of the forensic sample was assigned to this group (Megargee et al., 2001). Despite this, a number of descriptive personality attributes used to describe members of Group Foxtrot theoretically relate to the construct of psychopathy. Specifically, members of Group Foxtrot have been described as dominant, manipulative, impulsive and irresponsible. Furthermore it has been suggested that members of the group present with a lack of morals (Megargee et al., 2001). Given this description, members of Group Foxtrot may present with higher levels of overall psychopathy.

The previous section outlined the research related to the Megargee subtypes. Table 6.3 summarizes the research, and looks at theoretical links between previous research and potential links to the construct of psychopathy.
Table 6.3

The characteristics of each group and the theoretical relationship with facets of psychopathy.

<table>
<thead>
<tr>
<th>Group</th>
<th>Characteristics</th>
<th>Psychopathy facet</th>
</tr>
</thead>
<tbody>
<tr>
<td>Delta</td>
<td>Manipulative interpersonal style</td>
<td>Arrogant and deceitful</td>
</tr>
<tr>
<td></td>
<td>Sensation seeking</td>
<td>Impersonal style</td>
</tr>
<tr>
<td></td>
<td>Impulsive</td>
<td>Impulsive and irresponsible</td>
</tr>
<tr>
<td></td>
<td>Grandiose sense of self-worth</td>
<td>Behavioural style</td>
</tr>
<tr>
<td>Able</td>
<td>Extroverted</td>
<td>Arrogant and deceitful</td>
</tr>
<tr>
<td></td>
<td>Dominant</td>
<td>Impersonal style</td>
</tr>
<tr>
<td></td>
<td>Manipulative</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Impulsive</td>
<td>Impulsive and irresponsible</td>
</tr>
<tr>
<td></td>
<td>Antisocial tendencies</td>
<td>Behavioural style</td>
</tr>
<tr>
<td>How</td>
<td>Impulsive</td>
<td>Impulsive and irresponsible</td>
</tr>
<tr>
<td></td>
<td>Lack of concern for others</td>
<td>Behavioural style</td>
</tr>
<tr>
<td>Foxtrot</td>
<td>Dominant</td>
<td>Overall psychopathy</td>
</tr>
<tr>
<td></td>
<td>Assertive</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Poor criminal history</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Lack of morals</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Manipulative</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Impulsive</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Irresponsible</td>
<td></td>
</tr>
<tr>
<td></td>
<td>High self-esteem</td>
<td></td>
</tr>
</tbody>
</table>
Scoring profiles

The following section will briefly describe how individuals are classified into the four relevant groups. For a full list of rules used to categorise individuals please see Appendix D.

Group How is characterised by a large overall scale elevation. Specifically, the highest scale needs to be \( T > 71 \). The second highest scale, needs to have \( T > 67 \), and at least 5 clinical scales need to be elevated above \( T = 59 \). Additionally, individuals are more likely to fit this category if their largest scale is \( T > 80 \), and if they have 3 clinical scales elevated above \( T > 69 \). Essentially, this means that individuals with a number of elevated scales, and a high overall elevation will meet the inclusion criteria for this scale. This suggests that these individuals are likely to present with a number of clinical issues and concerns.

Members of Group Delta are classified by a spike on scale 4 of the MMPI-2. Specifically, scale 4 needs to have \( T > 61 \), and needs to be at least 4 \( T \) points higher than scales 1, 2, 3, 7, 8 and 9. Though, the more elevated scale 4 is and the degree to which it is higher than other scales is taken in to consideration. Essentially, individuals meeting the inclusion criteria for group delta have an elevated scale 4, which is larger than any other scale. This suggests that these individuals will most closely resemble the original group that scale 4 was developed upon, and as a result will most likely be most intrinsically criminal group.

Group Able is characterised by spikes on scales 4 and 9. Specifically, either scale 4 or 9 need to be the highest scale, and both scales 4 and 9 need to be in the top 4 scales. Furthermore, this group is for individuals whose overall
profiles are not largely elevated elevations, as a scale $T > 86$ would exclude someone from this scale. This group likely resembles the classic 4-9 codetype of the MMPI-2.

Individuals are placed into Group Foxtrot if three of the top four scales are clinical scales 4, 8 and 9. In addition, scales 1, 2, 3, 7 and 0 cannot be elevated above $T = 76$. Essentially, individuals classified in this group show elevations on scales 4, 8 and 9 respectively.

*Interpreting profiles*

Clinicians using the Megargee classification system follow a set of rules to classify offenders on the basis of their MMPI-2 profile. The basic procedure for classifying cases is to first perform a number of sums, based on the T-scores of the client. In other words, the clinician needs to calculate the sum of scales 1, 2 and 3. Following this, the clinician must go through the varying types to determine if the profile meets all the primary rules for that subtype (e.g., “highest scale <86T”). If a case meets all primary rules for only one group, it is automatically assigned to that group. If a profile satisfies the primary rules for more than one group, tie breaking rules, followed by the secondary rules can be utilized. For a full list of the rules used, refer to Appendix D (Megargee et al., 2001).

*Research utilising an MMPI based classification system and psychopathy*

More recently, Sellbom (2014) has utilised factor mixture modeling (FFM) to identify varying subgroups based on their MMPI-2-RF profile interpretation. Whilst the MMPI-2-RF has a distinct different structure compared
to the MMPI-2, it is worth noting that the study showed that various groups of individuals identified by their MMPI-2-RF profiles can differ across underlying psychopathy facets, which the current study is trying to replicate, utilising an established classification system, the Megargree system (Megargee & Bohn, 1977; 1979).

*The current study*

The aim of Study 3 was to expand the literature examining the relationship between MMPI-2 profiles and PCL-R (psychopathy) scores. More specifically, this study examined the relationship between Megargee subtypes and psychopathy. The study also investigated whether the Megargee system for classifying criminal offenders reliably differentiated between individuals who score highly on different underlying facets of psychopathy. The study focused on four groups specifically, due to their rational relationship with the facets of psychopathy: Groups Delta, Able, Foxtrot and How. Group Foxtrot was not included in the hypothesis or analysis as there were only four cases identified as belonging to that group.

It was hypothesised that members of Group Able should present with higher levels of the arrogant and deceitful interpersonal style, and the impulsive and irresponsible behavioural style facets of psychopathy when compared to the other groups. It was hypothesised that members of Group Delta should display higher levels of the antisocial and lifestyle facets of psychopathy when compared to the other groups. Finally, it was hypothesised that members of Group How should display lower levels of the interpersonal facet of psychopathy and higher
levels of the impulsive and behavioural style facet of psychopathy compared to the other groups.

Method

Participants

The participants were from the same sample used in both Study 1 and Study 2.

Initially included in the data set were 272 cases. From those cases, 4 were removed on the basis of missing MMPI-2 data. Subsequently, 11 cases were not included in the analysis on the basis of an unclassifiable profile and a further 12 cases were excluded due to multiply classifiable profiles. Of the remaining 245 cases, the age ranged from 34 to 98 years, with an average age of 54.9 years ($SD = 9.26$). All participants included in the analysis were male. In regards to race, 60% were white, 22% were African American and 9% were Hispanic.

Apparatus

The specific assessment tools used in this study were the MMPI-2 and the PCL-R. As these tools were described in Study 1 and Study 2, they will not be repeated here.

Procedure

After obtaining ethics approval from Deakin University Human Research Ethics Committee, the data set was obtained from the ASH. All data were de-identified before the author had access to it, preventing any ethical issues regarding the use of the data. Participants were assigned to a subgroup based on
the Megargee et al. (2001) rules for classifying offenders (see Appendix D).

Further rules for classifying multiple-classified profiles can be found in Appendix E. Furthermore, to assess for inter-rater reliability, 20% of the sample (56 cases) were classified by an additional researcher. Inter-rater reliability was excellent ($kappa = .96$). Data were screened and analysed and the groups compared using one way ANOVAs and independent sample t-tests in SPSS 21.0.

**Results**

There were 268 cases assigned to each of subgroups. The number of cases assigned to each group is shown in Table 6.4 below.
Table 6.4

*The ten different classification groups defined by Megargee and the number of cases which were assigned to each group.*

<table>
<thead>
<tr>
<th>Group</th>
<th>Number</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Jupiter</td>
<td>9</td>
<td>3.4</td>
</tr>
<tr>
<td>Able</td>
<td>14</td>
<td>5.2</td>
</tr>
<tr>
<td>Baker</td>
<td>6</td>
<td>2.2</td>
</tr>
<tr>
<td>Charlie</td>
<td>28</td>
<td>10.4</td>
</tr>
<tr>
<td>Delta</td>
<td>42</td>
<td>15.7</td>
</tr>
<tr>
<td>Easy</td>
<td>16</td>
<td>6.0</td>
</tr>
<tr>
<td>Foxtrot</td>
<td>4</td>
<td>1.5</td>
</tr>
<tr>
<td>George</td>
<td>21</td>
<td>7.8</td>
</tr>
<tr>
<td>How</td>
<td>67</td>
<td>25.0</td>
</tr>
<tr>
<td>Item</td>
<td>38</td>
<td>14.2</td>
</tr>
<tr>
<td>Unclassified</td>
<td>11</td>
<td>4.1</td>
</tr>
<tr>
<td>Multiple</td>
<td>12</td>
<td>4.5</td>
</tr>
<tr>
<td>Total</td>
<td>268</td>
<td>100.0</td>
</tr>
</tbody>
</table>

Group How was the largest group, followed by Groups Delta and Item. Groups Foxtrot and Baker had the fewest number of cases assigned. The 11 cases
that were unclassifiable and the 12 cases that were multiply classified were removed from further analysis, leaving 245 cases.

To determine the distribution of individuals classified as highly psychopathic among groups, the PCL-R scores were examined. A cut-off score of 30 was utilized consistent with the scoring manual of Hare (2003). To determine if the groups differed significantly in their total PCL-R mean scores, these scores were compared between groups. Table 6.5 shows the number of individuals scoring above 30 in each group, the mean PCL-R scores for each group, and the percentage of members assigned to each group. The reason all groups were included in this analysis was to determine if the three groups theoretically identified as relating to psychopathy would have higher PCL-R scores compared to the other groups.
Table 6.5

*Mean PCL-R scores, number and percentage of individuals scoring 30 or more on the PCL-R assigned to the ten different Megargee subgroups.*

<table>
<thead>
<tr>
<th>Group</th>
<th>SD</th>
<th>PCL-R ≥ 30</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Jupiter</td>
<td>4.41</td>
<td>0</td>
<td>0.00</td>
</tr>
<tr>
<td>Able</td>
<td>7.82</td>
<td>4</td>
<td>28.57</td>
</tr>
<tr>
<td>Baker</td>
<td>3.17</td>
<td>0</td>
<td>0.00</td>
</tr>
<tr>
<td>Charlie</td>
<td>6.71</td>
<td>5</td>
<td>17.86</td>
</tr>
<tr>
<td>Delta</td>
<td>5.79</td>
<td>10</td>
<td>23.80</td>
</tr>
<tr>
<td>Easy</td>
<td>5.29</td>
<td>1</td>
<td>6.25</td>
</tr>
<tr>
<td>Foxtrot</td>
<td>10.50</td>
<td>1</td>
<td>25.00</td>
</tr>
<tr>
<td>George</td>
<td>6.44</td>
<td>5</td>
<td>23.80</td>
</tr>
<tr>
<td>How</td>
<td>6.90</td>
<td>10</td>
<td>14.93</td>
</tr>
<tr>
<td>Item</td>
<td>7.07</td>
<td>4</td>
<td>10.53</td>
</tr>
<tr>
<td>Total</td>
<td>6.63</td>
<td>40</td>
<td>16.33</td>
</tr>
</tbody>
</table>

Group Foxtrot had the highest mean PCL-R scores followed by Group Delta. To test for differences between groups, a one-way ANOVA was conducted. There was no significant difference in total PCL-R scores between groups, $F(9, 234) = 1.15, p > .05.$
To determine whether membership to certain Megargee groups was related to higher PCL-R scores or varying psychopathy facets, a series of planned comparisons was conducted. The planned comparisons were conducted based on theoretical means, examining the three groups that theoretically relate to the construct of psychopathy based on previous research. The three groups that were compared against the remainder were Groups Delta, Able and How. It has been suggested that when conducting multiple comparisons, an adjusted alpha should be incorporated to control for the family-wise error rate (Dunn, 1961). However, given the exploratory nature of this study, the less stringent alpha of .05 was used, despite the number of comparisons conducted (Bender & Lange, 1999; Bender & Lange, 2001).

The planned comparisons were conducted comparing members of the three identified groups to the remainder of the sample on PCL-R scores. The reason the remainder of the sample was included in the analysis, was to determine if individual membership to any of the three groups identified offered information regarding the assessment of psychopathy compared to the remainder of the sample. Effectively, attempting to determine whether membership to each of the identified groups offers information regarding the assessment of psychopathy.

The first planned comparison revealed that Group Delta had significantly higher PCL-R scores ($M = 24.08$, $SD = 5.79$) compared to individuals in all other groups ($M = 21.78$, $SD = 6.74$), $t(242) = 2.06$, $p<.05$, $d = 0.37$. To determine whether the differences in PCL-R scores between Group Delta and the other groups could be further broken down, members of Group Delta were compared to the rest of the sample using the two factors and four facets of psychopathy. The
means for these comparisons are shown in Table 6.6 below, along with the results from t-tests comparing Group Delta with the other groups.

Table 6.6

*Mean scores on the three factors for Group Delta and the other groups*

<table>
<thead>
<tr>
<th>Factor</th>
<th>Group Delta</th>
<th>Other groups</th>
<th>Analysis</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Mean</td>
<td>SD</td>
<td>Mean</td>
</tr>
<tr>
<td>Factor 1</td>
<td>9.17</td>
<td>3.57</td>
<td>8.32</td>
</tr>
<tr>
<td>Factor 2</td>
<td>11.50</td>
<td>2.79</td>
<td>10.21</td>
</tr>
<tr>
<td>Arrogant and deceitful</td>
<td>4.17</td>
<td>2.37</td>
<td>3.42</td>
</tr>
<tr>
<td>Interpersonal style</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Deficient affective experience</td>
<td>5.00</td>
<td>1.98</td>
<td>4.96</td>
</tr>
<tr>
<td>Impulsive and irresponsible</td>
<td>5.95</td>
<td>1.93</td>
<td>5.72</td>
</tr>
<tr>
<td>Antisocial facet</td>
<td>6.83</td>
<td>2.18</td>
<td>5.76</td>
</tr>
</tbody>
</table>

The six planned comparisons revealed that two of the facets, and one of the factors, displayed a significant difference between Group Delta and the other groups. Scores on the interpersonal ($d = 0.33$) and the antisocial ($d = 0.44$) facets were significantly higher for members of Group Delta. Furthermore, members of Group Delta scored significantly higher on factor 2 of the PCL-R compared to the remainder of the sample ($d = 0.39$).
To examine the second hypothesis (that members of Group Able would present with higher levels of the interpersonal facet of psychopathy as measured by the PCL-R and compared to the remainder of the sample) further planned comparisons were conducted. The results are outlined in Table 6.7 below.

Table 6.7

*Mean scores on the four factors, two facets and total PCL-R scores for Group Able and the other groups.*

<table>
<thead>
<tr>
<th>Factor</th>
<th>Group Able</th>
<th>Other groups</th>
<th>Analysis</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Mean</td>
<td>SD</td>
<td>Mean</td>
</tr>
<tr>
<td>Total PCL-R score</td>
<td>23.39</td>
<td>7.82</td>
<td>22.10</td>
</tr>
<tr>
<td>Factor 1</td>
<td>9.07</td>
<td>4.51</td>
<td>8.42</td>
</tr>
<tr>
<td>Factor 2</td>
<td>9.00</td>
<td>4.39</td>
<td>10.52</td>
</tr>
<tr>
<td>Arrogant and deceitful</td>
<td>4.43</td>
<td>2.59</td>
<td>3.50</td>
</tr>
<tr>
<td>interpersonal style</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Deficient affective experience</td>
<td>5.36</td>
<td>1.45</td>
<td>4.94</td>
</tr>
<tr>
<td>Impulsive and irresponsible</td>
<td>5.39</td>
<td>2.42</td>
<td>5.78</td>
</tr>
<tr>
<td>behavioural style</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Antisocial facet</td>
<td>5.33</td>
<td>2.30</td>
<td>5.97</td>
</tr>
</tbody>
</table>

The planned comparisons showed that none of the differences were significant, suggesting that individuals in Group Able are no more likely than the remainder of the sample to score highly on any of the two factors, or four facets of psychopathy.
Finally, Group How was compared to the remainder of the sample. Table 6.8 below shows the results of the planned comparisons between Group How and the remainder of the sample.

Table 6.8

*Mean scores, t-values and significance levels for the four facets, two factors and total PCL-R scores for Group How and the other groups.*

<table>
<thead>
<tr>
<th>Factor</th>
<th>Group How</th>
<th>Other groups</th>
<th>Analysis</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean SD</td>
<td></td>
<td>21.68 6.90</td>
<td>22.36 6.54</td>
</tr>
<tr>
<td>Total PCL-R score</td>
<td>7.99 3.35</td>
<td>10.60 3.70</td>
<td>10.37 3.62</td>
</tr>
<tr>
<td>Factor 1</td>
<td>5.03 1.81</td>
<td>5.93 2.02</td>
<td>5.70 2.11</td>
</tr>
<tr>
<td>Deficient affective experience</td>
<td>3.00 2.16</td>
<td>3.76 2.22</td>
<td>3.76 2.22</td>
</tr>
<tr>
<td>Impulsive and irresponsible</td>
<td>5.88 2.81</td>
<td>5.96 2.53</td>
<td>5.96 2.53</td>
</tr>
<tr>
<td>Antisocial facet</td>
<td></td>
<td>22.36 6.54</td>
<td>22.36 6.54</td>
</tr>
<tr>
<td>Analysis</td>
<td></td>
<td>0.48</td>
<td>0.48</td>
</tr>
</tbody>
</table>

The only significant difference between Group How and the other groups was found on the arrogant and deceitful interpersonal style facet of psychopathy ($d = .035$). This result indicates that individuals in Group How scored lower on the arrogant and deceitful interpersonal style facet of psychopathy when compared to the rest of the sample. This result suggests that due to their symptomatic presentation, they lack the social poise traditionally associated with psychopathy.
Overall, the results suggest that the subtypes of offenders defined by Megargee and Bohn (1977, 1979) do not appear to strongly differentiate between individuals high or low on the various underlying facets of psychopathy defined by Cooke and Michie (2001). Groups How, Able and Delta were examined in detail, with a specific focus on their relationship to varying psychopathy. Group Delta showed a higher PCL-R score when compared to the rest of the sample, indicating that members of this group likely have more aspects of psychopathy than the rest of the sample. This finding will be further discussed in the overall conclusion section of this thesis.

**Discussion**

The current study investigated the relationship between the Megargee and Bohn (1977, 1979) subtypes of offenders and psychopathy. The aim of the study was to determine whether different subgroups of offenders, as defined by the Megargee system, would be characterised by higher scores on psychopathy measures. The hypotheses were partially supported by the results. The first hypothesis was not supported. Members of Group Able did not differ on psychopathy scores compared to the remainder of the sample on either PCL-R total scores, nor on the different facets of psychopathy. In contrast, the second hypothesis was partially supported. Members of Group Delta displayed significantly higher overall psychopathy scores compared to the remainder of the sample. Furthermore, members of Group Delta displayed significantly higher levels of Factor 2 and the antisocial facet of psychopathy. However, inconsistent with the hypothesis, facet three was not significantly higher for members of Group Delta.
The third hypothesis was partially supported. As predicted, members of Group How were characterised by significantly lower scores on the interpersonal facet of psychopathy when compared to the remainder of the sample. In contrast, however, members of Group Delta did not display higher levels of the behavioural facet of psychopathy compared to the remainder of the sample. Overall the results suggest that the Megargee classification system is a poor predictor of psychopathy, and as such cannot be used to screen for potential psychopathy. However, a number of relationships between the subgroups and varying facets of psychopathy may provide useful information for clinicians working within this field.

**Relationship between group membership and psychopathy**

Individuals who were classified as Group Delta were characterised by higher overall PCL-R scores than individuals classified to other groups. These results indicate that membership in Group Delta is related to overall psychopathy. This finding is consistent with Megargee et al.’s (2001) proposal, that this group is likely to be the most psychopathic subgroup of offenders. In regards to the MMPI-2 profile of individuals who were in Group Delta, their profile was characterised by a spike on the Psychopathic deviate scale (scale 4). The Psychopathic deviate clinical scale was originally designed in the MMPI to measure a psychopathic personality (Hathaway & Mckinley, 1943). However, this scale has shown to have a weak or negligible relationship to overall psychopathy (Study 1). One explanation for this lack of relationship concerns the heterogeneity within the Psychopathic deviate clinical scale of the MMPI-2.
In addition to overall psychopathy scores, members of Group Delta presented with significantly higher scores on the interpersonal and antisocial facets of psychopathy compared to members of the other groups. The interpersonal facet of psychopathy describes individuals who are superficially charming, manipulative, have a grandiose sense of self-worth and a propensity towards pathological lying. The antisocial facet is related to past criminal behaviour. Therefore, these results indicate that members of Group Delta are more likely to present with these personality attributes, and have prior antisocial behaviour. This result is somewhat inconsistent with previous research regarding the Psychopathic deviate clinical scale and psychopathy (Study 1). Previous research has suggested that there is no relationship between the overall Psychopathic deviate clinical scale and any of the psychopathy facets (see the results of Study 1 in the current thesis). A possible explanation for this inconsistency concerns the way in which the MMPI-2 scores were conceptualised within the study. The current research used MMPI-2 scores as categorical data (by placing individuals into groups based on their MMPI-2 profiles). It is possible that the relationship between the Psychopathic deviate clinical scale and psychopathy is stronger when this scale is the only elevated scale. Future research into the relationship between psychopathy and the Psychopathic deviate scale could be beneficial by expanding on this area.

It was predicted that members of Group Able should score significantly higher on the interpersonal facet of psychopathy when compared to the remainder of the sample. Although the finding was not significant, the results were in the suggested direction—members of Group Able had a higher mean score on the arrogant and deceitful interpersonal style facet than members of the other groups.
There are at least two possible explanations for this lack of significance. First, there may be no differences between members of Group Able and members of other groups in regards to psychopathy. Second, it is possible that due to the small number of members assigned to Group Able, the analysis lacked the statistical power required to find a significant difference. In the current study, Group Able had a smaller percentage of individuals assigned compared to the original percentages suggested by Megargee and Bohn (1977). The numbers in the current study were consistent with other work in forensic psychiatric settings (Hutton et al., 1993; Wrobel et al., 1988), however. It has been suggested that the low numbers of Group Able in this setting might be because they are mentally stable and do not require psychiatric treatment (Hutton et al., 1993).

It was hypothesised that individuals in Group How should score lower than the other groups on the interpersonal facet of psychopathy and higher on the antisocial behavioural facet of psychopathy. This hypothesis was partially supported by the results, as members of Group How displayed lower levels of the interpersonal facet of psychopathy, but they showed no significant difference from the other groups on levels of the antisocial facet of psychopathy. One possible explanation for this finding is that members of Group How were too unwell to have their impulsive behavioural style measured. There are two possible explanations as to why members of Group How displayed lower levels of the interpersonal facet psychopathy. Consistent with previous research, it is likely that this group of individuals lacks the social skills or desire to engage in interpersonal relationships. Alternatively, given the high proportion of members of Group How diagnosed with a psychotic illness in previous samples, it is likely that this group is actively psychotic, and thus individuals are more inclined to
isolate themselves and may be socially introverted. This may be why members of this group scored lower on this facet of psychopathy.

Overall, these findings suggest that psychopathy, and its underlying facets, are partially related to membership into a subtype of offenders. The results suggest that psychopathic individuals could fall into a number of categories, which indicates that there is not one ‘psychopathic subgroup’. Despite this, members of Group Delta had higher scores on the PCL-R compared to the remainder of the sample. Furthermore, members of Group Delta scored significantly higher on the interpersonal and antisocial facets of psychopathy when compared to the remainder of the sample. This finding indicates that individuals in Group Delta are more likely to have an arrogant and deceitful interpersonal style and a tendency towards antisocial behaviour when compared to the remainder of the sample. This is likely to be an important consideration when working with individuals assigned to Group Delta, as they are more likely to possess the interpersonal features consistent with psychopathy.

One possible explanation for why it may be difficult to reliably capture psychopathy indices based on membership to certain Megargee subtypes is related to the temporal stability of the system. PCL-R scores are rated on a number of factors, the large majority of which are static or considered stable over time. Megargee et al. (2001) has suggested that individuals can move between the subtypes based on current attitudes, values and behaviours. It is suggested that the classification system is sensitive to changes within individuals that occur over time (Megargee et al., 2001). It is therefore possible that individuals, who are psychologically unwell and housed within a forensic psychiatric facility, will score differently than they might within a purely forensic setting. Therefore, the
relationship between psychopathy and the Megargee subtypes may be stronger within a forensic setting.

Applications of the Megargee typology within a forensic psychiatric facility

Despite only finding partial support for the hypotheses, these findings do not rule out the use of the MMPI-2 typology within a forensic psychiatric setting. While the percentage of individuals assigned to each group differed from those reported by Megargee et al. (2001) in a purely forensic setting, these differences were expected given the level of psychological disturbance within a forensic psychiatric setting. Previous research using the Megargee typology in a psychiatric forensic setting has found mixed results. For example, Edinger et al. (1982) and Hutton et al. (1993) argued that the system provided a useful guide to the treatment needs within this population, whilst Nieberding et al. (2003) suggested that the presentation of the types might differ in this setting.

Consistent with previous research within a forensic psychiatric setting (Hutton et al., 1993), the sample in Study 3 was characterised by a high proportion of individuals assigned to Group How. In the current sample, 25% of participants were categorised into Group How. Whilst this percentage is considerably higher than research within a purely forensic setting (13.3%), it is somewhat lower than the percentage previously been found within a forensic mental health unit. For example, Bohn, Carbonell and Megargee (1995) found that 47.4% of their cases were classified into Group How. Group How is characterised by an overall high level of elevation on their MMPI-2 profiles, suggesting a high level of psychological disturbance. Therefore, it should be expected that a higher percentage individuals would be assigned to Group How in
a forensic psychiatric setting compared to a purely forensic setting. It is possible that the percentage in the current study was lower than the one found by Bohn et al. because the current sample drew from a population of patients with range of mental health issues, whereas in the Bohn et al. (1995) study, only individuals who were flagrantly psychotic were included in their sample.

While the current results support the use of the Megargee system within a forensic psychiatric setting, one issue in using this classification system within this setting is related to the high number of individuals classified into Group How. Knowing that roughly one-quarter of the individuals have widespread mental health needs is too broad a characterisation to be clinically useful within such a setting. While this subgroup is classified solely on profile elevation, it is possible that specific subtypes within Group How exist. It would be useful for future research to examine this subtype in greater detail and determine if the profiles of members of Group How can be reliably differentiated from other profiles for use within this setting.

Groups Foxtrot and Baker captured few individuals within the sample (approximately 3% assigned to each group). The low percentage of participants assigned to Group Baker is similar to what has previously been found in a forensic psychiatric setting (Hutton et al., 1993). However, the low percentage of participants assigned to Group Foxtrot was lower than what has been found previously in a similar setting (Hutton et al., 1993). Additionally, Group Foxtrot had the highest overall mean score for psychopathy. This finding suggests that individuals within Group Foxtrot may present as more psychopathic when compared to individuals in the other groups. Previous research regarding Group Foxtrot within a forensic psychiatric facility suggests that individuals assigned to
this group are more likely to have committed a crime against people when compared to members of the other groups (Hutton et al., 1993). It is possible that this group is displaying one aspect of psychopathy. However, given the small number of individuals assigned to Group Foxtrot in the current sample, these results need to be interpreted carefully. More research on the relationship between Group Foxtrot and the psychopathy facets would be beneficial.

Limitations

While the current study has indicated that some of the Megargee subtypes are more related to the construct of psychopathy than others, there were some limitations that need to be acknowledged. First, the heterogeneity of the sample may have biased the results. The sample was drawn from a forensic psychiatric institution which includes individuals housed for a wide variety of reasons, including people found not guilty due to mental impairment, individuals being assessed for fitness to stand trial, and individuals with unhealthy sexual fantasies. Given that the data was de-identified before the analysis was conducted it was impossible to determine the reasons that the participants were originally admitted to the hospital the sample was derived from. Therefore, it is possible that the subtypes would correlate in different ways to measures of psychopathy depending on why individuals were held at the facility. Future research would benefit from examining the relationship between offence type, reasons housed at a forensic psychiatric setting and psychopathy. Future research could focus on examining other external variables to further validate the Megargee typology within a forensic psychiatric setting.
Furthermore, the results may depend on the timing of the assessment. Whilst PCL-R scores are considered stable across time, MMPI-2 profiles are responsive to an individual’s mental state at the time of assessment. Therefore, it is likely that individuals will move between Megargee subgroups based on the timing of the assessment. For example, if someone is assessed when suffering from either positive or negative symptoms of schizophrenia, it is likely to severely influence their MMIP-2 profile, and subsequent Megargee subtype, whilst their PCL-R score should remain relatively stable.

Conclusion

Membership to certain Megargee groups does not reliably predict psychopathy scores. Overall, the results suggest that the Megargee system cannot be used as a screening measure for psychopathy. However, individuals using the Megargee classification system should be aware of the relationship between membership to Group Delta and psychopathy. This is important because individuals assigned to Group Delta are likely to be more psychopathic, specifically in regards to their interpersonal style than members of the other groups. Furthermore, a higher proportion of individuals assigned to Group How suggests that this group may be overrepresented within this facility. Given that individuals in Group How are characterised by an overall elevation on a number of different scales, it is likely that heterogeneity exists within this group and further research on a similar sample could benefit from attempting to extrapolate meaningful subgroups of individuals assigned to Group How. Finally, further research is required into the relationship between Group Foxtrot and psychopathy scores, as this group may be related to psychopathy.
CHAPTER 7: OVERALL DISCUSSION

Psychopathy

The current research investigated the relationship between psychopathy and personality attributes. Overall, the results suggest that the ‘core’ features of psychopathy are difficult to capture using traditional personality measures, such as the MMPI-2. Whilst the MMPI-2 was able to capture some aspects of psychopathy, it was generally unable to differentiate between underlying facets of psychopathy. However, the results suggest that individuals’ MMPI-2 scores may be able to help clinicians understand varying presentations of psychopathy.

The current thesis has implications for a number of areas within psychopathy research and practice. These include the factor structure of psychopathy, the etiology of psychopathy, whether psychopathy exists as a unitary syndrome or whether distinct subgroups exist, the role of anxiety within psychopathy, the role of negative emotions, whether psychopathy can be measured via self-report measures, the treatability of individuals high on psychopathy and finally the use of the PCL-R. The following section will discuss the implications of the current research on the areas identified.

Factor structure

The factor structure of psychopathy has been debated in the literature for some time and a number of models have been proposed. These models include a four-facet model (Hare, 2003), a three-factor model (Cooke & Michie, 2001), the two-factor model of the PPI (Lilienfeld & Andrews, 1996) and a triarchic model (Patrick et al., 2009). As discussed in Chapter one, Hare’s (2003) two-factor,
four-facet model of psychopathy was based on the PCL-R. Factor 1 represents an interpersonal/affective factor and Factor 2 represents an anti-social factor. Factor 1 is further broken into interpersonal and affective facets, whilst Factor 2 is broken into lifestyle and anti-social facets. Hare suggested that Factor 1 is related to the core personality features of psychopathy, whilst Factor 2 is more strongly related to anti-social behaviour. Factor 1 and Factor 2 of the PCL-R do not directly relate to the distinction between primary and secondary psychopaths, but some authors have suggested that primary psychopathy is more strongly related to Factor 1, whilst secondary psychopathy is more strongly related to Factor 2 (Mealey, 1995).

Study 1 directly contrasted the two dominant theories related to items of the PCL-R and the factor structure of psychopathy. Given there was no conclusive decision regarding which model provided to be a better fit for the data, the fourth facet was included in the subsequent analysis.

Based on the results from Study 1, psychopathy was viewed as a construct derived of three underlying personality facets, with a fourth facet dedicated to antisocial behaviour. The first three facets are included in both the Hare (2003) four-facet model and the Cooke and Michie (2001) three-facet model, these facets are labelled slightly differently in the two models, however for ease of interpretation will be referred to as the interpersonal (arrogant and deceitful interpersonal style), affective (deficient affective experience) and impulsive (impulsive and irresponsible behavioural style).

Study 1 also showed that the underlying facets of psychopathy described by Cooke and Michie (2001) and Hare (2003) were correlated differently with a
variety of scales of the MMPI-2. Furthermore, these correlations were generally consistent with previous research on these scales (Lilienfeld, 1999; Sellbom et al.). This indicates that the four facets are in fact assessing different personality components of psychopathy. Whilst the affective facet, considered the core facet, did not significantly correlate with any of the scales measured, the interpersonal facet, the impulsive facet and the antisocial facet were all shown to correlate with different scales of the MMPI-2. The finding that the affective aspect of psychopathy did not correlate with any of the subscales indicates that using the scales measured is likely to be insufficient to capture all of the core elements of psychopathy.

To further examine the factor structure proposed within psychopathy, Study 2 implemented latent class analysis to determine whether the classes of individuals identified would differ on their psychopathy presentations (as measured by the PCL-R). Latent class analysis was used to differentiate these classes on the basis of their MMPI-2 RC scales. It was found that three classes were extrapolated. One of these classes appeared consistent to what has been found in previous studies (Hicks et al., 2004; Sellbom, 2014) and appeared to embody attributes of secondary psychopathy. Another group, considered more emotionally stable and who had less mean deviation across all MMPI-2 RC scales, appears consistent to previous works considering the emotionally stable group to be closer to primary psychopathy (e.g. Hicks et al., 2014). However, no class differed on the affective facet of the PCL-R (which embodies a number of characteristics) of primary psychopathy. Therefore, if primary and secondary psychopathy could be differentiated based on PCL-R profiles it would be expected that the classes consistent with that of primary psychopathy should
score significantly higher on the affective facet of the PCL-R, whilst the group consistent with the secondary psychopath would score higher on Factor 2 of the PCL-R. No significant differences were found across any of the classes regarding the affective facet of psychopathy. This suggests that despite the groups showing markedly different personality profiles, they did not differ on the basis the affective facet. This finding may suggest the PCL-R is unable to differentiate between individuals displaying the affective features of psychopathy (as measured by the PCL-R) and individuals not displaying these features. Alternatively, the lack of finding may be related to a number of limitations within the study, discussed in study 2.

All of the different classes identified were tested against the four facets of psychopathy proposed by Hare (2003). It was expected that the group who more closely resembled secondary psychopathy, that is, higher levels of negative emotionality, should present with higher levels of the impulsive and antisocial facets of psychopathy. This was found to be the case suggesting that the PCL-R and the RC scales of the MMPI-2 are better at capturing elements consistent with impulsivity and antisociality.

There are at least three possible explanations for the lack of difference on the affective facet. First, it is possible that the questions in the affective facet of the PCL-R do not accurately reflect the construct that they are trying to measure. Second, it is also possible that different presentation of individuals, based on their MMPI-2 profile, show the same levels of these three facets. Third, it is possible that the MMPI-2 RC scales are unable to differentiate between the affective components of psychopathy. In similar research, Sellbom (2014) found that the different classes differed on levels of machiavillism egocentrity and empathy, two
components that should relate to the affective facet of psychopathy. Therefore, the lack of significant findings may suggest the PCL-R is not properly assessing this component.

Etiology

The results of Study 2 loosely support the notion that different etiological pathways towards psychopathy exist, given the different classes of individuals showed markedly different profiles who scored similar on the PCL-R. Class 3 appeared consistent with the disinhibited pathway described by Patrick (2006). Additionally, other groups showed higher levels of the interpersonal aspect of psychopathy, suggesting higher levels of boldness, which is proposed to have a biological origin. The idea of different etiological pathways towards psychopathy supports the view that varying classes of psychopathy exist, with different levels of the underlying constructs.

This has further implications for the treatment of individuals who score high on psychopathy within the criminal justice system. Specifically, if some individuals with high scores present with a biological marker, it may mean that they are unlikely to respond to traditional treatment programs and as such require higher levels of external monitoring compared to individuals who are more likely to benefit from traditional treatment approaches.

Discrete construct or distinct subgroups

While previous research has shown that variants of psychopaths exist (Hicks et al., 2004), the majority of the research has been conducted within a purely forensic setting. Study 2 extended previous research and demonstrated that
variants of psychopathy likely exist within a forensic psychiatric setting also. The number of clusters within a forensic setting has been cause for debate within the literature, with research supporting 4, 5 and up to 10 varying clusters with different personality presentations. The results from Study 2 of this thesis suggest that 3 classes of individuals was the best fit for the data, who displayed various personality attributes. However, it should be noted that both the 6 and 8 class solution had some statistical merit. Some of the classes found resembled various other classes found within purely forensic settings, suggesting that these groups are relatively stable across both forensic and psychiatric forensic settings. This is an area that warrants further research.

The findings reported in Study 2 are somewhat similar to the subgroups found within different settings. The personality profile of the classes generally matches what is described by Hicks et al. (2004), Sellbom (2014) and Megargee (2006) in similar studies using a purely forensic population. Within the previous research, the results indicated one group characterised by a lack of personality profile elevation (referred to as emotionally stable, or group item within the Megargee system). In the current research, the sample was obtained from ASH, which is a forensic psychiatric facility that houses individuals who are mentally unwell. Therefore, it would be expected that this sample should present with greater mean elevations of their T-scores. However, there was still one class found characterised by a lack of MMPI-2 profile elevation.

Overall, the results from Study 2 support the growing notion that psychopathy is not a discrete class, or taxon of individuals. By extension, this suggests that not all individuals scoring highly on measures of psychopathy will present with similar personality structure. This is likely to have implications for
treatment, funding and sentencing. Specifically, people scoring highly on the PCL-R need to be considered on other various personality attributes to develop the most coherent treatment, sentencing or management options.

**Primary vs. Secondary Psychopaths**

Given that there is no universally accepted definition of what encompasses a *primary* or *secondary* psychopath, it is difficult to draw concise conclusions regarding the state of the literature or the extent to which this thesis supports or challenges the *primary/secondary* distinction of psychopathy. However, from what has been proposed by different authors, it has been suggested that secondary psychopaths present with higher levels of negative emotionality anxiety and impulsivity, whilst primary psychopaths present with a lack of empathy, shallow affect and a high degree of manipulativeness (Blackburn, 1998). The personality profiles of two of the classes found in Study 2 appear to fit with this description. More specifically, the class 3 presented with relatively high levels of negative emotionality and anxiety, and high levels of impulsivity, whilst class 1 appeared more emotionally stable. However, in contrast to Blackburn’s description, the two subgroups did not differ on their levels of the affective facet of psychopathy, suggesting that neither group presented with higher levels the ‘core’ features of psychopathy. This suggests that whilst a number of different variants of psychopathy exist, the core features were unable to be differentiated on the basis of the MMPI-2 profile within this thesis.

Originally, Karpman (1941) proposed that primary and secondary psychopaths could be differentiated on the basis of an affective deficit within the primary psychopaths. Karpman also suggested that primary psychopathy would
include purposeful anti-social behaviour aimed at enhancing personal gain, whilst secondary psychopaths, in contrast, were proposed to be inclined to experience intense feelings of anxiety and hatred, which when combined with insufficient impulse control, could lead to impulsive anti-social behaviour. It was proposed that both primary and secondary psychopaths would exhibit high anti-sociality and a lack of empathy (Karpman, 1948). However, the distinction made was that the two types of psychopathy could be differentiated on the basis of anxiety.

The role of anxiety in psychopathy

The relationship between anxiety and psychopathy has been an area of contention within the literature (Vassileva et al., 2005). It has been suggested that people who score highly on psychopathy measures will present with a low levels of anxiety/fear activation based on physiological responses to stressful stimuli (Lykken, 1995). It has also been suggested that a low level of anxiety/fear response is central as a core aspects of psychopathy (Lykken, 1995).

The current thesis demonstrated that subgroups of individuals scoring highly on levels of negative emotionality, and anxiety, even compared to the general population T score > 65, do not significantly differ on the affective facet of psychopathy compared to other groups. This suggests that the relationship between anxiety and psychopathy is difficult to understand on the basis of the MMPI-2 scales measured. Given that a lack of affective responding has traditionally been considered a core feature of psychopathy, and the PCL-R is designed to capture psychopathy as a unitary construct, this research adds to the growing evidence suggesting that psychopathy is best understood as a series of related, yet distinct constructs. Further adding to the strong evidence that
individuals who score highly on psychopathy are a heterogeneous group and that subtypes, or variants of the construct may be identified. More recently, research has suggested that rather than just anxiety, negative emotions and emotional regulation plays a role in psychopathy (Hicks & Patrick, 2006).

*The role of negative emotions/emotional regulation*

One of the classes in study 2 of the current thesis was characterised with higher levels of negative emotionality. Negative emotionality refers to the tendency to experience unpleasant emotional states. Traditional descriptions and theories of psychopathy suggest that individuals high on psychopathy will present with low negative emotionality (Cleckley, 1941). However, the relationship between negative emotionality and psychopathy can be considered inconsistent at best (Hicks & Patrick, 2006). The current findings offer an explanation for the inconsistency within the literature with regards to negative emotionality and psychopathy. Specifically, it is likely that whilst some individuals scoring highly on the PCL-R, present with low levels of negative emotionality (similar to what was described by Cleckley (1941), others will present with high degrees of negative emotionality or externalising behaviour.

*Self-report personality measure to capture psychopathy*

There has been speculation as to whether psychopathy can be captured via self-report measures (Patrick, 2006). It has been proposed that given some attributes of psychopaths (untruthful and manipulative), it would be difficult to capture psychopathy through the use of self-report measures. The results of both Study 1 and Study 2 suggest that the scales measured are at best, average predictors of overall psychopathy. This study showed that the overall Pd scale
was not correlated with overall psychopathy as measured by the PCL-R, nor is it related to any of the underlying facets of psychopathy. This result is consistent with previous research that has suggested the scale is a poor measure of psychopathy (Lilienfeld, 1999). However, it was shown that the ASP scale, RC4 and two of the Pd subscales did correlate significantly with psychopathy, suggesting that the heterogeneity within the psychopathic deviate scale is the main reason the scale failed to correlate to overall psychopathy measures. Study 1 examined the correlations between the Pd subscales, the RC4 scale and ASP scale and the facets of psychopathy.

Overall, the results suggest that both the PCL-R and the MMPI-2 add useful information about a client’s presentation. Whilst, the MMPI-2 scales measured do not appear to be an effective screening measure of the core features of psychopathy, it adds valuable information in regards to formulation. The MMPI-2 may be useful in differentiating variants of psychopathy, as it appears individuals scoring highly on psychopathy may present with a range of different MMPI-2 profiles. As such, clinicians working within the field should utilise both a PCL-R and an MMPI-2 test, as both add useful yet distinct information.

*The use of the PCL-R*

The PCL-R is viewed as the gold standard measure of psychopathy within the forensic psychiatric literature, but recent research and the results from Studies 1, 2 and 3 raise questions about this standard. The PCL-R was designed to measure Cleckley’s (1941) conceptualisation of psychopathy (Hare, 2003). However, there are a number of inconsistencies between the results of the three studies and Cleckley’s definition of the psychopath. First, Cleckley explicitly
stated that psychopaths should present with an “absence of delusions and other
signs of irrational thinking” (Cleckley, 1941 p. 342). Further to this, Cleckley
suggested that psychopaths should present with an absence of nervousness and or
psychoneurotic manifestations. Additionally, he suggested that psychopaths
should have a general poverty in their major affective responses.

The results of Study 2 suggest that there exists a number of subgroups of
individuals who score relatively highly on the PCL-R, who present with the exact
opposite of these symptoms described by Cleckley (1941). That is, they are likely
to have delusional thought processes, present as highly anxious and have
extremely strong affective responses to stimuli. Factor 1, and more specifically
the affective facet of the PCL-R attempts to capture some of these aspects
proposed by Cleckely (Hare, 2003). It was therefore expected that individuals
presenting with higher levels of disturbed thinking and negative emotionality
would present with lower levels of facet 2 of the PCL-R. However, the results did
not support this prediction. The PCL-R profiles of individuals with extremely
high levels of thought disturbances and anxiety did not differ from other groups
on the affective facet of psychopathy. This suggests that the PCL-R was not able
to differentiate between individuals who embody the opposite characteristics of
one of the traditional concepts of psychopathy.

It is recognised that the conceptualisation of psychopathy has changed
somewhat since the early definition of Cleckley (1941). However, core features
of psychopathy are considered to include a shallow affect, a lack of remorse or
guilt, a superficial charm and manipulativeness (Hare, 2003). Given the MMPI-2
profile of the individuals in a number of the cluster in Study 2, it is unlikely that
they presented with any of these characteristics. Indeed, it is likely that across the
various clusters they presented as highly emotional, unstable and with poor interpersonal skills. Given this presentation, it was expected that these individuals should score lower on the ‘core’ facets of psychopathy, as measured by the PCL-R (affective and interpersonal facet in particular), however, this was not the case. There were no significant differences between the clusters in regards to facet 2 of psychopathy and only minimal differences regarding the interpersonal facet. This indicates that the PCL-R did not differentiate between individuals who presented with high levels of emotionality.

*Considerations for treatment*

As the current studies did not measure any treatment outcomes, the following section remains highly speculative. The findings from the three studies presented in this thesis may have implications in regards to the clinical treatment of psychopaths. The traditional view regarding the treatability of psychopaths has been that they are untreatable (Hemphill et al., 1988; Ogloff et al., 1990). Furthermore, a diagnosis of psychopathy is used to inform treatment, and in many cases change the treatment approach used. This policy is not without reason, as research has suggested that including psychopaths in a treatment program can have negative outcomes for the individuals in the group (Ogloff, Wong & Hare, 1990). One study found that completing a treatment program resulted in an increase in recidivism for individuals who were classified as psychopathic (Seto & Barberee, 1999). Given these results, the caution for entering psychopaths into traditional treatment programs is understandable.

It has been suggested that it is the core psychopathic features, manipulativeness and a lack of empathy, that contributes to the difficulty treating
individuals high on psychopathy (Hughes, Hogue, Hollin & Champion, 1997). However, a number of the subgroups identified within Study 2 presented with a wide range of identifiable treatment targets (paranoid ideation, high negative emotionality, anxiety), high PCL-R scores, and did not differ regarding the psychopathy facets that have been suggested to relate to poor treatment outcomes (for example, lack of affect). It is thus possible that this group may be more responsive to treatment than individuals with the traditional psychopathic presentation. It should be noted that the current research did not measure the varying subgroups against any external measures (such as response to treatment) and therefore more research regarding treatment outcomes of the subgroups is required. However, this research provides an explanation for the mixed results regarding the treatability of psychopaths. The heterogeneity within psychopathy means the results could be found to support either hypothesis depending on the makeup of the sample.

It has been suggested that primary psychopaths will be less amenable to treatment and as such present a higher risk of recidivism to the community. Therefore, it is possible that they will require a higher degree of external measures to contain risk of reoffending in the future (as opposed to traditional treatment approaches). The current research suggests that the MMPI-2 is able to differentiate between different groups of offenders displaying markedly different personality profiles (however similar their MMPI-2 profiles) and therefore may be able to differentiate between individuals high on psychopathy who are more or less amenable to treatment. However, future research is required to determine if these subtypes vary on other external measures (such as recidivism).
Overall, in regards to psychopathy, the current research supports the notion that psychopathy is best viewed as a continuum as opposed to a discrete taxon. In addition, the results from Study 2 supported the notion that a number of variants of psychopathy exist, as there was not one group who was clearly a psychopathic group, scoring equally on all aspects of the PCL-R. Additionally, this research has implications for the treatability of psychopaths, as it is possible that the features of psychopathy, which pose difficulties to treatment programs, are exclusive to only one subgroup. It is suggested that not all individuals who score highly on the PCL-R will present with the ‘core’ features of psychopathy. Clinicians need to be aware that a diagnosis of psychopathy does not necessarily mean the individual has a lack of affective experience, or is manipulative with high levels of interpersonal poise.

**The MMPI-2 in a forensic psychiatric setting**

The MMPI-2 has a long-standing history of use within the forensic setting. Megargee (2006) argued that the MMPI-2 should be used routinely within correctional settings given that it is an assessment tool that can be carried out quickly and does not require the respondent to have a high level of intelligence. Furthermore, it is suggested that through the interpretation of an MMPI-2, clinicians gain a large amount of information regarding the current psychological functioning of the offenders. While these points are valid, the same could be argued for many personality measures. However, there are two advantages that the MMPI-2 possesses over a range of other personality assessments. First, a large range of empirical research validates the use of the MMPI-2. The MMPI-2 is the most widely researched personality measure in the world (Camara, Nathan & Puente, 2000). Further to this, there exist a number of studies that specifically
utilise the MMPI-2 with offenders (Archer, Buffington-Vollum, Streedny, & Handel, 2006; Viljoen, McLachlan, & Vincent, 2010). A further advantage of using the MMPI-2 is the existence of the Megargee system for classifying criminal offenders (Megargee and Bohn, 1977, 1979).

The following section will examine the applicability of the current thesis regarding the use of the MMPI-2 in a forensic psychiatric setting. The results from Study 1 suggest that some of the Psychopathic deviate subscales are likely to relate to certain aspects of psychopathy. It was also shown that two other scales (ASP and RC4) are able to capture some aspects of psychopathy (that is, a correlation existed between these scales and certain psychopathy facets). Furthermore, the results from Study 3 suggest that the Megargee and Bohn (1977, 1979) classification system is applicable in a forensic psychiatric setting. Additionally, it is shown that some of the subtypes identified relate more strongly to psychopathy than the others.

*The Psychopathic deviate (Pd) scale*

The scales of the MMPI-2 that should best represent psychopathy have, at best, a moderate application. While scale four of the MMPI was originally designed to measure the psychopathic personality (Hathaway & Mckinley, 1943) research has suggested that the overall Pd scale is a poor measure of psychopathy (Graham, 2012). The current thesis extended this research to a forensic psychiatric setting. In Study 1, individuals who scored highly on the Psychopathic deviate scale of the MMPI-2 did not score any higher on the PCL-R than individuals who scored lower on the Psychopathic deviate scale. Furthermore, the results showed that overall Psychopathic deviate scale elevations were not related
to any of the facets of psychopathy. More detailed examination revealed that some of the subscales significantly correlated with overall measures of psychopathy and with the underlying facets, consistent with previous research (Lilienfeld, 1999). These findings suggest that the relationships found are generally true for the population regardless of the setting or sample in which the analyses were conducted.

Consistent with previous research, the authority problems scale (Pd2), the ASP scale and the RC4 scale were the strongest predictors of overall psychopathy. Furthermore, the Pd2 scale correlated with the interpersonal, impulsive and antisocial facets of psychopathy. Both the RC4 and ASP scales correlated with the impulsive and antisocial facets.

Interestingly, in Study 1, the social imperturbability scale (Pd3) was uniquely correlated with the interpersonal aspect of psychopathy. This finding suggests that Pd3 captured some unique aspect of psychopathy that was unrelated to the other Psychopathic deviate subscales. Clinicians interpreting MMPI-2 profiles of individuals should be aware of the relationship between Pd3 and the interpersonal style facet of psychopathy. Moreover, additional research is needed to investigate the relationship between Pd3, Pd2 and psychopathy, as the correlation between Pd2 and Pd3 was not significant in Study 1. This was an unexpected finding due to previous research, and suggests that Pd2 and Pd3 capture differing elements of the arrogant and deceitful interpersonal style facet.

Within Study 1, familial discord (Pd1), social alienation (Pd4) and self-alienation (Pd5) correlated in a similar fashion to measures of psychopathy, suggesting that they offer redundant information towards the overall measure of
psychopathy. When interpreting MMPI-2 profiles on the basis of the Psychopathic deviate subscale elevations, clinicians should be aware that individuals who score highly on Pd1, Pd4 and Pd5 are likely to act impulsively and irresponsibly.

Overall, these findings are consistent with previous research (Lilienfeld, 1999; Sellbom, 2007) and highlight the continued difficulty of capturing the affective facet of psychopathy utilising the MMPI-2 within a forensic, psychiatric setting. These findings further suggest that clinicians interpreting the MMPI-2 should have an understanding of intricacies of the scales and their relationship to psychopathy facets. Another way clinicians can use the MMPI-2 within a forensic setting is through the Megargee classification system (Megargee & Bohn, 1977).

The Megargee classification system

The Megargee classification system was developed on the original MMPI, but has since been adapted to suit the MMPI-2. The applicability of this classification system to a psychiatric forensic sample has been questioned (Megargee et al., 2001), however, there is some evidence to suggest that the groups are relatively similar to those proposed by Megargee in such a setting (Hutton et al., 1993). The current research (Study 3) supported the usage of the Megargee classification system within a forensic psychiatric setting, as the percentage of individuals assigned to each group were similar to previous findings in this setting.

Study 3 showed that the most widely represented subgroup within this setting was Group How, with 26% of the sample assigned to this group, consistent with previous research (Hutton et al., 1993). In regards to the
relationship between the groups of individuals classified using the Megargee and Bohn (1977, 1979) typology and psychopathy, the results only partially supported the hypothesis. Overall membership to a subgroup defined by Megargee et al. (2001) within this sample did not predict levels of psychopathy, nor did it predict higher scores on any of the aspects of psychopathy.

An inconsistency between results of Study 1 and Study 3 should be acknowledged. In Study 1, no relationship was found between the Psychopathic deviate scale (scale 4) of the MMPI-2 and any of the facets of psychopathy. In Study 3, individuals who were classified into Group Delta presented with higher levels of psychopathy compared to other groups. Group Delta is characterised by an increase in the Psychopathic deviate scale of the MMPI-2, above any other scale (for more information refer to Appendix D). This result is surprising given that the Psychopathic deviate clinical scale showed no correlation with any of the facets of psychopathy measured in Study 1. It is possible that this difference between the two studies occurred as a result of the differing measurements used in the two studies (for classification into Delta, scale 4 was required to be at least 4 T-score points higher than any other scale). A possible explanation is that individuals with a Psychopathic deviate clinical scale higher than other scales may be more likely to present as psychopathic, whereas individuals with elevations on the Psychopathic deviate scale equal to elevations on other scales may not possess any of the psychopathic personality attributes.

One of the concerns with using the Megargee classification system is related to the high degree of overlap between the groups (Megargee et al., 2001). That is, the groups do not constitute mutually exclusive categories that have nothing in common with each other. This concern was validated by Study 3,
which found that a number of individuals met the classification criteria for more
than one group.

The use of the Megargee classification system for classifying criminal
offenders is not widespread in forensic practice. This classification system has
been well-validated and has a number of studies supporting the varying
subgroups and the differing relationships to a range of external measures
(Megargee et al., 2001). These external measures include the use of violence,
marital status, intelligence, number of convictions, personality style, number of
young offender convictions, and familial concerns. An area that remains to be
explored is the relationship between the subgroups of offenders and psychopathy.
The findings from Study 3 suggest that there is some validity in the groups, but
not enough is gained from the classification system over and above careful
analysis of individual profiles.

The results of this thesis suggest that the scales measured from the MMPI-2
were unable to capture the core features of psychopathy. These scales were likely
unable to measure the complex nature of psychopathy. Due to the nature of the
data set and the scope of this thesis, several scales that have some empirical or
theoretical relationship with psychopathy were not included. These include scales
RC9 (Sellbom et al., 2005), the Fears scale (Sellbom et al., 2005), the Aggression
scale (Wygnant & Sellbom, 2012), Disconstraint (Sellbom, Ben-Porath &
Stafford (2007), Negative Emotionality (Wygnant & Sellbom, 2012) and scale
RC9 (Sellbom et al., 2005). Given the nature of psychopathy (that is, involving
various underlying personality constructs) it is likely that no one specific scale
will be adequate in assessing psychopathy. Future research should focus on
assessing a multitude of scales and developing a greater understanding of their specific benefits to the varying facets of psychopathy.

Conclusion

Combined, the results from the three studies provide valuable information for clinicians working within the field of forensic psychology. This research expands on the notion of heterogeneity within psychopathy, in a forensic psychiatric setting. It is shown that various classes of individuals exist within this setting, two of which may be similar with some theoretical descriptions of primary and secondary psychopathy. Furthermore, the groups are similar in their personality structure to what has been found using similar methods in purely forensic settings (Hicks et al., 2004). These results have clinical implications for the assessment and treatment of individuals classified as psychopathic, as currently people scoring highly on psychopathy are treated as a homogenous group. These groups could not be differentiated on the basis of their PCL-R profiles, suggesting that the PCL-R may be missing some aspect of psychopathy. Furthermore, this research suggests that some aspect of psychopathy can be captured through the use of various scales of the MMPI-2. It is suggested that the Psychopathic deviate subscales of the MMPI-2 should be interpreted by clinicians with an awareness of the relationships between these subscales and the underlying facets of psychopathy.

Overall this research supports the use of both the PCL-R and the MMPI-2 as assessment measures, as both tools offer unique and valuable information to an assessment in a forensic, psychiatric setting.
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doi:10.1037/a0028411


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Appendix A

Vicky Bates
Human Research Ethics Administrator
Office of Research Integrity
Research Services Division
Deakin University, Burwood VIC 3125

Re: Use of data from Atascadero State Hospital

Dear Vicky

As the custodian of the data collected at Atascadero State Hospital in California, I am writing to grant Dr. Linda Byrne permission to use the permanently de-identified data, including specifically the projects undertaken by students under her supervision. Please advise if any additional information is required in this matter.

Best regards

James D. Voss, Ph.D.
Subject Matter Expert | Project Manager
Innovative Technology Applications Division | ITA | National Center for Telehealth and Technology | T2 |
9933 West Hayes Street
Joint Base Lewis-McChord, WA 98431
TEL: (253) 968-2860 | FAX: (253) 968-4192 www.t2health.org | redacted by library
Appendix B

DEAKIN UNIVERSITY HUMAN RESEARCH ETHICS COMMITTEE
APPLICATION FOR EXEMPTION FROM ETHICS REVIEW
(for projects involving only the use of pre-existing, non-identifiable data sets)

Principal Investigator: Dr. Stefanie Sharman
Student Researcher (if applicable): Luke Hockey
School: Deakin University Faculty: Psychology
Campus: Burwood
Contact Telephone No: 92446485
Email: stefanie.sharman@deakin.edu.au
Project Title: The link between psychopathy and offender sub-types as categorized by the MMPI-2

Part A

Project Information

1 Please describe the background to project:
Accurate, cost effective assessment and classification of offenders is essential for optimally allocating scarce correctional services. Interventions should target those individuals who are at greatest level of risk and target specific need (Andrews & Bonta, 2003). Psychopathic offenders, as measured by the Hare Psychopathy Checklist – Revised (PCL-R), have shown to have higher rates of recidivism when compared to non-psychopathic offenders (Hare, Clarke, Gran & Thornton, 2000). Furthermore, offenders classified as psychopathic have shown to have poor results when completing conventional treatment programs (Ogloff, Wong & Hare, 1990).
The PCL-R is a tool designed to measure the construct of Psychopathy, as defined by Hare (1961). It is the most widely used tool in the assessment of psychopathy. Psychopathy has traditionally been viewed as a discrete taxon (Cleckley, 1941), suggesting all psychopaths are alike. However, more recent evidence suggests that psychopathy comprises different underlying facets (e.g., Cooke and Michie, 2001), and that there may be different manifestations of psychopaths (Patrick, 2006). Furthermore, it has been proposed that different facets of psychopathy involve different underlying etiological mechanisms and therefore it may be beneficial to employ different treatment approaches (Patrick, Fowles & Krueger, 2009). Debate around the factor structure of psychopathy in the literature is ongoing, with different authors proposing a two, three or four factor conceptualisation of psychopathy (Hare, 2003; Cooke & Michie, 2001; Patrick et al. 2009). This study will focus on the three-factor structure of psychopathy as proposed by Cooke and Michie (2001). The three facets that they proposed are: (1) arrogant and deceitful interpersonal styles, (2) deficient affective experiences and (3) impulsive and irresponsible behavioural styles.

The MMPI-II is a personality measure with a long empirical history (Megargee, 2001). The Psychopathic Deviate scale of the MMPI-II was originally designed to capture the construct of psychopathy, however due to the heterogeneity of the scale shows poor correlation with the overall construct of psychopathy (Lilienfeld 1999). The scale may be capturing some aspect of psychopathy, but not the whole construct. Megargee (1979) proposed a system of classifying criminal offenders based on their profile on the MMPI-II. He classified offenders into 10 sub-groups, with research showing reliable differences between the subgroups on a variety of external measures (Megargee, 2001). It is proposed that some of these sub-groups may capture some underlying facet of psychopathy.

The aim of this study is to examine the three factor structure of psychopathy outlined by Cooke and Michie, (2001), as measured by the PCL-R, to determine related personality attributes as measured by the MMPI-II. This information will be used to
further the knowledge base surrounding the underlying facets of psychopathy. This will increase the accurate assessment and treatment of psychopathic individuals.

2 Please outline the project aim and rationale:

The general aim of this project is to investigate the link between profiles on the MMPI-2 and scores on the PCL-R. Specifically, the project has three broad aims. First, it will use cluster analysis to determine if specific clusters exist, with differing personality characteristics, of individuals high on psychopathy (>30 on the PCL-R). Second, it will use the Harris and Lingoes’ (1955) subscales of the psychopathic Deviate scale of the MMPI-II to determine if the varying facets of psychopathy correlate with different subscales of the psychopathic deviate scale of the MMPI-II. Third, it will classify offenders using the Megargee system, based on their MMPI-II profiles and determine if different types of offenders are more likely to present with the different underlying facets of psychopathy.

This information will add to the literature concerning the factor structure of psychopathy, and may assist clinicians working with psychopathic individuals in determining which core deficits are relevant for specific psychopathic individuals.

3 Please state the source of data or records:

Atascadero State Hospital, California, USA.

4 Please describe the format that the non-identifiable data/records will be obtained in:

De-identified electronic copies of the data will be obtained

5 Please outline the purpose of the original data collection:

To evaluate the relationship of psychopathy to other personality disorders and psychopathology in forensic Psychiatric Inpatients

6 Please describe the nature of consent originally obtained from participants:

Participants consented for data to be used for research purposes
7 Please provide the reason for the request to waive the requirement for consent (where applicable):

The data have been de-identified before the researchers were given access to it.

8 Please state the ethical issues associated with the project and the means by which they will be addressed;

The researchers do not anticipate any ethical issues will arise as a result of this study.

9 Please state the name of the original custodian of the data:

Dr. James Vess (included with this ethics application is a letter from Dr. Vess giving his approval for the data to be used).

Part B

Investigators and qualifications

1 Please list the names, roles and qualifications of all researchers who will be involved in the study, including any based outside Deakin:

<table>
<thead>
<tr>
<th>Investigator</th>
<th>Role</th>
<th>Qualification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dr. Stefanie Sharman</td>
<td>Supervisor</td>
<td>PhD</td>
</tr>
<tr>
<td>Dr. Linda Byrne</td>
<td>Supervisor</td>
<td>PhD, M.Clin.NeuroPsych.</td>
</tr>
<tr>
<td>Luke Hockey</td>
<td>Student researcher</td>
<td>Candidate: Doctorate of psychology</td>
</tr>
</tbody>
</table>
2 DECLARATION

I/We, the undersigned declare that the information supplied in this application is true and accurate to the best of my/our knowledge.

I / We the undersigned have read the National Statement on Ethical Conduct in Human Research and accept responsibility for the conduct of the project detailed in this application in accordance with the principles contained in the Statement and any other conditions laid down by Deakin University Human Research Ethics Committee.

Signatures:

Principal Investigator

Signature Redacted by Library

Date: 13/9/12

Principal Investigator

Signature Redacted by Library

Date: 13/9/12

Student-Investigator

Signature Redacted by Library

Date: 13/9/12

Please tick to acknowledge your agreement:

☑ I am aware that I am required to submit an Annual/Final Report to the Ethics Office for this project when requested and agree to do so in a timely manner.
3 ACKNOWLEDGMENT OF HEAD OF SCHOOL /DIRECTOR OF RESEARCH

I the undersigned acknowledge that the Faculty has considered and approved the academic worth of the project described in this application.

Name: Alex Mussap

Signature:

Date: 17/9/2012

Part C

All Applications please attach:

- A copy of a letter from the original custodian of the data outlining:
  - What access to the data has been granted
  - Who has been granted access to the data and for what purpose
  - What the original purpose of the data collection was and
  - What any conditions or consent were required for its use

Please submit all documents via the Human Research Ethics lodgement page

For further information contact research-ethics@deakin.edu.au or call (03) 9251 7123
or (03) 5227 2975.
Appendix C

Memorandum

To: Dr Stefanie Sharman  
School of Psychology

From: Deakin University Human Research Ethics Committee (DUHREC)

Date: 26 September, 2012

Subject: 2012-275
The link between psychopathy and offender sub-types as categorized by the MMPI-2

Please quote this project number in all future communications.

Exemption from Ethics Review was granted for this project on 26/09/2012.

Authorisation has been given for Mr Luke Hockey under the supervision of Dr Stefanie Sharman, School of Psychology, to undertake this project for the life of the project from 26/09/2012

This Exemption from Ethics Review is given only for the project as stated in this memo. It is your responsibility to contact the Human Research Ethics Unit immediately regarding any of the following:

- Any adverse events or events which might affect the continuing ethical acceptability of the project
- All modifications to the research relating to the data or records must be submitted to the Human Research Ethics Unit for review prior to being implemented

In addition, you will be required to report on the progress of your project at least once every year and at the conclusion of the project. You are furthermore required to retain auditable records of the project demonstrating compliance with the National Statement on Ethical Conduct in Human Research (2007) (paragraph 5.2.9) and to produce these if required.

Signature Redacted by Library

Human Research Ethics Unit
research-ethics@deakin.edu.au
Telephone: 03 9251 7123
Appendix D

Procedures for Classifying the MMPI-2s of Male Offenders

Basic Procedure

I. Screen profiles for validity.

II. Using K-corrected MMPI-2 T scores, compute the following sums:
   A. \([\text{Scales } 1 + 2 + 3 + 4]\) = Left Sum
   B. \(\Sigma [\text{Scales } 6 + 7 + 8 + 9]\) = Right Sum
   C. \(\Sigma [\text{Left Sum}] + [\text{Right Sum}]\) = Big Sum
   D. \(\Sigma \text{ Scales } [1 + 2 + 3]\)
   E. \(\Sigma \text{ Scales } [2 + 4]\)
   F. \(\Sigma \text{ Scales } [4 + 6 + 8]\)
   G. \(\Sigma \text{ Scales } [4 + 9]\)

III. Using K-corrected MMPI-2 T scores, compute the following differences:
   A. \([\text{Right Sum}] - [\text{Left Sum}]\) = Slope
   B. \([\text{Scale F}] - [\text{Scale K}]\)
   C. \([\text{Scale 4}] - [\text{Scale 9}]\)
   D. \([\text{Scale 7}] - [\text{Scale 6}]\)
   E. \([\text{Scale 9}] - [\text{Scale 8}]\)

Classificatory Rules

Group Able

Primary Rules

1. Highest scale < 86T.
2. Either Scale 4 or Scale 9 is the highest scale (except for ties between Scales 4 and 9, ties are not permitted.)
3. Disregarding Scales 5 and 0, Scales 4 and 9 are both in the top four.*
4. Scale 7 < 75T.
5. Scales 1 and 3 and 0 < 71T.
6. Scales 2 and 8 < 66T.
7. Scales 4 and 9 > 43T.
10. Scale 9 ≥ Scale 8.
11. Σ [Scales 1 + 2 + 3] < 195T.
12. If Scale 3 > 60T, it cannot be one of the top three scales or tied with one or more of the top three scales.

Secondary Rules

Rules
1. Scale 9 is the highest scale (ties not permitted). +1
2. Scales 4 and 9 are the top two scales.* +1
3. Scales 4 and 9 are in the top three.* +1
4. Scale 0 < 51T. +1
5. Scale 0 or Scale 5 is the lowest scale.* +1
6. Scale 8 is not one of (or tied with) the top four scales. +1
7. Scale 2 is not one of (or tied with) the top three scales. +1
8. Scale 2 < Scale 1. +1
9. Scale 2 < Scale 3. +1
10. [Scale 9] – [Scale 8] > +14T. +1

Point Chart

<table>
<thead>
<tr>
<th>No. Points</th>
<th>Level</th>
</tr>
</thead>
<tbody>
<tr>
<td>7–10</td>
<td>High</td>
</tr>
<tr>
<td>4–6</td>
<td>Medium</td>
</tr>
<tr>
<td>1–3</td>
<td>Low</td>
</tr>
<tr>
<td>0</td>
<td>Minimum</td>
</tr>
</tbody>
</table>
Group Baker

**Primary Rules**

1. Highest scale < 85T.
2. Scales 1 and 5 cannot be (or be tied with) the highest scale.
3. Scale 3 cannot be one of (or tied with) the top two scales.
4. Disregarding Scale 0, either Scale 2 or Scale 4 is one of the top two scales.*
5. Scales 1, 2, 3, 4, 5, 7, 8, and 9 < 71T.
6. Scale 2 > 41T.
7. Scale 4 > 47T.
8. Scale 5 < 55T.
9. Scale 2 ≥ Scale 1 and > Scale 3.
10. Scale 4 ≥ Scale 3 and > Scale 5.
11. $\sum [\text{Scales } 1 + 2 + 3] < 181T$.  

**Secondary Rules**

**Rules**

1. The highest scale is Scale 6, 8, 9, or 0.*
2. Scale 0 is one of the top three scales.*
3. Scale 1 is not one of the top three scales.*
4. Scale 3 is not one of the top three scales.*
5. Left Sum > Right Sum.
6. Scale 1 < 55T.
7. Scale 3 < 55T.
8. Scale 6 > Scale 5.

**Point Chart**

<table>
<thead>
<tr>
<th>No. Points</th>
<th>Points</th>
<th>Level</th>
</tr>
</thead>
<tbody>
<tr>
<td>8</td>
<td>+1</td>
<td>High</td>
</tr>
<tr>
<td>5–7</td>
<td>+1</td>
<td>Medium</td>
</tr>
<tr>
<td>1–4</td>
<td>+1</td>
<td>Low</td>
</tr>
<tr>
<td>0</td>
<td>+1</td>
<td>Minimum</td>
</tr>
</tbody>
</table>
Group Charlie

Primary Rules

1. Highest scale > 68T and < 112T.
2. Scale 4, 6, or 8 is one of the two highest scales (except for ties among Scales 4, 6, or 8, ties are not permitted.)
3. Scales 1, 2, 3, 5, and 0 cannot be (or be tied with) the highest scale.
4. Scales 1, 2, and 3 < 82T.
5. Scale 6 > 57T.
6. Scale 8 > 60T.
8. $\sum [\text{Scales } 4 + 6 + 8] > 185T.$

Secondary Rules

Rules Points
1. Scale 6 is the highest scale (may be tied with Scales 4 or 8). +1
2. Scales 4, 6, and 8 are all among the top four scales.* +1
3. Scale 6 > Scale 7. +1
4. Scale 6 > Scale 8. +1
5. Scales 6 and 8 are the two highest scales.* +1
6. Left Sum ≤ Right Sum. +1

Point Chart

<table>
<thead>
<tr>
<th>No. Points</th>
<th>Level</th>
</tr>
</thead>
<tbody>
<tr>
<td>5–6</td>
<td>High</td>
</tr>
<tr>
<td>3–4</td>
<td>Medium</td>
</tr>
<tr>
<td>1–2</td>
<td>Low</td>
</tr>
<tr>
<td>0</td>
<td>Minimum</td>
</tr>
</tbody>
</table>

Group Delta

Primary Rules

1. Disregarding Scales 5 and 0, Scale 4 is the highest scale.*
2. Scale 4 is at least 4 points higher than any of Scales 1, 2, 3, 7, 8, or 9.
3. Scale 4 ≥ 61T.
4. Scales 2 and 3 < 77T.

*Ties are permitted.
5. Scales 6, 8, and 0 are all < 74T.
6. Scales 1, 5, 7, and 9 are < 71T.

Secondary Rules

Rules
1. Scale 4 is at least 5 T-score points higher than any other clinical scale. 
2. Scale 4 is at least 10 T-score points higher than any other clinical scale.
4. Scale 4 > 65T.
5. Scale 4 > 70T.
6. Scale 4 > 79T.
7. Scale 2 > Scales 1 and 3.
8. Scale 6 is the second highest scale.*

Points
+2*
+1
+1
+1
+1
+1
+1

Point Chart

No. Points Level
6–9 High
3–5 Medium
1–2 Low
0 Minimum

Group Easy

Primary Rules
1. Neither Scale 8 nor Scale 9 can be (or be tied with) the highest scale.
2. Disregarding Scales 5 and 0, at least two of Scales 1, 2, 3, or 4 are among the top three scales.**
3. Scales 4 and 9 cannot both be in (or tied with) the top three scales.
4. Scales 1 and 9 < 80.
5. Scales 2 and 0 < 75T.
6. Scales 4, 5, 6, 7, and 8 < 70T.
7. Scale 3 > 49T.
8. Scale 4 > 45T.

*Note two points.
**Ties are permitted.
Secondary Rules

Rules

1. Scale 3 is the highest scale.*  
Points  
+1

2. Scale 3 is one of the two highest scales.*  
+1

3. Scales 2 and 4 are not (and are not tied with) the two  
highest scales.  
+1

4. Scale F < Scale L.  
+1

5. Scale F < Scale K.  
+1

6. Scale 3 > Scale 2.  
+1

7. Left Sum > Right Sum.  
+1

Point Chart

No. Points  
7  
High  
4--6  
Medium  
1--3  
Low  
0  
Minimum

Group Foxtrot

Primary Rules

1. Highest scale < 100T.

2. Scales 1, 2, 3, 5, or 0 are never the top scale (and are never tied with the  
top scale).

3. Disregarding Scale 0, Scales 4, 8, and 9 are all among the top four scales.  
   @

4. Scale 6 < 80T.

5. Scales 1, 2, 3, 7, and 0 are all < 76T.

6. Scale 4 > 56T and < 91T.

7. Scale 8 > 45T and < 91T.

8. Scale 9 > 58T.


10. Big Sum > 366T.

11. Big Sum < 607T.

*Ties are permitted.
Secondary Rules

Rules

1. Scales 4, 8, and 9 are the top three scales. +1
2. Scales 4, 8, and 9 are among the top four scales.* +1
3. Scale 9 is the highest scale.* +1
4. Scale 9 > Scale 6. +1
5. Scale 9 > Scale 8. +1
6. Scale F > Scale K. +1

Points Chart

<table>
<thead>
<tr>
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</thead>
<tbody>
<tr>
<td>5–6</td>
<td>High</td>
</tr>
<tr>
<td>3–4</td>
<td>Medium</td>
</tr>
<tr>
<td>1–2</td>
<td>Low</td>
</tr>
<tr>
<td>0</td>
<td>Minimum</td>
</tr>
</tbody>
</table>

Group George

Primary Rules

1. Highest scale < 95T.
2. If the highest scale is > 61T, then it cannot be Scale 5, 6, 8, or 9 (and the highest scale cannot be tied with scales 5, 6, 8, or 9).
3. If Scale 3 < 70T, it cannot be one of the two highest scales or tied for second.
4. Scale 2 > 49T and < 78T.
5. Scale 4 > 43T and < 80T.
6. Scale 6 < 69T.
7. Scale 7 < 78T.
8. Scales 8 and 9 < 76T.
9. Big Sum > 345T.
10. Big Sum < 540T.
11. If Scale 7 is < 70T, Left Sum > Right Sum.

*Ties are permitted.
Secondary Rules

Rules                      Points
1. Scale 1, 2, or 4 is the top scale.*  +1
2. Scale 1, 2, or 4 is the second highest scale.  +1
3. Scales 2 and 4 are the two highest scales.*  +1
4. Scale 2 is one of the top three scales.*  +1
5. Scale 2 > Scale 3.  +1
6. Scale 2 > 64T.  +1

Point Chart

No. Points  Level
5–6    High
3–4    Medium
1–2    Low
0    Minimum

Group How

Primary Rules

1. Highest clinical scale > 71T.
2. Second highest clinical scale > 67T.
3. Highest scale is never Scale 5 or 0 (and is never tied with 5 or 0).
4. Scale 2 > 56T.
6. Big Sum > 479T.
7. At least five clinical scales > 59T.

Secondary Rules

Rules                      Points
1. Three clinical scales > 69T.  +1
2. Seven or more clinical scales > 59T.  +1
3. Highest scale > 80T.  +1
4. Scale 7 > Scale 6.  +1
5. Scale 8 is the highest scale (ties not permitted).  +1
6. Scale 8 > Scale 6.  +1

*Ties are permitted.
**Point Chart**

<table>
<thead>
<tr>
<th>No. Points</th>
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<tbody>
<tr>
<td>5–6</td>
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</tr>
<tr>
<td>3–4</td>
<td>Medium</td>
</tr>
<tr>
<td>1–2</td>
<td>Low</td>
</tr>
<tr>
<td>0</td>
<td>Minimum</td>
</tr>
</tbody>
</table>

**Group Item**

**Primary Rules**

1. All clinical scales < 70T.*
2. The third highest clinical scale < 66T.
3. Big Sum < 495T.
4. [Scales 1 + 2 + 3] < 185T.
5. [Scales 2 + 4] < 129T.
6. [Scales 4 + 9] < 135T.
7. [Scales 4 + 6 + 8] < 195T.
8. Right Sum < 258T.

**Secondary Rules**

<table>
<thead>
<tr>
<th>Rules</th>
<th>Points</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Scales 1 through 9 are all &lt; 66T.</td>
<td>+1</td>
</tr>
<tr>
<td>2. Scale 5, 6, or 0 is the highest scale.**</td>
<td>+1</td>
</tr>
<tr>
<td>3. Scale 8 is not the highest scale (or tied with the highest scale).</td>
<td>+1</td>
</tr>
<tr>
<td>4. Scale L ≥ Scale F</td>
<td>+1</td>
</tr>
<tr>
<td>5. Left Sum ≤ Right Sum.</td>
<td>+1</td>
</tr>
<tr>
<td>6. [Scales 4 + 9] &lt; 110T.</td>
<td>+1</td>
</tr>
</tbody>
</table>

**Point Chart**

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<td>Low</td>
</tr>
<tr>
<td>0</td>
<td>Minimum</td>
</tr>
</tbody>
</table>

*Ties are permitted.

**Exception:** If the profile does not meet the basic rules for any other group and would be classified "Unclassifiable," it can be classified in Group Item if the highest scale (and only one scale) is in the range 70T through 79T and providing all the other primary rules for Group Item are met.
Group Jupiter

Primary Rules

1. Highest scale > 66T.
2. Disregarding Scale 0, the highest scale is 6, 7, 8, or 9. (Except for ties between 6, 7, 8, or 9, ties are not permitted.)
3. Scales 1 and 0 < 78T.
4. Scale 3 < 72T.
5. Scale 4 > 39T and < 68T.
6. Scale 7 > 48T and < 80T.
7. Scale 8 > 57T and < 97T.
8. Scale 9 > 52T and < 95T.
9. [Right Sum – Left Sum] ≥ +10T.

Secondary Rules

Rules
Points
1. Highest scale < 91T.  +1
2. Disregarding Scale 0, one of Scales 7, 8, or 9 is among the two highest scales.*  +1
3. Disregarding Scale 0, Scales 7, 8, and 9 are all among the four highest scales.*  +1
4. [Scale F] – [Scale K] > +9T.  +1
5. [Scale 9] – [Scale 8] ≤ 19T.  +1

Point Chart

<table>
<thead>
<tr>
<th>No. Points</th>
<th>Level</th>
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</thead>
<tbody>
<tr>
<td>5</td>
<td>High</td>
</tr>
<tr>
<td>3–4</td>
<td>Medium</td>
</tr>
<tr>
<td>1–2</td>
<td>Low</td>
</tr>
<tr>
<td>0</td>
<td>Minimum</td>
</tr>
</tbody>
</table>

*Ties are permitted.
Appendix E

Guidelines for Classifying Multiply Classified MMPI-2 Profiles

The following guidelines will help resolve some of the most common cases of multiply classified profiles. There may be some instances that are not covered by these guidelines. Clinicians experienced in the system may try to resolve these cases based on their knowledge of the system. However, it is probably best to leave them multiply classified.

Occasionally there will be three-way and even four-way ties. These are to be dealt with sequentially, two at a time. If, for example, Types Able, Baker, and Easy should be tied, the Able/Baker tie should be resolved first. If it cannot be resolved, the profile stays multiply classified. If it can, the “winner” is compared with Easy. If the Able/Baker tie is resolved in favor of Baker, then proceed as with a Baker/Easy tie, and so on.

Since Group Item is involved in many two-way and three-way ties, programming will probably be easiest if ties involving Group Item are dealt with first. The Item guidelines will be presented first, followed by the rest of the Groups in alphabetical order beginning with Able.

Ties Involving Group Item

General Principles

Except as specified otherwise in these guidelines, ties involving Group Item should be resolved in favor of the other group. Reminder: In the event of three-way ties, after the tie involving Item is resolved, the preferred group should be compared with the remaining groups in the multiple classification.
Specific Comparisons

1. Item vs. Able.
   a. If Scales 4 and 9 are the two highest scales (or tied for the highest), and if Scales 4 and 9 are both ≥ 50T, classify as Able.
   b. If Scales 4 and 9 are not the two highest (or tied for the highest), or if Scales 4 and 9 are not both ≥ 50 T, classify as Item.


4. Item vs. Easy. In Item/Easy ties, the general principle does not apply. All such ties are to be decided on their merits according to these guidelines:
   a. If Scale 6 is the highest scale or the second highest scale, classify as Item. (This applies even if the provisions of b are met.)
   b. If Scale 3 or Scale 4 is the highest scale or tied for the highest, and if both Scales 3 and 4 are among the three highest scales, and if Scales 3 and 4 are both ≥ 55T, classify as Easy.
   c. If all the provisions of b are not met, classify as Item.

5. Item vs. Foxtrot.
   a. If the two highest scales are Scales 4, 8, or 9, and if both are ≥ 60T, classify as Foxtrot.
   b. If the two highest scales are not Scales 4 or 8 or 9, or if two of Scales 4, 8, and 9 are not both ≥ 60T, classify as Item.

6. Item vs. George. In Item/George ties, the general principle does not apply. All such ties are to be decided on their merits according to these guidelines:
   a. If all the clinical scales are < 65T, and Scales 1, 2, 3, and 4 are all < 60T, classify as Item.
   b. If not, classify as George.

Ties Involving Group Able

General Principle

If Scales 9 and 4 are the two top scales, Able is preferred.

Specific Comparisons

   a. If Scales 4 and 9 are the two highest scales, classify as Able.
   b. If Scale 2 is one of the two highest scales, classify as Baker.
   c. If Scale 9 is the highest scale, and Scales 2 and 4 are tied with each other for second place, classify as Able.
2. *Able vs. Charlie.* If Scale 4 is the highest scale, and
   a. if Scale 9 > Scale 6 and > Scale 8, classify as Able.
   b. if Scale 6 > Scale 9, classify as Charlie.
   c. if Scale 8 > Scale 9, classify as Charlie.

3. *Able vs. Delta.* Disregarding the elevation of Scales 5 and 0, if Scale 4 is
   the highest scale, and
   a. if Scale 9 is not the second highest scale or tied for second highest,
      classify as Delta.
   b. if Scale 9 is the second highest scale and Scale 4 \( \geq 65T \), and \([(\text{Scale} 4 - \text{Scale} 9) \geq 8]\), classify as Delta.
   c. if Scale 9 is the second highest scale, and Scale 4 \(< 65T \) or \[(\text{Scale} 4 - \text{Scale} 9) < 8\] , classify as Able.

4. *Able vs. Easy.*
   a. If Scales 4 and 9 are the two highest scales, classify as Able.
   b. If Scales 4 and 3 are the two highest scales, classify as Easy.

5. *Able vs. Foxtrot.*
   a. If Scales 8 and 9 are the two highest scales, classify as Foxtrot.
   b. If Scales 4 and 9 are the two highest scales, and
      i. if Scale 8 \( \geq 60T \), classify as Foxtrot.
      ii. if Scale 8 \(< 60T \), classify as Able.

   a. If Scales 4 and 9 are the two highest scales, classify as Able.
   b. If Scale 9 is not one of the two highest scales, classify as George.

**Ties Involving Group Baker**

**Specific Comparisons**

1. *Baker vs. Delta.*
   a. If Scale 4 \(< 64T \), classify as Baker.
   b. If Scale 6 is the second highest scale, classify as Delta.

2. *Baker vs. Foxtrot.*
   a. If Scale 2 \( > 65T \), classify as Foxtrot.
   b. If Scale 2 \( \leq 65T \), classify as Baker.

   a. If Scale 2 \( \geq 63T \), classify as George.
   b. If Scale 2 \( \leq 62T \), classify as Baker.
Ties Involving Group Charlie

Specific Comparisons

   a. If Scales 4, 6, and 8 are the three highest scales, classify as Charlie.
   b. If Scales 4, 8, and 9 are the three highest scales, classify as Foxtrot.
   c. If Scales 4, 6, 8, and 9 are all among the four highest scales, and
      i. if Scale 6 > Scale 9, classify as Charlie.
      ii. if Scale 9 > Scale 6, classify as Foxtrot.

   a. If Scales 4, 6, and 8 are all ≥ 70T, and Scales 4, 6, and 8 are all among the four highest clinical scales, classify as Charlie.
   b. If Scales 4, 6, and 8 are all < 70T, or Scales 4, 6, and 8 are not all among the four highest clinical scales, classify as How.

   a. If Scale 2 or Scale 4 ≥ 65T, classify as Charlie.
   b. If Scale 1 ≥ 60T, classify as Charlie.
   c. If Scale 3 ≥ 52T, classify as Charlie.
   d. If Scale 4 ≤ 50T, Classify as Jupiter.

Ties Involving Group Delta

Specific Comparisons

1. Delta vs. Easy. If Scale 4 is the highest scale, and
   a. if Scale 3 is not the second highest scale, classify as Delta.
   b. if Scale 3 is the second highest scale, and
      i. if Scale 4 ≥ 65T and [Scale 4 – Scale 3] ≥ 10T, classify as Delta.
      ii. if Scale 4 < 65T and [Scale 4 – Scale 3] ≤ 5T, classify as Easy. (If [Scale 4 – Scale 3] = 6, 7, 8, or 9, it stays multiply classified.)

2. Delta vs. Foxtrot.
   b. If [Scale 4 – Scale 8] ≤ 5 and/or [Scale 4 – Scale 9] ≤ 5 classify as Foxtrot.

3. Delta vs. George.
   a. If [Scale 4 - Scale 2] ≥ 10T, classify as Delta.
   b. If [Scale 4 - Scale 2] < 10T, classify as George.
Ties Involving Group Easy

*General Principle*

If Scale 3 is the highest scale, classify as Easy.

*Specific Comparisons*

1. *Easy vs. George.*
   a. If Scale 3 is the highest, classify as Easy.
   b. If Scales 3 and 4 are the two highest or tied for highest, classify as Easy.
   c. If Scales 1 or 2 are the highest, classify as George.
   d. If Scales 1 and 4 or Scales 2 and 4 are the two highest or tied for highest, classify as George.
   e. If all scales are $\leq 55T$, and Easy and George are involved in a three-way tie with Item, classify as Item.

Ties Involving Group Foxtrot

*Specific Comparisons*

1. *Foxtrot vs. George.*
   a. If Scales 4, 8, and 9 are among the four highest scales and are all $\geq 65T$, classify as Foxtrot.
   b. If $a$ above does not apply, and if either Scale 1 or 2 is among the two highest scales, classify as George.
   c. If at least two of Scales 4, 8, and 9 are $< 65T$, classify as George.

Ties Involving Group George

*Specific Comparisons*

1. *George vs. How.*
   a. If Right Sum $>$ Left Sum, classify as How.
   b. If three or more scales $\geq 70T$, classify as How.
   c. If Scale $F > 70T$, classify as How.
   d. If Scale 1 or Scale 2 is the highest scale, classify as George.