An Exploration of the Trauma Histories, Dissociative Experiences and Psychopathic Features of Murderers

A Thesis Submitted for the Award of Doctor of Philosophy

by

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September 2008

Abstract

Background: Differential relationships of the dimensions of psychopathy with external factors indicate that psychopathy can be conceptualised as a multifaceted syndrome comprised of distinct subgroups of psychopaths (Blackburn, 1988). However, it is not known whether similar subtypes of psychopathy exist across cultures. The research question which this thesis sought to answer was: Do subtypes of psychopathy exist among murderers, and if so, might the prevalence of these subtypes differ across cultures? Three aims were addressed: i) to compare the trauma histories, dissociative experiences and psychopathic features of British and South African men convicted of murder and the associations among them; ii) to test potential aetiological models of psychopathy; and iii) to explore whether subtypes of psychopathy could be identified among men convicted of murder.

Method: Participants were 120 adult male prisoners serving sentences for murder. Sixty participants were British and incarcerated in prisons in England and 60 participants were South African and incarcerated in South Africa. Trauma, dissociation and psychopathy were measured using the Trauma History Questionnaire (THQ; Green, 1996), the Dissociative Experiences Scale (DES; Carlson & Putnam, 1993) and the Psychopathy Checklist-Revised Second Edition (PCL-R; Hare, 2003a), respectively.

Results: South African participants reported significantly more traumatic and dissociative experiences and possessed more psychopathic features than their British counterparts. Structural equation modelling (SEM) analyses of the entire sample revealed that trauma was positively and directly related to the behavioural features of psychopathy, whereas trauma was positively and indirectly related to the affective features of psychopathy via the partial mediating role of dissociation, suggesting that subtypes of psychopathy may exist among murderers. In addition, cluster analyses identified subtypes of psychopathy, two of which parallel variants of primary and secondary psychopathy described in the literature.

Conclusions: Dissociation may mediate the relationship between trauma and psychopathy among individuals who have experienced high levels of trauma, suggesting that there may be a threshold or a 'cut-off' level at which witnessing or experiencing trauma becomes detrimental for one's psychological health. The prevalence of certain subtypes of psychopathy may differ across cultures. Findings have theoretical implications as well as implications for the treatment and risk assessment of offenders.

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Acknowledgement

I would like to thank my supervisor Dr Martina Reynolds for providing me with guidance and advice throughout the duration of my PhD. I would also like to thank HM Prison Service and the South African Department of Corrections for granting me permission to conduct this research, as well as the Psychologists and Prison Officers who helped organise my prison visits. Most of all, I would like to thank my Mum and Dad for their endless love and support, and my partner and soulmate Jon for always having faith in my abilities and for brightening my darkest moments. Without them I would not have found the strength to complete this research.

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CHAPTER ONE

Introduction

Overview

The construct of psychopathy was operationalised by Hervey Cleckley, who believed that "these curious people referred to as sociopaths or psychopaths...offer a field of study in personality disorder more baffling and fascinating than any other" (Cleckley, 1964, p.13). Cleckley proposed 16 core personality traits of psychopaths and believed that these individuals have deficits in interpersonal and affective functioning. Hart and Hare (1997) summarise the essential features of Cleckley's psychopath:

> *Interpersonally, psychopaths are grandiose, arrogant, callous, superficial and manipulative; affectively, they are short-tempered, unable to form strong emotional bonds with others, and are lacking in empathy, guilt or remorse; and behaviorally, they are irresponsible, impulsive, and prone to violate social and legal norms and expectations.* (Hart & Hare, 1997, pp. 22-23)

Hare (1980) extended Cleckley's ideas to develop the *Psychopathy Checklist* (PCL), a rating scale for the assessment of psychopathy in male forensic populations.[1] The scale consists of items that measure the personality traits and behaviours believed to be essential to the clinical construct of psychopathy exemplified by Cleckley. The PCL was an attempt to operationalise assessment procedures so that clinicians could readily understand what was meant by the term psychopathy. Many researchers also adopted the PCL and subsequently, a large number of research findings emerged. Increasing popularity made it necessary to refine the PCL to provide more explicit scoring instructions. This led to the development of the *Psychopathy Checklist-Revised* (PCL-R; Hare, 1991) – a revised version of the PCL, which was developed with data from male offenders and forensic patients (Brown & Forth, 1997).

[1] The PCL was developed for use with male populations because criminal offenders are disproportionately male.

Apart from improved scoring criteria and modified item descriptions, the PCL-R has the same psychometric properties as the PCL and measures the same construct. It would have been possible to include additional items in the PCL-R, but the item selection procedures used for its development indicated that they would have been difficult to score or of little value (Hare, 1991). The PCL-R items are consistent with Cleckley's core traits, as shown in Table 1.1. The PCL-R is the most widely used instrument for assessing psychopathy in the criminal justice system and has been described as "state of the art...both clinically and in research use" (Fulero, 1995, p.454).

Table 1.1 Cleckley's core traits and the PCL-R items

Cleckley's 16 core traits of psychopaths	**PCL-R items**
1. Superficial charm and good intelligence	1. Glibness/Superficial Charm
2. Absence of delusions and other signs of irrational thinking	2. Grandiose Sense of Self Worth
3. Absence of nervousness or psychoneurotic manifestations	3. Need for Stimulation/Proneness to Boredom
4. Unreliability	4. Pathological Lying
5. Untruthfulness and insincerity	5. Conning/Manipulative
6. Lack of remorse or shame	6. Lack of Remorse or Guilt
7. Inadequately motivated antisocial behavior	7. Shallow Affect
8. Poor judgement and failure to learn by experience	8. Callous/Lack of Empathy
9. Pathologic egocentricity and incapacity for love	9. Parasitic Lifestyle
10. General poverty in affective reactions	10. Poor Behavioral Controls
11. Specific loss of insight	11. Promiscuous Sexual Behavior
12. Unresponsiveness to interpersonal relationships	12. Early Behavioral Problems
13. Fantastic and uninviting behavior with or without alcohol	13. Lack of Realistic, Long-Term Goals
14. Suicide rarely carried out because of love of the self	14. Impulsivity
15. Sex life impersonal, trivial and poorly integrated	15. Irresponsibility
16. Failure to follow any type of life plan	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
	Note: From Hare (1991)

Following the success of the PCL-R, the *PCL-R Second Edition* (Hare, 2003a) was released. The PCL-R Second Edition manual (Hare, 2003b) was developed to include comparison tables based on larger and more diverse samples including North American male and female offenders, male forensic psychiatric patients and English male offenders. However, it is important to note that the PCL-R Second Edition is not a revision of the PCL-R as the items and their scoring criteria remain the same. This is in keeping with recommendations for determining the need for revisions to a psychological instrument (Knowles & Condon, 2000; Silverstein & Nelson, 2000; Strauss *et al.,* 2000).

Harpur *et al.* (1989) proposed that two factors underlie the PCL-R; Factor 1 measures the *interpersonal*/*affective* features of psychopathy, while Factor 2 reflects *social deviance.*[2] However, Cooke and Michie (2001) proposed that the PCL-R would be better accounted for by a three-factor model, underpinned by *interpersonal*, *affective* and *behavioural* factors. This model excludes the items which reflect antisocial behaviour in the two-factor model. More recently, Hare (2003b) proposed a four-factor model, in which each of the factors of the original two-factor model are split into two facets: Factor 1 is split into an *interpersonal* facet and an *affective* facet, and Factor 2 is split into a *lifestyle* facet and an *antisocial* facet.

However, it has been suggested that the construct of psychopathy should be "uncontaminated with criminality and socially deviant behavior, because these...can be considered to be strong correlates to psychopathy rather than core features and part of the definition of this disorder" (Johansson *et al*., 2002, p. 82). This view is consistent with the personality-based view of psychopathy, which proposes that socially deviant behaviour is neither necessary nor sufficient for an individual to be labelled as psychopathic (Lilienfeld *et al*., 1997). It is also in keeping with Hare's (1993) description of the *subcriminal* psychopath who "never goes to prison or any other facility. They appear to function reasonably well – as lawyers, doctors, psychiatrists, academics...without breaking the law, or at least without being caught and convicted" (p.113). The three-factor PCL-R model was used in the present research to explore whether subtypes of psychopathy could be identified among men convicted of murder. The psychopathic features reflected by each of the factors are shown in Table 1.2.

Table 1.2 Psychopathic features reflected by the three-factor PCL-R model

PCL-R Factor	PCL-R items
Factor 1: Interpersonal	1. Glibness/Superficial Charm 2. Grandiose Sense of Self Worth 4. Pathological Lying 5. Conning/Manipulative
Factor 2: Affective	6. Lack of Remorse or Guilt 7. Shallow Affect 8. Callous/Lack of Empathy 16. Failure to Accept Responsibility for Own Actions
Factor 3: Behavioural	3. Need for Stimulation/Proneness to Boredom 9. Parasitic Lifestyle 13. Lack of Realistic, Long-Term Goals 14. Impulsivity 15. Irresponsibility

[2] Throughout this thesis, capital letters are used as opposed to lowercase letters to refer to PCL-R Total and the PCL-R Factors (i.e. PCL-R Total, Factor 1, Factor 2, Factor 3), in keeping with the PCL-R manual (Hare, 1991, 2003b).

Although an individual may score highly on certain PCL-R items, they may score relatively low on others, making them less psychopathic overall than an individual who scores highly on many of the items. Thus, a PCL-R Total score can result from a variety of combinations of items, which suggests that "offenders who fall in a given range of PCL-R scores (e.g. 30 or higher) are not necessarily homogeneous with respect to all of the salient features of psychopathy they exhibit" (Hare, 2003b, p.10). For instance, some individuals possess more *personality* features (i.e. interpersonal or affective features) whereas others exhibit more *behavioural* features, suggesting that psychopathy is a heterogeneous construct.

It has been posited that different developmental or aetiological mechanisms may be accountable for different combinations of psychopathic features (Brinkley *et al*., 2004). As Poythress *et al*. (2006) note, Cleckley (1941, 1976) believed that psychopathy has a constitutional aetiology in which the *primary* psychopath's deficit is a biologically based disorder, whereas other theorists believe that psychopathy is a heterogeneous construct and distinguish psychopathy subtypes on the basis of aetiology, with certain subtypes being largely sociocultural in origin. Porter (1996) proposed a specific type of psychopath whose symptoms result from early abuse or abandonment. This *secondary* psychopath has experienced a "dissociation" or deactivation of a capacity for affective, or empathetic responding. In other words, secondary psychopaths *acquire* psychopathic features, whereas primary psychopaths are born psychopathic (Porter, 1996).

Dissociation is defined by the *Diagnostic and Statistical Manual of Mental Disorders-Fourth Edition-Text Revision* (DSM-IV-TR; American Psychiatric Association [APA], 2000) as "a disruption in the usually integrated functions of consciousness, memory, identity or perception of the environment" (p.456). Dissociation is an adaptive response to trauma; an individual is unable to fight or flee and so psychologically distances themselves (Perry *et al*., 1995). Dissociative coping is thought to be available early in infancy (Liotti, 1992) and a tendency to dissociate is believed to remain with the child as they grow into adulthood, subsequently impairing the development of identity and emotional coping mechanisms (Turkus, 2003). Kardiner (1941) claims that once traumatised, an individual "acts as if the original traumatic situation were still in existence and engages in protective devices which failed on the original occasion" (p.82). Consequently, the individual's perception of the world and themselves are permanently altered (Kardiner, 1941). Porter's (1996) idea that dissociation mediates an association between trauma and psychopathy is often referred to as the *diminished affective responding model* (e.g. Poythress *et al.,* 2006).

An alternative explanation for an association between trauma and psychopathy is *vicarious conditioning*. Vicarious conditioning models (Bandura *et al*., 1963, Berkowitz, 1993) propose that individuals acquire impulsive and aggressive behaviours by observing aggressive role models. The use of aggressive behaviour is shaped during childhood; reward is a child's indication that they are behaving appropriately, whereas punishment is an indication that they are not behaving in a socially acceptable way. In order for behaviour to be shaped appropriately, the child must have a need to be accepted by others (Bandura, 1973). It is believed that parenting plays an important part in this process, as a child who receives inconsistent discipline might not learn what behaviour is acceptable. In addition, a child who is not well-cared for or who is rejected by a parent or caregiver may not learn to desire the acceptance and love of others. Furthermore, feelings of rejection may lead to hostility and aggressive behaviour (Bandura, 1973). It is possible that subtypes of psychopathy may have different aetiologies.

A number of studies have investigated whether subtypes of psychopathy exist in offender populations (e.g. Alterman *et al*., 1998; Haapasalo & Pulkkinen, 1992; Herve *et al*., 2000; Hicks *et al*., 2004; Miller *et al*., 2001; Nestor *et al*., 2002; Skeem *et al*., 2007; Swogger & Kosson, 2007; Vassileva *et al.*, 2005), most of which have found support for subtypes which resemble primary and secondary variants of psychopathy described in the literature. However, because these studies have not selected offenders on the basis of offence type, it is not known whether subtypes exist in specific offender populations. In addition, although studies have examined the PCL-R ratings of offenders from different countries and ethnic groups (e.g. Cooke, 1998; Cooke & Michie, 1997; Kosson *et al.*, 1990; Rasmussen *et al*., 1999; Thornquist & Zuckerman, 1995), there is a paucity of research surrounding whether subtypes of psychopathy exist among offenders from different cultural groups.

The present research seeks to bridge the aforementioned gaps in the literature by exploring whether subtypes of psychopathy might exist in a specific offender population from different cultures. Murderers were selected as a suitable offender population for the purpose of the research because they constitute a more clearly delineated group than 'violent' offenders; murder is defined as killing with intent, whereas violence is more difficult to define because of its differing levels of severity (e.g. actual bodily harm, grievous bodily-harm, wounding, kidnapping).

The UK and South Africa constitute an interesting comparison because they are very different with respect to their murder rates. In the UK, murder is a relatively uncommon event (Shaw *et al*., 2005), whereas South Africa has the third highest murder rate in the world (Pistorius, 2000); the UK has approximately 2 murders per 100,000 compared to South Africa which has a murder

rate of 56 per 100,000 (Brooks & Barker, 2003). Potential explanations for the high murder rate in South Africa include a low standard of education, a lack of social and vocational skills, poor living conditions and a lack of parenting skills (Masuku, 2002). In addition to their substantially different murder rates, the UK and South Africa also have very different cultural histories:

> *Clearly, the cultural divide between these two countries is substantial ... In particular, South Africa has the tradition of "Apartheid" that differentiates it quite markedly from the United Kingdom which does not have the same history of officially sanctioned racism.* (Makoni & Grainger, 2002, p.808)

South Africa has been described as one of the most psychologically ill societies in the world (Hickson & Kriegler, 1991) and is characterised by a "culture of violence" (Vogelman & Simpson, 1990). Research has suggested that exposure to violence causes short-term psychological suffering (Straker, 1987) as well as more serious consequences for psychological development and future behaviour (Gibson, 1991). Punamaki (as cited in Macksoud & Aber, 1996) claims that profound alterations in behaviour have been observed among the victims of violence and political unrest, including aggressive behaviour. Many individuals who have experienced violence are psychologically bruised and have come to accept violence as a way of life and as an appropriate means of conflict resolution (Chikane, 1986; Netshiombo, 1994). A major concern is that harsh environments may lead to the demoralisation and *dehumanisation* of South African individuals: "South Africa has produced a generation of children who have been socialised to find violence completely acceptable and human life cheap" (Chikane, 1986, p.344).

As well as in South Africa, research has indicated that many people in Northern Ireland have been psychologically affected by conflict (e.g. Cairns *et al.*, 1995). Leading on from such research, Dorahy *et al.* (2003) examined associations between traumatic experiences and dissociation among citizens of Northern Ireland and found that dissociative experiences were related to political violence exposure. It is possible therefore, that South African individuals might be more likely than British individuals to dissociate in response to trauma and to subsequently disconnect emotion from their thoughts and behaviour. Subsequently, from the perspective of Porter's diminished affective responding model, South Africans may possess more psychopathic personality features, particularly those reflected by the affective domain of psychopathy.

Background of the Research

The choice of research topic for this thesis stemmed from my avid interest in true crime stories as a child and my work at psychiatric units. Before this, the tendency of the media to sensationalise stories of rapists and serial killers as *psychopathic* and *evil* had led me to believe that such individuals would be difficult to engage with. During my time as an Assistant Psychologist, I met a number of patients convicted of violent offences. One particular patient had been convicted of stabbing a woman to death whom he had been having a sexual relationship with. He buried her body in a bin liner and stored it in his attic until it was discovered by police some months later. I was invited by my supervisor to attend his assessment meeting and was informed beforehand that he had previously been labelled as psychopathic. Due to my preconceptions (and misconceptions) about psychopathic individuals, I felt nervous about meeting him. However, during the meeting and over time, I was surprised to learn that he was one of the friendliest patients on the ward and possessed seemingly normal interpersonal skills. This intrigued me and led me to develop a curious interest in the concept of psychopathy. Ironically, I now work at a therapeutic community (TC) prison, which offers therapy to a number of men considered psychopathic. This has enabled me to gain more of an understanding of psychopathy, both from a clinical and a research perspective.

The Research Question

The research question which this thesis seeks to answer is: *Do subtypes of psychopathy exist among murderers, and if so, might the prevalence of these subtypes differ across cultures?* This question will be answered by addressing three research aims: i) to compare the trauma histories, dissociative experiences and psychopathic features of British and South African men convicted of murder and the associations among them; ii) to test potential aetiological models of psychopathy; and iii) to explore whether subtypes of psychopathy can be identified among men convicted of murder. It is important to address this research question because it is not known whether differences exist in the manifestation of psychopathy across cultural groups (Hare, 1991). Because of the increasing use of the PCL-R in correctional institutions with growing minority populations (Sullivan *et al*., 2006), it is important to evaluate the construct of psychopathy in terms of cultural variations, with the goal of expanding current conceptualisations of psychopathy beyond the bounds of western society and taking a more

critical and global perspective when applying the construct as it is currently measured (Sullivan & Kosson, 2006). The present research is also important because the field is just beginning to investigate subtypes of psychopathy (Poythress & Skeem, 2006) and our knowledge of subtypes "seems to be characterized much more by theory and informed speculation than by data" (Skeem, Poythress *et al*., 2003, p.526).

In addition to having theoretical implications, the present research may also have practical implications for the treatment and risk assessment of offenders. As Swogger and Kosson (2007) state, "the classification of offenders into homogeneous groups...may inform efficient application of treatments and may be useful in the prediction of future dangerousness" (p.953). Furthermore, Brinkley *et al*. (2004) claim that understanding the root causes of antisocial behaviour is important because it allows prevention and treatment strategies to be developed that target key mechanisms: "Without an adequate understanding of the underlying etiology [of psychopathy], prevention and treatment are likely to be ineffective because they may target the wrong mechanism for change" (pp.70-71). If different subtypes of psychopathy can be identified among offenders, then this might point to prospective treatment targets. Furthermore, the identification of psychopathy subtypes may improve the ability to predict negative outcomes associated with psychopathy (Falkenbach, 2005) such as severity and variety of criminal behaviour and adjudications in prison (Blackburn & Coid, 1998; Hart & Hare, 1997) as well as violent and non-violent recidivism (Salekin *et al.,* 1996; Serin, 1996; Seto & Barbaree, 1999).

Structure of the Thesis

This thesis is composed of seven chapters, including the present chapter. The contents of the following six chapters are outlined below:

Chapter Two: Literature Review presents a review of the literature relevant to the present research. The chapter begins with an outline of research on trauma and dissociation in British and South African populations and moves on to present the general theories of psychopathy and seminal theories surrounding subtypes of psychopathy. Evidence for the potential existence of sutypes is then discussed. The literature surrounding the study of psychopathy across cultures is reviewed, and psychoanalytic and psychosocial theories are presented which may be invoked in an attempt to explain the aetiology of psychopathy. Finally, the research question, aims and potential implications of the research are summarised. This chapter presents the theoretical framework of the thesis and explains how the research question was derived from gaps in the literature.

Chapter Three: Research Methodology begins by presenting the research philosophy of the thesis. This thesis is written from a positivist perspective and thus employs a quantitative methodology. The participants of the research, the sampling process and the research measures are described, and the research procedure is explained, including ethical considerations, piloting and the semi-structured interviews conducted to obtain the data. Finally, an overview is provided of the methods of data analysis used.

Chapter Four: A Comparison of the Trauma Histories, Dissociative Experiences and Psychopathic Features of British and South African Murderers presents the findings of the research which are relevant to the first aim of the thesis. The demographic characteristics and offence-related characteristics of British and South African offenders are compared as well as their trauma histories, dissociative experiences and psychopathic features. The chapter proceeds with an exploration of the associations among these constructs.

Chapter Five: Aetiological Models of Psychopathy presents the findings of the research which are relevant to the second aim of the thesis. The chapter tests a vicarious conditioning model and Porter's (1996) diminished affective responding model, using the multivariate statistical technique of structural equation modelling (SEM).

Chapter Six: Subtypes of Psychopathy presents the findings of the research relevant to the third aim of the thesis. The chapter explores whether subtypes of psychopathy can be identified among men convicted of murder using the statistical technique of cluster analysis.

Chapter Seven: Discussion and Conclusions summarises the findings of the thesis and discusses them in relation to previous relevant research in the field. The chapter proceeds with a discussion of the strengths and limitations of the research as well as its contributions to knowledge. The implications of the research are discussed and recommendations for future research are made. The chapter closes with a statement of conclusions.

CHAPTER TWO

Literature Review

Overview

The purpose of this chapter is to present a review of the literature relevant to the research question of this thesis. Firstly, research on trauma and dissociation in British and South African populations is outlined. Following this, general theories of psychopathy and seminal theories surrounding subtypes of psychopathy are presented. Evidence for the existence of subtypes is offered, including research which has advocated a positive association between trauma and psychopathy. Studies which have investigated the prevalence of psychopathy across cultures are reviewed. Psychoanalytic and psychosocial perspectives are then discussed which may be invoked in an attempt to explain potential differences in the prevalence and aetiology of psychopathy among British and South African individuals. Finally, the research question and aims of the thesis are restated and the potential implications of the research are discussed.

Trauma

A high prevalence of trauma has been found among offenders in British prisons. For example, Sarkar *et al.* (2005) used the *Trauma History Questionnaire* (THQ; Green, 1996) to compare the traumatic experiences of 27 British male offenders with 28 British (non-offender) psychiatric patients and found that 93% of the total sample reported experiencing trauma and that the offenders reported more multiple traumas and higher rates of physical and sexual abuse. The majority of research surrounding traumatic experiences in England has been conducted with non-offender samples, which may be attributable to the reluctance of HM Prison Service to grant approval for such research on ethical grounds.[1] Sariola and Uutela (1992) conducted a

[1] HM Prison Service often considers research surrounding trauma as potentially distressing to prisoners.

study of 9,000 15 year old British adolescents and found that 72% reported that they had been punished using physical force by their parents before the age of 14, and 8% reported that they had been the victim of severe violence (being punched, kicked or punished with a weapon). Furthermore, Nobes and Smith (1997) conducted a community study of 400 British families with children aged between 1 and 11 years of age and found that 99% of children had been physically punished by one or both of their parents. Twenty-one percent of such punishment was rated as "severe", with 14% of parents using implements (e.g. belts, wooden spoons, shoes) to punish their children.

Hirschowitz and Orkin (1997) claim that out of 3,870 individuals in South Africa aged 16 to 64, approximately a quarter of these individuals had been exposed to one or more violent events, such as being attacked, participating in violence or witnessing one's home being burnt, and Hamber (1999) believes that all of South African society has been traumatised to some degree. In addition to political violence, South African children often witness violence in the home (Abrahams & Jewkes, 2005). Research has found that boys in under-developed countries who witness parental conflict in childhood are at greater risk of being violent themselves in adolescence and adulthood (e.g. Beasley & Stolenberg, 1992) and studies have shown that the most consistent risk factor for engaging in violence in later life is young boys' witnessing abuse of their mothers (Eron *et al*., 1991; McCord, 1979; Widom, 1989).

Abrahams and Jewkes (2005) found that a almost a quarter of 600 South African male offenders witnessed their mother being abused by her partner during childhood and nearly three quarters of those men reported having seen such abuse more than once. The majority of participants (87%) reported that they had been physically punished as children and 14.5% indicated that this punishment occurred frequently (daily or at least once a week). More than a fifth of the men were raised in female-headed households, 17% never saw their biological father during childhood and 6% reported that their father showed no interest in them. Abrahams and Jewkes (2005) claimed that "a considerable proportion of the violence committed by respondents in adulthood could have been avoided if they had not witnessed the abuse of their mothers as children" (p.1814). The current research seeks to compare the traumatic experiences of British and South African men convicted of murder. It is possible that South African participants may report more traumatic experiences (particularly those which are crime-related or involving violence) than their British counterparts due to South Africa's "culture of violence" (Vogelman & Simpson, 1990).

Dissociation

One of the ways in which individuals might cope with trauma is to dissociate. As stated previously in chapter one, dissociation can be defined as "a disruption in the usually integrated functions of consciousness, memory, identity or perception of the environment" (DSM-IV-TR; APA, 2000, p.456) and is believed to be an adaptive response to trauma; an individual is unable to fight or flee and so psychologically distances themselves (Perry *et al*., 1995). Moskowitz (2004) claims that approximately a quarter of offenders experience pathological dissociation and high levels of dissociation have been found in offender populations, including sex offenders (Bliss & Larson, 1985), juvenile offenders (Carrion & Steiner, 2000), domestic violence perpetrators (Simoneti *et al*., 2000) and murderers (Hopwood & Snell, 1933; Holcomb & Daniel, 1988; Spitzer *et al*., 2001). The majority of research conducted on dissociation among murderers has investigated offenders' dissociative experiences in relation to their offence rather than dissociative experiences in general. For example, studies have found that murderers report high levels of amnesia either for the offence itself, or for a period of 30 minutes to 24 hours following the crime (e.g. Bradford & Smith, 1979; Taylor & Kopelman, 1984). Research has also found that murderers often experience depersonalisation at the time of their offence (Lewis, 1998; Tanay, 1969).

Little research has investigated the dissociative experiences of British male offenders. Baker and Beech (2004) investigated disorganised attachment style among 20 male prisoners in the UK convicted of sexual offences, 15 prisoners convicted of violent offences and a comparison group of 21 non-offenders and found that the offenders received significantly higher DES scores than the non-offenders. The mean DES total score for the sample of violent offenders was 26.31 (SD = 20.12). The mean DES total score for the British offenders in the present research shall be compared to that reported by Baker and Beech. However, no known research has been conducted on the dissociative experiences of South African offenders and so the current research shall make an original contribution to knowledge by being the first attempt to do so.

As stated in the previous chapter, it is of interest in this thesis whether dissociation might mediate the relationship between trauma and psychopathy, as suggested by Porter's (1996) diminished affective responding model. This model posits that there is a specific type of psychopath whose symptoms result from early abuse or abandonment. This *secondary* psychopath has experienced a "dissociation" or deactivation of a capacity for affective or

empathetic responding (Porter, 1996). The potential mediating role of dissociation in the association between trauma and psychopathy will be discussed later in this chapter in the section entitled *Theories Surrounding Subtypes of Psychopathy*. However, first, more general theories of psychopathy are discussed.

Psychopathy

It has been suggested that an element of learning is involved in the development of psychopathic features. Lykken (1957) asked psychopaths and controls to learn a "mental maze" and choose a response from four possible answers at intervals. Although a correct response meant that they could progress through the maze, one of the possible answers led to an electric shock. It was found that psychopaths made significantly more responses which resulted in punishment than control respondents, who learned to avoid the punishment. This study indicates that psychopaths show poor avoidance learning, although Arnett *et al*. (1993) argue that poor avoidance learning may be a function of criminality rather than psychopathy per se.

Gray (1970) proposed a deficit in the *behavioral inhibition system* (BIS) of psychopaths, a construct derived from theories of animal learning and motivation and supplemented by consideration of neurobiological findings (Fowles & Dindo, 2006). The BIS can be understood in relation to its counterpart, the *behavioral activation system* (BAS; Gray, 1978), which is related to impulsivity and behaviours associated with attaining a goal. The BIS and BAS are each activated when a goal is presented. If systems are functioning properly, they conflict and provoke anxiety (Lykken, 1995). As an example, when an individual is presented with a socially unacceptable goal, the BAS is activated and they feel the desire to achieve this goal. However, because guilt and punishment are anticipated if one conducts an unacceptable act, the BIS is also activated and anxiety results. In most individuals, the anxiety created by the BIS supersedes the desire to conduct a socially unacceptable act. As Fowles and Dindo (2006) note, Gray did not discuss psychopathy extensively, but suggested that psychopaths seek rewards "with no fear of punishment" and that their persistent antisocial behaviour reflects "a relative insensitivity to punishment" (Gray, as cited in Fowles & Dindo, 2006), implying that they have a weak BIS combined with a normal (or strong) BAS.

Eysenck (1998) believes that conscience is a conditioned response which is developed through socialisation to control an individual's behaviour and that individuals might not develop a conscience for one of two reasons. First, a permissive society results in conditioning

experiences for conscience to either be missing or inadequate, which leads to antisocial behaviour. Second, the wrong experiences are reinforced and so the conditioned response to this reinforcement is also wrong. According to Bandura (1973), the extent to which an individual learns behaviour through imitation is influenced by the consequences of the observed behaviour; behaviour that is rewarded is more likely to be imitated than behaviour that is punished. Bandura coined the term *vicarious conditioning* to refer to learning based on the observed consequences of others' actions, and stated that the following factors are necessary for this type of learning: attention to the behaviour, retention of what is seen, ability to reproduce the behaviour, and motivation.

Bandura proposed that in order for behaviour to be shaped appropriately, a child must have a need to be accepted by others. It is believed that parenting plays an important part in this process, as a child who receives inconsistent discipline might not learn what behaviour is acceptable. In addition, a child who is not well-cared for or who is rejected by a parent or caregiver may not learn to desire the acceptance and love of others. Moreover, feelings of rejection may lead to hostility and aggressive behaviour (Bandura, 1973). Other theorists, such as Lykken (1995) also believe that poor parenting leads to deficiencies in learning to act appropriately and the development of antisocial and/or aggressive behaviour. Lykken's theory is discussed in the next section of this chapter which reviews theories surrounding subtypes of psychopathy.

Skeem and Poythress (2004) found that childhood abuse was positively and directly related to the behavioural features of psychopathy using standardised regression-based analyses (Baron & Kenny, 1986) among 521 male prisoners and substance abuse treatment residents in the US, consistent with a vicarious conditioning model. A limitation of this study is that there was no correction for measurement error, which may serve to exaggerate or diminish certain relationships among the variables under study. Measurement error reflects the adequacy of observed variables in measuring their underlying variables. The multivariate statistical technique of structural equation modelling (SEM) enables measurement error to be controlled and was used in the present research to test potential aetiological models of psychopathy, including a vicarious conditioning model. Poythress *et al*. (2006) conducted SEM analyses and found support for a vicarious conditioning model among 615 male prisoners and substance misuse treatment residents in the US. The stages involved in SEM are described in chapter five.

Although research has suggested that there is an element of learning involved in the development of psychopathic features, there is evidence for certain deficits in the brains of psychopaths. Using positron emission tomography (PET) scans, Raine *et al*. (1997) found that

murderers have prefrontal deficits, including a reduced glucose metabolism in lateral and medial cortical areas of the brain compared to controls matched on age and gender. They believe that damage to the prefrontal region can cause loss of self-control, impulsivity and a lack of ability to modify behaviour, which can subsequently lead to aggression. Research has also detected abnormalities in the corpus callosum of psychopaths. For example, Raine *et al*. (2003) found that increased callosal volume was associated with blunted affect, lack of remorse, lack of social closeness, and reduced skin conductance and heart-rate in response to stressors. These are all characteristic features of psychopaths. However, Blair (as cited in Vien & Beech, 2006) believes that the lifestyle of psychopaths (e.g. substance misuse) may exacerbate neurobiological impairments, if any, rather than the impairments being defined at birth.

An alternative explanation of psychopathy is *low arousal theory* (Hare, 1970), which posits that psychopathic individuals experience a low level of autonomic and cortical arousal compared to non-psychopaths; psychopaths do not become aroused by stimuli that would be exciting or distressing to non-psychopaths and so they seek stimulation to increase their arousal level. A number of studies have found support for this theory (e.g. Glenn *et al*., 2007; Raine & Venables, 1981; Raine *et al*., 1990). For example, Glenn *et al.* (2007) found that psychopathic adults were less fearful and more stimulation-seeking at age 3. The low arousal of psychopaths may be explained by reduced electrodermal activity (EDA) in anticipation of aversive stimuli (Siddle & Trasler, 1981) or an unnaturally high aversion threshold, whereby to reach the threshold, extreme levels of violence or aggression would be necessary to have an aversive effect on psychopaths (Vien & Beech, 2006). In support of this idea, Patrick *et al.* (1993) found that psychopaths had an inhibited startle blink response to emotionally aversive pictures.

Eysenck (1998) believes that low arousal makes an individual less able to be conditioned, and research conducted by Birbaumer *et al.* (2005) provides evidence to support this. They compared the brain activation of psychopaths and non-psychopaths using functional magnetic resonance imaging (fMRI) as well as electrodermal responsivity, arousal and emotional valence ratings. It was found that although non-psychopaths demonstrated successful conditioning, psychopaths failed to show conditioned skin conductance and emotional valence ratings. The authors suggest that the dissociation of emotional and cognitive processing may form the neural basis of a lack of anticipation of aversive events among psychopaths.

Although there is some evidence that psychopaths possess a fear and/or anxiety deficit, Yochelson and Samenow (1976) argue that psychopaths are able to feel fear, anxiety or both and that they frequently worry. However, psychopaths are cautious about revealing their fears as it reflects a weakness in their character. Consequently, they use cognitive strategies to alleviate

fear or to convert fear into anger, which often results in antisocial or violent behaviour. As Vien and Beech (2006) note, although Yochelson and Samenow's theory helps to explain why psychopaths display such little fear and anxiety during clinical trials involving aversive stimuli and accounts for the interpersonal and affective features of the psychopath (e.g. grandiose sense of self-worth, shallow affect) and deviant behaviour, the extent to which such individuals represent psychopaths as defined by the PCL-R is unclear.

Research conducted by Jurkovic and Prentice (as cited in Vien & Beech, 2006) suggests that psychopaths have less mature moral reasoning than other delinquent individuals, and the concept of *theory of mind* (ToM; Leslie, 1987) has been offered as an attempt to explain a potential moral reasoning deficit in psychopaths. The ToM proposes that individuals understand the behaviour of others according to what they believe is reality rather than reality itself. However, research indicates that psychopaths do not have an impairment of ToM (Blair *et al*., 1996; Richell *et al*., 2003). For example, Blair *et al*. (1996) administered ToM tasks developed for adults (which involved reading stories and interpreting the behaviour of the characters or predicting what would happen next) to psychopaths and non-psychopaths, and found that there was no significant difference in task performance between the groups. Vien and Beech (2006) claim that a moral reasoning deficit in psychopaths "does not stem from the inability to distinguish between what is moral or immoral; psychopaths are able to distinguish between the two verbally but are unable to put these words into action" (p.161).

An emotional deficit might be responsible for the psychopath's inability to act on moral reasoning. An emotional deficit which is characteristic of psychopaths is a lack of empathy. Low arousal theory offers one potential explanation for this, although it is possible that a moral reasoning deficit may be attributable to a deficit in forming mental representations. However, research has demonstrated that psychopaths mentalise as well as control respondents (Blair *et al*., 1996) and Blair *et al*. (1995) claim that rather than an inability to mentalise, a moral reasoning deficit in psychopaths may be accounted for by a deficit in emotional attribution. They showed 25 psychopaths and 25 non-psychopaths vignettes of stories representing embarrassment, guilt, happiness and sadness and asked them to attribute emotion to the central character of the story. The groups did not differ in their attributions of embarrassment, happiness or sadness, but differed in their attribution of guilt; although the control respondents attributed guilt correctly, the psychopaths attributed happiness or indifference to vignettes depicting guilt. As Vien and Beech suggest, a moral reasoning deficit in psychopaths may stem from an inability to feel guilt or anxiety, rather than a deficit in forming mental representations.

Few studies conducted on psychopathy in offender populations have selected offenders on the basis of offence type and as Stone (1998) notes, "only a few articles focus solely on persons who have murdered (p.1). The majority of studies conducted with murderers have focused specifically on sexual murderers and have shown that psychopathy is over-represented in this population (Laurell and Daderman, 2007). For instance, Stone (1998) found that 96% of a sample of 77 serial sexual murderers met the criteria for psychopathy using a PCL-R cut-off score of 25 and Myers and Blashfield (1997) found that 36% of young offenders convicted of sexual murders were identified as psychopathic using a cut-off score of 27. In addition, Firestone *et al.* (1998a) found that 48 American sexual murderers received higher PCL-R scores than a comparison sample of incest offenders and Firestone *et al.* (1998b) reported that paedophiles who murdered children received significantly higher PCL-R scores than paedophiles who did not murder their victims. Furthermore, Thomas (2001) discovered that American offenders who murdered their victims received significantly higher PCL-R scores than those who did not and Woodworth and Porter (2002) found that 27% of 125 American homicide offenders were psychopathic using a PCL-R cut-off score of 30. A high rate of psychopathy was also found in a study of Swedish homicide offenders conducted by Laurell and Daderman (2007). They found that 31.4% of 35 homicide offenders could be classified as psychopathic using a PCL-R cut-off score of 30.

Theories Surrounding Subtypes of Psychopathy

Research has suggested that certain factors considered important in the development of psychopathic features have different relationships with the different dimensions of the psychopathy construct as captured by the PCL-R. For instance, impulsivity is considered to be a core characteristic of psychopathy, although research has found that impulsivity is related to the behavioural features of psychopathy but not the interpersonal/affective features (Harpur *et al*., 1989). The different associations of the PCL-R Factors with a variety of external factors suggests that psychopathy can be conceptualised as a multifaceted syndrome comprised of distinct subgroups of psychopaths (Blackburn, 1988). The major theorists in the field of subtyping are Benjamin Karpman, David Lykken, Stephen Porter and Linda Mealey.

Karpman

Benjamin Karpman's seminal distinction between primary and secondary psychopathy has provided the foundation for much subsequent work on psychopathy subtypes. Karpman (1948a) proposed that primary and secondary psychopaths are phenotypically similar; they both cheat and swindle others, "seemingly have no feeling or regard for others" and often manifest antisocial behaviour (p.457), although they differ with respect to their aetiology. He believed that the characteristics of the primary psychopath reflect a constitutional, or biological affective deficit, whereas the symptoms of the secondary psychopath reflect an affective disturbance based on psychosocial learning. The hostile temperament of the secondary psychopath can be viewed as an emotional adaptation to environmental factors such as parental rejection or abuse. Unlike the primary psychopath who possesses the "instinctive emotional organization of a subhuman animal" (Karpman, 1948a, p.533), the secondary psychopath occasionally manifests "higher human emotions" such as empathy or a desire for acceptance (Karpman, 1941). The secondary psychopath is believed to suffer from an underlying anxiety or character neurosis.

Lykken

David Lykken (1995) built on Karpman's theory of primary and secondary psychopathy by linking it with Gray's model of personality, the core components of which are the BIS and BAS. The BIS regulates responsiveness to aversive stimuli and is associated with the experience of negative affect (including anxiety), and the BAS regulates motivation and is associated with the experience of positive affect, such as impulsivity (Poythress & Skeem, 2006). Lykken (1995) believes that the primary psychopath has an underactive BIS and a constitutional deficit in *fearfulness*. Most children are punished for acting antisocially and subsequently learn to act in an appropriate manner. However, individuals who are indifferent to punishment are "unlikely to develop an effective conscience" (Lykken, 1995, p.62). In other words, children low in fearfulness are at higher risk of behavioural problems because they are not as afraid of punishment and do not experience guilt (Lykken, 1995). However, the secondary psychopath possesses an overactive BAS and continues to seek reward even though they feel anxiety. Lykken's theory is consistent with Karpman's view that secondary psychopaths (but not primary psychopaths) experience negative affect and behave impulsively (Poythress & Skeem, 2006). However, Lykken believes that primary and secondary psychopaths reflect two extreme constitutional or biological abnormalities, whereas individuals who are psychopathic due to environmental factors (such as inadequate socialisation) are *sociopaths.*[2]

[2] According to Hare (1993), the difference between sociopathy and psychopathy may "reflect the user's views on the origins and determinates of the disorder" (p.23). *User's* refers to researchers or clinicians who administer the PCL-R, and *disorder* refers to psychopathy.

Porter

Like Karpman, Stephen Porter (1996) believes that primary psychopathy reflects a constitutional affective deficit, whereas secondary psychopathy reflects an *acquired* affective disturbance caused by environmental factors. Although Karpman believed that the secondary psychopath has an underlying character neurosis, Porter proposes that secondary psychopaths are more *dissociative* than neurotic and believes that traumatic experiences such as abuse or abandonment lead to disillusionment and interfere with an individual's ability to form significant attachments. Although the secondary psychopath is "born with" the capacity for "empathetic responding" and positive attachments with others, they cope with trauma by dissociating their emotions:

> *The capacity for empathetic responding…is 'turned off' with repeated disillusionment of the child through physical or sexual abuse or other mistreatment… This should be considered a dissociative disorder with the child's emotion being dissociated from or unconnected with cognition and behaviour over time.* (Porter, 1996, p.183)

Porter's theory is consistent with the belief of Everstine and Everstine (1989), that abused children learn to diminish the emotional impact of disillusionment by "turning off" their emotions, which is rewarded through the reduction of negative experience. As adults, the result of this well-developed dissociative reaction is the presentation of a "hardened" individual with a "strong/tough demeanor" (p.156). Similarly, Weiler and Widom (1996) claim that as a result of early abuse, an individual "might become 'desensitised' to future painful or anxiety provoking experiences" and that this desensitisation might make them "less emotionally and physiologically responsive to the needs of others, to be callous and lack empathy, and to lack remorse or guilt" (p.264).

Porter (1996) claims that it is plausible that such emotional deactivation could contribute to the creation of a psychopath and believes that depending on the age of abuse onset, the affective component and conscience of the child might be in an early, late or complete stage of development which might influence the level of resistance to a dissociative strategy. Porter believes that the strategy of "not feeling" becomes reinforced, with reduced psychological distress or trauma associated with abusive incidents. The re-experiencing of abusive events in memories is also made less painful in the absence of affect, serving as further positive reinforcement for maintenance of the coping technique (Porter, 1996).

Mealey

Linda Mealey (1995a) believes that primary psychopaths have a genetic temperament that predisposes them to "be selectively unresponsive to the cues necessary for normal socialization and moral development" (p.536). She believes that primary psychopathy represents a mechanism for maintaining the strategy of "cheating" in speciation and extinction contests between individuals (Mealey as cited in Skeem, Poythress *et al*., 2003). Because they reflect a genetic mechanism for maintaining the strategy for cheating, primary psychopaths are a small group of unchanging frequency (Skeem, Poythress *et al*., 2003). Secondary psychopaths, on the other hand, reflect a more environmentally (and less genetically) based mechanism for maintaining this strategy and thus represent a variable proportion of psychopaths. Mealey believes that secondary psychopaths experience emotions but pursue a life strategy that involves antisocial (but not emotionless) behaviour as a result of experiences brought about by the environment. Individuals who are "competitively disadvantaged" in terms of mating opportunities and their ability to obtain resources are most likely to adopt this life strategy (Skeem, Poythress *et al*., 2003).

Sources of competitive disadvantage include inconsistent discipline, familial violence and low socioeconomic status (SES), which lead individuals to seek alternative peer groups in which they may be more able to achieve their goals (e.g. to gain sexual opportunities). This path often leads to antisocial behaviour. It is important to note that Mealey's work is based on antisocial behaviour and antisocial personality disorder (APD) rather than psychopathy per se. Also, it is interesting that Mealey (1995b) believes that primary psychopathy is a taxon, or categorical entity, whereas secondary psychopathy is a dimension. As Skeem, Poythress *et al*. (2003) note, this is consistent with the work of Harris *et al*. (1994), which indicates that only Factor 2 of the two-factor PCL-R model (Social Deviance), not Factor 1 (Interpersonal/Affective) is taxonic in nature.

Evidence for the Existence of Subtypes

Associations among trauma and psychopathy

Studies surrounding the correlates and aetiology of psychopathy have provided evidence for the existence of subtypes. For instance, studies of information processing and neuroimaging have indicated that psychopaths possess processing deficits, including less autonomic arousal during fear and distress imagery (Blair *et al*., 1997), a diminished startle response to negative or aversive emotional cues (Patrick *et al*., 1993), greater recall for the peripheral details of aversive images (Christianson *et al*., 1996), and poor avoidance learning in response to cues of reward and punishment (Newman *et al*., 1990). Research has suggested that some of these deficits, which have been discussed in more detail in the section entitled *Psychopathy* above, may be more strongly related to the interpersonal and affective features of psychopathy than the behavioural features (e.g. Harpur *et al*., 1989), thereby providing support for the existence of a primary psychopathy subtype characterised by a constitutional affective deficit. However, caution should be taken in interpreting the findings of such studies as the heritability of such characteristics is unclear (Vien & Beech, 2006).

Although research has indicated that "high anxious" and "low anxious" psychopaths can be discriminated (Kosson & Newman, 1995), in keeping with Cleckley's belief that primary psychopaths are characterised by a lack of anxiety, other research has found that individuals with high psychopathy scores (as measured by the PCL; Hare, 1980), frequently obtained scores on a measure of anxiety which "would have been considered indicative or secondary psychopathy in past research" (Kosson *et al*., 1990, p.254). This finding is consistent with Karpman's belief that observable differences between primary and secondary psychopaths are subtle (Skeem, Poythress *et al*., 2003).

Research which has indicated that trauma is associated with psychopathy provides support for Karpman's and Porter's conceptualisation of the secondary psychopath and Lykken's conceptualisation of the sociopath. One of the earliest studies to find a link between trauma and psychopathy was conducted by Partridge (1928), who found that a number of psychopathic delinquents had all been rejected as children. Other early studies also found that psychopaths often experience neglect, parental deprivation or abuse during childhood (Frodi *et al*., 2001; Greer, 1964; Gregory, 1958; Jenkins & Hewitt, 1944; Robins, 1966). Jenkins (1960) claims that "the product of this background is a child of bottomless hostilities and endless bitterness, who

feels cheated...and is grossly lacking in guilt sense over his misconduct" (p.326). Bandura (1986) proposes that one of the best predictors for the development of psychopathy in young individuals is a parent who is a psychopath, an alcoholic or who is antisocial. He also believes that delayed or inconsistent discipline from parents leads to a lack of guilt and confusion about when to resist impulses, two qualities which are common among psychopaths. More recently, Frodi *et al*. (2001) found that high psychopathy scores[3] among offenders in a psychiatric hospital or medium security prison were associated with a rejecting father.

Weiler and Widom (1996) examined the relationship between trauma and psychopathy in a sample of 652 "previously abused and neglected individuals" (p.253) and a matched control group (n = 489). The sample of abused/neglected individuals was composed of cases of childhood physical/sexual abuse and/or neglect processed during 1967 to 1971 in an urban area of the midwestern United States. It was found that abused or neglected individuals received significantly higher PCL-R Total scores than individuals who were not abused or neglected (Weiler & Widom, 1996). However, Lang *et al*. (2002) found no significant association between childhood victimisation and psychopathy among 199 men recruited from a socially high-risk neighbourhood in Sweden (although victimisation was related to violence). These findings indicate that an association between childhood victimisation and adulthood psychopathy might be mediated by psychosocial components, suggested to form a common ground for violence in vulnerable individuals (Lang *et al*., 2002).

The different findings of the studies of Weiler and Widom (1996) and Lang *et al*. (2002) might be accounted for by the different measures used; the measures of neglect and abuse in Lang *et al's* study could be considered mild indicators of childhood victimisation compared with Weiler and Widom's study which included more severe cases, such as physical injuries and sexual abuse. The majority of research which has investigated a possible association between trauma and psychopathy has used the PCL-R as it is the "gold standard" for measuring psychopathy (Edens *et al*., 2001b). Studies which have used other instruments to measure psychopathy are rare and have found no support for a relationship between trauma and psychopathy.

Cima *et al*. (2008) found that childhood abuse was not significantly related to psychopathy as measured by the *Psychopathic Personality Inventory* (PPI; Lilienfeld & Andrews, 1996) among 47 White Dutch offenders (15% of whom were convicted of murder). The opposing findings of Cima *et al*. with other studies which have found a significant positive association between

[3] Frodi *et al*. (2001) used the *Psychopathy Checklist: Screening Version* (PCL:SV; Hart *et al*., 1995) to measure psychopathy. The PCL:SV was developed for use with non-criminal populations and as a screen for psychopathy in forensic populations. It is now also used as a stand-alone instrument in some clinical and forensic settings (Hare, 2003b).

abuse/trauma and psychopathy may be attributable to differences between the instruments used to measure psychopathy. The PCL-R was developed for use with criminal and non-criminal populations, whereas the PPI was designed to measure the core personality features of psychopathy among non-criminal populations, meaning that the PPI may not reflect the psychopathic features possessed by criminals. Furthermore, given that the PPI is a self-report measure of psychopathy, the scores must be treated cautiously; pathological lying is a core characteristic of psychopathy and so the reliability of PPI scores is questionable.

Support for an association between trauma and psychopathy originates from a psychoanalytic perspective, as the perception of parental love is believed to be of prime importance in the formation of conscience (e.g. Freud, 1961). Freud (1961) believed that conscience formation is dependent upon a child's wish to exact vengeance for the authority and control exerted by their parents. Direct revenge is not possible because the child needs the love of the parent; instead the child masters the situation by identifying with the controlling parent and treating the impulses of the id as the parent treated them – by controlling them. Loevinger (as cited in Porter, 1996) believes that obedience to authority becomes internalised in a process known as "mastery through reversal of voice" or mastery gained by repeating what one has experienced passively. Fixation may result if any stage of conscience formation is interrupted, and id impulses can prevail in adulthood because of an under-developed or weak superego. It is believed that parental mistreatment or rejection leads to fixation at an early stage of conscience formation (Fenichel as cited in Porter, 1996). Thus, from a psychoanalytic perspective, the absence of parental love is detrimental for normal affective development. This view is supported by the research of Miller and Looney (1974) who found that murderers who displayed symptoms of dehumanisation were likely to have experienced extreme intra-familial violence.

Two studies to date (Skeem & Poythress, 2004; Poythress *et al*., 2006) have tested Porter's theory. Skeem and Poythress (2004) tested Porter's theory on a sample of 521 prisoners and substance abuse treatment residents in the US. Standardised regression-based analyses revealed that childhood abuse was positively and indirectly related to the affective features of psychopathy via the mediating role of dissociation. As Poythress and Skeem (2006) note, although these findings "are largely consistent with Porter's theory, further research is necessary to draw firm conclusions regarding dissociation as a pathogenic mechanism for secondary psychopathy" (p.174). As mentioned earlier (in relation to findings which supported a vicarious conditioning model), the analyses of Skeem and Poythress (2004) did not enable any correction for measurement error. The multivariate statistical technique of structural equation modelling (SEM) enables measurement error to be controlled and so was selected for use in the present research. When this method was decided upon, no previous research to date had used SEM to

test associations among these constructs. However, in 2006 Poythress *et al.* published a study which examined childhood abuse in relation to dissociation and psychopathy. Their study is similar to the present research in that it sought to test relations between abuse/dissociation and the different factors of the PCL-R, although it differs because it examined childhood abuse as opposed to lifetime trauma.

Participants in Poythress *et al's* study were 615 European American and African American male offenders serving sentences or court-ordered to residential drug treatment sites in the US. Abuse was measured using the *Child Abuse and Trauma Scale* (CATS; Sanders & Giolas, 1991), a self-report measure consisting of 38 items that address physical abuse or punishment, verbal or psychological abuse, sexual abuse, neglect and a negative home environment. A five-point scale is used to rate the frequency with which particular types of events occurred during the individual's youth. The *Dissociative Experiences Scale* (DES; Carlson & Putnam, 1993 – see chapter three for a description) was used to measure dissociation. The DES is a 28-item self-report measure which measures a broad range of dissociative experiences, including disturbances in memory, identity and cognition, and feelings of derealisation, depersonalisation, absorption and imaginative involvement. Finally, the PCL-R (Hare, 1991) was used to measure psychopathy. Poythress *et al.* claimed that support for the diminished affective responding model would be evidenced by an indirect relationship between abuse and the affective features of psychopathy via the mediating role of dissociation. However, the findings of their SEM analyses did not support this model.

As Poythress *et al*. (2006) note, although their findings cast doubt on the hypothesis that the association between abuse and psychopathy is attributable to the intervening effects of dissociation, it is possible that different results could have emerged in a non-clinical sample. Porter (1996) believes that dissociation-mediated psychopathic features arise as a result of abuse in individuals with constitutionally normal capacities for affective responding and so in order to test this hypothesis, a sample would be required from which individuals with constitutional deficits in affective responding were excluded (Poythress *et al*., 2006). Poythress *et al*. claimed that their sample was likely to have included primary psychopaths with histories of abuse who have a constitutionally fearless temperament. This temperament may render such individuals less vulnerable to the adverse effects of early experiences that are traumatic to those with normal capacities for fear.

It is difficult to determine whether psychopathy can be traced to traumatic experiences because most individuals who experience trauma do not become psychopathic or even criminal. In addition, there are no life experiences which are consistently found to be associated with

psychopathy (Porter, 1996). DeVita *et al*. (1990) illustrate this as they found no difference between psychopathic criminals and other criminals in terms of their family backgrounds. Similarly, Forth and Tobin (1995) found that the majority of both psychopathic and non-psychopathic young male offenders had experienced abuse, suggesting that traumatic childhood experiences are not specific to psychopathy. Because environmental factors such as abuse may be influenced by genetic confounds, caution must be exercised in interpreting the findings of studies which indicate a link between trauma and psychopathy (Vien & Beech, 2006). For example, DiLalla and Gottesman (1991) suggest that if psychopathy is influenced by genetic factors, psychopathic children are more likely to have psychopathic parents, who in turn are more likely to abuse their children.

Cluster analytic studies of subtypes

A small number of studies have investigated whether subtypes of psychopathy might exist in offender populations, the majority of which have used the statistical technique of cluster analysis. However, these studies have differed with respect to their samples, clustering variables and the measures used to validate the clusters. Four main strategies are evident in the literature: i) using PCL-R profiles of identified psychopaths; ii) using psychopathic features and other variables; iii) using psychopathic individuals on general personality indicators; and iv) using psychopathy prototypes based on general personality constructs (Poythress & Skeem, 2006). Studies which have used each of these strategies shall now be discussed in turn.

Because the PCL-R separates psychopathic features into factors that are consistent with theories which advocate differences between primary and secondary psychopaths, a sample of psychopaths can be selected according to an a priori criterion, and clusters can be identified on the basis of the configurations of these factors (Poythress & Skeem, 2006). In order to validate the clusters, it must then be determined whether they differ on external variables that are not tapped into the original cluster solution. This is important, as without such validation, it is unclear whether the groups are valid and meaningful (Poythress & Skeem, 2006). Haapasalo and Pulkkinen (1992) illustrate the strategy of using PCL-R profiles of psychopaths to identify subtypes. They clustered PCL-R items for 92 non-violent Swedish male offenders and compared the identified clusters on measures of criminal behaviour and personality, including the *Personality Disorder* (PD) scale of the *Minnesota Multiphasic Personality Inventory* (MMPI; Hathaway & McKinley, 1943), the *Socialisation* (So) scale of the *California Personality Inventory* (CPI; Gough, 1994), and sensation-seeking behaviour. A *primary psychopathy* cluster (n = 27) received the highest scores on PCL-R Factor 1

(Interpersonal/Affective), a *secondary psychopathy* cluster (n = 23) received the highest scores on Factor 2 (Social Deviance) and a *non-psychopathy* cluster (n = 42) received lower scores on both Factors. Although these clusters are consistent with primary and secondary subtypes found in the literature, the authors did not specify any a priori hypotheses with respect to how potential subtypes might differ on the measures administered.

Herve *et al*. (2000) also illustrate the strategy of using PCL-R profiles of psychopaths to identify subtypes of psychopathy. They clustered 202 Canadian male prisoners who scored above 27 on the PCL-R on Factors of the three-factor model of psychopathy (Cooke & Michie, 2001) and identified four clusters: *prototypical psychopaths* scored highest on all three PCL-R Factors; *manipulative psychopaths* scored higher on Factor 1 (Interpersonal) but lower on Factor 3 (Behavioural), suggesting that they might be prone to crimes involving fraud and deception; *macho psychopaths* scored lower on Factor 1 but higher on Factor 3, suggesting that they lack the glibness and charm required for confidence games and instead manipulate others through force and intimidation (Herve *et al*., 2000); *sociopaths* scored lower on Factor 2 (Affective) and second lowest on the other PCL-R Factors. This group were later named *pseudo psychopaths* or *secondary psychopaths* (Herve & Hare, as cited in Poythress & Skeem, 2006).

An alternative strategy to using PCL-R profiles to identify subtypes is to use psychopathic features and other variables, which is useful if important features that define subtypes of psychopathy are not well-represented by measures of psychopathy (Poythress & Skeem, 2006). Alterman *et al*. (1998) illustrate this approach as they clustered 252 patients undergoing treatment for substance abuse on the Factors of the two-factor PCL-R model (Harpur *et al*., 1989), measures of conduct disorder (CD), symptoms of antisocial personality disorder (APD), and the *socialisation* (So) scale of the *California Personality Inventory* (CPI; Gough, 1994). Due to difficulties distinguishing clusters based on PCL-R Factor scores, the second stage of cluster analysis used individual items of the PCL-R. Six clusters were identified and validated using (among others), measures of guilt, depression, anxiety and hostility. Three clusters were identified as psychopathic and were characterised by some antisocial behaviour, although they scored differently on anxiety. Interestingly, some of the clusters had similar score patterns to those of primary and secondary psychopaths reported in the literature, but were not psychopathic; Cluster 5 was similar to primary psychopaths with antisocial behaviour, less substance abuse, and less anxiety and guilt, and Clusters 1 and 2 were similar to secondary psychopaths, characterised by antisocial behaviour, substance abuse, depression and anxiety. It is important to note that Alterman *et al*. (1998) used a liberal PCL-R cut-off score of 20 to define psychopathy.

Nestor *et al*. (2002) clustered 26 psychiatric patients convicted of murder in the US using PCL-R Total scores and psychosis[4] as clustering variables. Two clusters were identified, one identified by a high prevalence of psychosis and low level of psychopathy, and the other by a low prevalence of psychosis and a high level of psychopathy. The clusters were externally validated using measures of intelligence, memory, attention, executive functions and academic abilities, and it was found that they differed in theoretically coherent ways (Nestor *et al*., 2002). The findings of this study must be treated with caution given the very small sample size (N = 26). Also, because the study involved a sample of murderers from a forensic hospital, it is not known whether subtypes exist among murderers incarcerated in prisons who have not been diagnosed with a major mental disorder. Furthermore, as with the overwhelming majority of subtyping studies, this study was conducted in the US. Therefore, it is not known whether subtypes of psychopathy exist among murderers from other countries. The present research seeks to bridge this gap in the literature.

Vassileva *et al*. (2005) clustered 200 male offenders sentenced for felony convictions on PCL-R Factor scores (based on the two-factor model of psychopathy; Harpur *et al*., 1989) as well as measures of trait anxiety, interpersonal behaviour and drug/alcohol problems. Four clusters were identified: *secondary psychopaths* were characterised by high Factor 2 scores, severe alcohol and drug problems, higher anxiety and more non-violent offences than other clusters; *non-psychopathic criminals with alcohol and drug problems* were characterised by the lowest PCL-R scores; *primary psychopaths* were characterised by higher Factor 1 scores, less alcohol and drug problems and more violent crimes; and *criminals with features of psychopathy* were characterised by less criminal versatility than primary psychopaths but a similar number of violent offences to secondary psychopaths. Although the findings of this study are consistent with variants of primary and secondary psychopathy described in the literature, a weakness of the study is the use of the two-factor PCL-R model (Harpur *et al*., 1989), which reduced the power of the external validation of clusters by including items which assess involvement in early and serious antisocial behaviour in one of the clustering variables (Swogger & Kosson, 2007).

Swogger and Kosson (2007) clustered 258 European American male prisoners "convicted of a felony or misdemeanour" (p.958) on the Factor scores of the three-factor PCL-R model (Cooke & Michie, 2001), scores on the *Interpersonal Measure of Psychopathy* (IMP; Kosson *et al*.,

[4] Psychosis was defined by a DSM-III-R diagnosis of schizophrenia, schizoaffective disorder, schizophreniform disorder, bipolar disorder with psychotic features, depressive disorder with psychotic features, delusional disorder, or psychotic disorder not otherwise specified (Nestor *et al*., 2002).

1997), and measures of anxiety[5] and substance abuse/dependence.[6] Three clusters were identified. First, *psychopathology criminals* (*n* = 82) were characterised by lower anxiety scores than all other clusters, lower scores on the IMP and the interpersonal and affective factors of the PCL-R than primary psychopaths, and lower scores on Factor 3 (Behavioural) than secondary psychopaths. Second, *criminals with negative affect (n* = 84*)* were characterised by moderate anxiety levels and fewer interpersonal features of psychopathy as measured by the IMP and low scores on all PCL-R Factors. *Primary psychopaths* (*n* = 40) received moderate anxiety scores, higher scores on the IMP and Factors 1 (Interpersonal) and Factor 2 (Affective) than all other clusters. Finally, *secondary psychopaths* (*n* = 52) received higher anxiety scores than members of all other clusters and lower Factor 1 and 2 scores than primary psychopaths. Secondary psychopaths also showed higher levels of alcohol and drug abuse/dependence compared to other clusters.

Skeem *et al*. (2007) conducted a cluster analysis of 123 psychopathic offenders convicted of violent crimes, using PCL-R Factor scores (of the two-factor model, Harpur *et al*., 1989) and scores on a measure of trait anxiety. A PCL-R Total score of 29 was used to distinguish psychopaths from non-psychopaths. Two clusters were identified which resemble primary and secondary variants of psychopathy found in the literature; relative to *primary psychopaths* (*n* = 74), *secondary psychopaths* (*n* = 49) had greater trait anxiety, fewer psychopathic features and comparable levels of antisocial behaviour. External validation of the clusters revealed that secondary psychopaths possessed more borderline personality features, poorer interpersonal functioning and more symptoms of major mental disorder than primary psychopaths. Findings provide evidence for the existence of subtypes of psychopathy among violent offenders, although like the majority of cluster analytic studies with offenders, the study was conducted using a sample of American offenders "convicted of violent offences" and so it cannot be determined whether similar subtypes might exist among murderers or British/South African offenders.

A third strategy for identifying psychopathy subtypes is to use general personality indicators as clustering variables, which "rests on the assumption that personality disorders can be conceptualised as distinct configurations of extreme scores on normative personality traits" (Hicks *et al*., 2004, p.277). Hicks *et al*. (2004) used the PCL-R to identify 96 psychopathic male prisoners (using a PCL-R cut-off score of 30) and used scores on the *Multidimensional Personality Questionnaire-Brief Form* (MPQ-BF; Patrick *et al*., 2002) as clustering variables to

[5] Anxiety was measured using the *State-Trait Anxiety Inventory Trait Scale* (STAI-T; Spielberger *et al*., 1983).

[6] Alcohol and drug abuse/dependence was assessed using the substance abuse modules from the *Structured Clinical Interview for DSM-IV Axis I Disorders* (SCID-I; First *et al*., 1997).

identify clusters among the prisoners. The MPQ-BF yields scores on 11 primary trait scales that assess a range of distinct personality constructs. Patterns of correlates for PCL-R Factor 1 and Factor 2 in the literature which are consistent with the characteristics of primary and secondary psychopathy led Hicks *et al*. to hypothesise that two distinct subgroups would emerge; one cluster low in anxiety with personality features similar to those attributed to primary psychopaths, and a second cluster characterised by high anxiety, impulsivity and aggression. Findings confirmed the authors' hypotheses; *emotionally stable psychopaths* (n = 30) were characterised by low anxiety (reflected in low stress reaction) and described themselves as socially dominant and relatively fearless but not impulsive. These characteristics are consistent with the conceptualisation of primary psychopathy. In contrast, *aggressive psychopaths* (n = 66) were characterised by more childhood and adulthood fights, difficulty establishing or maintaining relationships with others, impulsivity and reactive hostility towards others, anxiety and more alcohol abuse. These characteristics are consistent with the conceptualisation of secondary psychopathy.

The three strategies for identifying psychopathy subtypes which have been discussed so far all involve scores on a measure of psychopathy as a starting point for the identification of subtypes. The first two strategies include measures of psychopathy facets as clustering variables, whereas the third strategy uses a measure of psychopathy only to identify a sample of psychopathic individuals that is then disaggregated by clustering on indices of a general personality inventory. An alternative clustering strategy, which does not involve the use of a psychopathy measure, is to have psychopathy experts define the quintessential psychopath using the items or facets of a broad measure of general personality (Poythress & Skeem, 2006). The resulting profile is then used as a criterion against which to compare the profiles of individuals of interest.

Miller *et al*. (2001) developed a prototypical profile based on expert ratings of the *Five Factor Model* (FFM) of personality (McCrae & Costa, 1990, 2003), the domains of which include *neuroticism* (vs. *negative affectivity*), *extraversion* (vs. *introversion*), *openness to experience* (vs. *unconventionality*), *agreeableness* (vs. *antagonism*) and *conscientiousness* (vs. *low constraint*). Each of these five domains includes six facets that represent conceptually different aspects of the domain. A panel of 16 experts on psychopathy rated each of the 30 FFM facets from one (extremely uncharacteristic of psychopathy) to five (extremely characteristic of psychopaths). Miller *et al.* found that the mean scores across experts resulted in a prototype that was low in all facets of agreeableness, some facets of conscientiousness, warmth and openness to feelings. The psychopath was described as high on a single facet of neuroticism (impulsivity), high on extraversion, and unexpectedly, high in conscientiousness.

Although the majority of these studies have identified clusters which resemble subtypes of primary and secondary subtypes described in the literature, it cannot be determined which variables are important in the identification of subtypes because the studies have used different samples and clustering variables. Poythress and Skeem (2006) claim that it would be interesting for individuals to be clustered on psychopathic features as well as "mechanism markers" (e.g. childhood maltreatment) and then determine whether trait configurations vary in a coherent manner with hypothesised aetiological factors. This would enable individuals' representative of theoretical subtypes to be identified (Poythress & Skeem, 2006). In keeping with Poythress and Skeem's suggestion, the present research will cluster offenders on the basis of scores on a measure of trauma (the Trauma History Questionnaire; THQ; Green, 1996 – see chapter three for a description) as well as PCL-R Factor scores. In addition, given that the diminished affective responding and vicarious conditioning models are distinguished by the presence or absence of dissociation as a mediator in the trauma-psychopathy relationship, respectively, dissociation will also be used as a clustering variable. Identified clusters shall then be validated by determining whether they differ on external variables that are not tapped into the original cluster solution.

The present research is worthwhile because the field is only just beginning to investigate subtypes of psychopathy (Poythress & Skeem, 2006) and our knowledge of subtypes "seems to be characterized much more by theory and informed speculation than by data" (Skeem, Poythress *et al.,* 2003, p.526). Even the small number of studies which have investigated subtypes have used mixed samples of offenders (i.e. offenders not selected on the basis of a specific offence), which has enabled the study of the heterogeneity of psychopathy in already heterogeneous populations. The current research is the first known attempt to investigate whether subtypes of psychopathy might exist among incarcerated murderers. This is important because the identification of subtypes might have implications for the treatment and risk assessment of these offenders. As Swogger and Kosson (2007) state, the classification of offenders into homogeneous groups might inform the efficient application of treatment interventions and be useful in predicting the future dangerousness of offenders.

The research will also compare offenders from different cultures, which is important given that culture may have a greater impact on personality disorder than other forms of mental disorder (Cross & Markus, 1999). If personality disorders are an exaggeration of prevalent patterns of adaptation within a society, as suggested by Alarcon *et al.* (1998), then the prevalence of psychopathic features may be related to the prevalence of trauma and dissociation in a culture; if South African individuals experience more trauma and dissociation, then they may possess more, or different constellations of psychopathic features.

Psychopathy across Cultures

The PCL-R (Hare, 1991, 2003) was developed and normed almost exclusively on offenders in prisons in Canada and the United States (Sullivan & Kosson, 2006) and so little is known about whether there are differences in the manifestation of psychopathy across cultural groups (Hare, 1991). A small number of studies have investigated the PCL-R ratings of British offenders. Shine and Hobson (1997) found that the mean PCL-R Total score for 104 prisoners in a British prison was 24.10 and that 26% of the sample were classified as psychopathic using a PCL-R cut-off score of 30 as recommended by the instrument's developer (Hare, 1991). Blackburn and Coid (1998) found that the mean PCL-R Total score for 167 British adult male offenders was 26.11 and that 47% of the sample could be identified as psychopathic using a cut-off score of 30. The mean scores found in these two studies are higher than the mean PCL-R Total score (17.2) reported for 1,117 British adult male offenders in the PCL-R Second Edition manual (Hare, 2003b), although it is important to note that the offenders selected by Shine and Hobson (1997) were serving sentences at a therapeutic prison, which traditionally requires a "personality disorder or psychopathic disorder" as a prerequisite for admission (Hobson & Shine, 1998: 507). Similarly, the offenders in the study conducted by Blackburn and Coid (1998) were all convicted of serious violent offences.[7] Higher PCL-R scores would be expected in such samples.

Schwellnus (2004) used The *Levenson Psychopathy Scale* (LPS; Levenson *et al.*, 1995) to measure psychopathy among 130 Black African Basotho undergraduate students in South Africa and found that they received higher LPS scores than an American sample in a study conducted in 1998 by McHoskey *et al*. (as cited in Schwellnus, 2004). However, no known studies have reported PCL-R ratings for South African offenders and no research has compared the prevalence of psychopathy between British and South African offenders. It is difficult for PCL-R research to be conducted because the majority of studies which use PCL-R scores tend to use information which has already been collected for clinical (as opposed to research) purposes. This is illustrated by the fact that the vast majority of PCL-R studies have been conducted in the US and Canada, two countries which routinely use the PCL-R for the assessment of forensic patients and offenders. In the UK, many studies involving the PCL-R utilises readily available PCL-R data. Because the PCL-R takes between two and three hours to

[7] Eighty-six participants were patients detained in a maximum security hospital under the 1983 Mental Health Act category of *psychopathic disorder* and 81 participants were prisoners in three British prisons. Because participants in both groups were convicted of serious offences, they were treated as a single sample of violent men (Blackburn & Coid, 1998).

administer, conducting research on psychopathy in a country which does not have readily available PCL-R data is not a viable option for many researchers in terms of time and expense. In referring to the utility of the PCL-R to predict violent and non-violent offending, Louw *et al.* (2005) claim that such instruments "have not yet been standardized for the uniquely South African circumstances [and that] it is consequently of the utmost importance that researchers should urgently give attention to this aspect" (p.385).

Comparative research on psychopathy has tended to focus on the comparison of PCL-R ratings of British and North American samples, and has found that British offenders tend to receive lower PCL-R scores than North American offenders (Cooke, 1998; Hare, 1991). The mean PCL-R Total score reported for British prisoners in the PCL-R manual (Hare, 1991) is lower than the mean score reported for North American prisoners (13.82 vs. 23.63, respectively). Cooke (1998) found that the mean PCL-R Total score for 3,394 participants from 19 samples of prisoners, forensic offenders and psychiatric patients in ten countries outside of North America (Argentina, Belgium, Britain, Germany, Holland, Norway, Portugal, Scotland, Spain and Sweden), was lower than the mean reported in the PCL-R Second Edition manual (Hare, 2003b) for prisoners and psychiatric patients (18.70 vs. 22.1, respectively). However, the mean (18.70) was higher than the mean (16.2) for a pooled European sample consisting of 5 of the 19 samples. The mean PCL-R score of 17.5 for the combined prisoner samples (N = 2,046) remained significantly lower than the mean for the normative North American prisoner sample reported in the PCL-R Second Edition manual.

Cooke (1998) suggests that the differences in PCL-R scores between international and North American samples may reflect a lower prevalence of psychopathy in international samples due to cultural differences, although an alternative possibility is that there are cultural differences in the way that criminal justice systems identify and respond to mental illness across countries (Sullivan & Kosson, 2006). For example, there may be differences in the classification of offenders which may lead some psychopathic offenders who would be sentenced to prison in North America to be sent to a forensic hospital instead in other countries. This might be an important factor contributing to the lower PCL-R scores found in international prisons compared to North American prisons. For instance, lower PCL-R scores in Germany might be explained by differences in national standards for insanity and placement practices (Freese *et al*., as cited in Poythress & Skeem 2006); a diagnosis of *psychopathic disorder* in a German court can result in a verdict of diminished responsibility and institutionalisation in a forensic hospital rather than a correctional facility (Felthous & Sass, 2000). Similarly, the terms

psychopathic disorder[8] and *dangerous and severe personality disorder* (DSPD)[9] are medico-legal designations in the UK, which have implications for the placement of offenders (Blackburn *et al*., 2003). In the UK, there are facilities designed to provide services for mentally disordered offenders detained under the Mental Health Act (Doyle *et al*., 2002). Furthermore, as Hobson and Shine (1998) note, some therapeutic prisons require a "personality disorder or psychopathic disorder" as a prerequisite for admission (p.507) and so higher rates of psychopathy have been found at these prisons than other prisons in the UK, which could be interpreted as reflecting these selection criteria.

In addition to the lack of research on PCL-R assessed psychopathy in different countries, there has also been insufficient investigation of psychopathy among ethnic minorities (Salekin *et al*., 1996). The small number of studies which have examined the PCL-R scores of different ethnic groups have yielded inconsistent results. Although Wong (1984) found no significant relationship between the psychopathy ratings of White and native Canadians, other studies have found that African American prisoners in North America receive significantly higher PCL-R scores than Anglo American prisoners (Kosson *et al*., 1990; Thornquist & Zuckerman, 1995). Furthermore, Lynn (2002) found that higher levels of psychopathy exist among Black individuals, with lower levels existing among White individuals and the lowest levels existing among Asian individuals. However, it has been suggested that differences in PCL-R scores might be explained by rater bias. For example, Barrigher (1997) found that the race of the rater had a significant impact on PCL-R scores, with White raters giving higher PCL-R scores to African American offenders.

As stated above, no known research to date has investigated the prevalence of psychopathy in a South African offender sample and the vast majority of studies which have investigated the prevalence, correlates, aetiology and subtypes of psychopathy have used samples of American offenders not selected on the basis of offence type, which means that knowledge surrounding psychopathy is limited. The present research seeks to make an original contribution to knowledge as it seeks to explore the prevalence of psychopathy in a South African male offender sample. This is worthwhile because it is not known whether differences exist in the manifestation of psychopathy across cultural groups (Hare, 1991). Also, because of the increasing use of the PCL-R in correctional institutions with growing minority populations (Sullivan *et al*., 2006), it is important to evaluate the construct of psychopathy in terms of

[8] As Doyle and Dolan (2004) note, "in England and Wales, the term 'psychopathic disorder' was incorporated into the Mental Health Act 1959 - replacing the previous terms 'moral insanity' and 'moral defect' - as a generic term to cover all types of personality disorder; it was retained in the Mental Health Act 1983." (p.5).

[9] In the UK, the term *dangerous and severe personality disorder* (DSPD) describes a group of individuals with a severe personality disorder who pose a significant risk of serious harm to others (Warren *et a*l., 2003).

cultural variations, with the goal of expanding current conceptualisations of psychopathy beyond the bounds of western society and taking a more critical and global perspective when applying the construct as it is currently measured (Sullivan & Kosson, 2006). The research will also contribute to the existing body of literature surrounding the study of psychopathy in British offender populations.

Because of the paucity of research on psychopathy in specific offender populations and across cultures, no hypotheses have been formulated with respect to the outcomes of the present research. The research is therefore purely exploratory in nature. However, a number of theoretical perspectives may be drawn upon in an attempt to speculate about what the findings of the research might be. The prevalence of psychopathy may differ among British and South African offenders due to cultural differences. This is plausible since Cooke (1998) suggests that the difference in prevalence of psychopathy among British and North American offenders may be due to cultural differences. It is of interest whether South African individuals might possess more psychopathic features given that they are likely to have experienced more traumatic experiences, or more traumatic experiences and dissociative experiences as posited by the vicarious conditioning and diminished affective responding hypotheses, respectively.

The Present Research and Associated Perspectives

The first research aim of this thesis is to compare the trauma histories, dissociative experiences and psychopathic features of British and South African men convicted of murder and the associations among them. The second aim is to test the vicarious conditioning and diminished affective responding models in order to explore whether these theories might be invoked to explain a relationship between trauma and psychopathy among murderers. Finally, the third aim is to explore whether subtypes of psychopathy can be identified among British and South African men convicted of murder. The focus of the thesis is on whether a secondary psychopathy subtype might exist among male murderers and whether such a subtype may differ in prevalence across cultures. Although it is of interest whether other subtypes might exist among murderers, the present research does not seek to specifically test whether a primary psychopathy subtype exists as this would involve examining biological precursors to psychopathy. The present research adopts the approach of a psychological differences study, which typically involves:

> *...selecting some personality, attitude or values scale and collecting responses from individuals in two or more cultures. Means, standard deviations, response sets, factor structures and other aspects of measurement are then examined...post hoc explanations may then be invoked to help interpret the differences as well as the similarities.* (Lonner, 2005, p.18)

As stated above, British and South African male murderers will be compared on measures of trauma, dissociation and psychopathy and thus adheres to this "instrument-driven" approach (Lonner, 2005, p.18). Post hoc explanations will then be invoked in an attempt to explain the similarities and differences between the groups. Specifically, psychoanalytic and psychosocial perspectives may be drawn upon in an attempt to explain a relationship between trauma and psychopathy.

A psychoanalytic perspective

Psychoanalytic theories emphasise the importance of early experiences and the development of object relations, and so may be invoked in an attempt to explain a positive association between trauma and psychopathy. Object relations theory is a development of Freudian psychoanalytic theory and sees the self as a personal sphere which develops and exists in the context of relationships, and which is made up of internal relationships between different aspects of the person (Gomez, 1997). Object relations can be defined as the interpersonal expectations of self and other (Arzul, 2005) and although they contain conscious components, object relations are "largely unconsciously activated and inaccessible to self-report" (Westen *et al*, 1991a, p.407).

In contrast to the scientific physiological basis of Freud's early work, Melanie Klein proposed a more subjective theory – that we interact with, and influence the external world and our perception of it. Thus, Kleinian theory sees all experience as arising from an interplay between internal and external reality (Gomez, 1997). Like Freud, Klein sees birth as the beginning of mental life, although believes that the ego is oriented towards external reality from birth rather than emerging gradually. As Gomez notes, Klein believed that the infant is born with pre-programmed 'knowledge' of the existence of the mother and body parts/functions and that this knowledge enables them to experience life in physical terms. Klein referred to this largely unconscious experience as *phantasy*, in which body parts and products represent gifts or weapons.

Klein focuses on the first year of life (Freud's oral stage), which she saw as a movement between the *paranoid-schizoid position* and the *depressive position* (Klein, 1935). Klein perceives development in terms of how anxiety is experienced and managed (rather than sexuality as in Freud's theory) and relates psychopathology to the infant's attempts to cope with anxiety in these two positions (Gomez, 1997). In the paranoid-schizoid position, the infant strives to manage the deprivation and anxiety which are features of birth and post-natal life. In attempting to manage these experiences, the infant splits them into good and bad experiences and maintains distance between them (there is no neutral zone). As Gomez explains, by separating what is good from what is bad, the infant is able to trust others and experience pure goodness, which they can introject as a base for their sense of self. However, in experiencing pure goodness, the infant experiences fear that they might be destroyed by an evil external force, which Klein termed *persecutory anxiety*. When experiencing persecutory anxiety, the individual has no sense of personal responsibility, apportioning blame for everything bad to others. In applying Kleinian theory to the present research, it is possible that the characteristic irresponsibility of the psychopath could be attributed to persecutory anxiety.

The term 'part object' refers to a part of or an aspect of an object of the self or other which may be all that the infant can relate to, and an older child may revert to part object relating if they feel that the world is so perilous that they can only refer to people in part. In adulthood, individuals who engage in part object relating may be perceived as using others for certain means (e.g. sex, money) rather than treating them as whole beings (Gomez, 1997). In relating this to the current research, the psychopath could be seen as someone who relates to part objects and this is why they are perceived as selfish and callous.

In the Kleinian depressive position which begins to emerge at around three months, paranoid-schizoid elements remain and may be reverted to when the infant is under pressure. When the infant is able to deal with their paranoid-schizoid anxieties, they have less need to cope with persecutory anxiety through defences such as splitting, which results in the infant being able to experience internal and external reality more accurately, realising that the part objects which they experienced when they used splitting as a defence are whole beings about whom he has mixed feelings (Gomez, 1997). Fear results when the infant realises that the individuals they wanted to destroy are those whom they love and need most. The fear of this anger is the central fear of the depressive position; depression results when, instead of externally directing anger, the infant directs it inwards, treating themselves as bad rather than the other. However, as Gomez notes, if paranoid-schizoid anxieties are not fully resolved, repressed guilt can feel intolerable and lead the individual to revert to paranoid-schizoid defences, such as part object relating, which may help to explain some of the personality characteristics of psychopaths as noted above.

William R. D. Fairbairn opposed the biological foundations of Freud's theory, and, unlike Freud and Klein, believed that the purpose of life was relationships rather than the gratification of instincts. Thus, an individual's deepest anxiety is separation anxiety. In direct opposition to developing Freudian and Kleinian schools, Fairbairn rejected the notion of a death instinct or primary destructive urge, seeing aggression as a reactive rather than a fundamental phenomenon, which arises from frustrated or blocked libidinal contact (Gomez, 1997). Freud believed that at birth, individuals are divided and that their fragments gradually integrate over time. Fairbairn, however, believes that we are whole and undivided at birth, but that trauma results in us becoming divided. Fairbairn refers to this division as the *schizoid position* (Fairbairn, 1954) and believes that inner conflict structures the self. Trauma results when the infant feels that an object (e.g. their mother) does not accept their love as love. The only way in which they can cope with this feeling is to separate the traumatic experience and relocate it internally. Fairbairn refers to this relocation of badness as the *moral defence*. Fairbairn agreed with Harry Guntrip that the schizoid position was an attempt to "cancel external-object relations and live in a detached and withdrawn way" (Guntrip, 1961, p.19). In other words, they act as if they have no need for others, despite a longing for such contact (Rouff, 2000). For the schizoid person, early neglect or maltreatment create unmet needs for love and social contact, and associated frustration and rage (Fairbairn, 1952).

Fairbairn believed that the schizoid position is the basis for all personality development. When an individual experiences prolonged or extreme splitting and repression, this is when the schizoid personality develops. The main characteristic of the schizoid position – the schizoid state – is a sense of emptiness and ineffectuality. Because so much need and anger has been split off and repressed, the central ego/ideal object is left empty and that individuals in a schizoid state often experience this as feeling cut-off and unreal as though separated from the world and their own feelings (Gomez, 1997). This description of the schizoid person shares similarity with descriptions of depersonalisation disorder. For example the text revision of the fourth edition of the Diagnostic and Statistical Manual of Mental Disorders (DSM-IV-TR; American Psychiatric Association, 2000) claims that *Depersonalisation Disorder* is characterised by recurrent or persistent feelings of detachment from one's self.

Because the schizoid person has experienced intolerable relationships with others, they substitute inner relationships which are themselves problematic (Gomez, 1997). The introversion and narcissism which is characteristic of such individuals reflects the focus on the inner rather than the outer world. They scorn physical need and emotions and tend to treat others as part objects. As Gomez notes, the schizoid indifference for others led Freud to believe that such individuals could not be treated through psychoanalysis as they were unable to form a

useful transference with the analyst. The characteristics of the schizoid person are consistent with certain characteristics associated with psychopathic individuals (e.g. disdain for emotional contact, or indifference or contempt for others), and it is noteworthy that a number of theorists in the present day believe that psychopaths are untreatable psychoanalytically. Also relevant to the present research is the parallel that Fairbairn draws between the schizoid state of inner division and the state of dissociation. The parallels between the schizoid state and dissociation, and the characteristics of the schizoid person with those of the psychopath suggest that dissociation may be related to psychopathy.

Donald Winnicott (1965) sees aggression as a part of relating which becomes distinct from love over time, rather than as a separate instinct like Freud and Klein. He believes that it is originally part of the self-seeking excitement of relationships, before the realisation that the object of love is a separate being (Gomez, 1997). Over time, the infant builds an integrated picture of the two people who are both loving and hating, loveable and hateable, and begins to take more responsibility for their part in the relationship. However, children who have not experienced stable care will find it more difficult to integrate the different aspects of relationships and therefore create a coherent sense of self. As Gomez notes, a specific failure in a relationship at the stage when the child is able to perceive their own independence leads to a fault in the development of the capacity for concern. Winnicott refers to this failure as *deprivation*.

According to Winnicott, deprivation is the loss of good experience at a stage when the child can perceive the loss as coming from the outside (typically the parents). This loss continues until the child's faith in their parents and the world diminishes. Consequently, the child tries to prevent this by keeping themselves away from danger by constructing a compliant self which is adapted to external requirements rather than their own needs (Gomez, 1997). Winnicott believes that deprivation leads to an *anti-social tendency,* which emerges when the child becomes hopeful of a positive response from the world again. As Gomez explains, hope leads them to protest against their deprivation and take back what has been stolen (e.g. through stealing or destructiveness). When a caring adult reacts with a firm response, the child can begin to trust the world and be their true self again. Winnicott's theory may help to explain the sustained delinquent behaviour of psychopaths; delinquent acts along with society's controlling response give the individual a sense of emotional satisfaction which is difficult to live without.

John Bowlby's *attachment theory* (Bowlby, 1969) is built on the object relations principles of the need for relationships. It posits that humans are born with inbuilt patterns of behaviour which promote and maintain relationships, and which unfold during interaction with the environment. Bowlby believed that strong and permanent bonding with others is imperative for

survival and that the experiences people have in relationships contribute to an *internal working model* of the world, which includes cognitive, emotional and behavioural representations of self and other and the relationships which mediate their connection. This model reflects the security of our attachments, with dysfunctional relationships leading to a distorted model. The *self-trauma* model proposed by Briere (1996) posits that a child who experiences abuse suffers a disruption in the development of the attachment system, and other research has found that adults who report a history of childhood abuse or neglect tend to have an insecure attachment style (Alexander, 1992) and develop negative models of self and other (McCann & Pearlman, 1990). These psychological processes can result in the manifestation of trauma symptoms such as anxiety and dissociation, and may lead to difficulties in relating to oneself and others and regulating affect (Briere & Runtz, 1993). These studies are consistent with Porter's diminished affective responding model.

Kernberg (1996) believes that disturbed early object relations are central to all personality disorders. According to Kernberg, psychopaths are biologically predisposed to excessive aggressive drive, but that this becomes dominant in response to traumatic experiences or cognitive distortions arising from abuse or abandonment. Rage becomes a core emotion and the individual defends themselves against a dangerous world through devaluation and grandiosity. Interpersonal behaviour is characterised by narcissism as the superego is limited to self-interest. In keeping with Kernberg's theory, Gacono *et al.* (1990) found that psychopaths displayed more borderline object relations than non-psychopaths. Similarly, Gacono and Meloy (1993) refer to an adult male murderer characterised by distorted object relations who managed aggression through devaluation. Furthermore, Meloy and Gacono (1998) found that psychopaths display more signs of pathological narcissism than non-psychopaths. This previous research indicates that psychopathy may be related to distorted object relations, although these studies involved the use of the Rorschach inkblot test, the validity of which remains controversial.

Arzul (2005) explored the object relations of eight male juvenile offenders in South Africa incarcerated for violent offences, including murder. The *Thematic Apperception Test* (TAT; Murray, 1943) and the *Social Cognitions and Objects Relations Scale* (SCORS; Westen, 1985) were used to measure object relations. Arzul (2005) claims that the affective dimension of the SCORS provided insight into the violent acts of the offenders; they had an aggressive and painful view of the world and a need-gratifying orientation and absence of remorse related to violence. He also believes that the combination of this pattern of object relations may contribute to violence in emotionally distressing moments. In relating this idea to the current research, secondary psychopaths might be more likely to react aggressively in distressing situations, given their propensity towards emotionally laden reactive aggression (due to their overactive

BAS). It has been suggested that among violent offenders, overwhelmingly distressing situations "activate pathological emotional dimensions, resulting in a loss of perspective normally offered by the cognitive realms" (Arzul, 2005, p.66). Although it could be argued that this is consistent with the conceptualisation of the secondary psychopath in the literature, Arzul did not specify whether the offenders in the study were psychopathic and so it cannot be determined whether these findings are consistent with previous research surrounding the object relations of psychopaths. However, the findings of the study are in keeping with previous research which has suggested that violent offenders display distorted object relations (e.g. Cartwright, 2002).

Cartwright (2002) believes that a fuller understanding of the nature of violence must include other factors and that violent acts depend on the coincidence of these factors in a particular way at a given time. He identifies seven intrapsychic dimensions of violence: i) the nature and quality of the object world; ii) representational capacity and the body; iii) brutalisation of the self: trauma and loss; iv) sexuality; v) the role of phantasy/fantasy; vi) defensive organisation; and vii) interaction with the external situation. With respect to the object world of perpetrators of violence, primitive object relations may be a factor even in objectless acts of violence, such as rage reactions (Cartwright, 2002). Cartwright believes that perversions of object relations are apparent in some acts of violence (e.g. sadistic violence), in which the object is dehumanised. Attachment theorists address the importance of disorders of attachment as important in understanding violence. Violence may represent an attempt to overcome an attachment with a primal object (e.g. an individual's Mother). The superego, derived from internalisation of parental values may be variable in violent individuals; it may be absent in psychopaths or overly restrictive in perpetrators of explosive acts of violence (Walker, 2006).

Cartwright (2002) relates the capacity for violence to an inability to mentalise. When there is no coherent mentalisation of the object world, there is confusion between the mental and the physical. When an individual is unable to reflect on their own internal state or that of another, physical action may replace mentation, making the inhibition of aggression difficult. In violent individuals, the inability to mentalise may not pervade the entire personality and the capacity for mentalisation may be overwhelmed in particular circumstances (Walker, 2006). As Walker notes, in premeditated violence however, the capacity for mentalisation or symbolisation may become obsessive and the mentalisation itself provides primitive excitement.

Cartwright distinguishes between mature sexuality and sexualisation as a determinant of violence. *Sexualisation* (the erotisation of parts of the mind or body) is a defence mechanism for coping with painful experiences. Sadists sexualise painful experiences, although some

perpetrators of violence may be violent in order to ward off sexual excitement. Walker (2006) believes that social and cultural values surrounding masculinity support violence in defence of phallic power. With respect to the role of phantasy/fantasy[10] in violent behaviour, Cartwright believes that violence is associated with conscious or unconscious narratives. For example, violence has been related to unconscious oedipal phantasies (e.g. castration directed at parents).

With respect to Cartwright's (2002) intrapsychic dimension of *defensive organisation*, violent individuals often possess borderline and narcissistic psychic organisation. Impairment in psychic organisation (e.g. paranoid or psychotic splitting) can render the personality subject to violent overreaction to benign stimuli (Walker, 2006). In applying Cartwright's dimension of defensive organisation to the present research, it is possible that secondary psychopaths may be more susceptible to an impairment in psychic organisation given their overactive BAS, which some theorists (e.g. Lykken, 1995) believe is accountable for their neurotic/anxious character. With regard to the intrapsychic dimension *interaction with external situation* (Cartwright, 2002), the internal world of the perpetrator cannot be considered in isolation from the external world. Aggressive behaviour often has external precipitants (Sheridan *et al*., 1990) and the external world may cause an alteration in the individual's internal world, or the individual may manipulate elements in the external world to serve an internal purpose (Walker, 2006). This dimension may have implications for the treatment of violent offenders as an individual may experience the external world as representing aspects of a fantasy.

As Blackburn (2006) notes, although psychoanalytic theory has been criticised as untestable, the idea of a superego formed through relations with parents has been influential in thinking about psychopathy. For example, Karpman (1948b) argued for an aetiological definition in terms of psychodynamics and distinguished primary (idiopathic) psychopaths from secondary (symptomatic) psychopaths. In addition, early research (e.g. McCord & McCord, 1964) identified *neurotic delinquents* who are antisocial because of a harsh superego, *subcultural delinquents* (or gang delinquents) who have a deviant superego, and *psychopathic delinquents*, who are deficient in superego (Blackburn, 2006). Whilst a relationship between trauma and psychopathy may be explained from a psychoanalytic perspective, such a relationship may also be explained from a psychosocial perspective, which characterises human development as an interaction between an individual's psychological needs and social influences.

[10] Phantasies are unconscious and constitute deep structures of the mind from which all thoughts and behaviours originate, whereas fantasies reflect conscious mentation (Cartwright, 2002).

A psychosocial perspective

Erik Erikson's *psychosocial theory* of development extends Freud's concept of biologically determined psychosexual stages to the sociocultural realm (Silverman, 1982) and proposes that all changes which occur at puberty as presenting the adolescent with psychosocial problems, including identity formation and role confusion (Lerner & Hultsch, 1983). Erikson (1963) proposed eight stages of psychosocial development which are characterised by an underlying crisis that must be resolved for healthy development. These stages are: infancy (characterised by trust vs. mistrust), early childhood (autonomy vs. shame and doubt), childhood (initiative vs. guilt), pre-school age (industry vs. inferiority), adolescence (identify formation vs. role confusion), young adulthood (intimacy vs. isolation), middle adulthood (generativity vs. self-absorption), and maturity (integrity vs. despair).

Erikson believed that successful resolution of a new crisis partly depends on the resolution of earlier crises as well as on the strength of drives and the availability of social support (Moore & Rosenthal, 1993). If a crisis is dealt with successfully, its positive component (e.g. trust, intimacy, integrity) is integrated into the ego for further healthy development. On the other hand, if a crisis is not dealt with in a satisfactory manner, then its negative component (e.g. mistrust, isolation, despair) are absorbed into the ego, damaging it. As Hjelle and Ziegler (1986) note, whilst Erikson believes that these psychosocial stages are universal, he claims that there is some degree of cultural variation in the resolution of crises, with cultural expectations and opportunities having an impact on an individual's development at each stage (Newman & Newman, 1987). Thus, Erikson's theory is valuable because it considers the role of culture in shaping the direction of an individual's growth.

A psychosocial perspective may be useful in attempting to explain an association between trauma and psychopathy among individuals from cultures which are characterised by political violence, such as South Africa. The *Centre for the Study of Violence and Reconciliation* in Johannesburg, South Africa coined the term 'politicisation of everyday life', which refers to the idea that whoever an individual thinks is right or wrong during conflict, one of the consequences of conflict is that all sides of the political divide sanction violence (Hamber, 2004). When the use of violence is used in a legitimate way to solve problems, a "culture of violence" is said to have developed (Vogelman & Simpson, 1990). This has occurred in South Africa because of apartheid, which, according to Hamber has permeated all aspects of South African individuals' lives. Political violence has transformed itself into criminal violence rapidly in South Africa as

many South Africans of all races still support the death penalty, carry firearms and engage in vigilante action if appropriate action is not taken by police, highlighting that violence is the preferred solution to problems (Hamber, 2004).

Abrahams and Jewkes (2005) believe that the widespread use of violence in South Africa in many different circumstances suggests that it is accepted by communities. For example, research surrounding perceptions of violence has found that many South African individuals regard intimate partner violence as acceptable if it does not injure or leave a mark (Wood, 2003), or perceive it as a sign of love (Jewkes *et al*., 2001). Similarly, Straus (1994) and Graziano (1994) have both referred to the concept of *cultural spillover*, which suggests that where cultural norms tolerate violence, a degree of *spillover* into non-legitimate violence is cultivated as the line between discipline and abuse is often blurred (Whipple & Richey, 1997). From a social learning perspective, if violence is not punished, it is likely to be repeated. Thus, in South Africa, where aggression and violence is more tolerated than in the UK and even rewarded in some circumstances (e.g. through gang membership), a positive association between trauma and psychopathy may be explained in terms of vicarious conditioning; role models who display psychopathic features (e.g. need for stimulation, impulsivity) are imitated. However, an association between trauma and psychopathy may not be as straightforward as this given that some individuals might be more vulnerable to the effects of trauma, whereas others may be more resilient (Doucette-Gates *et al*., 1999).[11]

Perloff (1983) claims that one of the most common reactions individuals exhibit in response to adverse experiences is a heightened sense of vulnerability. Vulnerable individuals are described in the literature as individuals who have been so overwhelmed by their exposure to traumatic events that they can no longer function in everyday life (Straker *et al*., 1992). Environmental and individual risk factors are involved in an interactive process that may lead to vulnerability. Risk factors are the characteristics of an individual or the environment that are associated with an increased probability of maladaptive developmental outcomes (Compas *et al*., 1995). However, the effects of trauma that may lead to psychosocial vulnerability are rarely fixed. Whether or not a risk factor leads to vulnerability or a maladaptive outcome depends on what happens over time. In some cases, the maladaptive outcome is dependent on the individual encountering particular situations that, in effect, activate the vulnerability produced by the risk factor (Rutter, 1988).

[11] When a traumatic experience increases an individual's vulnerability to future stressors, this is known as a *sensitising* effect. On the other hand, when an adverse experience strengthens an individual, this is known as a *steeling* effect (Dawes, as cited in Dawes & Donald, 1994).

Studies conducted in South Africa have found that violence has a negative impact on the development of children and adolescents (e.g. Dawes, 1990; Garbarino & Kostelny, 1996). For example, Turton *et al*. (1991) found that township experiences of adolescents caused subsequent psychopathology. Netshiombo (1994) believes that the violence experienced and witnessed by many South African adolescents leaves scars in the psyche and in the current lived reality. Permanent psychosocial damage is more likely to occur when there are multiple risks and negative stressors in a child's environment, and Dawes (as cited in Dawes & Donald, 1994) claims that the culture of violence in South Africa has created a situation in which millions of children and adolescents have had to live in high-risk environments.

A number of factors have been identified in the literature which are believed to contribute to the development of psychosocial vulnerability to trauma, such as family dysfunction (Garbarino & Kostelny, 1996), large family size (Miller, 1996) and low socioeconomic status (Rutter, 1988). The traumatic consequences of the apartheid regime have meant that many South African citizens (particularly Black individuals) have to live with a lack of resources and poor living conditions. Interestingly, Mealey (1995a) claimed that the secondary psychopath "will almost always come from lower class backgrounds" (p.537). Hickson and Kriegler (1991) claim that a lack of resources and poor living conditions diminish an individual's resources for dealing with stress or trauma and may subsequently lead an individual to crime in order to live. They believe that because large numbers of Black households are headed by single-parent females, Black children are more likely to turn to crime because of economic necessity. Hickson and Kriegler summarise the consequence of apartheid on the structure of the Black family:

> *An unavoidable consequence of apartheid ideology…has been the widespread disintegration of black families. The impact of influx control (a government policy which set out to limit the urbanization of blacks by restricting them to 'residence' in tribal areas and resulting in an overall migrant labor pattern) was that black males gravitated to the cities in seach of the available jobs…In both homes, the major responsiblty for child rearing came to rest on the mothers.* (Hickson & Kreigler, 1991, p. 144)

In this type of family, it is difficult for the mother to spend quality time with her children due to long working hours and household chores, and these less than ideal conditions can result in a disorganised family environment for the child (Hickson & Kriegler, 1991). As Burman and Reynolds (1986) note, the absence of male role models for long periods of time and the lack of preparation for future parenthood became the norm for Black children. Thus, traumatic experiences (such as the disintegration of one's family or violence) may not directly cause

individuals to develop psychopathic features. Instead, these experiences may lead to a different family environment (such as being raised by a single parent), which may later predispose an individual to develop psychopathic features.

Although some individuals might be more vulnerable to the effects of trauma, others may be more resilient. In the literature, the term *resilience* generally refers to the capacity for, or outcome of successful adaptation despite challenging or threatening circumstances, whereas Masten *et al*. (as cited in Howard & Dryden, 1999) identify three kinds of resilience. First, resilience may refer to the belief that individuals have a particular personal strength that helps them to withstand adversity. Second, resilience may refer to coping in the face of sustained and acute negative circumstances, and third, resilience may refer to recovery from a traumatic event. When applied to children in stressful environments (e.g. political violence), resilience is generally described as the capacity to maintain healthy functioning in an unhealthy setting (Garmezy, as cited in Smith & Prior, 1995).

Certain protective factors have been consistently found to characterise resilient individuals in stressful situations, such as self-efficacy (Garbarino *et al*., 1992), adaptability (Garmezy, 1985), social responsiveness (Smith & Prior, 1995), high self-esteem (Compas, 1989), a strong sense of self-worth (Garmezy, 1985) and a supportive family environment (Cairns & Dawes, 1996). It is believed that family environment is one of the most important influences on psychosocial development (Cairns & Dawes, 1996). The characteristics of a supportive family include a lack of physical crowding, consistently enforced rules with fair supervision, well-balanced discipline and cohesion (Garmezy, 1993), parental warmth (Compas, 1989) and a sound relationship with at least one parent (Smith & Prior, 1995). However, in times of conflict (such as political conflict), parents often become distant from their children as they grieve for their own loss and cope with their own fear and anxiety (Macksoud, 1994). They become unable to fulfil their parenting roles and cannot compensate for the loss of their children's feelings of security (Stavrou, 1992). Studies have found that the lack of support from one's family during stressful times may lead to psychological disturbance (Richman, 1993), with some children responding to their threatening environment by manifesting psychosocial symptoms such as antisocial behaviour (Wilson & Raphael, 1993).

Research conducted in South Africa has found elements of psychological resilience or hardiness among the victims of violence. Garbarino and Stoff (as cited in Punamaki *et al*., 1997) found that in times of political hardship and violence, the intellectual and creative capabilities of children alleviate the negative consequences of these events for their psychosocial well-being. Smukler (1990) claims that a child's response to psychosocial stressors depends not only on the

frightening event, but whether it has personal connotations in terms of loss. Events are less likely to lead to psychological problems when they do not have consequences in terms of negative appraisals or changed personal relationships. The type of cognitive appraisal of a situation (either positive or negative) may contribute to the vulnerability or resilience of an individual.

Cognitive appraisal refers to an individual's perception of a situation (Lazarus & Folkman, 1987). There are three types of appraisal: *primary appraisal*, *secondary appraisal* and *reappraisal*. Primary appraisal is concerned with the motivational relevance of what is happening and involves an individual's perception of how threatening a situation is, and secondary appraisal is concerned with an individual's perception of the resources available for dealing with a stressful situation. If the individual perceives the situation to be stressful, an adaptational process of coping is mobilised. Psychosocial vulnerability is determined both by the individual's assessment of how threatening a situation is to one's well-being (primary appraisal) and by one's evaluation of available coping resources (secondary appraisal). Reappraisal involves the possibility of feedback from changes in the relationship between the individual and the environment. As the transaction continues, the individual reflects, allowing for changes in the quality and intensity of the emotion experienced (Lazarus, 1991). Reappraisal may lead to a different view of the stressfulness of the situation or to different approaches of coping (Johnson, 1986). For instance, reappraisal of a stressful situation may lead to more psychosocial vulnerability when an individual lacks coping resources and strategies.

Although research has suggested that some individuals may become more resilient following trauma, it is widely believed that exposure to trauma, particularly violence, causes short-term psychological suffering (Straker, 1987) as well as more serious consequences for psychological development and future behaviour (Gibson, 1991). Profound alterations in behaviour have been observed among the victims of violence and political unrest, including aggressive behaviour (Punamaki, as cited in Macksoud & Aber, 1996). Many individuals who have experienced violence are psychologically bruised and have come to accept violence as a way of life and as an appropriate means of conflict resolution (Chikane, 1986; Netshiombo, 1994). During times of conflict, individuals create psychological boundaries between themselves and those perceived as ‘the other’ (Volkan, as cited in Hamber, 2004), and ‘the other’ are continuously devalued and viewed as less human than those from one’s own perceived group. Freud (1915) believed that violence is innate to human nature and finds easy expression in times of conflict. In *Thoughts for the Times on War and Death* (1915), he wrote that:

> *War strips us of the latter accretions of civilization, and lays bare the primal man in each of us. It compels us once more to be heroes...it stamps strangers as enemies, whose death is to be brought about or desired...* (Freud, 1915, p. 289)

Such *dehumanisation* (Chikane, 1986) may lead individuals to feel that killing for political reasons is different from murder (Macksoud, 1994). Interestingly, stunted moral development has been reported among victims of chronic armed conflicts (Fields, as cited in Macksoud & Aber, 1996). The concept of dehumanisation can be related to Porter's (1996) theory that trauma leads to a diminished capacity for affective responding via the mediating role of dissociation.

Summary

This chapter has presented a review of the literature surrounding trauma and dissociation in British and South African populations, as well as general theories of psychopathy and seminal theories surrounding subtypes of psychopathy. Evidence for the existence of subtypes has been offered, including studies which have indicated a positive association between trauma and psychopathy. Studies which have investigated the PCL-R ratings of British male offenders have been reviewed, as have studies which have compared PCL-R ratings between British and North American samples. A review of the literature has highlighted that the majority of research surrounding psychopathy has been conducted using samples of American offenders not selected on the basis of offence type, meaning that little is known about the manifestation of psychopathy in specific offender populations across cultures.

The research question which this thesis seeks to answer is: Do subtypes of psychopathy exist among murderers, and if so, might the prevalence of these subtypes differ across cultures? This research question shall be answered by addressing three aims: i) to compare the trauma histories, dissociative experiences and psychopathic features of British and South African men convicted of murder and the associations among them; ii) to test potential aetiological models of psychopathy; and iii) to explore whether subtypes of psychopathy can be identified among men convicted of murder. The research will make an original contribution to knowledge in three ways. First, the research represents the first known attempt to explore psychopathy in a South African male offender sample. Second, the research represents the first attempt to test potential aetiological models of psychopathy on a sample of male murderers. Third, the research represents the first attempt to explore whether subtypes of psychopathy might exist among murderers. The potential implications of the research have been discussed. The next chapter will present the methodology utilised to address the research question of this thesis.

CHAPTER THREE

Research Methodology

Overview

The purpose of this chapter is to present the research methodology used to address the research question of this thesis. The chapter begins with an outline of the research philosophy of the thesis and moves on to describe the sampling process used to select participants. The research measures used to measure the constructs under investigation are described. These are the Trauma History Questionnaire (THQ; Green, 1996), the Dissociative Experiences Scale (DES; Carlson & Putnam, 1993), and the Psychopathy Checklist-Revised Second Edition (PCL-R; Hare, 2003a). The chapter moves on to describe the procedure utilised in the research, including ethical considerations, the pilot phase and the interview. The methods of data analysis are then outlined and justified. The chapter closes with a summary of the aforementioned sections.

Research Philosophy

The present research is quantitative and is thus associated with the philosophical tradition of positivism. As noted by Crossan (2003), the traditional scientific approach to research has its foundations in positivist philosophy, and positivists such as Hemple (1965) have focused on developing specific predictions from general principles and determining whether or not such predictions are valid. Crossan explains that positivist philosophy has five main implications for research based on this approach: *methodological, causality, operationalisation, independence* and *reductionism* (Easterby-Smith *et al*., 1997; Hughes, 1994). With respect to methodological implications, research conducted from a positivist perspective should be quantitative as only quantitative research can be the basis for valid generalisations. The current research utilises a

quantitative methodology. With regards causality, the aim of research should be to identify causal explanations and fundamental laws that explain human behaviour. The present research seeks to explore associations among trauma, dissociation and psychopathy rather than underlying meaning in a phenomenological sense.

Operationalisation refers to the fact that the positivist perspective advocates that problems are better understood if they are reduced to the simplest possible elements and that concepts should be operationalised in a way that enables facts to be measured quantitatively (Easterby-Smith *et al*., 1997). Prior to analysis, individual responses were reduced to groups of scores and the concepts under investigation (trauma, dissociation and psychopathy) were operationalised so that total scores and subscale scores were analysed for each measure. With respect to the implication of independence, the positivist approach posits that the role of the researcher should be independent of the participants under investigation (Hughes, 1994). Because psychometric instruments were used to collect quantitative data, there was little opportunity for the researcher to become directly involved with participants.

The final implication is reductionism, which refers to the belief that problems are better understood if they are reduced to the simplest possible elements (Easterby-Smith *et al*., 1997; Hughes, 1994). Prior to analysis, responses to individual questions were reduced to groups of scores. Participants' traumatic experiences were reduced to three domain scores (crime-related events, general trauma/disaster and physical/sexual experiences), dissociative experiences were reduced to three subscale scores (amnesia, absorption and depersonalisation) and psychopathic features were reduced to three factor scores (interpersonal, affective and behavioural). Although the positivist approach has many advantages over the post-positivist approach which seeks to explore phenomena from a qualitative perspective, the positivist approach has been criticised as it does not enable humans and their behaviours to be studied in depth (Crossan, 2003).

Participants

Krathwohl (1997) defines sampling procedures as: "ways of selecting a small number of units from a population to enable researchers to make reliable inferences about the nature of that population" (p.160). The first stage in the sampling process is to define the population from which the sample is drawn (Malhotra & Birks, 2003). The population from which the sample for the current research was drawn consisted of British and South African men convicted of murder selected from prisons in England and South Africa. Once the population from which the sample

is drawn has been determined, the sampling technique must be defined (Malhotra & Birks, 2003). Sampling techniques are typically divided into probability and non-probability techniques. Probability sampling "involves random sampling of units from the population at some stage in the sampling process" (Krathwohl, 1997, p.163) and enables the researcher to make inferences about characteristics of the population. The probability sampling technique includes simple, random, stratified, systematic, cluster and multi-stage sampling methods. Unlike probability sampling, non-probability sampling does not involve random sampling (Krathwohl, 1997).

Non-probability sampling methods include judgemental and purposive, quota, snowball, sequential and convenience sampling. As Krathwohl explains, judgemental and purposive sampling involve judgements being made by researchers regarding which characteristics of the target population should be included in the sample. In quota sampling, researchers establish quotas for characteristics of individuals, often on the basis of demographic data, to ensure they are distributed in the sample as they are in the population. Snowball sampling is used to identify members of the population who are not otherwise easily identified, by starting with known members and asking for referrals to other individuals. Sequential sampling involves gathering data in successive waves until a criterion of adequacy is met. Convenience sampling enables the researcher to select a number of cases whose size depends mainly on the availability of participants and ease of data collection. The convenience sampling method is the most commonly used non-probability technique (Krathwohl, 1997). Participants of the present research were selected using random sampling.

Once access had been granted to the prisons, each establishment produced an anonymous list of prisoners who met the criteria for inclusion in the research. Once a sampling technique has been decided upon, the size of the sample must be determined (Malhotra & Birks, 2003). Generally, a large sample size is necessary as the certainty of the inferential leap from sample to population increases with sample size, as Krathwohl (1997) notes: "A small sample might contain only cases at one extreme characteristic of the population. Only with a larger sample is the chance factor minimised" (p. 162). A power analysis indicated that using the traditional alpha level of .05, the necessary sample size for a power of .80 was 102, which the final sample size of the research exceeded.

Eighty prisoners were randomly selected from the lists of British prisoners and 80 prisoners were randomly selected from the lists of South African prisoners, making the total selected sample 160. Although a power analysis determined that the minimum sample size for the study

should be 102, a larger number of potential participants were deliberately selected on the grounds that some participants might decline to take part in the research. The list of prisoners for each prison was given to a member of prison staff, along with consent forms inviting prisoners to participate in the research.

At this stage, it was discovered that eight of the potential British participants declined to take part in the research, reducing the sample size to 72. It was also discovered that nine of the potential South African participants could not speak English and so they were excluded from the sample. Because these individuals constituted only a small proportion of the selected sample (11.25%), it was decided that minimisation of potential bias through having the interviews translated was more important than including this percentage in the final sample.[1] This made the South African sample size 71. Nine British participants declined to take part in the research after initially agreeing, as did Eight South African participants. Three further potential participants were excluded from the British sample as they declined to take part on the days scheduled for the interviews. In order to make the sample sizes equal (n = 60), three prisoners were randomly excluded from the South African sample. Therefore, the total sample size was 120. The response rate of the British sample was 78.75% (63 out of 80 selected prisoners agreed to participate) and the response rate of the South African sample was 90.0% (72 out of 80 selected prisoners agreed to participate). Because a random sampling method was used, the ability of the findings to generalise to the entire population of British and South African male murderers is maximised as members of these populations had an equal chance to participate.[2] This is important because psychopathic features might manifest differently among different individuals. The demographic characteristics of the British and South African participants are reported in the results section of the following chapter.

[1] The reason why a random sample was not selected from lists of only English-speaking prisoners was because it was considered important to know how many men would be excluded on the grounds of not being able to speak English. Only nine potential South African participants could not speak English (11.25% of the randomly selected sample), which meant that the final sample excluded only a small number of men. However, it is recognised that the exclusion of these men might have influenced the findings of the research as valuable information about non-English speaking South African men might have been lost.

[2] Apart from the six non-English-speaking men who were excluded from the South African sample.

Research Measures

The Trauma History Questionnaire

The *Trauma History Questionnaire* (THQ; Green, 1996) was used to measure the traumatic experiences of participants in the current research. The THQ assesses a range of traumatic events across three domains: *crime-related events*, *general disaster and trauma*, *physical/sexual experiences*. The THQ has 24 items; four questions assess crime related events, yielding a score from 0-4. Thirteen questions assess general disaster and trauma, yielding a score from 0-13. Six questions assess physical/sexual experiences, yielding a score from 0-6 and one question asks whether the respondent has experienced any "other extraordinarily stressful event" that is not accounted for by the preceding 23 items. For the crime-related events and general disaster/trauma questions, the individual indicates whether or not they have experienced the event and if so, the number of times and approximate age(s) of occurrence. For the questions relating to physical/sexual experiences, the individual is asked whether the experience was repeated and if so, approximately how often and at what age. A copy of the THQ can be found in Appendix C.

The THQ has been used to measure traumatic experiences in offender populations, both male (Sarkar *et al*., 2005) and female (Zlotnick, 2002) and research has found that the THQ has a moderate to high level of internal consistency (Mueser *et al*., 2001) in both clinical and non-clinical samples. Cronbach's alpha for the THQ in the present research was .76 for the total sample, .82 for the British sample and .70 for the South African sample, indicating that the THQ is appropriate for use with offenders convicted of murder. It is noteworthy however, that an examination of THQ items indicated that item 24 ("have you experienced any other extraordinarily stressful event that is not covered above?") had the lowest corrected item-total correlation and that exclusion of this item increased the overall reliability of the scale to .78, .84 and .72 for the total sample, British sample and South African sample, respectively. Item 24 was subsequently excluded from all analyses, in keeping with previous research which has found that the exclusion of item 24 resulted in increased scale reliability (Spertus *et al*., 1999).

In order to compare the level of distress experienced by British and South African participants in relation to their traumatic experiences, the THQ was modified by adding two columns; one column asked participants to rate how distressed they felt at the time of the experience and the other column asked them how distressed they felt 'at present' (i.e. at the time of being interviewed), on a scale of 0-10 (0 being not at all distressed and 10 being extremely distressed). This modification was developed by Reynolds *et al*. (2005) and permission was granted by the senior author to apply this modification to the THQ for the purposes of the present research.[3]

The Dissociative Experiences Scale

The *Dissociative Experiences Scale* (DES; Carlson & Putnam, 1993) was used to measure dissociation in the present research. The DES was constructed using DSM-III (APA, 1980) criteria for dissociative disorders and from consultations with clinical experts in the treatment of dissociative disorders. The scale taps a broad range of dissociative experiences including disturbances in memory, identity and cognition and feelings of derealisation, depersonalisation, absorption and imaginative involvement. The DES has 28-items which reflect a variety of dissociative experiences and are rated on an 11-point scale in 10% increments ranging from 0% (never) to 100% (always). Respondents select the number that best describes their experience of the item. The mean score across all 28 items represents the respondent's DES total score. Typically, a score of 30 or higher is considered suggestive of pathological dissociation (Moskowitz, 2004). Questions are framed in a normative way, which does not stigmatise the respondent for positive responses. A copy of the DES can be found in Appendix C.

Mean DES total scores for various diagnostic groups tend to follow a predictable ordering: low in nonclinical samples; moderate for personality disorders, mood disorders, and schizophrenia; and highest in samples selected on the basis of abuse history or diagnoses related to trauma history (e.g. post-traumatic stress disorder) or dissociative disorders (Carlson & Putnam, 1993; Van Ijzendoorn & Schuengel, 1996). Studies which have investigated the prevalence of dissociative experiences in offender populations have found that the distribution of DES scores is shifted right in clinical compared with non-clinical populations (Ross *et al*., 1992). A principal components analysis (PCA) of 1,055 DES responses by Ross *et al.* (1991) found that the DES has three factors: *amnesia* (DES items 3, 4, 5, 6, 8, 10, 25, 26), *absorption* (DES items 2, 14, 15, 16, 17, 18, 20, 22, 23), and *depersonalisation* (DES items 7, 11, 12, 13, 27, 28). Factor studies have found that the absorption items are much more common than those in the

[3] Permission was granted by the senior author before the paper was published.

other two factors and there is a general consensus that absorption items are not inherently pathological, even when an individual item score is high (Ross, 2006). Scores on the three subscales of the DES were used in the present research in addition to the DES total score.

The DES has very good reliability and validity (Carlson, 1994; Carlson & Armstrong, 1994; Carlson & Putnam, 1993) and robust psychometric properties as confirmed by a meta-analysis of over one hundred studies involving the use of the DES (Van Ijzendoorn & Schuengel, 1996). In the present research, Cronbach's alpha for the DES scale was .82 for the total sample, .81 for the British sample and .80 for the South African sample. The DES was considered to be the most suitable measure of dissociation in the current research because of its high level of internal consistency and because it was simple for offenders to understand. The use of independent measures to assess trauma and dissociation were considered to be more suitable than using measures which jointly assess these constructs, such as the *Peritraumatic Dissociative Experiences Scale* (PDEQ; Mamar *et al*., 1996).

The Psychopathy Checklist-Revised

The *Psychopathy Checklist-Revised* Second Edition (PCL-R; Hare, 2003a) was used to measure psychopathy in the present research. The PCL-R involves using a semi-structured interview and file information to measure inferred personality traits and behaviour related to the concept of psychopathy (Hare, 2003b). The PCL-R interview covers education, employment, family and interpersonal relationships, substance misuse and adolescent/adult antisocial behaviour. The purpose of the interview is to observe the interactional style of the individual, assess consistency and obtain historical information. The purpose of the collateral review is to obtain historical information using multi-source information (e.g. prison file information, police records, psychiatric reports and employment reports) and to evaluate the credibility and interpersonal style of the individual. There are 20 PCL-R items, each of which are rated on a 3-point scale according to the extent to which it applies to a given individual (2 = applies; a reasonable match; 1= applies to some extent; matches but too many exceptions; conflicts between interview and collateral information, 0 = does not apply; exhibits behaviour or traits inconsistent with or opposite to the item). A description of each PCL-R item is provided in Appendix C.[4]

[4] It is not possible to provide a copy of the PCL-R *Interview Guide* or *QuikScore Form* (Hare, 2003a) used to conduct PCL-R interviews and score the PCL-R as these materials are protected by copyright. In addition, it was considered inappropriate to provide these materials given that the PCL-R has important implications for offenders and could thus be misused.

Although it is possible to rate psychopathy using the PCL-R reliably without an interview (Grann *et al.*, 1998; Wong, 1988), one of the consequences of using the file review procedure alone is that it is difficult to score some of the interpersonal and affective items without direct observation of the individual's interactional style (Hare, 2003b). As a result, ratings based on file reviews alone are likely to result in lower PCL-R scores than would be obtained from an integrated interview and file review (Hare, 2003b). For example, Serin (1993) found that more than 40% of individuals received different diagnoses under the two different methods (ratings based solely on files versus ratings based on files plus interviews). The present research was advantageous over other studies which have assessed offenders based on file information alone.

PCL-R items are scored according to usual functioning based on behaviour in most situations across the individual's lifetime. Rating bias was minimised in the current research by rating PCL-R items one at time, starting at zero and by reviewing evidence for and against a high score. Items are omitted if there is insufficient interview and file information, or if the interview and file information are divergent and it is not possible to determine which source of information is more credible. In such instances, an item is omitted. Items are omitted if only absolutely necessary and not because of uncertainty about what score to assign. This is because if too many items are omitted, the reliability of the PCL-R scores decreases. A dimensional PCL-R Total[5] score of between 0 and 40 represents the extent to which the individual is judged to match the prototypical psychopath. The higher the score, the closer the match, and the greater the confidence an individual is a psychopath.

The developer of the PCL-R (Hare, 1991) recommends a score of 30 as a diagnostic cut-off because it was approximately one standard deviation above the mean of the pooled samples of male offenders and patients that took part in the validation studies of the PCL-R and provided the best diagnostic efficiency with respect to the global clinical assessments of psychopathy (Hare, 2003b). When this cut-off score is applied to samples from other countries, the prevalence of psychopathy has been found to decrease when a cut-off score of 30 is used and so other cut-off scores are sometimes used in different countries. For example, a cut-off score of 25 is sometimes used in the UK (Cooke & Michie, 1999). However, this reduced cut-off score tends to be used for clinical purposes (e.g. risk assessment), whereas the traditional cut-off score of 30 is often used for research with British offender samples (e.g. Blackburn & Coid, 1998; Shine & Hobson, 1997). For this reason, a cut-off score of 30 was used for identifying psychopaths in the present research. Reliability of the PCL-R is high, with alpha coefficients of

[5] As stated previously in chapter one, capital letters are used as opposed to lowercase letters to refer to PCL-R Total and the PCL-R Factors throughout this thesis (i.e. PCL-R Total, Factor 1, Factor 2, Factor 3). This is in keeping with the PCL-R manual (Hare, 1991, 2003b).

.80+ (Hare, 2003b) and the generalisability of the PCL-R makes it possible to assess psychopathy in a wide variety of contexts and in different racial, ethnic, cultural and socioeconomic groups (Hare & Neumann, 2006). The Cronbach's alpha of the PCL-R in the present research was found to be .86 for the total sample, .88 for the British sample and .80 for the South African sample, providing support for the ability of the PCL-R to reliably assess psychopathy among offenders from different cultures.

The Coding Guide for Violent Incidents

The offences committed by participants were rated as either primarily 'instrumental' (premeditated) or 'reactive' (impulsive) using the *Coding Guide for Violent Incidents* (Cornell *et al.,* 1996 – see Appendix C). As defined in the coding guide, the two main characteristics of instrumental aggression are goal-directedness and planning: "The instrumental aggressor acts to obtain a readily apparent goal such as power, money, sexual gratification, or some other objective beyond inflicting injury on the victim" (p.3). Examples of instrumental aggression include stabbing a homeowner during a burglary, strangling a rape victim or shooting a police officer during a bank robbery (Cornell *et al*., 1996). According to Cornell *et al*., instrumental aggressors are motivated by goals, not emotions and so their level of emotional arousal (particularly anger) is relatively low to the act. The main characteristics of reactive aggression are provocation and arousal of hostility: "The objective of the aggressive act is to harm or injure the victim, in response to feelings of hostility that may include a mixture of anger, resentment, fear or other distress aroused by the victim's actions" (p.4).

Procedure

Ethical considerations

Permission was granted to undertake the research by HM Prison Service and the South African Department of Corrections as well as Brunel University Ethics Committee (see Appendix A). All participants signed a consent form (see Appendix B) which explained the purpose and procedure of the research and stated that they would receive no benefit, monetary or otherwise for participating in the research. In addition, the consent form informed participants that their participation would not influence their sentence or care, that their personal information would remain confidential and that they would have the right to withdraw from the research at any time.

Piloting

Piloting is important in order to ensure that instructions to participants are clear and unambiguous (Glass & Sim, 2006) and to estimate the time required for the research process. The procedure of the present research was piloted in order to highlight any problems participants might have in understanding the items of the research measures. Due to the nature of the participants (i.e. prisoners) and the duration of the each interview (approximately 2.5 hours), it was only possible to pilot the research procedure on two individuals. These individuals provided feedback about the research measures and procedure of the research. Both individuals were satisfied with the order of administration of the measures, stating that they liked the fact that the PCL-R interview was conducted last.

The interview

Prisoners who gave their written consent to participate in the research were interviewed individually by the researcher in a consulting room in the relevant prison establishment. No other individuals were present during any of the interviews in an attempt to minimise bias. Participants completed the THQ and DES in the presence of the researcher before taking part in the PCL-R interview. Participants were given the opportunity to ask questions throughout the interview and were reminded of their right to withdraw from the research.

Methods of Data Analysis

As discussed previously in this chapter, the current research was conducted from a positivist perspective and so all analyses were quantitative. The nonparametric chi-square test for independence was used to explore categorical data, including demographic characteristics (age group, ethnicity and educational level) and offence-related characteristics (plea, gender of victim, relationship of the victim to the offender, method of murdering the victim). Previous studies have tended to sum THQ items,[6] have treated scores as continuous data (e.g. Green *et al*., 2000; Najavits *et al*., 2007) and have used parametric statistics for adequately normally

[6] Although the THQ asks the respondent to rate each item as *Yes* or *No*, each *Yes* is summed to yield a total THQ score ranging from 0-24.

distributed THQ scores. For example, Kilcommons and Morrison (2005) examined the THQ scores of psychiatric patients and stated that: "The data were examined using visual inspection and consideration of skewness and kurtosis. All variables were considered to be normally distributed. Therefore, the data was analysed using parametric statistics" (p.354). In keeping with these previous studies, the present research treated THQ scores as continuous data.

Although the DES asks respondents to rate each item on an 11-point scale from 0% (never) to 100% (always), the mean score across all items represents the respondent's total DES score. For this reason, the majority of studies which have used the DES to measure dissociative experiences, have treated DES scores as continuous data, including studies involving male offenders (e.g. Baker & Beech, 2004; Simoneti *et al*., 2000). In keeping with these studies, DES scores were treated as continuous data in the current research. Similarly, although PCL-R items are rated on an ordinal scale (2 = applies; 1 = applies to some extent; 0 = does not apply), a dimensional score of between 0 and 40 represents the extent to which the individual is judged to match the prototypical psychopath. A review of the literature revealed than the vast majority of studies which have used the PCL-R to assess psychopathy have treated PCL-R scores as continuous data and have used Pearson correlation coefficients to examine associations between the PCL-R Factors and other variables, including studies conducted with British offenders (Blackburn & Coid, 1998; O'Kane *et al*., 1996). Consistent with previous studies, the present research treated PCL-R scores as continuous data.

The normality of the data was assessed using statistics of skewness, kurtosis and the Kolmogorov-Smirnov and Shapiro-Wilk tests for normality.[7] The distribution of THQ total scores was slightly positively skewed (.07) and platykurtic (-.16) for the total sample, negatively skewed (-.02) and platykurtic (-.17) for the British sample, and positively skewed (.15) and platykurtic (-.17) for the South African sample. The Kolmogorov-Smirnov statistic was significant at $p > .05$ for the total sample. In addition, the Shapiro-Wilk statistic was significant at the $p > .05$ level for both subsamples and so no transformation was made to the data. The distribution of DES total scores was slightly positively skewed (.07) and platykurtic (-.16) for the total sample, positively skewed (.18) and platykurtic (-.16) for the British sample, and positively skewed (.04) and platykurtic (-.13) for the South African sample. The Kolmogorov-Smirnov statistic was significant at $p > .05$ for the total sample and the Shapiro-Wilk statistic was significant at $p > .05$ for both subsamples, and so no transformation was made to the data. Finally, the distribution of PCL-R Total scores was slightly negatively skewed (-.19) and platykurtic (-.27) for the total sample, negatively skewed

[7] The Kolmogorov-Smirnov statistic was used to assess normality of scores on measures for the total sample (N = 120), whereas the Shapiro-Wilk statistic was used to assess normality of scores for the sub-samples (i.e. the British and South African samples). This is in keeping with the suggestion of Pallant (2005), that the Shapiro-Wilk statistic is more accurate at assessing normality in samples of < 100.

(-.17) and platykurtic (-.19) for the British sample, and negatively skewed (-.27) and platykurtic (-.25) for the South African sample. The Kolmogorov-Smirnov statistic was significant at $p > .05$ for the total sample. The Shapiro-Wilk statistic was significant at $p > .05$ for both subsamples and so no transformation was made to the data.

Summary

This chapter has presented the research philosophy of the thesis and has justified the use of the quantitative methodology employed in the research, in keeping with the positivist approach adopted. The participants of the research have been described as has the sampling process used to select them. The research measures used to measure the constructs under investigation have also been described, namely the THQ (Green, 1996), DES (Carlson & Putnam, 1993) and the PCL-R Second Edition (Hare, 2003a). The procedure utilised in the research has been outlined, including ethical considerations, piloting and the interview process. The next chapter presents the results which relate to the first aim this thesis, which is to compare the trauma histories, dissociative experiences and psychopathic features of British and South African murderers and the associations among them.

CHAPTER FOUR

A Comparison of the Trauma Histories, Dissociative Experiences and Psychopathic Features of British and South African Murderers

Overview

This chapter compares the trauma histories, dissociative experiences and psychopathic features of British and South African men convicted of murder. The chapter begins by comparing the demographic characteristics of these two groups, including age, ethnicity and education. Next, the offence-related characteristics of British and South African participants are compared, including plea, gender of victim, relationship of victim to the offender and the method used to murder the victim. The trauma histories of the two groups are compared, including the total number of traumatic experiences as well as the number of crime-related experiences, general traumatic experiences and physical/sexual experiences. The dissociative experiences of the groups are then compared, including the total number of dissociative experiences, as well as experiences of amnesia, absorption and depersonalisation. Finally, the psychopathic features of the groups are compared, including mean PCL-R Total scores and Factor scores.

Chi-square analyses are presented which compare the demographic and offence-related characteristics of British and South African participants. The Pearson chi-square statistic was used for contingency tables larger than 2 x 2 and Yates' Correction for Continuity was used for 2 x 2 tables.[1] Fisher's Exact tests were used when the chi-square assumption concerning minimum expected cell frequency was violated.[2] Independent-samples *t*-tests were performed to compare the mean THQ, DES and PCL-R scores of the two samples. Wilcoxon signed-rank tests were conducted to compare the distress ratings of participants at the time of each traumatic experience and 'at present' and Mann-Whitney U tests were used to compare the distress ratings of participants in relation to each traumatic experience. Zero-order Pearson correlation

[1] Yates' Correction for Continuity compensates for overestimation of the χ^2 value for a 2 x 2 table (Pallant, 2005).

[2] The minimum expected cell frequency should be 5 or greater (i.e. at least 80% of cells should have expected frequencies of 5 or more; Pallant, 2005).

coefficients were calculated to explore bivariate associations between trauma and psychopathy, trauma and dissociation, and dissociation and psychopathy. Finally, partial correlations were calculated to explore the unique relationships between each PCL-R Factor and trauma/dissociation. An alpha level of .05 (two-tailed) was used for all analyses, although correlations at the more stringent alpha levels of .01 and .001 are also reported. All analyses were conducted using the *Statistical Package for the Social Sciences* (SPSS) Versions 12.0 (SPSS Inc, 2003) and 15.0 (SPSS Inc, 2007).

Demographic Characteristics

The demographic characteristics of British and South African participants are reported in Table 4.1. The proportion of British and South African participants in each age group did not differ significantly and neither did the mean age of the samples, $M = 36.58$, $SD = 10.58$ vs. $M = 35.28$, $SD = 11.75$; $t(118) = .64$, $p > .05$. The proportion of British and South African participants with educational qualifications did not differ significantly, although there were different proportions of British and South African participants in each ethnic group, $\chi^2(2, N = 120) = 23.17$, $p < .001$; there were significantly more White participants in the British sample and significantly more Black participants in the South African sample.

Table 4.1 Demographic characteristics

Demographic characteristic	British sample		South African sample		χ^2	*p*
	n	**%**	***n***	**%**		
Age group						
18-33	25	41.7	27	45.0	1.05	.59
34-49	24	40.0	26	43.3		
50-65	11	18.3	7	11.7		
Educational status						
No qualifications	52	86.7	49	81.7	.05	.82
Qualifications	8	13.3	11	18.3		
Ethnic group						
White	41	68.3	21	35.0	23.17***	.00
Asian	11	18.3	6	10.0		
Black	8	13.4	33	55.0		

Note: *** $p < .001$.

Offence-Related Characteristics

The offence-related characteristics of British and South African participants are reported in Table 4.2. British and South African participants differed significantly with respect to the method they used to murder their victim, $\chi^2(3, N = 120) = 28.98$, $p < .001$. Bonferroni-corrected pair-wise comparisons revealed that South African participants were more likely to shoot their victim, whereas British participants were more likely to stab or beat their victim. British and South African participants also differed significantly with respect to the number of murders they had been convicted of; more South African participants had been convicted of more than one murder, $\chi^2(1, N = 120) = 16.01$, $p < .001$. [3]

Table 4.2 Offence-related characteristics

Offence-related characteristic	British sample		South African sample		χ^2	*p*
	n	**%**	***n***	**%**		
Plea						
Guilty	32	53.3	31	51.7	.00	1.00
Not guilty	28	46.7	29	48.3		
Gender of victim						
Male	46	76.7	44	73.3	.04	.83
Female	14	23.3	16	26.7		
Relationship of victim to offender						
Friend/acquaintance	25	41.7	16	26.7	8.91	.06
Stranger	17	28.3	22	36.7		
Partner	7	11.7	9	15.0		
Burglar/robber/mugger	3	5.0	10	16.7		
Child/sibling	8	13.3	3	5.0		
Method of murdering victim						
Stabbed	37	61.7	22	36.7	28.98***	.00
Beat	15	25.0	5	8.3		
Shot	3	5.0	28	46.7		
Other	5	8.3	5	8.3		
Number of convicted murders						
One	59	98.3	42	70.0	16.01***	.00
Two or more	1	1.7	18	30.0		

Note: *** $p < .001$.

[3] The offender's most recent offence was used for the purposes of the present research.

Trauma Histories

Mean THQ scores

Mean THQ total and subscale scores are reported for the British and South African samples in Table 4.3. Consistent with previous research which has used independent-samples *t*-tests to compare the traumatic experiences of different groups as measured by the THQ (Kilcommons & Morrison, 2005), independent-samples *t*-tests were performed to compare the traumatic experiences of British and South African participants. It was found that South African participants received significantly higher THQ total scores, $M = 8.13$, $SD = 2.29$ vs. $M = 6.88$, $SD = 2.64$; $t(118) = -2.77$, $p < .01$, crime-related events scores, $M = 1.75$, $SD = .90$ vs. $M = 1.38$, $SD = 1.06$; $t(118) = -2.05$, $p < .05$, and general trauma/disaster scores, $M = 4.58$, $SD = 1.72$ vs. $M = 3.72$, $SD = 1.91$; $t(118) = -2.62$, $p < .01$ than British participants. However, British participants received significantly higher physical/sexual experiences scores than South African participants, $M = 2.17$, $SD = 1.75$ vs. $M = 1.23$, $SD = 1.31$; $t(118) = 3.31$, $p < .001$. Based on Cohen's (1988) guidelines on effect size (.01= small effect, .06 = moderate effect, .14 = large effect), the magnitude of differences between crime-related events scores between the two samples was small (eta squared = .04), although the magnitude of differences between THQ total scores, general trauma/disaster scores and physical/sexual experiences scores were moderate (eta squared = .07, .06 and .08, respectively).

Table 4.3 Mean THQ scores

THQ scale	British sample		South African sample		*t*	*p*
	M	***SD***	***M***	***SD***		
THQ total	6.88	2.64	8.13	2.29	-2.77**	.01
Crime-related events	1.38	1.06	1.75	.90	-2.05*	.04
General trauma and disaster	3.72	1.91	4.58	1.72	-2.62**	.01
Physical/sexual experiences	2.17	1.75	1.23	1.31	3.31***	.00

Note: * $p < .05$; ** $p < .01$; *** $p < .001$.

Because of the known influence of demographic factors on certain measures (Harpur & Hare, 1994), a one-way analysis of covariance (ANCOVA) was performed to explore the influence of age on THQ total and subscale scores. It was found that when age was controlled for, there was still a significant difference between the British and South African samples in terms of mean

THQ total score, $F(1, 117) = 8.29$, $p < .01$, crime-related events score, $F(1, 117) = 4.34$, $p < .05$, general trauma, $F(1, 117) = 7.94$, $p < .01$, and physical/sexual experiences, $F(1, 117) = 11.66$, $p < .001$. It was also of interest whether THQ scores might differ between ethnic groups. A one-way ANOVA was performed using the total sample ($N = 120$), which indicated that there were no significant differences between ethnic groups (Asian, Black, White) with respect to either mean THQ total score, $F(2, 117) = .63$, $p > .05$, crime-related events, $F(2, 117) = .26$, $p > .05$, general trauma/disaster, $F(2, 117) = 1.17$, $p > .05$ or physical/sexual experiences, $F(2, 117) = 11.66$, $p < .001$.

It was also of interest whether THQ scores might differ between participants of different educational levels. An independent-samples *t*-test using the data of the total sample ($N = 120$) revealed that there was no significant difference between participants with qualifications and those without qualifications groups with respect to either mean THQ total score, $M = 7.88$, $SD = 2.58$ vs. $M = 7.42$, $SD = 2.53$; $t(118) = -.79$, $p > .05$, crime-related events, $M = 1.88$, $SD = 1.04$ vs. $M = 1.49$, $SD = .97$; $t(118) = -1.71$, $p > .05$, general trauma, $M = 4.67$, $SD = 2.14$ vs. $M = 4.02$, $SD = 1.77$; $t(118) = -1.53$, $p > .05$ or physical/sexual experiences, $M = 1.33$, $SD = 1.71$ vs. $M = 1.79$, $SD = 1.58$; $t(118) = 1.25$, $p > .05$. In addition, a one-way ANCOVA indicated that years in education had no significant influence on the difference in mean THQ total scores between British and South African participants, $F(2, 117) = 8.62$, $p < .01$, crime-related events, $F(2, 117) = 7.53$, $p < .01$, general trauma, $F(2, 117) = 5.21$, $p < .05$, or physical/sexual experiences, $F(2, 117) = 4.92$, $p < .05$.

THQ item endorsement

It was explored whether British and South African participants differed with respect to the specific types of trauma they reported. Table 4.4 shows the number of participants in each sample who responded *Yes* or *No* to each THQ item. As shown in Table 4.4, chi-square analyses revealed that significantly more British participants reported being exposed to dangerous chemicals, $\chi^2(1, N = 120) = 5.52$, $p < .05$, forced to have sexual intercourse or oral or anal sex against their will, $\chi^2 (1, N = 120) = 11.31$, $p < .001$, forced to touch or have their genitals touched, $\chi^2(1, N = 120) = 9.37$, $p < .001$, or being in some other situation involving forced sexual contact, $\chi^2(1, N = 120) = 10.01$, $p < .001$. In contrast, more South African participants reported being mugged, $\chi^2(1, N = 120) = 6.54$, $p < .01$, seriously injured, $\chi^2(1, N = 120) = 5.87$, $p < .05$, or having received news of serious injury, illness or death of someone close to them, $\chi^2(1, N = 120) = 6.55$, $p < .01$. Findings suggest that British participants reported experiencing more sexual abuse, whereas South African participants reported more physical abuse.

Table 4.4 Comparison of THQ item endorsement for British and South African participants

THQ item	British sample		South African sample		χ^2	*p*
	Yes (*n*)	No (*n*)	Yes (*n*)	No (*n*)		
1. Mugged	22	38	37	23	6.54**	.01
2. Belongings stolen	34	26	43	17	2.32	.13
3. Burgled when not present	25	35	18	42	1.31	.25
4. Burgled when present	1	59	7	53	<3.35>	07
5. Serious accident	36	24	30	30	.84	.36
6. Natural disaster	15	45	8	52	1.94	.16
7. Manmade disaster	9	51	10	50	.00	1.00
8. Exposed to dangerous chemicals	11	49	2	58	5.52*	.02
9. Seriously injured	29	31	43	17	5.87*	.02
10. Fear of being seriously injured/killed	38	22	48	12	3.32	.07
11. Seen someone seriously injured/killed	8	52	13	47	.92	.34
12. Seen dead body other than at a funeral	6	54	12	48	1.63	.20
13. Family member/friend killed by drunk	7	53	7	53	.00	1.00
14. Spouse/romantic partner/child die	10	50	17	43	1.72	.19
15. Serious or life threatening illness	8	52	6	54	.08	.78
16. News of serious illness/death of someone close	39	21	52	8	6.55**	.01
17. Engaged in combat	6	54	9	51	.31	.58
18. Forced to have sex against will	18	42	3	57	11.31***	.00
19. Forced to touch/have private parts touched	21	39	6	54	9.37***	.00
20. Other situation involving forced sexual contact	11	49	0	60	10.01***	.00
21. Attacked by family member with weapon	14	46	23	37	2.50	.11
22. Attacked by family member without weapon	31	29	22	38	2.16	.14
23. Beaten/ pushed by family to cause injury	27	23	20	40	2.21	.12

Note: χ^2: Yates' Correction for Continuity was used for all analyses reported in this table as all contingency tables were 2 x 2; * $p < .05$; ** $p < .01$; *** $p < .001$; < > indicates that Fisher's Exact test was used instead of Yates' Correction for Continuity as the chi-square assumption of minimum expected cell frequency was violated.

For crime-related events and general disaster/trauma items, the THQ requests that respondents indicate whether or not they have experienced the event, and if so how many times. For the purpose of comparing the two samples, responses were recoded into 'not applicable' (i.e. the participant had not experienced the event in question), 'once' and 'occasionally'. No participants reported experiencing any crime-related events or general disaster/trauma on a frequent basis and so no 'frequently' category was created. For physical/sexual experiences items, the THQ requests that respondents indicate whether or not they have experienced the event in question, and if so whether it occurred once or repeatedly.

Chi-square analyses revealed that South African participants reported experiencing crime-related events significantly more frequently than British participants, including being mugged, $\chi^2(2) = 9.48$, $p < .01$, having their belongings stolen, $\chi^2(2, N = 120) = 7.37$, $p < .05$, and being burgled whilst at home, χ^2 $(2, N = 120) = 6.09$, $p < .05$. In addition, South African participants reported experiencing 'violent' traumatic experiences involving injury either to oneself or to another person significantly more frequently than British participants, including being seriously

injured, $\chi^2(2, N = 120) = 7.15$, $p < .05$, being in fear of being seriously injured or killed, $\chi^2(2, N = 120) = 6.48$, $p < .05$, seeing someone be seriously injured or killed, $\chi^2(2, N = 120) = 6.32$, $p < .05$, and seeing a dead body other than at a funeral, $\chi^2(2, N = 120) = 6.35$, $p < .05$. On the other hand, British participants reported experiencing sexual abuse significantly more frequently than South African participants, including being forced to have intercourse or oral or anal sex, $\chi^2(2, N = 120) = 14.21$, $p < .01$, being forced to touch another person sexually or be touched oneself under force or threat, $\chi^2(2, N = 120) = 18.25$, $p < .01$, and being forced to have sexual contact in another situation, $\chi^2(2, N = 120) = 10.93$, $p < .05$.

It was explored whether British and South African participants differed with respect to the ages at which they experienced traumatic events. For each sample, each THQ item response was divided into participants reporting experiences before age 10, age 10 to 17, and age 18 or over. The number and percentage of participants in each category in the British and South African samples are reported in Table 4.5. Chi-square analyses revealed that South African participants experienced significantly more traumatic experiences during adolescence (aged 10 to 17) than British participants, including being mugged, $\chi^2(3, N = 120) = 10.80$, $p < .01$, being seriously injured, $\chi^2(3, N = 120) = 14.44$, $p < .01$, fearing being seriously injured or killed, $\chi^2(3, N = 120) = 12.99$, $p < .01$, and receiving news of serious illness, injury or death of someone close to them, $\chi^2(3, N = 120) = 8.80$, $p < .05$. In addition, South African participants reported experiencing significantly more physical abuse under age ten than British participants, $\chi^2(3, N = 120) = 8.48$, $p < .05$. On the other hand, British participants reported experiencing significantly more sexual abuse under age ten, including being forced to have intercourse or anal or oral sex, $\chi^2(3, N = 120) = 11.45$, $p < .01$, forced to touch another person's genitals, or have their own genitals touched under force or threat, $\chi^2(3, N = 120) = 15.26$, $p < .01$, and being forced to have sexual contact in 'another situation', $\chi^2(3, N = 120) = 9.93$, $p < .01$.

Table 4.5 Ages of traumatic experiences

	N/A		Under 10		10-17		18+	
	Br	SA	Br	SA	Br	SA	Br	SA
	%	%	%	%	%	%	%	%
1. Mugged	63.3	38.3	0.0	5.0	10.0	25.0	26.7	31.7
2. Belongings stolen	43.3	28.3	1.7	3.3	21.7	21.7	33.3	46.7
3. Burgled when not present	58.3	70.0	0.0	1.7	5.0	0.0	36.7	28.3
4. Burgled when present	98.3	88.3	0.0	1.7	1.7	3.3	0.0	6.7
5. Serious accident	40.0	50.0	5.0	0.0	6.7	13.3	48.3	36.7
6. Natural disaster	75.0	86.7	0.0	1.7	3.3	6.7	21.7	5.0
7. Manmade disaster	85.0	81.7	3.3	3.3	0.0	1.7	11.7	13.3
8. Exposed to dangerous chemicals	81.7	96.7	1.7	1.7	1.7	0.0	15.0	1.7
9. Seriously injured	51.7	28.3	3.3	1.7	3.3	25.0	41.7	45.0
10. Fear of being seriously injured/killed	36.7	20.0	1.7	0.0	6.7	30.0	55.0	50.0
11. Seen someone seriously injured/killed	86.7	78.3	0.0	0.0	1.7	6.7	11.7	15.0
12. Seen dead body other than at a funeral	90.0	80.0	0.0	0.0	0.0	6.7	10.0	13.3
13. Family member/friend killed by drunk	88.3	88.3	1.7	1.7	1.7	6.7	8.3	3.3
14. Spouse/romantic partner/child die	83.3	71.7	0.0	0.0	0.0	1.7	16.7	26.7
15. Serious or life threatening illness	86.7	90.0	3.3	0.0	3.3	1.7	6.7	8.3
16. News of illness/death of someone close	35.0	13.3	5.0	3.3	11.7	21.7	48.3	61.7
17. Engaged in combat	90.0	85.0	0.0	0.0	1.7	0.0	8.3	15.0
18. Forced to have sex against will	70.0	93.3	23.3	5.0	3.3	0.0	3.3	1.7
19. Forced to touch/have genitals touched	65.0	93.3	26.7	3.3	5.0	1.7	3.3	1.7
20. Other forced sexual contact	81.7	98.3	13.3	0.0	5.0	1.7	0.0	0.0
21. Attacked by family with weapon	76.6	60.0	3.3	18.3	8.3	13.3	11.7	8.3
22. Attacked by family without weapon	48.3	63.3	30.0	21.7	18.3	13.3	3.3	1.7
23. Beaten/pushed by family	38.3	68.3	43.3	21.7	16.7	10.0	1.7	0.0

Note: Br = British sample; SA = South African sample.

The THQ asks the respondent to specify the perpetrator of two specific unwanted sexual experiences: item 18: *Has anyone ever made you have intercourse, oral or anal sex against your will? If yes, please indicate the nature of the relationship with the person (e.g. stranger, friend, relative, partner, sibling),* and item 19: *Has anyone ever touched private parts of your body or made you touch theirs under force or threat? If yes, please indicate the nature of the relationship with the person (e.g. stranger, friend, relative, partner, sibling).* Participants' responses for these questions were coded as either 'not applicable', 'parent', 'other family member' or 'stranger'.

Eighteen British and 3 South African participants responded 'yes' to item 18, and 21 British and 6 South African participants responded 'yes' to item 19. The percentage of participants in each sample who specified the perpetrator as a parent, relative or stranger are reported in Table 4.6. There was no difference between the samples with respect to the perpetrator of forced intercourse, although more South Africans reported being forced to touch or have their genitals touched by a parent.[4]

[4] It was not possible to calculate chi-square as the group sizes were too small.

Table 4.6 Perpetrators of traumatic experiences

THQ item	Parent		Relative		Stranger	
	Br	SA	Br	SA	Br	SA
	%	%	%	%	%	%
18. Forced to have sex against will	33.3	33.3	33.3	33.3	33.3	33.3
19. Forced to touch/have private parts touched	28.6	50.0	47.6	16.7	23.8	33.3

Note: Br = British sample; SA = South African sample.

Perceived distress of traumatic experiences

During the administration of the THQ, participants were asked to rate the amount of distress they felt at the time of each traumatic experience on a scale of 0-10.[5] They were also asked to rate the amount of distress they felt in relation to each traumatic experience 'at present' (i.e. at the time of being administered the THQ). The purpose of this was to explore whether British and South African participants perceived traumatic experiences in a similar or different manner at the time of occurrence and whether they differed with respect to their perception of these experiences in the present. Wilcoxon signed-rank tests were conducted to compare the distress ratings of participants at the time of each traumatic experience and 'at present'. It was found that British and South African participants both rated their traumatic experiences as significantly less distressing 'at present' than at the time of the experience. Mann-Whitney U tests were then performed to compare the distress ratings of British and South African participants, at the time of each experience and 'at present' as shown in Table 4.7.

[5] As stated in the previous chapter, this modification was made to the THQ with permission from the senior author of the paper for which this modification was made (Reynolds *et al*., 2005).

Table 4.7 Comparison of distress ratings between British and South African participants

THQ item	Distress at time of experience	Distress at present
	***Z* score**	***Z* score**
1. Mugged	-2.46**	-2.18*
2. Belongings stolen	-2.11*	-2.46**
3. Burgled when not present	-2.41*	-2.54**
4. Burgled when present	–	–
5. Serious accident	-.95	-1.87
6. Natural disaster	-1.28	-.04
7. Manmade disaster	-.13	-2.37**
8. Exposed to dangerous chemicals	-1.04	-.22
9. Seriously injured	-1.49	-1.02
10. Fear of being seriously injured/killed	-2.76**	-2.56**
11. Seen someone seriously injured/killed	-2.08*	-2.77**
12. Seen dead body other than at a funeral	-2.42*	-2.28*
13. Family member/friend killed by drunk driver	-1.44	-1.67
14. Spouse/romantic partner/child die	-.53	-.56
15. Serious or life threatening illness	-.87	-1.12
16. News of illness/death of someone close	-.05	-1.56
17. Engaged in combat	-2.37*	-1.35
18. Forced to have sex against will	-.59	-1.64
19. Forced to touch/have private parts touched	-.83	-.59
20. Other situation with forced sexual contact	–	–
21. Attacked by family member with weapon	-.18	-1.13
22. Attacked by family member without weapon	-1.43	-1.35
23. Beaten/pushed by family to cause injury	-.28	-.99

Note: * $p < .05$; ** $p < .01$; – indicates that the *Z* score could not be calculated because too few participants reported experiencing these events.

As shown in Table 4.7, South African participants rated crime-related experiences as less distressing than British participants both at the time of their occurrence and 'at present', including being mugged, having their belongings stolen and being burgled. In addition, South African participants reported general traumatic experiences involving violence as less distressing at the time of their occurrence and 'at present', including a fear of being seriously injured or killed, seeing someone else be seriously injured or killed, or seeing a dead body other than at a funeral. Furthermore, South African participants rated engagement in combat as less distressing at the time of occurrence and manmade disasters as less distressing 'at present' than British participants.

Dissociative Experiences

Mean DES scores

Mean DES total and scale scores are reported for the British and South African samples in Table 4.8. Independent-samples *t*-tests revealed that South African participants received significantly higher DES total scores, $M = 22.90$, $SD = 11.46$ vs. $M = 16.40$, $SD = 8.36$; $t(108) = -3.55$, $p < .01$, absorption scores, $M = 30.35$, $SD = 17.10$ vs. $M = 23.02$, $SD = 13.54$; $t(118) = -2.60$, $p < .01$, and depersonalisation scores, $M = 16.62$, $SD = 17.65$ vs. $M = 7.18$, $SD = 9.71$; $t(92) = -3.63$, $p < .01$ than British participants. Based on the guidelines of Cohen (1988) on effect size (.01 = small effect, .06 = moderate effect, .14 = large effect), the magnitude of differences between DES total, absorption and depersonalisation scores between the two samples were moderate (eta squared = .12, .06 and .13, respectively). Using a DES cut-off score of 30 recommended by Moskowitz (2004), more South African participants than British participants met the criteria for pathological dissociation, $\chi^2(1, N = 120) = 3.98$, $p < .05$; 30.0% of South African participants reported experiencing pathological dissociation compared to 13.3% of British participants.

Table 4.8 Mean DES scores

DES scale	British sample		South African sample		*t*	*p*
	M	***SD***	***M***	***SD***		
DES total	16.40	8.36	22.90	11.46	-3.55**	.00
Amnesia	14.52	10.13	17.77	12.53	-1.56	.12
Absorption	23.02	13.54	30.35	17.10	-2.60**	.01
Depersonalisation	7.18	9.71	16.62	17.65	-3.63***	.00

Note: ** $p < .01$; *** $p < .001$.

A one-way ANCOVA revealed that even when age was controlled for, there was still a significant difference between the British and South African samples in terms of mean DES total score, $F(1, 117) = 12.10$, $p < .001$, amnesia, $F(1, 117) = 7.25$, $p < .01$, absorption, $F(1, 117) = 6.27$, $p < .01$, and depersonalisation, $F(1, 117) = 12.61$, $p < .001$. A one-way ANOVA (performed using the total sample, $N = 120$), indicated that there were no significant differences between ethnic groups (Asian, Black, White) with respect to either mean DES total score, $F(2, 117) = .39$, $p > .05$, amnesia, $F(2, 117) = .14$, $p > .05$, absorption, $F(2, 117) = .15$, $p > .05$ or

depersonalisation, $F(2, 117) = .12$, $p > .05$. An independent-samples *t*-test revealed that there was no significant difference between participants with qualifications and those without qualifications with respect to either mean DES total score, $M = 17.54$, $SD = 9.69$ vs. $M = 20.18$, $SD = 10.69$; $t(118) = 1.10$, $p > .05$, amnesia, $M = 12.42$, $SD = 10.32$ vs. $M = 17.07$, $SD = 11.59$; $t(118) = 1.80$, $p > .05$, absorption, $M = 22.54$, $SD = 10.74$ vs. $M = 27.72$, $SD = 11.02$; $t(118) = -1.86$, $p > .05$, or depersonalisation, $M = 8.71$, $SD = 10.34$ vs. $M = 12.70$, $SD = 11.02$; $t(118) = 1.17$, $p > .05$. In addition, a one-way ANCOVA indicated that years in education had no significant influence on the difference in mean DES total scores between British and South African participants, $F(2, 117) = 7.56$, $p < .01$, crime-related events, $F(2, 117) = 5.67$, $p < .05$, general trauma, $F(2, 117) = 4.93$, $p < .05$, or physical/sexual experiences, $F(2, 117) = 7.21$, $p < .01$.

DES item endorsement

Mann-Whitney U-tests were conducted to compare the DES ratings of British and South African participants. As shown in Table 4.9, South African participants rated experiencing a number of DES items significantly more frequently than British participants, including experiences of depersonalisation (items 7, 27 and 28), absorption (items 16, 17 and 23) and amnesia (items 24 and 26) as well as item 21, which is an additional item contributing to the DES total score. In contrast, British participants rated experiencing one of the absorption items (item 15) significantly more frequently than South African participants.

Table 4.9 Comparison of DES item endorsement for British and South African participants

DES Item	*Z*
1. Do not remember trip	-1.23
2. Do not hear what said	-.61
3. Find self in place but do not know how	-.96
4. Find self in clothes do not remember	-1.21
5. Find belongings do not remember	-1.07
6. Approached by people do not know	-.03
7. Feel as though self is another person	-2.45**
8. Do not recognise friends or family	-1.71
9. No memory for important events	-.41
10. Accused of lying	-.42
11. Look in mirror and not recognise self	-1.81
12. Feel that others or objects not real	-1.65
13. Feel that body does not belong to self	-.95
14. Remember past vividly	-.01
15. Unsure whether things really happened	-2.37*
16. Be in familiar place but find it unfamiliar	-3.95**
17. Absorbed/unaware of surroundings	-2.16*
18. Absorbed in fantasy	-1.44
19. Can ignore pain	-.82
20. Stare into space and unaware of time	-.22
21. Talk aloud to oneself	-2.67**
22. Feel as though one is two people	-.71
23. Do things with spontaneity	-2.03*
24. Not remember whether done something	-2.15*
25. Find evidence of things do not remember	-1.69
26. Find writing/drawings do not remember	-2.43**
27. Hear voices giving instructions	-2.86**
28. Feel as though people/objects far away	-2.10*

Note: * $p < .05$; ** $p < .01$.

Psychopathic Features

Mean PCL-R scores

Mean PCL-R Total and Factor scores are reported for the British and South African samples in Table 4.10. Independent-samples *t*-tests revealed that South African participants received significantly higher PCL-R Total scores, $M = 25.45$, $SD = 7.16$ vs. $M = 20.13$, $SD = 9.03$; $t(118) = -3.57$, $p < .001$, PCL-R Factor 1 (Interpersonal) scores, $M = 4.17$, $SD = 2.76$ vs. $M = 3.07$, $SD = 2.71t(118) = -2.20$, $p < .05$, and PCL-R Factor 3 (Behavioural) scores, $M = 7.85$, $SD = 2.02$ vs. $M = 6.08$, $SD = 3.13$; $t(118) = -3.68$, $p < .001$ than British participants. The magnitude of differences between PCL-R Total scores was moderate (eta squared = .12), the magnitude of differences between Interpersonal scores was small (.04) and the magnitude of differences between Behavioural scores was large (.14).

Table 4.10 Mean PCL-R scores

PCL-R scale	British sample		South African sample		*t*	*p*
	M	***SD***	***M***	***SD***		
PCL-R Total	20.13	9.03	25.45	7.16	-3.57**	.00
Factor 1 (Interpersonal)	3.07	2.71	4.17	2.76	-2.20*	.03
Factor 2 (Affective)	5.30	2.77	6.10	2.10	-1.78	.08
Factor 3 (Behavioural)	6.08	3.13	7.85	2.02	-3.68**	.00

Note: * $p < .05$; ** $p < .01$.

A one-way ANCOVA revealed that even when age was controlled for, there was still a significant difference between the British and South African samples in terms of mean PCL-R Total score, $F(1, 117) = 12.31$, $p < .001$, Factor 1 (Interpersonal), $F(1, 117) = 4.40$, $p < .05$, Factor 2 (Affective), $F(1, 117) = 4.21$, $p < .05$ and Factor 3 (Behavioural), $F(1, 117) = 13.02$, $p < .001$. A one-way ANOVA (performed using the total sample, $N = 120$), indicated that there were no significant differences between ethnic groups (Asian, Black, White) with respect to either mean PCL-R Total score, $F(2, 117) = 1.22$, $p > .05$, Factor 1 (Interpersonal), $F(2, 117) = .12$, $p > .05$, Factor 2 (Affective), $F(2, 117) = 2.01$, $p > .05$, or Factor 3 (Behavioural), $F(2, 117) = 1.60$, $p > .05$.

An independent-samples *t*-test revealed that there was no significant difference between participants with qualifications and those without qualifications with respect to either mean PCL-R Total score, $M = 21.04$, $SD = 8.50$ vs. $M = 23.23$, $SD = 8.54$; $t(118) = 1.12$, $p > .05$, Factor 1 (Interpersonal), $M = 3.38$, $SD = .65$ vs. $M = 3.68$, $SD = .27$; $t(118) = .48$, $p > .05$, Factor 2 (Affective), $M = 4.88$, $SD = 2.42$ vs. $M = 5.91$, $SD = 2.46$; $t(118) = 1.84$, $p > .05$, or Factor 3 (Behavioural) scores, $M = 6.54$, $SD = 2.78$ vs. $M = 7.07$, $SD = 2.77$; $t(118) = .84$, $p > .05$. Furthermore, a one-way ANCOVA indicated that years in education had no significant influence on the difference in mean PCL-R Total scores between British and South African participants, $F(2, 117) = 8.21$, $p < .01$, crime-related events, $F(2, 117) = 6.34$, $p < .05$, general trauma, $F(2, 117) = 5.97$, $p < .05$, or physical/sexual experiences, $F(2, 117) = 7.56$, $p < .01$.

PCL-R item ratings

The frequencies of ratings for each PCL-R item for British and South African participants are displayed in Table 4.11. Chi-square analyses revealed that significantly more British participants received a rating of "2" (i.e. item applies) for *Revocation of conditional release*, χ^2 $(2, N = 120) = 8.52$, $p < .01$. However, significantly more South African participants received a

rating of "2" on the following items: *Grandiose sense of self-worth*, $\chi^2(2, N = 120) = 6.19$, $p < .05$, *Need for stimulation/proneness to boredom,* $\chi^2(2, N = 120) = 9.90$, $p < .01$, *Lack of remorse or guilt*, $\chi^2(2, N = 120) = 5.98$, $p < .05$, *Parasitic lifestyle*, $\chi^2(2, N = 120) = 7.51$, $p < .05$, *Poor behavioural control*, $\chi^2(2, N = 120) = 8.31$, $p < .05$, *Promiscuous sexual behaviour*, $\chi^2(2, N = 120) = 7.29$, $p < .05$, *Lack of realistic long-term goals*, $\chi^2(2, N = 120) = 12.95$, $p < .001$, *Impulsivity*, $\chi^2(2, N = 120) = 13.11$, $p < .001$, *Juvenile delinquency*, $\chi^2(2, N = 120) = 13.75$, $p < .001$, and *Criminal versatility*, $\chi^2(2, N = 120) = 10.59$, $p < .001$.

Table 4.11 Comparison of PCL-R item ratings for British and South African participants

PCL-R item	British sample			South African sample			χ^2	*p*
	0	1	2	0	1	2		
	n	*n*	*n*	*n*	*n*	*n*		
1. Glibness/superficial charm	41	7	12	31	6	23	4.92	.09
2. Grandiose sense of self worth	37	8	15	27	5	28	6.19*	.04
3. Need for stimulation	16	2	42	4	6	50	<9.90>**	.01
4. Pathological lying	28	15	17	22	12	26	2.94	.23
5. Conning/manipulative	23	8	29	19	9	32	.59	.75
6. Lack of remorse or guilt	8	10	42	1	10	49	<5.98>**	.04
7. Shallow effect	13	13	34	10	12	38	.65	.72
8. Callous/lack of empathy	14	9	37	9	12	39	1.57	.46
9. Parasitic lifestyle	29	8	23	17	5	38	7.51*	.03
10. Poor behavioural controls	11	6	43	4	1	55	<8.31>*	.02
11. Promiscuous sexual behaviour	42	7	11	28	9	23	7.29*	.03
12. Early behavioural problems	24	19	17	19	17	24	1.89	.39
13. Lack of realistic goals	24	13	23	14	4	32	12.95***	.00
14. Impulsivity	7	7	46	0	1	59	<13.11>***	.00
15. Irresponsibility	25	3	32	20	3	37	<.92>	.63
16. Failure to accept responsibility	27	6	27	17	6	37	3.84	.15
17. Many short-term marital relationships	44	9	7	49	4	7	2.19	.33
18. Juvenile delinquency	20	21	19	6	17	37	13.75***	.00
19. Revocation of conditional release	40	9	11	53	2	5	8.52**	.01
20. Criminal versatility	25	16	19	9	25	26	10.59***	.00

Note: * $p < .05$; ** $p < .01$; *** $p < .001$; < > indicates that Fisher's Exact test was used instead of Yates' Correction for Continuity as the chi-square assumption of minimum expected cell frequency was violated.

Comparison of Psychopaths and Non-Psychopaths

Using a PCL-R cut-off score of 30 recommended by Hare (1991, 2003b) to distinguish psychopaths from non-psychopaths, the number of psychopaths in each sample did not differ significantly, $\chi^2(2, N = 120) = 2.34$, $p > .05$; there were 10 psychopaths in the British sample (16.6%) and 17 psychopaths in the South African sample (28.3%). Psychopaths and non-psychopaths were compared with respect to their scores on each measure. The THQ, DES and PCL-R scores of psychopaths and non-psychopaths are reported in Table 4.12. Independent samples *t*-tests revealed

that psychopaths received significantly higher THQ total scores than non-psychopaths (M = 8.96, SD = 2.36 vs. M = 7.09, SD = 2.44; $t(118) = -3.55$, $p < .001$, as well as higher crime-related events (M = 1.96, SD = .98 vs. M = 1.45, SD = .97; $t(118) = -2.40$, $p < .05$), physical/sexual experiences (M = 2.59, SD = 1.67 vs. M = 1.44, SD = 1.50; $t(118) = 3.42$, $p < .01$, DES total (M = 25.85, SD = 10.30 vs. M = 17.85, SD = 9.92; $t(118) = -3.66$, $p < .001$, amnesia (M = 21.37, SD = 12.79 vs. M = 14.62, SD = 10.64; $t(118) = -2.77$, $p < .01$ and absorption scores (M = 35.93, SD = 12.41 vs. M = 24.00, SD = 11.37; $t(118) = -3.62$, $p < .001$. These findings suggest that psychopathy is related to trauma and dissociation. As expected, psychopaths received significantly higher PCL-R Total scores than non-psychopaths, M = 33.15, SD = 1.94 vs. M = 19.78, SD = 7.26; $t(118) = -15.90$, $p < .001$, as well as higher Interpersonal, M = 5.93, SD = 2.17 vs. M = 2.95, SD = 2.58; $t(118) = -5.47$, $p < .001$, Affective, M = 7.37, SD = 1.04 vs. M = 5.22, SD = 2.57; $t(118) = -6.47$, $p < .001$ and Behavioural scores, M = 9.48, SD = .80 vs. M = 6.24, SD = 2.70; $t(118) = -10.14$, $p < .001$.

Table 4.12 Mean THQ, DES and PCL-R scores of psychopaths and non-psychopaths

Variable	Psychopaths n = 27		Non-psychopaths n = 93		t	p
	M	***SD***	***M***	***SD***		
THQ						
THQ total	8.96	2.36	7.09	2.44	-3.55***	.00
Crime-related events	1.96	.98	1.45	.97	-2.40*	.02
General trauma/disaster	4.67	1.54	4.00	1.92	-1.65	.10
Physical/sexual experiences	2.59	1.67	1.44	1.50	3.42***	.00
DES						
DES total	25.85	10.30	17.85	9.92	-3.66***	.00
Amnesia	21.37	12.79	14.62	10.64	-2.77**	.01
Absorption	35.93	12.41	24.00	11.37	-3.62***	.00
Depersonalisation	15.89	11.32	10.74	11.42	-1.59	.12
PCL-R						
PCL-R Total	33.15	1.94	19.78	7.26	-15.90***	.00
Factor 1 (Interpersonal)	5.93	2.17	2.95	2.58	-5.47***	.00
Factor 2 (Affective)	7.37	1.04	5.22	2.57	-6.47***	.00
Factor 3 (Behavioural)	9.48	.80	6.24	2.70	-10.14***	.00

Note: * $p < .05$; ** $p < .01$; *** $p < .001$.

Comparison of Pure Murderers and Non-Pure Murderers

Because some of the participants in the present research had been convicted of offences other than murder (28.3% of the total sample had been convicted of at least one offence other than murder), it is recognised that the term *murderer* might be misleading. In order to study psychopathy in a pure sample of murderers, the subset of the sample that had no history of offences before committing murder were compared with participants who had a criminal history. A chi-square analysis revealed that there the number of 'pure' and 'nonpure' murderers

was significantly different, $\chi^2(1, N = 120) = 8.04$, $p < .01$; 83.3% of the British sample were pure murderers compared to 60.0% of the South African sample. Independent-samples *t*-tests revealed that there were no significant differences between the groups with respect to THQ total scores, $M = 7.65$, $SD = 2.55$ vs. $M = 7.45$, $SD = 2.53$; $t(118) = -.38$, $p = .70$, DES total scores, $M = 19.81$, $SD = 10.31$ vs. $M = 19.24$, $SD = 11.15$; $t(118) = .27$, $p = .79$), or PCL-R total scores, $M = 21.87$, $SD = 8.88$ vs. $M = 25.12$, $SD = 7.25$; $t(118) = -1.90$, $p = .06$.[6]

Correlations among Variables

Zero-order correlations

Bivariate associations among variables were compared for British and South African participants. Zero-order Pearson correlation coefficients are reported for each sample in Tables 4.13 and 4.14, respectively. Two-tailed tests of significance were used as there were no directional hypotheses for specific correlations. With respect to correlations between trauma and psychopathy, physical/sexual experiences were positively and significantly related to global psychopathy (PCL-R Total) ($r = .34$, $p < .01$) and to the behavioural features of psychopathy ($r = .30$, $p < .05$) for the British sample. For the South African sample, trauma history (THQ total) was positively and significantly related to global psychopathy ($r = .32$, $p < .05$), the affective features of psychopathy ($r = .29$, $p < .05$) and to the behavioural features of psychopathy ($r = .25$, $p < .05$). In addition, crime-related trauma was positively and significantly related to global psychopathy ($r = .27$, $p < .05$) and to the affective features of psychopathy ($r = .32$, $p < .05$) among South African participants. Furthermore, physical/sexual abuse was positively and significantly related to global psychopathy ($r = .51$, $p < .01$), the interpersonal features of psychopathy ($r = .38$, $p < .01$), affective features ($r = .44$, $p < .01$) and behavioural features ($r = .39$, $p < .01$) among South African participants. These findings indicate that the more traumatic experiences and individual has experienced, the more psychopathic features they possess, although only physical/sexual experiences was related to psychopathy among British participants.

With regard to correlations between trauma and dissociation, trauma history was positively and significantly related to global dissociation (DES total) ($r = .41$, $p < .01$), amnesia ($r = .29$, $p < .05$) and absorption ($r = .46$, $p < .01$) for the British sample. Crime-related trauma was related to

[6] Independent-samples *t*-tests were also performed to compare pure and nonpure murderers on the THQ subscales (crime-related events, general trauma/disaster, physical/sexual experiences), DES subscales (amnesia, absorption, depersonalisation) and PCL-R Factors (Interpersonal, Affective, Behavioural), although no significant differences between the groups were found.

physical/sexual abuse ($r = .29$, $p < .05$), and general trauma was related to global dissociation ($r = .34$, $p < .01$), amnesia ($r = .39$, $p < .05$) and absorption ($r = .27$, $p < .05$). Furthermore, physical/sexual experiences were positively and significantly related to global dissociation ($r = .34$, $p < .01$) and absorption ($r = .45$, $p < .01$) among British participants. For the South African sample, trauma history was positively and significantly related to global dissociation ($r = .41$, $p < .01$), amnesia ($r = .27$, $p < .05$) and absorption ($r = .29$, $p < .05$). Crime-related trauma was related to global dissociation ($r = .31$, $p < .05$) and absorption ($r = .34$, $p < .01$), and general trauma was related to global dissociation ($r = .26$, $p < .05$). Furthermore, physical/sexual experiences were positively and significantly related to global dissociation ($r = .47$, $p < .01$), amnesia ($r = .46$, $p < .01$) and absorption ($r = .32$, $p < .05$) among South African participants. These findings indicate that although trauma was positively and significantly related to dissociation for both samples, the patterns of correlations between specific domains of trauma and dissociation differed between them. The main difference was that although trauma history, general trauma and physical/sexual experiences were related to dissociation among both British and South African participants, only crime-related events were related to dissociation among South African participants.

With respect to correlations between dissociation and psychopathy, global dissociation was positively and significantly related to global psychopathy ($r = .32$, $p < .01$), and absorption was related to global psychopathy ($r = .29$, $p < .05$) for the British sample. For the South African sample, global dissociation was positively and significantly related to global psychopathy ($r = .58$, $p < .01$), the interpersonal features of psychopathy ($r = .55$, $p < .01$), affective features ($r = .58$, $p < .01$) and behavioural features ($r = .39$, $p < .01$). Amnesia was related to global psychopathy ($r = .45$, $p < .01$), interpersonal features ($r = .36$, $p < .01$), affective features ($r = .41$, $p < .01$) and behavioural features ($r = .32$, $p < .05$). In addition, absorption was positively and significantly related to global psychopathy ($r = .52$, $p < .01$), interpersonal features ($r = .42$, $p < .01$), affective features ($r = .53$, $p < .01$) and behavioural features ($r = .37$, $p < .01$). Furthermore, depersonalisation was related to global psychopathy ($r = .32$, $p < .05$), interpersonal features ($r = .30$, $p < .05$) and affective features ($r = .46$, $p < .01$). These findings indicate that dissociation is more strongly related to psychopathy among South African participants than British participants.

Table 4.13 Zero-order correlations among variables for British participants

Scale	THQ total	THQ crime	THQ general	THQ ph/sex	DES total	DES amnesia	DES abs	DES deperson	PCL-R Total	PCL-R Factor 1	PCL-R Factor 2
THQ											
Total											
Crime	.54**										
General	.65**	.19									
Ph/sex	.72**	.29*	.15								
DES											
Total	.41**	.18	.34**	.34**							
Amnesia	.29*	.13	.29*	.20	.71**						
Absorption	.46**	.22	.27*	.45**	.85**	.48**					
Deperson	-.06	.02	-.01	-.14	.53**	.29*	.34**				
PCL-R											
Total	.21	.09	-.05	.34**	.32**	.13	.29*	.07			
Factor 1	-.08	-.03	-.18	.06	.19	.14	.12	.08	.71**		
Factor 2	.03	-.09	-.01	.13	.17	.15	.14	.05	.78**	.51**	
Factor 3	.25	.09	.00	.30*	.12	.02	.14	.10	.83**	.39**	.58**

Note: ph/sex = physical/sexual experiences; abs = absorption; deperson = depersonalisation; Factor 1 = interpersonal features of psychopathy; Factor 2 = affective features of psychopathy; Factor 3 = behavioural features of psychopathy; * $p < .05$; ** $p < .01$.

Table 4.14 Zero-order correlations among variables for South African participants

Scale	THQ total	THQ crime	THQ general	THQ ph/sex	DES total	DES amnesia	DES abs	DES deperson	PCL-R Total	PCL-R Factor 1	PCL-R Factor 2
THQ											
Total											
Crime	.51**										
General	.68**	.17									
Ph/sex	.64**	.33*	.19								
DES											
Total	.41**	.31*	.26*	.47**							
Amnesia	.27*	.10	.17	.46**	.74**						
Absorption	.29*	.34**	.13	.32*	.82**	.46**					
Deperson	.19	.17	.19	.23	.72**	.36**	.50**				
PCL-R											
Total	.32*	.27*	.20	.51**	.58**	.45**	.52**	.32*			
Factor 1	.23	.24	.15	.38**	.55**	.36**	.42**	.30*	.74**		
Factor 2	.29*	.32*	.23	.44**	.58**	.41**	.53**	.46**	.66**	.42**	
Factor 3	.25*	.24	.05	.39**	.32*	.32*	.37**	.12	.73**	.30*	.55**

Note: ph/sex = physical/sexual experiences; abs = absorption; deperson = depersonalisation; Factor 1 = interpersonal features of psychopathy; Factor 2 = affective features of psychopathy; Factor 3 = behavioural features of psychopathy; * $p < .05$; ** $p < .01$.

In order to determine whether differences in correlations between the two samples were statistically significant, Pearson (r) values were converted into Z scores and the observed value of Z (*Zobs* value) was calculated. *Zobs* values are significant if *Zobs* $\leq$ -1.96 or $\geq$ 1.96 (Pallant, 2005). *Zobs* values are reported for correlations between i) trauma and psychopathy, ii) trauma and dissociation, and iii) dissociation and psychopathy in Tables 4.15, 4.16 and 4.17, respectively. Calculations of *Zobs* values can be found in Appendix D. As shown in Table 4.15,

there was a significant difference in the strength of the correlation between crime-related events and PCL-R Factor 2 (Affective); crime-related events and affective features were negatively (but not significantly) correlated among British participants, but were positively and significantly correlated among South African participants.

As shown in Table 4.16, there was a significant difference in the strength of the correlation between physical/sexual experiences and depersonalisation; physical/sexual experiences were negatively (but not significantly) related to depersonalisation among British participants, but were positively (but not significantly) correlated among South African participants. As shown in Table 4.17, there were some significant differences in the strength of the correlations between dissociation and psychopathy for the two samples; DES total was positively and significantly related to Factor 1 (Interpersonal) only among South African participants. In addition, DES total, absorption and depersonalisation were positively and significantly related to PCL-R Factor 2 (Affective) only among South African participants.

Table 4.15 Differences in zero-order correlations between trauma and psychopathy

Variables	**British sample**	**South African sample**	***Zobs* value**
	r	***r***	
THQ total + PCL-R Total	.21	.32*	-.64
THQ total + Interpersonal	-.08	.23	-1.30
THQ total + Affective	.03	.29*	-1.44
THQ total + Behavioural	.25	.25**	.00
Crime related events + PCL-R Total	.09	.27*	-.10
Crime related events + Interpersonal	-.03	.24*	-1.47
Crime related events + Affective	-.09	.32*	-2.26*
Crime related events + Behavioural	.09	.24	-.83
General trauma and disaster + PCL-R Total	-.05	.20	-1.35
General trauma and disaster + Interpersonal	-.18	.15	-1.78
General trauma and disaster + Affective	-.01	.23	-1.30
General trauma and disaster + Behavioural	.00	.05	-.27
Physical and sexual experiences + PCL-R Total	.34**	.51**	-1.12
Physical and sexual experiences + Interpersonal	.06	.38**	-1.82
Physical and sexual experiences + Affective	.13	.44**	-1.83
Physical and sexual experiences + Behavioural	.30*	.39**	-.55

Note: * $p < .05$; ** $p < .01$.

Table 4.16 Differences in zero-order correlations between trauma and dissociation

Variables	British sample	South African sample	*Zobs* value
	r	*r*	
THQ total + DES total	.41**	.41**	.0
THQ total + amnesia	.29	.27	.12
THQ total + absorption	.46**	.29	1.06
THQ total + depersonalisation	-.06	.19	-1.35
Crime related events + DES total	.18	.31*	-.74
Crime related events + amnesia	.13	.10	.17
Crime related events + absorption	.22	.34**	-.69
Crime related event + depersonalisation	.02	.17	-.81
General trauma and disaster + DES total	.34**	.26*	.47
General trauma and disaster + amnesia	.29*	.17	.68
General trauma and disaster + absorption	.27*	.13	.78
General trauma and disaster + depersonalisation	-.01	.19	-1.08
Physical and sexual experiences + DES total	.34**	.47**	-.83
Physical and sexual experiences + amnesia	.20	.46**	-1.57
Physical and sexual experiences + absorption	.45**	.32*	.82
Physical and sexual experiences + depersonalisation	-.14	.23	-2.00*

Note: * $p < .05$; ** $p < .01$.

Table 4.17 Differences in zero-order correlations between dissociation and psychopathy

Variables	British sample	South African sample	*Zobs* value
	r	*r*	
DES total + PCL-R Total	.32**	.58**	1.76
DES total + Interpersonal	.19	.55**	-2.28*
DES total + Affective	.17	.58**	-2.59*
DES total + Behavioural	.12	.32*	-1.13
Amnesia + PCL-R Total	.13	.45**	-1.89
Amnesia + Interpersonal	.14	.36**	-1.26
Amnesia + Affective	.15	.41**	-1.52
Amnesia + Behavioural	.02	.32*	-1.67
Absorption + PCL-R Total	.32*	.52**	1.30
Absorption + Interpersonal	.12	.42**	-1.75
Absorption + Affective	.14	.53**	-2.91*
Absorption + Behavioural	.14	.37**	-1.32
Depersonalisation + PCL-R Total	.07	.32*	-1.40
Depersonalisation + Interpersonal	.08	.30*	-1.23
Depersonalisation + Affective	.05	.46**	-2.39*
Depersonalisation + Behavioural	.10	.12	-.11

Note: * $p < .05$; ** $p < .01$.

Partial correlations

Although the PCL-R Factors were significantly correlated with one another for both the British sample and the South African sample as shown in Tables 4.13 and 4.14, they had different patterns of correlations with the THQ and DES. However, because statistical suppression can obscure the differences in the relationships between related scales and other variables (Falkenbach, 2005), partial correlation coefficients were calculated. The purpose of this was to control the relationships between the PCL-R Factors. Partial correlations are reported for the British and South African samples in Tables 4.18 and 4.19, respectively. As shown in Table 4.18, controlling for the relationships between the PCL-R Factors did not significantly influence the associations among constructs for either the British sample. However, as shown in Table 4.19, controlling for the relationships between the PCL-R Factors influenced some of the correlations between constructs for the South African sample.

First, when PCL-R Factor 2 was controlled for, the correlation between PCL-R Factor 1 (Interpersonal) and physical/sexual experiences was no longer significant (the correlation reduced from $r = .38$, $p < .01$ to $r = .24$, *ns*). In addition, when PCL-R Factor 2 was controlled for, the correlation between PCL-R Factor 1 (Interpersonal) and amnesia was no longer significant (the correlation reduced from $r = .36$, $p < .01$ to .22, *ns*). Furthermore, when PCL-R Factor 2 was controlled for, the correlation between PCL-R Factor 1 (Interpersonal) and depersonalisation was no longer significant (the correlation reduced from $r = .30$, $p < .05$ to .13, *ns*). These findings indicate that the interpersonal features of psychopathy are not independently associated with physical/sexual experiences, amnesia or depersonalisation among South African participants.

Second, when PCL-R Factor 1 (Interpersonal) was controlled for, the correlation between PCL-R Factor 2 (Affective) and THQ total was no longer significant (the correlation reduced from $r = .29$, $p < .05$ to .21, *ns*). The correlation between PCL-R Factor 2 (Affective) and crime-related events also reduced when PCL-R Factor 1 (Interpersonal) was controlled for (from $r = .32$, $p < .05$ to .25, *ns*). Similarly, when PCL-R Factor 3 (Behavioural) was controlled for, the correlation between PCL-R Factor 2 (Affective) and THQ total was no longer significant (the correlation reduced from $r = .29$, $p < .05$ to .18, *ns*). The correlation between PCL-R Factor 2 (Affective) and crime-related events also reduced when PCL-R Factor 3 was controlled for (from $r = .32$, $p < .05$ to .23, *ns*). These findings indicate that the affective features of psychopathy are not independently associated with either total trauma history or crime-related events among South African participants.

Third, when PCL-R Factor 1 (Interpersonal) was controlled for, the correlation between PCL-R Factor 3 (Behavioural) and THQ total was no longer significant (the correlation reduced from $r = .25$, $p < .05$ to .20, *ns*). Also, the correlation between Factor 3 and physical/sexual experiences reduced when PCL-R Factor 2 (Affective) was controlled for (from $r = .39$, $p < .01$ to .20, *ns*). Furthermore, the correlation between Factor 3 and DES total was no longer significant when PCL-R Factor 1 (Interpersonal) was controlled for (the correlation reduced from $r = .32$, $p < .05$ to .20, *ns*). Also, this correlation reduced when PCL-R Factor 2 (Affective) was controlled for (from $r = .32$, $p < .05$ to .00, *ns*). The correlation between PCL-R Factor 3 (Behavioural) and amnesia was no longer significant when PCL-R Factor 1 was controlled for (the correlation reduced from $r = .32$, $p < .05$ to.24, *ns*). Similarly, this correlation reduced when PCL-R Factor 2 was controlled for (from $r = .32$, $p < .05$ to .12, *ns*). Finally, the correlation between PCL-R Factor 3 (Behavioural) and dissociative absorption was no longer significant when PCL-R Factor 2 (Affective) was controlled for (the correlation reduced from $r = .37$, $p < .01$ to .11, *ns*).

Despite these changes in patterns of correlations after controlling for the relationships between PCL-R Factors, some correlations were more robust. First, PCL-R Factor 1 (Interpersonal) remained significantly related to DES total and DES absorption even after controlling for PCL-R Factors 2 (Affective) and 3 (Behavioural). Second, Factor 2 remained significantly related to DES total, amnesia, absorption and depersonalisation even after controlling for PCL-R Factors 1 and 3. This suggests that PCL-R Factor 2 (Affective) is the only Factor to be significantly correlated with global dissociation as well as the three separate subscales of the DES among South African participants even when the effects of the other PCL-R Factor were controlled for.

Table 4.18 Partial correlations for British participants

Scale	PCL-R Factor 1 (Interpersonal)			PCL-R Factor 2 (Affective)			PCL-R Factor 3 (Behavioural)		
	ZO	PF2	PF3	ZO	PF1	PF3	ZO	PF1	PF2
THQ	-.08	-.11	-.20	.03	.08	-.15	.25	.31	.29
Total	-.03	.02	-.08	-.09	-.09	-.18	.09	.11	.18
Crime-related	-.18	-.20	-.19	-.01	.09	-.02	.00	.08	.01
General	.06	-.02	-.07	.13	.12	-.06	.30*	.31*	.28*
Physical/sexual									
DES									
Total	.19	.13	.16	.27	.25	.28	.12	.06	.05
Amnesia	.14	.07	.15	.15	.09	.18	.02	-.04	-.09
Absorption	.12	.05	.07	.14	.09	.07	.14	.10	.07
Depersonalisation	.08	.06	.04	.05	.01	-.02	.10	.08	.09

Note: ZO = zero-order correlation; PF1 = partial correlation whilst controlling for PCL-R Factor 1; PF2 = partial correlation whilst controlling for PCL-R Factor 2; PF3 = partial correlation whilst controlling for PCL-R Factor 3; * $p < .05$.

Table 4.19 Partial correlations for South African participants

Scale	PCL-R Factor 1 (Interpersonal)			PCL-R Factor 2 (Affective)			PCL-R Factor 3 (Behavioural)		
	ZO	**PF2**	**PF3**	**ZO**	**PF1**	**PF3**	**ZO**	**PF1**	**PF2**
THQ	.23	.13	.17	.29*	.21	.18	.25*	.20	.12
Total	.24	.12	.18	.32*	.25	.23	.24	.18	.08
Crime-related	.15	.06	.15	.23	.19	.25	.05	.00	-.10
General	.38**	.24	.30*	.44**	.33*	.29*	.39**	.32*	.20
Physical/sexual									
DES									
Total	.55**	.41**	.50**	.58**	.46**	.51**	.32*	.20	.00
Amnesia	.36**	.22	.29*	.41**	.31*	.30*	.32*	.24	.12
Absorption	.42**	.26*	.35**	.53**	.43**	.42**	.37**	.28*	.11
Depersonalisation	.30*	.13	.28*	.46**	.39**	.48**	.12	.03	-.18

Note: $p < .05$; ** $p < .01$.

CHAPTER FIVE

Aetiological Models of Psychopathy

Overview

The literature suggests that psychopathic features may develop through different developmental pathways. Vicarious conditioning models (e.g. Bandura *et al*., 1963; Berkowitz, 1993) posit that individuals directly acquire impulsive and aggressive behaviours by observing aggressive role models, and so may be invoked in an attempt to explain the behavioural features of psychopathy. On the other hand, the diminished affective responding model (Porter, 1996) proposes that the affective features of psychopathy develop due to a dissociation of a developing affective nature in response to traumatic experiences. Poythress *et al*. (2006) claim that "if there are phenotypic variations among subtypes of psychopathy, abuse could be more strongly and indirectly related to certain constellations of psychopathic traits than to global psychopathy per se" (p.293). Analyses involving the affective and behavioural domains of psychopathy enabled them to examine evidence for the diminished affective responding and vicarious conditioning models. This chapter presents the findings of structural equation modelling (SEM) analyses which sought to test these models on a sample of male offenders convicted of murder.

Structural equation modelling (SEM) is a statistical technique that takes a confirmatory (hypothesis-testing) approach to the analysis of a theory (Byrne, 2001). Associations among variables are represented by structural (regression) equations, which are typically portrayed schematically to enable a clearer conceptualisation of the theory under study. The hypothesised model is then tested statistically in a simultaneous analysis of the entire system of variables to determine the extent to which it is consistent with the data. If the model adequately fits the data, the hypothesised associations among variables are supported. If model-fit is inadequate, the tenability of such associations is rejected (Byrne, 2001). A number of stages are involved in SEM, including model specification, estimation, evaluation of model fit, model modification and interpretation, and this chapter shall report the findings of the present research in relation to

each of these stages. All SEM analyses were performed using the computer software *Analysis of Moment Structures* (AMOS) Versions 5.0 (Arbuckle, 2003) and 7.0 (Arbuckle, 2006). AMOS was selected as more appropriate than other software such as LISREL and EQS because it is based on interactive, graphical path diagrams and so enables the clearer conceptualisation of theoretical models.

Model Specification

SEM begins with the specification of a model to be estimated. A *model* is a statistical statement about the relations among variables, and *specification* refers to the formulation of a statement about a set of parameters (Hoyle, 1995). In SEM, the parameters which require specification are constants that indicate the nature of an association between two variables (Hoyle, 1995). As Hoyle explains, parameters are typically specified as *fixed* or *free*. Fixed parameters are not estimated from the data, whereas free parameters are estimated from the data. Statistics which assess the adequacy of a model indicate the degree to which the pattern of fixed and free parameters specified in a model is consistent with the pattern of variances and covariances from a set of observed data (Hoyle, 1995). Goodness of fit statistics are described later in this chapter in the section entitled *Evaluation of fit*.

A structural equation model consists of two components: the *measurement model* and the *structural model*. The measurement model is the component of the model in which *latent* variables are prescribed (Hoyle, 1995). Latent variables are abstract phenomena which cannot be observed directly and hence cannot be measured directly. Therefore, the latent variable of interest must be operationally defined in terms of behaviour believed to represent it (Byrne, 2001). As such, the unobserved variable is linked to one that is observable, making its measurement possible. Assessment of the behaviour constitutes the measurement of an observed variable. As Byrne explains, the term *behaviour* here is used in a broad sense to include scores on a research measure. Measured scores are called *manifest* (observed) variables and serve as indicators of the underlying construct that they are presumed to represent.

The structural model is the component of a structural equation model which depicts the links among latent variables (Byrne, 2001). Because original scales for measuring variables often fit data poorly, reliable indicators must be identified for each of the variables under study before the structural model can be tested. If an inadequate measurement model is used, then poor fit of the structural model might reflect the measurement model rather than the hypothesised

associations among variables (Poythress *et al*., 2006). When the measurement model and the structural model are combined, "the result is a comprehensive statistical model that can be used to evaluate relations among variables that are free of measurement error" (Hoyle, 1995, p.3). The most frequently used procedure for investigating relations between observed and latent variables is factor analysis. Because confirmatory factor analysis (CFA) focuses solely on the link between factors and their measured variables, CFA represents the measurement model within the framework of SEM (Byrne, 2001). The fit of the measures used to measure the variables under investigation in the present research were tested using CFA. The findings from these analyses are presented below in the section entitled *The measurement model.*

Jöreskog (1993) describes three scenarios in which structural equation models are tested: *strictly confirmatory* (SC), *alternative models* (AM) and *model generating* (MG). In the SC scenario, the researcher proposes a single model based on theory, collects data and then tests the fit of the hypothesised model to the data. The model is then either rejected or not rejected (i.e. no modifications are made to the model). Given the costs associated with data collection, it is rare for a researcher to terminate research on the basis of a rejected hypothesised model. As a consequence, the SC approach is not commonly found in practice (Byrne, 2001). In the AM scenario, the researcher proposes alternative (i.e. competing) models, all grounded in theory. Following the analysis of a single set of empirical data, one model is selected as the most appropriate in representing the data. In the MG scenario, the researcher, having proposed and rejected a model on the basis of its poor fit to the data, proceeds in an exploratory (rather than a confirmatory) manner to modify and re-estimate the model. The source of misfit in the model is located and a model that better describes the data is developed.

In the current research, the MG approach was used given the exploratory framework of this thesis and the fact that the models tested were not competing (i.e. the vicarious conditioning model may be invoked in an attempt to explain the behavioural features of psychopathy, whereas the diminished affective responding model may be invoked to explain the affective features of psychopathy), and so the purpose of the study was to determine the plausibility of different models, rather than an attempt to identify a model which explains psychopathy better than another model (which might have been the case if psychopathy were believed to be a homogeneous entity).

The measurement model

The THQ has three subscales: 4 crime-related events items, 13 general trauma/disaster items, and 6 physical/sexual experiences items, as well as one item which requires respondents to specify whether they have experienced some other extraordinarily stressful event not covered by one of the preceding items. This original structure inadequately fit the data of the total sample, $\chi^2(227, N = 120) = 434.87$, $p < .01$, CFI = .64, RMSEA = .09[1] and so factor analysis was conducted to develop a suitable measurement model of trauma. The final 16-item three-factor model provided an adequate fit to the total sample data, $\chi^2(101, N = 120) = 65.98$, $p > .05$, CFI = .96, RMSEA = .04, the British sample, $\chi^2(30, n = 60) = 46.08$, $p > .05$, CFI = .95, RMSEA = .08 and the South African sample, $\chi^2(33, n = 60) = 37.72$, $p > .05$, CFI = .96, RMSEA = .07. Three new composite variables were formed by summing the items associated with each of the three factors, named after their designated scales because they consisted of a reduced set of items from these scales: crime-related events, general trauma/disaster and physical/sexual experiences. These three variables (and the 16 items used to create them) indicated the latent construct of trauma. The items and factor loadings of the model are reported in Table 5.1.

Table 5.1 Measurement model of trauma

Factors and THQ item numbers	Factor loadings
Crime-related events	
1. Mugged	.70
2. Belongings stolen	.63
4. Burgled when present	.56
3. Burgled when not present	.55
General trauma/disaster	
12. Seen a dead body other than at a funeral	.90
11. Seen someone seriously injured or killed	.89
6. Natural disaster	.79
14. Spouse/romantic partner die	.75
13. Friend or family member killed by a drunk driver	.72
17. Engaged in combat	.72
16. News of unexpected illness/death of someone close	.70
7. Manmade disaster	.68
Physical/sexual experiences	
19. Forced to have private parts touched/touch another	.91
18. Forced to have sexual intercourse	.89
20. Other sexual contact	.87
21. Attacked by friend or family member with a weapon	.86

Note: All loadings significant at $p < .01$.

[1] The test of the null hypothesis that trauma has a 24-item, three-factor structure yielded a χ^2 value of 434.87 with 227 degrees of freedom ($p < .01$), indicating that the fit of the data to the hypothesised model was inadequate (i.e. the hypothesis represented an unlikely event [occurring less than one time in a thousand] and so was rejected). The CFI value of .64 and the RMSEA value of .09 provide further support for the rejection of the model.

The DES has three subscales: 8 amnesia items, 9 absorption items, 6 depersonalisation items and 5 additional items that contribute to a total score. This structure inadequately fit the total sample data, $\chi^2(227, N = 120) = 349.43$, $p < .01$, CFI = .77, RMSEA = .07. Subsequently, the data were analysed using EFA and CFA to develop a suitable measurement model for dissociation. The final model fit the total sample data, $\chi^2(101, N = 120) = 46.05$, $p > .05$, CFI = .95, RMSEA = .07, the British sample data ($\chi^2(31, n = 60) = 42.78$, p > .05, CFI = .96, RMSEA = .07) and the South African sample data ($\chi^2(32, n = 60) = 39.1$, $p > .05$, CFI = .96, RMSEA = .06). The model included three factors named after their designated scales (amnesia, absorption, and depersonalisation) because they consisted of a reduced set of items from these scales. Three new composite variables were formed by summing the items associated with each of these factors. These three factors (and the 16 items used to create them) indicated the latent construct of dissociation. The items and factor loadings of the model are reported in Table 5.2.

Table 5.2 Measurement model of dissociation

Factors and DES item numbers	Factor loadings
Amnesia	
25. Find evidence of things you do not remember doing	.84
10. Accused of lying when you believe you haven't lied	.81
4. Finding self dressed in clothes do not remember putting on	.77
3. Finding self in place and do not know how got there	.77
8. Do not recognise friends or family	.75
6. Approached by people you do not know	.71
Absorption	
2. Do not hear part or all of what has been said	.86
14. Remember past event so vividly it feels as though you are reliving it	.84
15. Unsure of whether things really happened or whether you dreamed them	.82
23. Do things with spontaneity and ease which people normally find difficult	.78
20. Stare into space and lose track of time	.77
22. Feel as though you are two different people	.72
Depersonalisation	
12. Feel that others/objects/the world are not real	.75
28. Feel as though people or objects are far away or unclear	.73
11.Look in mirror and not recognise oneself	.70
7.Feel as though looking at self is like looking at another person	.70

Note: All loadings significant at $p < .01$.

The PCL-R has three factors (Cooke & Michie, 2001): *interpersonal* (4 items), *affective* (4 items) and *behavioural* (5 items). This model provided an adequate fit to the total sample data, $\chi^2(60, N = 120) = 68.25$, $p > .05$, CFI = .97, RMSEA = .06, whereas the 18-item 2-factor PCL-R model (Harpur *et al*., 1989) did not, $\chi^2(134, N = 120) = 386.15$, $p = < .01$, CFI = .69, RMSEA = .13. Similarly, the three-factor model adequately fit the British sample data ($\chi^2(32, n = 60) = 67.05$, $p > .05$, CFI = .96, RMSEA = .07), whereas the two-factor model did not ($\chi^2(41, n = 60) =$

301.83, $p < .001$, CFI = .66, RMSEA = .15). Furthermore, the three-factor model adequately fit the South African sample data ($\chi^2(31, n = 60) = 69.37$, $p > .05$, CFI = .95, RMSEA = .08), whereas the two-factor model did not ($\chi^2(34, n = 60) = 241.90$, $p < .001$, CFI = .66, RMSEA = .12). Composite variables were computed that represented the interpersonal (PCL-R items 1, 2, 4 and 5), affective (items 6, 7, 8 and 16), and behavioural (items 3, 9, 13, 14, 15) domains. Items associated with each domain were used as indicators of the latent construct of psychopathy. The items and factor loadings of the model are reported in Table 5.3.

Table 5.3 Measurement model of psychopathy

Factors and PCL-R item numbers	Factor loadings
Interpersonal	
2. Grandiose sense of self worth	.87
1. Glibness/superficial charm	.86
4. Pathological lying	.81
5. Conning/manipulative	.80
Affective	
6. Lack of remorse or guilt	.88
7. Shallow affect	.86
8. Callous/lack of empathy	.82
16. Failure to accept responsibility for own actions	.78
Behavioural	
3. Need for stimulation/proneness to boredom	.83
14. Impulsivity	.82
15. Irresponsibility	.78
9. Parasitic lifestyle	.76
13. Lack of realistic long-term goals	.72

Note: All loadings significant at $p < .01$.

Correlations among composite variables

Correlations among composite variables are reported in Table 5.4. Trauma was positively and significantly related to the behavioural features of psychopathy for the total and British samples and was related to both the affective and behavioural features of psychopathy for the South African sample. Trauma was positively and significantly related to dissociation for the total, British and South African samples. Dissociation was positively and significantly related to all domains of psychopathy for the total and South African samples.[2]

[2] As stated previously in chapter four, global dissociation (DES total) was positively and significantly related to global psychopathy (PCL-R Total) among British participants using original (i.e. not composite) variables, but was not related to any of the individual domains of psychopathy.

Table 5.4 Zero-order correlations among composite variables used in SEM

Composite variables	Trauma			Dissociation			Psychopathy	
	Crime	General	Physex	Amnesia	Absorption	Deper	Factor 1	Factor 2
Total sample								
THQ								
General trauma	.01							
Physical/sexual	.14	-.03						
DES								
Amnesia	.10	.08	.25**					
Absorption	.29**	.20*	.24**	.38**				
Depersonalisation	.16	.12	-.11	.30**	.40**			
PCL-R								
Factor 1	.14	.01	.03	.30**	.32**	.23*		
Factor 2	.09	-.02	.12	.33**	.29**	.22*	.49**	
Factor 3	.19*	-.08	.18*	.21*	.26**	.15	.38**	.58**
British sample								
THQ								
General trauma	.00							
Physical/sexual	.19	.07						
DES								
Amnesia	.11	.29*	.28*					
Absorption	.18	.35**	.42**	.46**				
Depersonalisation	. 10	.14	-.15	.24	.30*			
PCL-R								
Factor 1	-.01	-.03	-.02	.17	.17	.03		
Factor 2	-.11	-.05	.11	.30	.17	-.06	.51**	
Factor 3	.09	-.18	.26*	.18	.13	-.01	.39**	.58**
South African sample								
THQ								
General trauma	-.06							
Physical/sexual	.23	-.09						
DES								
Amnesia	.08	-.12	.33**					
Absorption	.37**	.03	.12	.32*				
Depersonalisation	.13	.03	.08	.33**	.43**			
PCL-R								
Factor 1	.24	-.02	.12	.39**	.42**	.27*		
Factor 2	.32*	-.05	.32*	.38**	.42**	.40**	.42**	
Factor 3	.24	-.11	.37**	.26*	.41**	.13	.30*	.55**

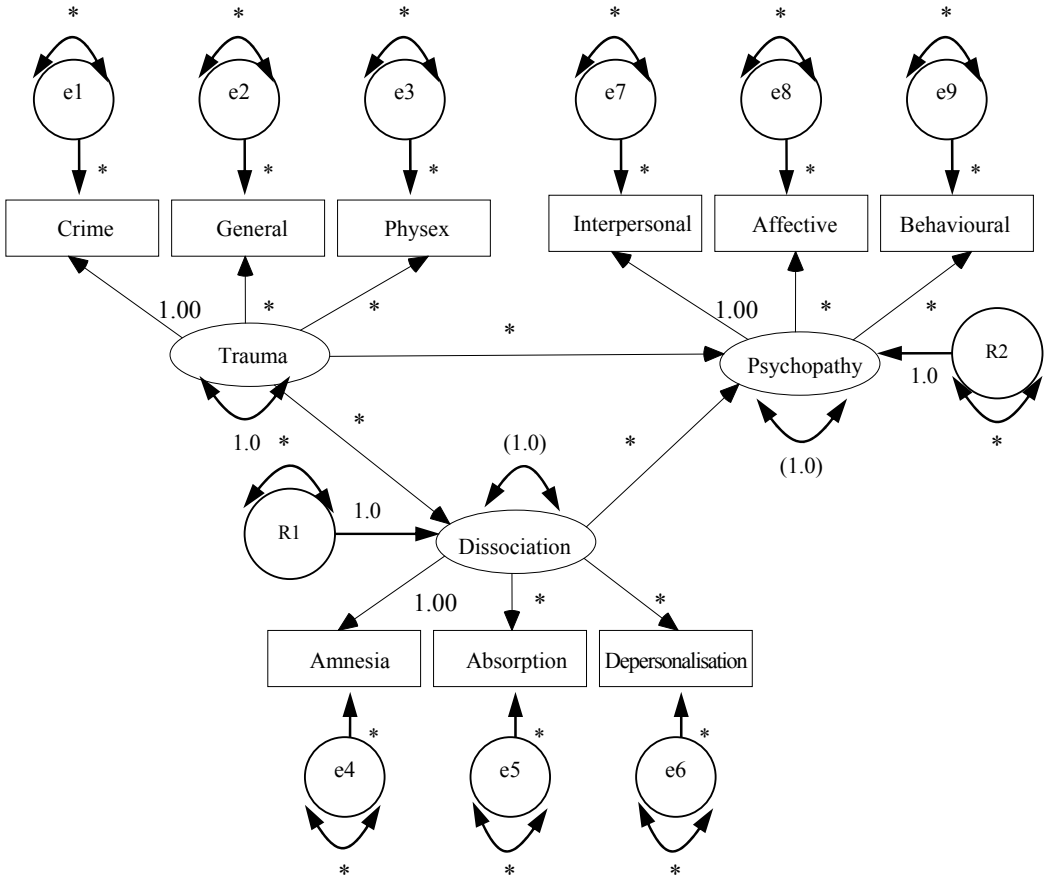
Note: * $p < .05$; ** $p < .01$; Physex = physical/sexual experiences; Deper = depersonalisation; Factor 1 = interpersonal features of psychopathy; Factor 2 = affective features of psychopathy; Factor 3 = behavioural features of psychopathy.

The structural model

As stated earlier, the structural component of a structural equation model depicts links among latent variables (Byrne, 2001). A path diagram is a pictorial representation of a structural equation model (Hoyle, 1995) in which ellipses represent latent (unobserved) variables, rectangles represent manifest (observed) variables, straight unidirectional arrows indicate prediction and bidirectional curved arrows represent correlations (Byrne, 2001). Double-headed arrows from variables to themselves indicate variance (MacCallum, 1995). Circles are used to represent errors of prediction in the measurement and structural components of the model. Figure 5.1 presents an illustrative path diagram for a model of associations among trauma, dissociation and global psychopathy. The model has three latent (unobserved) variables (*Trauma*, *Dissociation* and *Psychopathy*) and nine manifest (observed) indicator variables (*Crime, General, Physex, Amnesia, Absorption, Depersonalisation, Interpersonal, Affective* and *Behavioural*).

In Figure 5.1, *Trauma* is an exogenous (independent) latent variable because it receives no unidirectional paths from other variables, whereas *Dissociation* and *Psychopathy* are endogenous (dependent) latent variables. Because dissociation and psychopathy are endogenous variables, it is conventional to specify associated residual terms. The residual term R1 in the model portrayed in Figure 5.1 represents the part of the dissociation construct that is not accounted for by the direct linear effect of trauma. The residual term R2 represents the part of the psychopathy construct that is not accounted for by the direct linear effect of dissociation. The influence of each of these error terms on their associated latent variables is specified by a unidirectional arrow. The unidirectional arrows represent the hypothesised associations among the variables. Paths are labelled as * to represent the unknown values of the corresponding parameters.

Figure 5.1 Illustrative model of associations among trauma, dissociation and psychopathy



Model Identification

An important consideration related to model specification is *identification*. Model identification refers to the extent to which a single, unique set of values for free parameters can be obtained from the observed data. Hoyle (1995) explains that a model can either be *justidentified*, *overidentified* or *underidentified*; if a value can be obtained for each free parameter through only one manipulation of the observed data, then the model is said to be justidentified and has zero degrees of freedom (df). If a value for each parameter can be obtained in multiple ways from the data then the model is overidentified and has df equal to the number of observed variances and covariances minus the number of free parameters. If a single, unique value cannot be obtained from the data for one or more free parameters, then the model is underidentified and

cannot be estimated (Hoyle, 1995). The goal of the researcher is to develop a model that is overidentified, and thus has less estimable parameters than the number of data points (i.e. variance and covariances of the observed variables). The model shown in Figure 5.1 was overidentified and so the rejection of the model was permitted.

Model Estimation

Once a model has been specified, estimates are obtained for the free parameters from a set of observed data. The estimation of parameters in the present research was based on the *maximum likelihood* (ML) technique, which is the most robust of the parameter estimation techniques (Hoyle, 1995). The idea behind this method is to obtain the most likely values of the parameters for a given distribution that best describes the data. This method, however, can be adversely influenced by small sample sizes. Hair *et al*. (1998) claim that the sample size for SEM analyses should be at least five times the number of parameters estimated and more generally recommend a minimum sample size of 100 to 150 when ML estimation is used. In the present research, 21 parameters were estimated (for the global model), meaning that 105 participants were needed to fulfil Hair *et al's* (1998) recommendation, which the present research achieved.

Iteration begins with a set of start values (tentative values of free parameters) and continues until it is not possible to update the parameter estimates anymore. At this point, the estimation procedure is said to have *converged,* which leads to a single number being produced that summarises the degree of correspondence between the implied and observed data (Hoyle, 1995). Hoyle explains that this number (often referred to as the *fitting function*) approaches zero as the implied covariance matrix more closely resembles the observed matrix. The value of the fitting function is the origin for developing indexes of model fit.

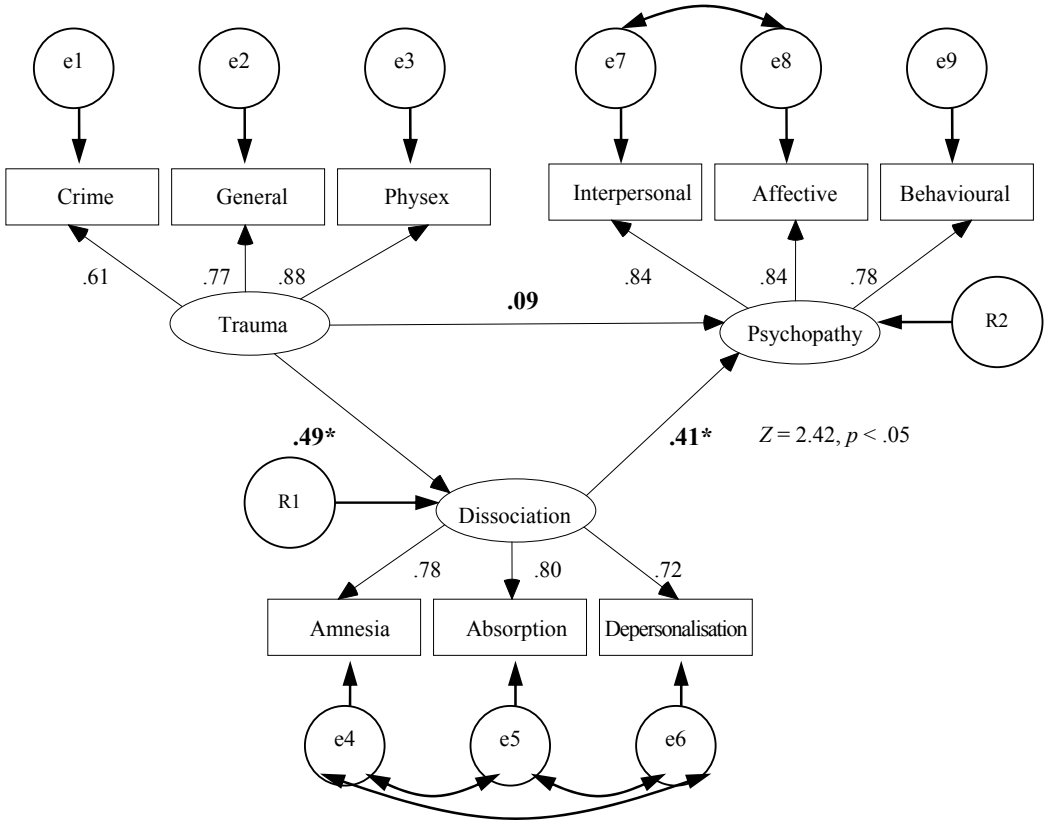
Evaluation of Model Fit

A structural equation model is said to *fit* the observed data to the extent that the implied data (the covariance matrix) is equivalent to the observed data (the observed covariance matrix). The most frequently used index of fit is the chi-square (χ^2) goodness-of-fit test, which tests the extent to which the specification of the hypothesised model is true. The χ^2 test is, in effect, a "badness-of-fit" index (Hoyle, 1995, p.7), and so smaller χ^2 values (and higher p values) indicate better fit. Kenny (2003) claims that for models with 75 to 200 cases, χ^2 is a reasonable measure of fit, although for more cases, χ^2 is almost always statistically significant. χ^2 is appropriate for use in the present research, which had a reasonably small sample size ($N = 120$).

In light of the disadvantages of the χ^2 goodness-of-fit test, a number of *adjunct fit indexes* have been developed, which are descriptive indexes of fit (Hoyle, 1995). Adjunct fit indexes vary between 0 and 1.0 and .90 is a widely accepted value which indexes must exceed before a model can be viewed as consistent with the observed data from which it was estimated. In contrast to the χ^2 test, adjunct fit indexes are *goodness-of-fit* indexes and so larger values indicate better fit. The two goodness-of-fit indexes used in the present research to evaluate model fit (in addition to the χ^2 goodness-of-fit test) were the *comparative fit index* (CFI; Bentler, 1990) and the *root mean square error of approximation* (RMSEA; Steiger & Lind, 1980). The CFI avoids the underestimation of fit often noted in small samples when the *normed fit index* (NFI; Bentler & Bonett, 1980) is used (Bentler, 1990). The CFI has a range of values from 0 to 1.00, with a value of .95 or above representing a well-fitting model (Hu & Bentler, 1999). RMSEA values less than .08 indicate reasonable fit, with values less than .05 indicating good fit (Hu & Bentler, 1999).

Due to the small sample size study, model fit was assessed more on the significance of the χ^2 statistic than on the value of CFI and RMSEA, as χ^2 is a reasonable measure of fit for models with 75 to 200 cases (Kenny, 2003). The global model shown in Figure 5.2 provided an adequate fit to the total sample data, $\chi^2(26, N = 120) = 31.28$, $p < .01$, CFI = .95, RMSEA = .05. The model also adequately fit the fit the British sample data, $\chi^2(26)$, $n = 60) = 29.95$, $p > .05$, CFI = .95, RMSEA = .05, and the South African sample data, $\chi^2(26)$, $n = 60) = 28.40$, $p > .05$, CFI = .96, RMSEA = .04.

Figure 5.2 Global model



Note: This figure displays the factor loadings of each indicator and the effects (in bold) between variables for the total sample ($N = 120$). * significant at $p < .05$.

In keeping with the model generating (MG) approach to structural equation modelling described earlier in this chapter (Jöreskog, 1993), *modification indices* were used in an attempt to further improve model fit. *Model modification* involves adjusting a specified and estimated model by either freeing parameters that formerly were fixed, or by fixing parameters that were formerly free (Hoyle, 1995). The modification indices provided by AMOS suggested that if a covariance were added between e7 and e9, and between e7 and e8 would reduce the χ^2 by 11.19. This would mean that in addition to the interpersonal and affective features of psychopathy being correlated, interpersonal features would also be correlated with the behavioural features of psychopathy, as would affective features. Initially, a covariance was drawn on the path diagram shown in Figure 5.2 because the literature suggests that the interpersonal and affective features of psychopathy are strongly related (e.g. as reflected by Factor 1 (Interpersonal/Affective) of the traditional two-factor PCL-R model proposed by Harpur *et al*. (1989), although no covariances

were drawn between the Interpersonal/behavioural features of affective/behavioural features of psychopathy. However, by taking into account the modification indices, the fit of the global model to the data was improved ($\chi^2 = 23.05$, $p < .01$, CFI = .97, RMSEA = .04).

Model Interpretation

If the χ^2 test of fit or adjunct fit indexes indicate adequate fit of a model, then the focus moves to specific elements of fit. Parameter estimates are compared using unstandardised estimates, which retain scaling information of variables and can be interpreted only with reference to the scales of those variables (Hoyle, 1995). Unstandardised estimates indicate the number of units change in the endogenous (dependent) variable per unit change in the exogenous (independent) variable when all remaining exogenous variables are at their mean. Standardised estimates on the other hand, are transformations of unstandardised estimates that remove scaling information and thus permit comparisons of parameters throughout a model. Standardised estimates represent the number of standard deviations change in the endogenous variable per standard deviation change in the exogenous variable when all remaining exogenous variables are at zero (i.e. their mean in standard normal units). The standardised estimates associated with each path in the *global* model are shown in Figure 5.2. Statistically significant unstandardised regression coefficients indicated positive relationships between trauma and dissociation, trauma and psychopathy, and dissociation and psychopathy.

In SEM, relations between variables can be of three types: an *association*, a *direct effect* or an *indirect effect*. An association is a relation between two variables in the model which is nondirectional and is the same as the relation evaluated by correlational analysis in this sense (Hoyle, 1995). A direct effect is a directional relation between two variables and is the type of relation evaluated by ANOVA or multiple regression (Hoyle, 1995). A direct effect characterises the relation between an *exogenous* (independent) and an *endogenous* (dependent) variable, although the endogenous variable in one direct effect can be the exogenous variable in another direct effect. An indirect effect enables a single variable to be treated as both an endogenous and an exogenous variable and can be defined as the effect of an exogenous variable on an endogenous variable through one or more mediating variables (Baron & Kenny, 1986). There are no widely and easily applied alternatives to SEM for estimating indirect effects (Byrne, 2001).

The direct and indirect effects of trauma on global psychopathy were explored. The significance of the indirect effects was tested with *Z* scores (MacKinnon & Dwyer, 1993) and Sobel's (1982) formula for the standard error of the mediated effect.[3] A significance level of .05 was used for all effects. With respect to the global model presented in Figure 5.2, trauma exerted a significant indirect effect (.20) on global psychopathy (PCL-R Total) for the total sample as well as the British (.20) and South African (.22) samples, although trauma exerted no significant direct effect on global psychopathy for the total sample (.09), the British sample (.04), or the South African sample (.07). However, because of the small sample sizes of the subsamples, emphasis was placed on the effects for the total sample data. In order to examine the relationship between abuse and psychopathy, the trauma construct was substituted with an abuse construct (whose indicators were the six items of the THQ which measure physical/sexual abuse). It was found that abuse exerted neither a direct effect (.12) nor an indirect effect (.07) on global psychopathy for the total sample, consistent with the findings of Poythress *et al*. (2006). Findings suggest that lifetime traumatic experiences as opposed to abuse play a role in the aetiology of psychopathy.

In order to test the vicarious conditioning and diminished affective responding models, two additional structural equation models were tested. These were identical to the model displayed in Figure 5.1, although the psychopathy construct was replaced with behavioural and affective constructs in these models, respectively. These models are portrayed in Figures 5.3 and 5.4. In keeping with Poythress *et al*. (2006), support for a vicarious conditioning model is evidenced by a direct effect of trauma on the behavioural features of psychopathy with little or no effect through the mediating role of dissociation, and support for the diminished affective responding model is evidenced by an indirect effect of trauma on the affective features of psychopathy via the mediating role of dissociation.

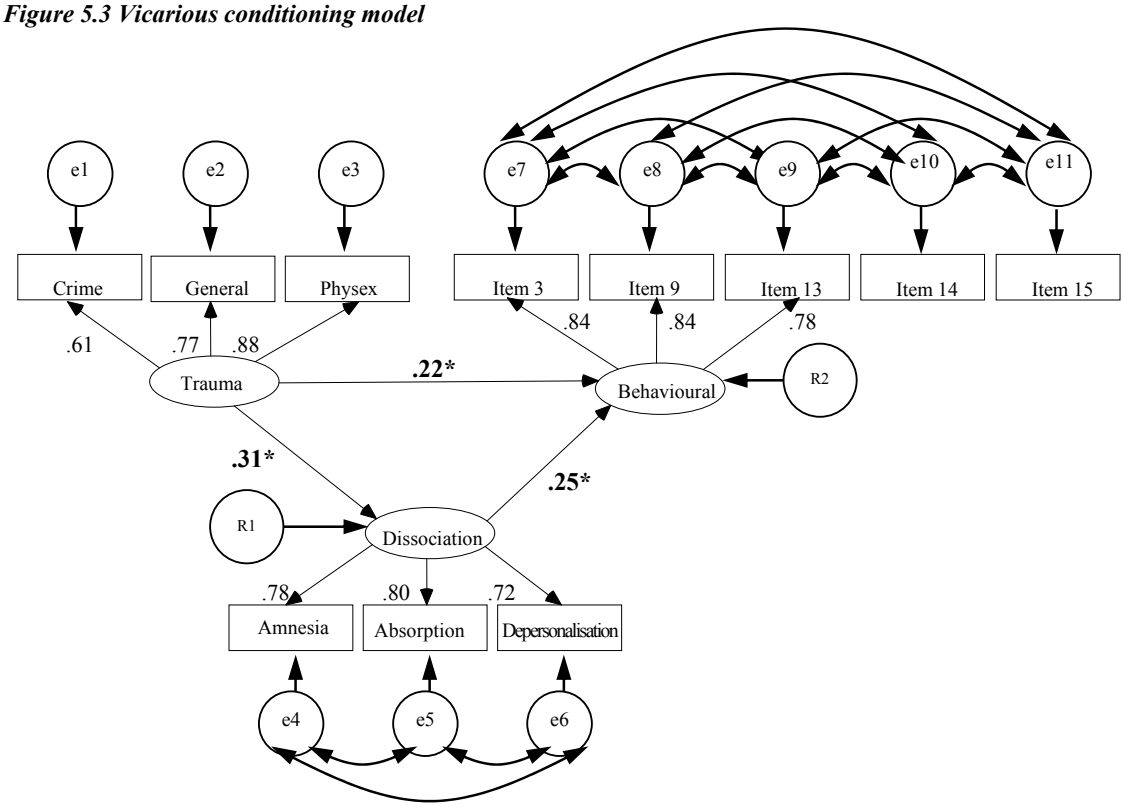
[3] The *Z* score is calculated by dividing the mediated effect by its standard error (MacKinnon & Dwyer, 1993):

$$Zab = \frac{a \times b}{Seab}$$

where Se*ab* is the standard error of the mediated effect (a x b), calculated as follows (Sobel, 1982):

$$Seab = \sqrt{(a^2 \times Seb^2) \times (b^2 \times Sea^2)}$$

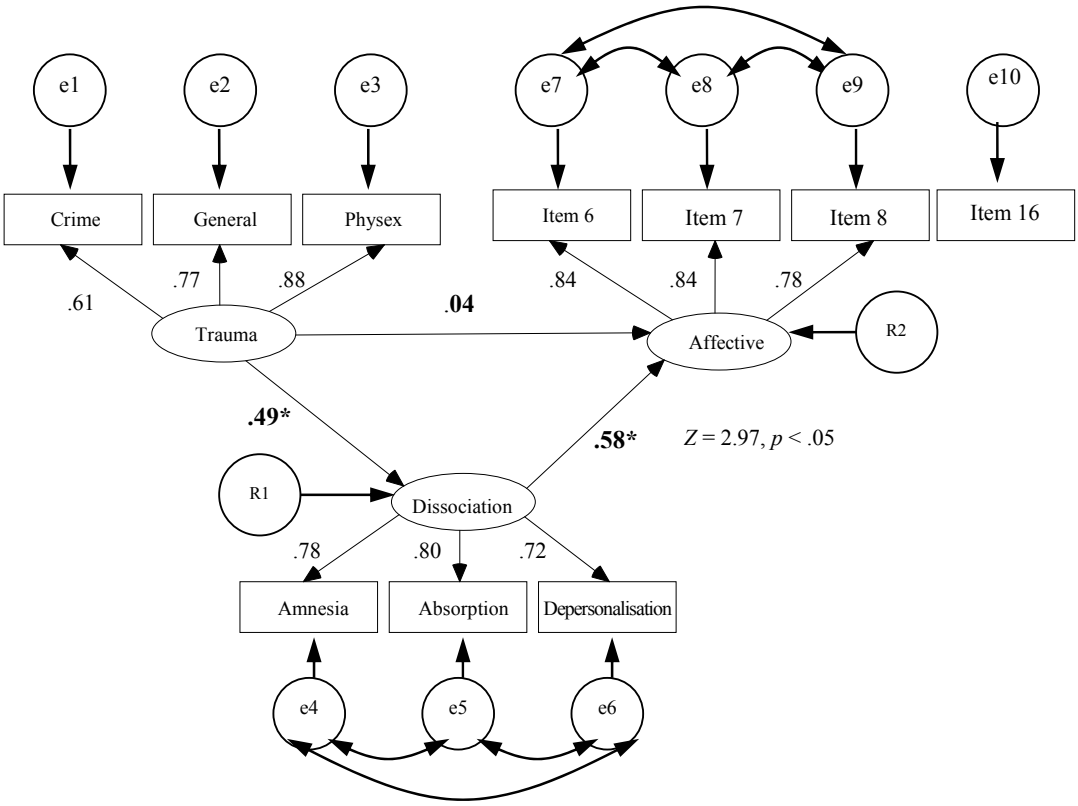
Figure 5.3 Vicarious conditioning model



Note: This figure displays the factor loadings of each indicator and the effects (in bold) between variables for the total sample (N = 120). Item 3 = Need for Stimulation/Proneness to Boredom; Item 9 = Parasitic Lifestyle; Item 13 = Lack of Realistic, Long-Term Goals; Item 14 = Impulsivity; Item 15 = Irresponsibility; * significant at $p < .05$.

The vicarious conditioning model adequately fit the total sample data, $\chi^2(41)$, $N = 120) = 24.15$, $p > .05$, CFI = .97, RMSEA = .05 as well as the British sample, $\chi^2(41)$, $n = 60) = 39.67$, $p > .05$, CFI = .95, RMSEA = .07, and the South African sample, $\chi^2(41)$, $n = 60) = 29.31$, $p > .05$, CFI = .97, RMSEA = .04. Modification indices however, suggested that the fit of the model to the British data could be improved by removing the covariance between e4 and e6 (i.e. between DES amnesia and depersonalisation). This improved model fit from χ^2 39.62 to χ^2 32.15. Trauma exerted a significant direct effect (.22) but no indirect effect (.08) on the behavioural features of psychopathy for the total sample as well as the British (.20) and South African samples (.24), consistent with a vicarious conditioning model which proposes that individuals acquire impulsive and aggressive behaviours by observing aggressive role models. When the trauma construct was substituted with an abuse construct (whose indicators were the six items of the THQ which measure abuse), abuse exerted neither a significant direct effect (.14) nor an indirect effect (.00) on the behavioural features of psychopathy, suggesting that lifetime trauma better accounts for the behavioural features of psychopathy than abuse alone.

Figure 5.4 Diminished affective responding model



Note: This figure displays the factor loadings of each indicator and the effects (in bold) between variables for the total sample (N = 120). Item 6 = Lack of Remorse or Guilt; Item 7 = Shallow Affect; Item 8 = Callous/Lack of Empathy; Item 16 = Failure to Accept Responsibility for Own Actions; * significant at $p < .05$.

The diminished affective responding model adequately fit the total sample data, $\chi^2(31)$, $N = 120) = 49.01$, $p > .05$, CFI = .95, RMSEA = .08, as well as the British sample, $\chi^2(34)$, $n = 60 = 52.43$, $p > .05$, CFI = .95, RMSEA = .07, and the South African sample, $\chi^2(32)$, $n = 60 = 33.59$, $p > .05$, CFI = .97, RMSEA = .04. However, because small sample sizes can lead to biased estimates (Byrne, 2001), the evaluation of model fit for these sub-samples must be treated with caution. For this reason, modification indices were considered for only the total sample. Modification indices suggested that the fit of the model to the total sample data would be improved if the covariance between amnesia and depersonalisation was removed (this reduced χ^2 by 9.65 (from 49.01 to 39.36). In addition, the fit of the model was improved by drawing a covariance between e7 and e10 (measurement error for PCL-R item 6: lack of remorse or guilt and item 16: failure to accept responsibility for one's actions), e8 and e10 (item 7: shallow affect and item 16), and e9 and e10 (item 8: callous/lack of empathy and item 16). The addition of these covariances improved model fit by 16.57, making the fit of the model $\chi^2 = 32.44$ (CFI = .98, RMSEA = .04).

It was found that trauma exerted a significant indirect effect (.28) on the affective features of psychopathy for the total sample and the South African sample (.25), but not the British sample (.08). Trauma had no significant direct effect on the affective features of psychopathy for either the total sample (.02), the British sample (.01), or the South African sample (.04). However, as with the global model, emphasis was placed on the effects for the total sample data due to the small sizes of the subsamples. Findings suggest that dissociation partially mediates the relationship between trauma and the affective features of psychopathy. In order to more closely examine the effect of abuse on psychopathy, the trauma construct was substituted with an abuse construct (whose indicators were the six items of the THQ which measure physical/sexual abuse). Unlike Poythress *et al*. (2006), it was found that abuse exerted an indirect effect (.22) on the affective features of psychopathy. The fit and effects of the global, vicarious conditioning and diminished affective responding models are summarised in Table 5.5.

Table 5.5 Fit and effects of models

Model	χ^2	df	CFI	RMSEA	Direct effect	Indirect effect
Total sample						
Global	31.28**	26	. 95	.05	.09	.20*
Vicarious conditioning	24.15**	41	.97	.05	.22*	.08
Diminished affective responding	49.01*	31	.95	.08	.02	.28*
British sample						
Global	29.95**	26	.95	.05	.04	.20*
Vicarious conditioning	39.67**	41	.95	.07	.20*	.03
Diminished affective responding	52.43*	34	.95	.07	.01	.08
South African sample						
Global	28.40**	26	.96	.04	.07	.22*
Vicarious conditioning	29.31**	41	.97	.04	.24*	.02
Diminished affective responding	33.59**	32	.97	.04	.04	.25*

Note: χ^2 = chi-square statistic; df = degrees of freedom; CFI = comparative fit index; RMSEA = root mean-square error of approximation; * $p < .05$; ** $p < .01$.

CHAPTER SIX

Subtypes of Psychopathy

Overview

Differential relationships of the dimensions of psychopathy with external factors indicate that psychopathy may be conceptualised as a multifaceted syndrome comprised of distinct subtypes of psychopaths (Blackburn, 1988). As discussed previously in chapter two, a small number of studies have investigated whether subtypes of psychopathy might exist in offender populations, the majority of which have used the statistical technique of cluster analysis. This chapter presents the findings of cluster analyses which sought to explore whether subtypes of psychopathy could be identified among male murderers. Cluster analysis is a statistical method used to discover which cases in a data set are similar (Romesburg, 1984) and involves a series of stages, including variable selection, determination of the clustering algorithm, derivation of clusters, validation of clusters and interpretation of clusters (Jurowski & Reich, 2000). This chapter shall report the findings of the present research in relation to each of these stages. All analyses were performed using SPSS Versions 12.0 (SPSS Inc, 2003) and 15.0 (SPSS Inc, 2007).

Variable Selection

Jurowski and Reich (2000) claim that the first step in conducting cluster analysis is to select the variables on which participants will be clustered, and state that it is imperative that the selection of the clustering variables focuses on the purpose of the research: "It is important to avoid the temptation to cluster the groups on unrelated variables" (p.70), as the statistical package chosen to conduct the analysis is unable to distinguish between important variables and irrelevant variables. Participants classified as psychopathic (i.e. those who received a PCL-R Total score of ≥ 30) were clustered on the basis of PCL-R Factor scores of the three-factor model (Cooke &

Michie, 2001). Although selecting only individuals who meet an a priori criterion for being psychopaths caters to the view of psychopathy as a taxon (a categorical construct), Poythress and Skeem (2006) claim that starting with higher scores on a psychopathy measure is an appropriate strategy for the initial exploration of subtypes. Although most cluster analytic studies reported in the literature have used PCL-R Factor scores of the two-factor model (Harpur *et al*., 1989) as clustering variables, the present research used Factor scores of the three-factor PCL-R model because it avoids the problem of criterion contamination; because the PCL-R items which assess involvement in criminal behaviour are not reflected by any of the factors used to derive clusters (whereas they are reflected by Factor 2 of the two-factor model), criminal behaviour can be used as a variable for the external validation of clusters.

The presence or absence of affective features could be important in differentiating primary and secondary psychopaths (Skeem, Poythress *et al*., 2003) and dissociation may be a valuable indicator of affect; it is plausible that primary psychopaths, given their absence of affect might experience less dissociation (i.e. because they may not feel emotion in the same way as other individuals, they might not dissociate in response to traumatic events). From this perspective, it is possible that different subtypes might experience different levels of dissociation and so DES total score was used as a clustering variable. It was also of interest whether the prevalence of traumatic experiences might differ among subtypes and so THQ total score was also used as a clustering variable.

For the purpose of the present research, the data was standardised. Jurowski and Reich (2000) claim that the need to standardise the data depends on the dissimilarities in scales. If the measurement of attributes on which participants are clustered is based on a similar scale, then the original data is likely to be adequate for further analysis. On the other hand, if a number of measurement scales are used, then standardisation of the data might be necessary because the differences in measurement characteristics of each attribute can affect the relationship between cases (Jurowski & Reich, 2000). Because of the different measures used in the present research, data standardisation was performed by transforming raw scores to *Z* scores for each clustering variable, as recommended by Hair *et al.* (1998). This is consistent with other cluster analytic studies using PCL-R scores and other variables, which have also transformed raw scores on measures to *Z* scores (e.g. Swogger & Kosson, 2007).

Determination of the Clustering Algorithm

The next step in cluster analysis is to determine the clustering method or *algorithm* to be used (Jurowski & Reich, 2000). There are two types of clustering algorithm*:* hierarchical and non-hierarchical. A hierarchical clustering algorithm involves selecting clusters based on a mathematical matrix, whereas a non-hierarchical algorithm involves selecting the desired number of clusters. The present research used a hierarchical clustering algorithm because it assists in determining the optimum number of clusters. Hierarchical clustering can be *agglomerative* or *divisive*. Agglomerative clustering initially treats all cases as separate and then combines (agglomerates) cases into clusters based on their similarity of ratings on the clustering variable(s), whereas divisive clustering begins with one cluster that includes all cases and then splits off the most dissimilar clusters until each object is a unique cluster (Jurowski & Reich, 2000). The present research used the agglomerative clustering method, which produces non-overlapping clusters (Rapkin & Luke, 1993) and does not require pre-specification of the number of clusters to be considered for the analysis.

Hierarchical clustering methods differ according to how cases are joined to the cluster. Because of the limitations of various clustering methods (e.g. the centroid, median and single linkage methods), Jurowski and Reich (2000) recommend the use of either average linkage or Ward's method when conducting hierarchical cluster analysis. The average linkage method calculates the average distance between clusters, joining cases if a certain level of similarity exists with all current members of the cluster (Everitt, 1980), whereas Ward's method (Ward, 1963) groups two cases with the smallest distance value and continues so that cases are merged in a way that keeps the within-group variance to a minimum. Ward's method was selected as the most appropriate clustering method for use in the present research for this reason and because this is the most widely used method by previous cluster analytic studies on psychopathy (e.g. Nestor *et al*., 2002; Swogger & Kosson, 2007).

Derivation of Clusters

Once a clustering algorithm has been selected, the next step in a cluster analysis is the derivation of clusters (Jurowski & Reich, 2000), which is achieved through a mathematical process using statistical software. Dissimilarity coefficients are calculated in the same manner

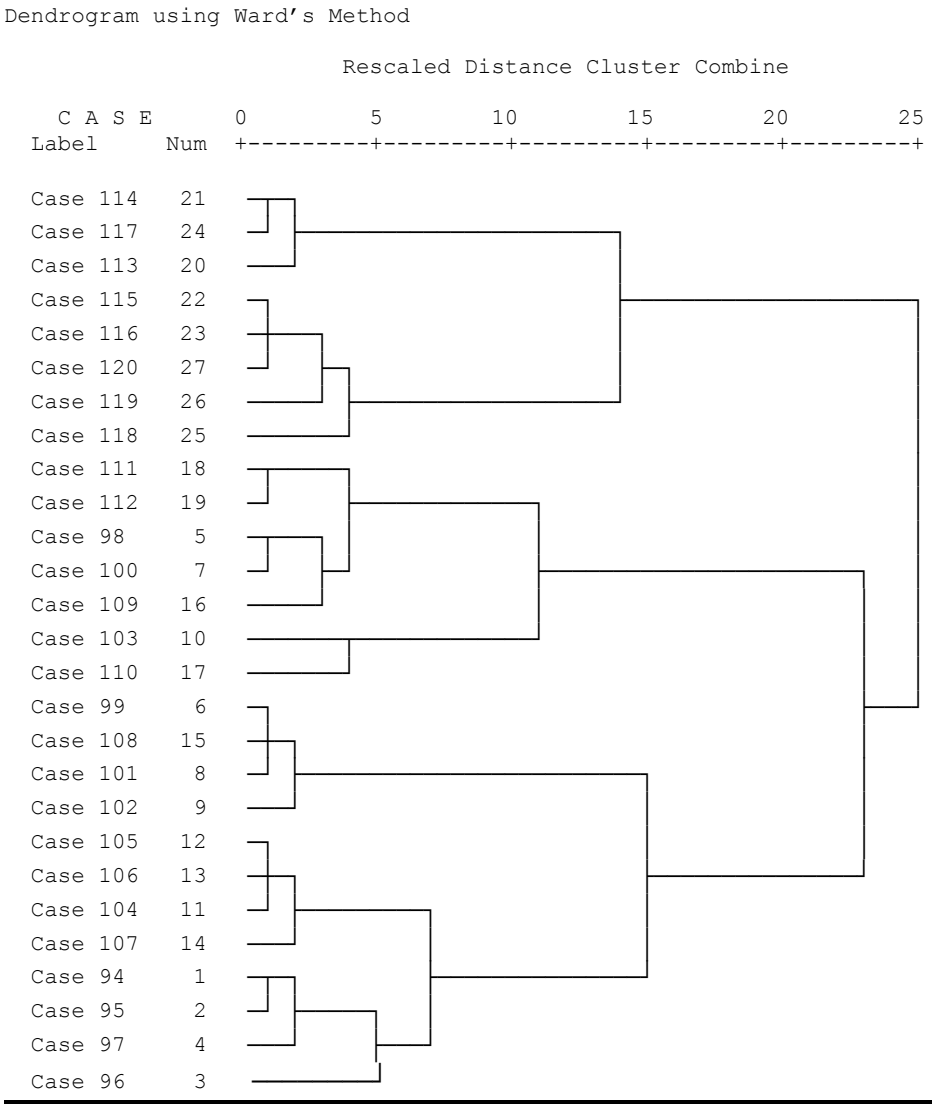
for all possible combinations of cases. The smallest coefficient represents the difference between the cases which are most closely related and which will be the first two cases to be combined into a cluster. The other cases remain in separate groupings. This process continues until all cases are included in a single cluster. With hierarchical clustering, the agglomeration schedule shows the step in which the cases are combined, the cases combined at each step, the clustering coefficient, and the steps where the first cluster first appears and next appears. Small coefficients indicate that fairly homogeneous clusters are being merged, whereas large coefficients indicate that very different groups are being combined (Jurowski & Reich, 2000). The difference between the coefficients at each step is analysed and it is determined where a significant jump in the value of the coefficients occurs. A large jump in the value of the coefficient implies that the clusters being joined are very different (Hair *et al*., 1998). Because the number of appropriate clusters is determined based on visual analysis as well as mathematical analysis (Romesburg, 1984), the cluster analysis dendrogram which visually displays the clustering procedure can be used to assist with the decision of how many clusters to select.

The optimum cluster solution for the cluster analysis presented in this chapter was determined by examining percentage changes in agglomeration coefficients for solutions of 2 to 10 clusters. As shown in Table 6.1, an examination of agglomeration coefficients revealed small increases at each stage until that in which three clusters were combined to form two. At this stage, a large increase in the agglomeration coefficient indicated a large jump in within-cluster variability, suggesting that dissimilar clusters were being combined (Hair *et al*., 1995). Both the agglomeration schedule and the dendrogram shown in Figure 6.1 suggested that a three-cluster solution was optimal. Cluster 1 (n = 12) comprised 44.44% of the clustered sample, Cluster 2 (n = 7) comprised 25.93% of the clustered sample, and Cluster 3 (n = 8) comprised 29.63% of the clustered sample.

Table 6.1 Agglomeration coefficients for psychopathic clusters

Number of clusters	Agglomeration coefficient
10	20.425
9	24.345
8	28.542
7	33.421
6	39.903
5	51.018
4	65.247
3	80.412
2	107.757
1	130.000

Figure 6.1 Cluster analysis dendrogram for psychopathic clusters



Validation of Clusters

The fifth step in conducting cluster analysis is validation of the clusters (Jurowski & Reich, 2000). A method of validating clusters is to compare the clusters on variables which one would expect the clusters to differ based on existing theory. This determines whether the clusters differ in theoretically meaningful ways (Poythress & Skeem, 2006). Because it was explored whether subtypes might exist among murderers which parallel primary and secondary subtypes found in the literature, the clusters were compared on variables on which they would be expected to

differ based on existing theory. First, because previous research has found that secondary psychopaths show higher levels of substance misuse than primary psychopaths (Vassileva *et al*., 2005; Skeem, *et al*., 2004), the clusters were compared with respect to substance misuse. Information surrounding substance misuse was collected during the PCL-R interview and a review of file information. Participants were rated as belonging to one of the following categories: i) no alcohol or drug misuse; ii) alcohol misuse; iii) drug misuse; iv) alcohol and drug misuse. The percentage of participants in Cluster 1, Cluster 2 and Cluster 3 in each category is reported in Table 6.2. Although members of Cluster 3 appeared to have higher levels of drug misuse and combined alcohol/drug misuse than members of Cluster 1 and Cluster 2, it could not be determined whether the groups differed statistically as a chi-square analysis could not be performed due to a violation of the chi-square assumption concerning cell counts.[1]

Table 6.2 Substance misuse of psychopathic clusters

Cluster	No alcohol or drug misuse	Alcohol misuse	Drug misuse	Alcohol and drug misuse
	%	%	%	%
Cluster 1 (*n* = 12)	83.3	0.0	16.7	0.0
Cluster 2 (*n* = 7)	14.3	0.0	85.7	0.0
Cluster 3 (*n* = 8)	25.0	0.0	37.5	37.5

Because previous research has found that primary psychopaths have more charges for violent offences, whereas secondary psychopaths have more charges for non-violent offences (Vassileva *et al*., 2005; Skeem *et al*., 2004), the clusters were compared with respect to criminal versatility as assessed by PCL-R item 20: *Criminal versatility*. It is important to note that this item is not reflected by any of the factors of the three-factor PCL-R model (Cooke & Michie, 2001) used as clustering variables and so was a suitable variable with which to validate the clusters. PCL-R item 20 describes an individual whose adult criminal record involves charges or convictions for many different types of offences (Hare, 2003b). In scoring this item, all offences appearing on the individual's criminal recorded are counted, even if the individual was not an adult (i.e. younger than age 18) when the offence occurred. The PCL-R *Rating Booklet* (Hare, 2003c, p.59) divides criminal offences into the following categories:

1. Theft, breaking and entering, possession of housebreaking tools, possession of stolen property, loitering at night, etc.

[1] Although Fisher's exact test can be used for 2 x 2 tables when the chi-square assumption concerning cell counts in violated, Fisher's exact test cannot be used for 2 x 4 tables.

2. Robbery, armed robbery, robbery with violence, extortion, etc.

3. Drug offences (possession, trafficking).

4. Assault, assault causing bodily harm, threatening, etc.

5. Murder, attempted murder, manslaughter, etc.

6. Possession of weapons, explosives.

7. Sexual offences.

8. Criminal negligence, including major driving offences (e.g. driving whilst intoxicated, hit and run, dangerous driving).

9. Fraud, forgery, false pretences, impersonation, etc.

10. Escape, unlawfully at large, jumping bail, failing to appear, etc.

11. Kidnapping, unlawful confinement, forcible seizure, hijacking.

12. Arson.

13. Obstruction of justice, perjury, assaulting a police officer, etc.

14. Crimes against the state, including treason, espionage, smuggling, tax evasion, etc.

15. Miscellaneous minor charges, including vandalism, causing a disturbance, mischief, minor driving offences, etc.

The following offences are coded under two categories: assault with a weapon is coded under both *assault* and *weapon* categories; sexual assault with a weapon is coded under both *sex* and *weapon* categories (Hare, 2003b). Inchoate offences (charges that begin with "Attempted..." or "Conspiracy to commit..." are included in the category of the offence stated in the latter part of the charge. For example, *attempted robbery* is coded as *robbery* (Hare, 2003b). Item 20 is scored on the basis of criminal *versatility (*i.e. the variety of offences committed by the individual), rather than the severity of the offences. Each item is rated either *0*, *1* or *2* as follows:

0: Has committed 3 or fewer types of offences.

1: Has committed 4 or 5 types of offences.

2: Has committed 6 or more types of offences.

The percentage of participants in each cluster who had committed: i) 3 or fewer types of offences; ii) 4 or 5 types of offences; and iii) 6 or more types of offences is shown in Table 6.3. Although members of Cluster 3 appeared to show more criminal versatility than members of Cluster 1 or Cluster 2, it could not be determined whether the groups differed statistically as a chi-square analysis could not be performed due to a violation of the chi-square assumption concerning cell counts.

Table 6.3 Criminal versatility of psychopathic clusters

Cluster	Committed 3 or fewer types of offences	Committed 4 or 5 types of offences	Committed 6 or more types of offences
	%	%	%
Cluster 1 (n = 12)	0.0	12.5	87.5
Cluster 2 (n = 7)	0.0	28.6	71.4
Cluster 3 (n = 8)	0.0	8.3	91.7

Woodworth and Porter (2002) distinguish between two types of aggression: instrumental aggression and reactive aggression. Instrumental aggression is intentional and directed at a specific target and is not produced by a major emotional reaction. In contrast, reactive aggression is impulsive and driven by emotion. Murders committed by psychopathic offenders are more likely to be instrumental in nature, whereas murders committed by non-psychopathic offenders are more reactive (Woodworth & Porter, 2002). Cornell *et al.* (1996) claim that instrumental aggression is associated with a lack of arousal. Consistent with this, previous research has found that primary psychopaths tend to use more instrumental aggression and secondary psychopaths tend to use more reactive aggression (Falkenbach, 2005). In order to explore whether subtypes identified in the present research could be distinguished on the basis of type of aggression, the clusters were compared with respect to the nature of their offence (i.e. whether the murder they committed was primarily instrumental or reactive).[2]

[2] Although some participants had been convicted of more than one murder, only their index offence was rated.

As discussed previously in chapter three, the *Coding Guide for Violent Incidents* developed by Cornell *et al.* (1996) was used to code the murders as either primarily instrumental or reactive in nature.[3] As defined in the coding guide, the two main characteristics of instrumental aggression are goal-directedness and planning: "The instrumental aggressor acts to obtain a readily apparent goal such as power, money, sexual gratification, or some other objective beyond inflicting injury on the victim" (p.3). Examples of instrumental aggression include stabbing a homeowner during a burglary, strangling a rape victim or shooting a police officer during a bank robbery (Cornell *et al.,* 1996). According to Cornell *et al.*, instrumental aggressors are motivated by goals, not emotions and so their level of emotional arousal (particularly anger) is relatively low to the act. The main characteristics of reactive aggression are provocation and arousal of hostility: "The objective of the aggressive act is to harm or injure the victim, in response to feelings of hostility that may include a mixture of anger, resentment, fear or other distress aroused by the victim's actions" (p.4).

Descriptions of murders committed by members of Cluster 1, Cluster 2 and Cluster 3 are shown in Tables 6.4, 6.5 and 6.6, respectively. Although a chi-square analysis could not be performed due to a violation of the chi-square assumption concerning cell counts, findings suggest that more murders committed by members of Cluster 1 were instrumental in nature than those committed by members of Cluster 2 or Cluster 3 (66.7% vs. 42.9% vs. 25.0%, respectively). Findings also suggest that more murders committed by members of Cluster 3 were reactive in nature than those committed by members of Cluster 1 or Cluster 2 (75.0% vs. 33.3 vs. 57.1%, respectively).

Table 6.4 Murders committed by members of psychopathic cluster 1

Cluster member	Description of murder
1	Drugged, raped and murdered woman he met in a nightclub (I)
2	Stabbed a man during a drunken fight outside a pub (R)
3	Raped and shot the girlfriend of a man who was in a rival gang (I)
4	Stabbed a man who attacked him for not having a cigarette (I)
5	Shot a gangster who was in a rival gang (R)
6	Stabbed his brother so that he could be with his brother's wife (I)
7	Stabbed a male friend who owed him money (I)
8	Stabbed male acquaintance during a drunken argument (R)
9	Kidnapped, raped and stabbed 16 year old girl (I)
10	Stabbed a woman during a burglary (I)
11	Murdered his one year old son with heroin overdose when he would not stop crying (R)
12	Followed and stabbed a male big issue seller for money (I)

Note: I = Instrumental; R = Reactive.

[3] The authors have made this coding guide available to researchers for research purposes.

Table 6.5 Murders committed by members of psychopathic cluster 2

Cluster member	Description of murder
1	Raped and beat to death his ex-partner following an argument (R)
2	Followed and beat a hitchhiker to death for money (I)
3	Shot an elderly man during a robbery (I)
4	Shot a man who he thought shot his father many years before (R)
5	Stabbed a man to death in a rival gang (R)
6	Bombed a school, killing a class of young boys (I)
7	Strangled a man following an argument about his ex-partner (R)

Table 6.6 Murders committed by members of psychopathic cluster 3

Cluster member	Description of murder
1	Shot a man in rival gang following a dispute (R)
2	Shot a woman and her son during a robbery (I)
3	Stabbed an elderly lady and bank manager during a bank robbery (I)
4	Shot a man leaving court who had shot the two children of a fellow gang member (R)
5	Shot a gangster during an argument about the accused's girlfriend (R)
6	Shot two men in a car following an argument (R)
7	Shot a man who had shot a fellow member of the accused's gang (R)
8	Stabbed ex-wife during an argument about her having an extra-martial affair (R)

Interpretation of Clusters

The sixth step in conducting cluster analysis is to interpret the clusters on the basis of the characteristics on which they were clustered (Jurowski & Reich, 2000). To begin, the mean scores of each cluster on the clustering variables were calculated. This is important because the mean scores provide the basis for the creation of a contrived name for each cluster (Jurowski & Reich, 2000). The mean scores of the clusters on the clustering variables are reported in Table 6.7. A one-way ANOVA revealed that there was no significant difference in PCL-R Factor 1 (Interpersonal) scores between the three clusters, $F(2, 24) = .56$, $p > .05$. However, there was a significant difference in PCL-R Factor 2 (Affective) scores between clusters, $F(2, 24) = 5.26$, $p < .01$. Post hoc analyses using Tukey's Honestly Significant Difference (HSD) test revealed that Cluster 3 received lower PCL-R Factor 2 scores than the other two clusters.

There was also a significant difference in PCL-R Factor 3 (Behavioural) scores between the clusters, $F(2, 24) = 50.38$, $p < .001$. Post hoc analyses indicated that Cluster 3 received higher Factor 3 scores than Cluster 2, and Cluster 2 received higher Factor 3 scores than Cluster 1.

There was a significant difference in THQ total scores between clusters, $F(2, 24) = 8.34$, $p < .01$ and post hoc analyses revealed that Cluster 3 received higher THQ total scores than Cluster 1. Finally, a one-way ANOVA indicated that there was a significant difference in DES total scores between clusters, $F(2, 24) = 6.17$, $p < .01$. Similarly, post hoc analyses using the Tukey HSD test revealed that Cluster 3 received higher DES total scores than Cluster 1.

It is possible that members of Cluster 3 may have received significantly higher DES total scores than members of Cluster 1 because they received higher THQ total scores (i.e. not because they experienced more dissociation in response to the same amount of trauma). To explore this possibility, a one-way analysis of covariance (ANCOVA) was performed to investigate whether the mean DES total score for the clusters was still significantly different when trauma (THQ total) was controlled for. It was found that after controlling for trauma, there was still a significant difference between the mean DES total scores for the clusters, $F(1, 16) = 6.25$, $p < .05$). This finding indicates that even when trauma was held constant, Cluster 3 still had a significantly higher mean DES total score than Cluster 1.

Table 6.7 Comparison of psychopathic clusters on clustering variables

Measure	**Cluster 1 (*n* = 12)**	**Cluster 2 (*n* = 7)**	**Cluster 3 (*n* = 8)**	***F***	***p***
	M	***M***	***M***		
PCL-R Factor 1 (Interpersonal)	5.92	5.29	6.50	0.56	.57
PCL-R Factor 2 (Affective)	7.75	7.71	6.50	5.26	.01
PCL-R Factor 3 (Behavioural)	7.92	8.29	9.88	50.38	.00
THQ total	7.42	9.43	10.88	8.34	.01
DES total	20.17	26.14	34.13	6.17	.01

The finding that Cluster 1 was characterised by higher PCL-R Factor 2 (Affective) scores and relatively lower Factor 3 (Behavioural) scores is consistent with Cleckley's (1976) conceptualisation of the primary psychopath as being characterised by affective features, such as shallow affect and a lack of remorse. Accordingly, Cluster 1 was named *primary psychopathy*. The finding that Cluster 3 was characterised by lower Factor 2 scores, higher Factor 3 scores and higher DES total scores than Cluster 1 is consistent with the theory that secondary psychopaths possess more of the behavioural features of psychopathy than primary psychopaths, without necessarily possessing the same personality features such as glibness and superficial charm. Accordingly, Cluster 3 was named *secondary psychopathy*. Because Cluster 2 received a lower mean Factor 1 scores than the other two clusters, which suggests that they lack glibness and charm and instead manipulate others through force, members of this cluster were named *intimidating psychopaths*.

In order to expose further differences between the identified subtypes, clusters were compared with respect to demographic variables, as suggested by Hair *et al*. (1998). The demographic characteristics of each cluster are reported in Table 6.8. Although a chi-square analysis could not be performed with respect to the cultural group of cluster members due to a violation of the chi-square assumption concerning cell counts, all members of the secondary psychopathy cluster were South African, whereas the proportion of British and South African participants in the other clusters were more equal; 58.3% of the primary psychopathy cluster were British and 47.1% were South African. Similarly, 42.9% of intimidating psychopaths were British and 57.1% were South African. A one-way ANOVA revealed that the three clusters did not differ significantly in terms of age, $F(2, 24) = .21$, $p > .05$. Although a chi-square analysis could not be performed due to a violation of the chi-square assumption concerning cell counts, the clusters appeared to be similar with respect to the number of individuals with and without educational qualifications; the majority of members of all three clusters had no qualifications.

Table 6.8 Demographic characteristics of psychopathic clusters

Cluster	Nationality			Ethnic group			Qualifications	
	British	South African	Mean age	Asian	Black	White	Yes	No
	%	%	*M*	%	%	%	%	%
Primary psychopathy	58.3	41.7	32.33	8.3	25.0	66.7	33.3	66.7
Intimidating psychopathy	42.9	57.1	31.71	14.3	28.6	57.1	14.3	85.7
Secondary psychopathy	0.0	100.0	34.38	25.0	50.0	25.0	25.0	75.0

The defining features of each identified subtype are summarised in Table 6.9.

Table 6.9 Defining features of psychopathic clusters

Subtype	Defining features
Primary psychopathy ($n = 12$)	Higher scores on PCL-R Factor 2 (Affective), but lower scores on Factor 3 (Behavioural) than secondary psychopaths. Experienced fewer traumatic experiences and less dissociation than other clusters.
Intimidating psychopathy ($n = 7$)	Lower scores on PCL-R Factor 1 (Interpersonal), higher Factor 2 (Affective) scores than secondary psychopaths, and higher Factor 3 (Behavioural) scores than primary psychopaths. Experienced less traumatic experiences and less dissociation than secondary psychopaths, but more traumatic experiences and more dissociation than primary psychopaths.
Secondary psychopathy ($n = 8$)	Higher scores on PCL-R Factor 3 (Behavioural), but lower scores on Factor 2 (Affective) than primary psychopaths. Experienced more traumatic experiences and more dissociation than other clusters. South African.

Exploration of Psychopathic and Non-Psychopathic Clusters

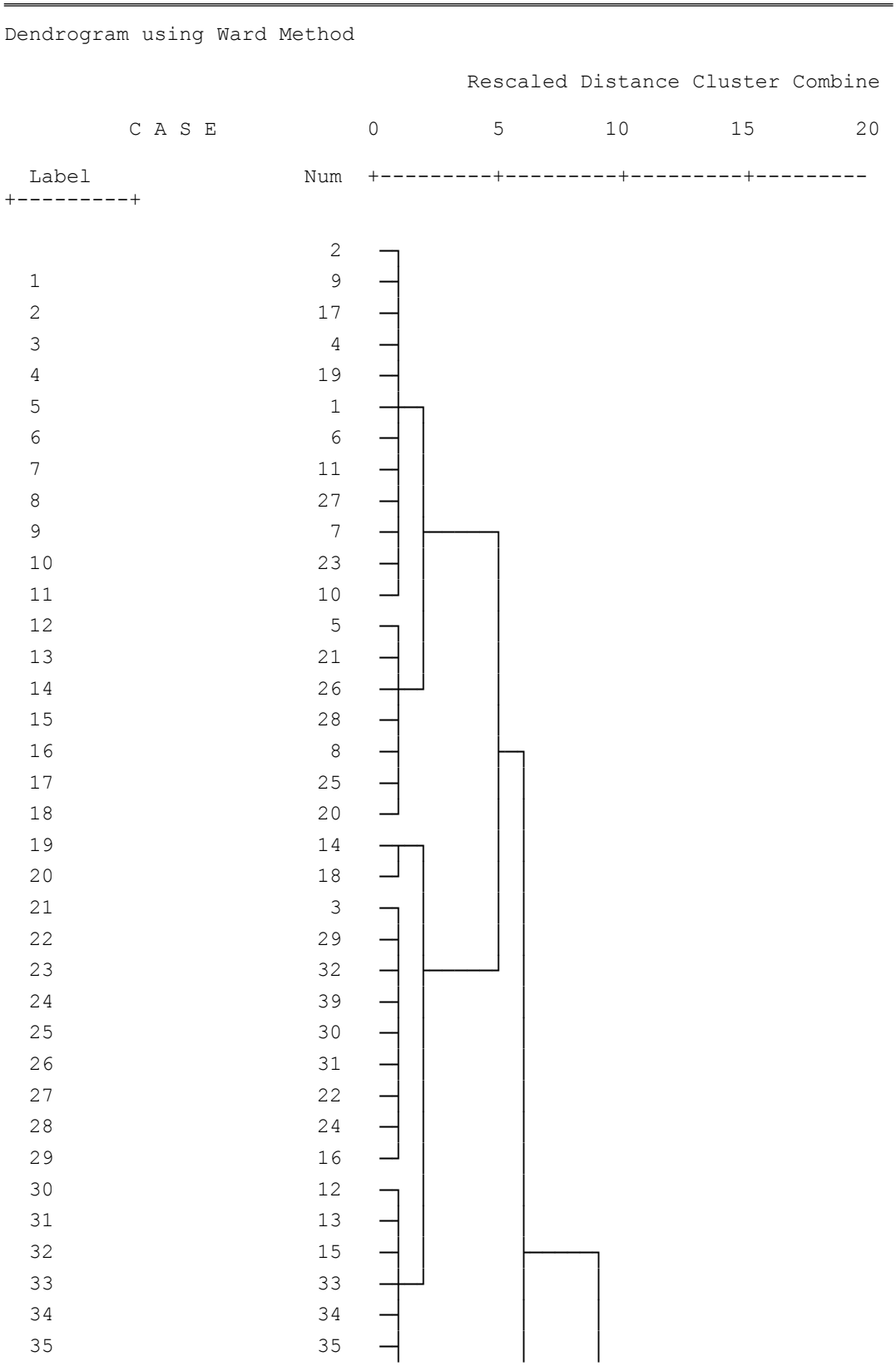
As stated previously in this chapter, selecting participants who met an a priori criterion for psychopathy (i.e. a PCL-R Total score of ≥ 30) for inclusion in the cluster analysis reported above caters to the view of psychopathy of a taxon, meaning that meaningful information about subtypes might have been lost. For this reason, an additional cluster analysis was performed, which used the same procedure and clustering variables as the analysis reported above (PCL-R Factor 1, PCL-R Factor 2, PCL-R Factor 3, THQ total and DES total), but which clustered the total sample of the study (N = 120) instead of only psychopathic participants.

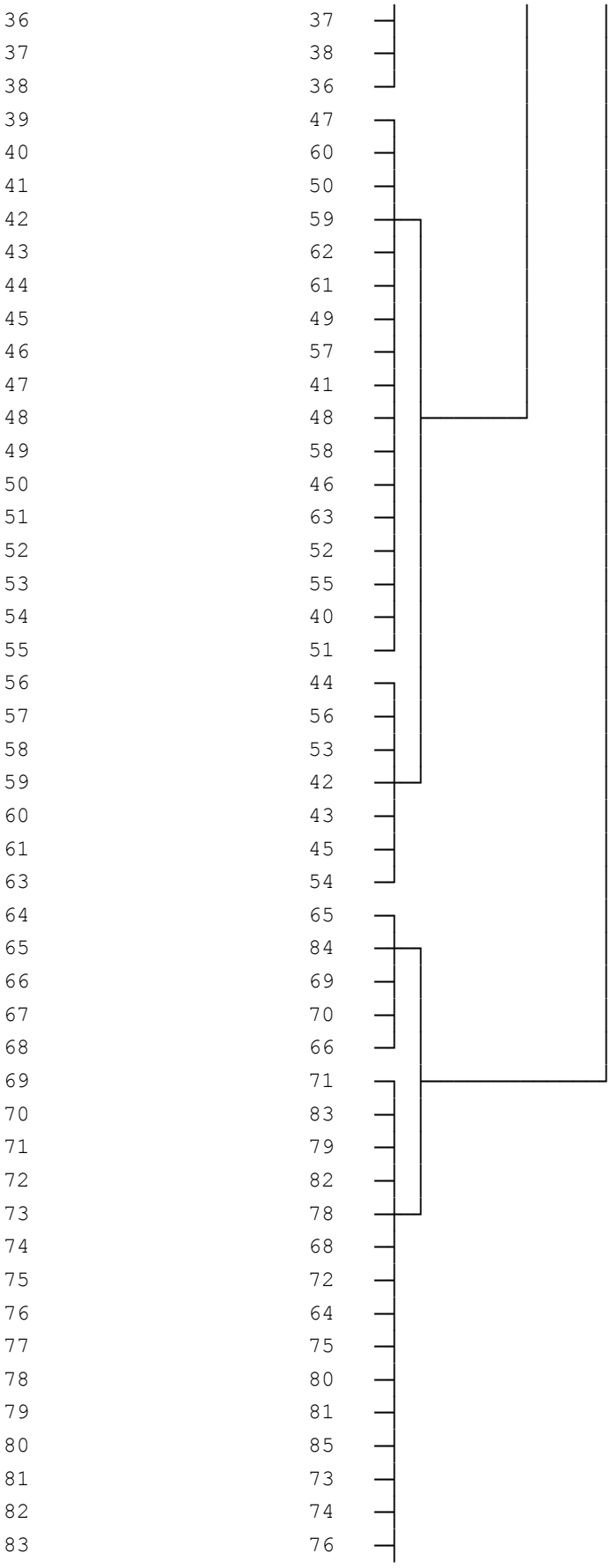
The optimal cluster solution was determined by examining percentage changes in agglomeration coefficients for solutions of 2 to 10 clusters. As shown in Table 6.10, an examination of agglomeration coefficients revealed small increases at each stage until that in which four clusters were combined to form three. At this stage, a large increase in the agglomeration coefficient indicated a large jump in within-cluster variability, suggesting that dissimilar clusters were being combined (Hair *et al*., 1998). Both the agglomeration schedule and the dendrogram shown in Figure 6.2 suggested that a four-cluster solution was optimum. Cluster 1 (n = 39) comprised 32.5% of the clustered sample, Cluster 2 (n = 24) comprised 20.0% of the sample, Cluster 3 (n = 22) comprised 18.3% of the sample, and Cluster 4 (n = 35) comprised 29.2% of the clustered sample.

Table 6.10 Agglomeration coefficients for psychopathic and non-psychopathic clusters

Number of clusters	Agglomeration coefficient
10	176.928
9	189.164
8	201.409
7	216.203
6	233.345
5	259.651
4	293.055
3	365.747
2	403.229
1	465.000

Figure 6.2 Cluster analysis dendrogram for psychopathic and non-psychopathic clusters

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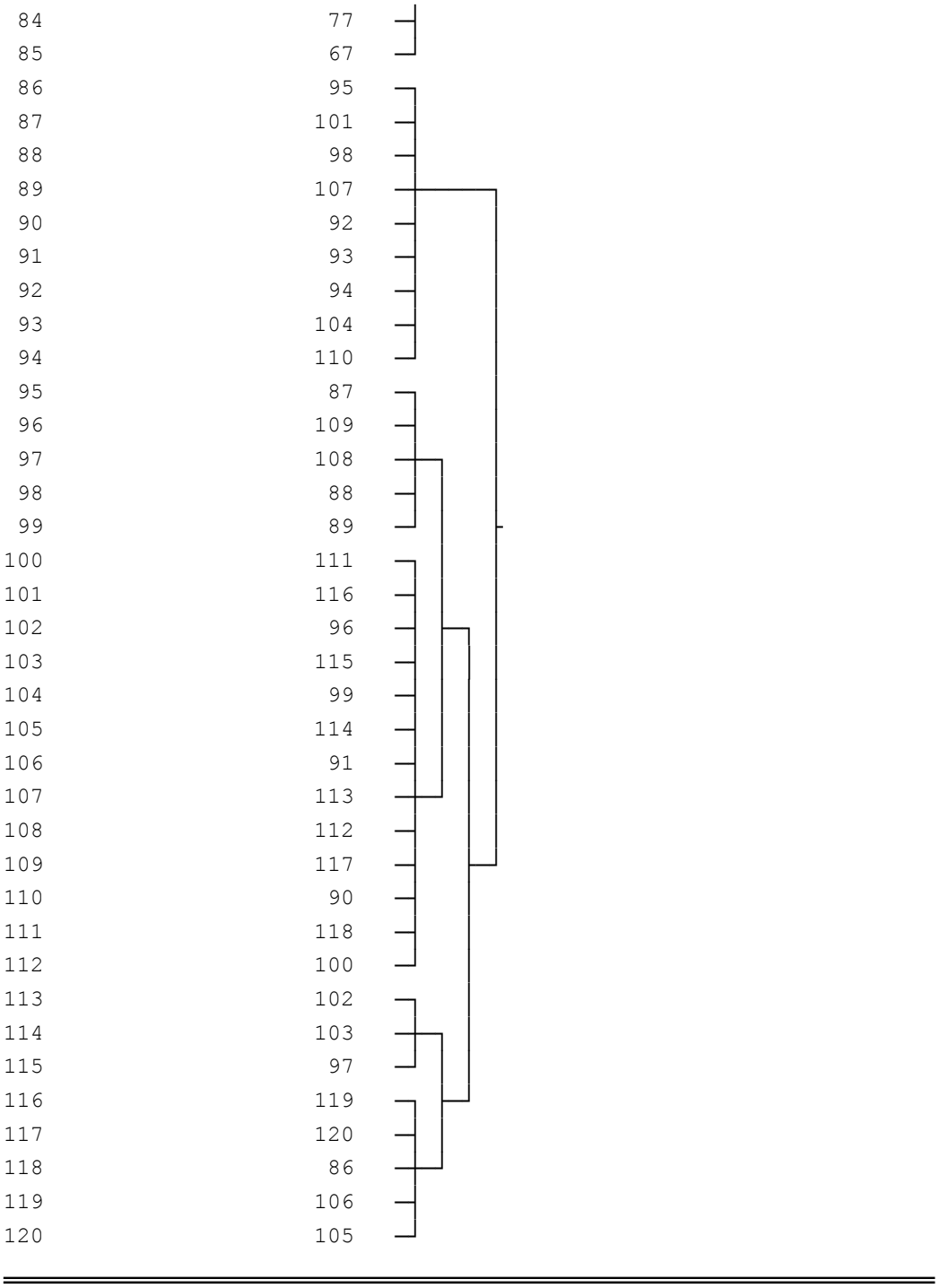
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As with the exploration of the psychopathic clusters, the percentage of participants in each substance misuse category (alcohol misuse; drug misuse; alcohol and drug misuse, neither alcohol nor drug misuse) was calculated and are reported in Table 6.11. Although members of Cluster 4 appear to have higher levels of alcohol misuse but lower levels of combined alcohol/drug misuse than members of Cluster 3, it could not be determined whether the groups differed statistically as a chi-square analysis could not be performed due to a violation of the chi-square assumption concerning cell counts.

Table 6.11 Substance misuse of psychopathic and non-psychopathic clusters

Cluster	No alcohol or drug misuse	Alcohol misuse	Drug misuse	Alcohol and drug misuse
	%	%	%	%
Cluster 1 (n = 39)	48.7	15.4	20.5	15.4
Cluster 2 (n = 24)	41.7	20.8	25.0	12.5
Cluster 3 (n = 22)	31.8	4.5	36.4	27.3
Cluster 4 (n = 35)	48.6	37.1	11.4	2.9

The percentage of participants in each cluster who had committed: i) 3 or fewer types of offences; ii) 4 or 5 types of offences; and iii) 6 or more types of offences is shown in Table 6.12. A chi-square analysis revealed a significant difference between the clusters with respect to criminal versatility, $\chi^2(6, N = 120) = 25.82$, $p < .001$; members of Cluster 3 committed more types of offences than members of Clusters 1 and 4.

Table 6.12 Criminal versatility of psychopathic and non-psychopathic clusters

Cluster	Committed 3 or fewer offences	Committed 4 or 5 types of offences	Committed 6 or more types of offences
	%	%	%
Cluster 1 (n = 39)	20.5	46.2	33.3
Cluster 2 (n = 24)	16.7	41.7	41.7
Cluster 3 (n = 22)	9.1	27.3	63.6
Cluster 4 (n = 35)	57.1	20.0	22.9

As with the subtypes of psychopathy identified in the first cluster analysis described above, the psychopathic and non-psychopathic subtypes identified in the present cluster analysis were compared with respect to the nature of their offence. As before, descriptions of the murders were coded as either instrumental or reactive, although the descriptions of these 120 murders are not shown here in the interests of space efficiency. It was found that more murders committed

by members of Cluster 1 were instrumental in nature than those committed by members of the other clusters, and that more murders committed by members of Cluster 2 were reactive in nature than those committed by members of the other clusters.

The psychopathic and non-psychopathic clusters were interpreted by comparing their mean scores on each of the clustering variables as shown in Table 6.13. A one-way ANOVA revealed a significant difference in PCL-R Factor 1 (Interpersonal) scores between clusters, $F(3, 116) = 45.52$, $p < .01$. Post hoc comparisons with Tukey's HSD test revealed that Clusters 1 and 3 received higher Factor 1 scores than Clusters 2 and 4. A one-way ANOVA also revealed a significant difference in PCL-R Factor 2 (Affective) scores between clusters, $F(3, 116) = 69.44$, $p < .01$; Cluster 4 received lower Factor 2 scores than all other clusters. There was a significant difference in PCL-R Factor 3 (Behavioural) scores between clusters, $F(3, 116) = 44.03$, $p < .01$; Cluster 4 received lower Factor 2 scores than all other factors. There was also a significant difference in THQ total scores between clusters, $F(3, 116) = 29.85$, $p < .01$; Cluster 1 received lower THQ total scores than all other clusters. Furthermore, a one-way ANOVA revealed a significant difference in DES total scores between clusters, $F(3, 116) = 24.34$, $p < .01$; Cluster 3 received higher DES total scores than all other clusters.

Table 6.13 Comparison of psychopathic and non-psychopathic clusters on clustering variables

Measure	**Cluster 1 (*n* = 39)**	**Cluster 2 (*n* = 24)**	**Cluster 3 (*n* = 22)**	**Cluster 4 (*n* = 35)**	***F***	***p***
	M	***M***	***M***	***M***		
PCL-R Factor 1 (Interpersonal)	5.38	2.04	4.82	1.26	45.52	.00
PCL-R Factor 2 (Affective)	9.74	6.74	6.83	2.63	69.44	.00
PCL-R Factor 3 (Behavioural)	6.36	8.88	8.91	4.00	44.03	.00
THQ total	5.90	8.29	10.55	6.86	29.85	.00
DES total	12.64	21.54	31.82	12.94	24.34	.00

The finding that Cluster 1 was characterised by higher PCL-R Factor 2 (Affective) scores and relatively lower Factor 3 (Behavioural) scores is consistent with Cleckley's (1976) conceptualisation of the primary psychopath as being characterised by affective features such as shallow affect, lack of empathy and a lack of remorse. Accordingly, Cluster 1 was named *primary psychopathy*. The finding that Cluster 3 was characterised by lower Factor 2 scores, higher Factor 3 scores and more criminal versatility than Cluster 1, is consistent with the conceptualisation of the secondary psychopaths as possessing the behavioural features of

psychopathy without necessarily possessing the personality features of psychopathy, such as glibness and superficial charm. Accordingly, Cluster 3 was named *secondary psychopathy*. Cluster 2 was characterised by similar Factor 1, 2 and 3 scores to members of cluster 3, and a slightly lower level of criminal versatility but there were only two psychopaths in this cluster (out of 24). Based on these characteristics, Cluster 2 was named *secondary non-psychopathy*. Finally, Cluster 4 was named *non-psychopathy* as it was characterised by lower scores than all other clusters on all PCL-R Factors and no members of this cluster were identified as psychopaths (according to a PCL-R cut-off score of 30).

In order to expose further differences between the four identified subtypes, clusters were compared on demographic variables. The demographic characteristics of each cluster are reported in Table 6.14. A chi-square analysis revealed that the proportion of British and South African participants in each cluster was significantly different, $\chi^2(3, N = 120) = 11.86$, $p < .01$; there were more South African participants in Cluster 3 (*secondary psychopathy*) than British participants. A one-way ANOVA revealed that the four clusters differed significantly in terms of age, $F(3, 116) = 4.48$, $p < .01$. Post hoc comparisons using Tukey's HSD test indicated that primary psychopaths and secondary psychopaths were younger than non-psychopaths (secondary psychopaths were younger). A chi-square analysis revealed that there was no significant difference between clusters with respect to ethnicity, $\chi^2(61, N = 120) = 5.29$, $p > .05$. It was not possible to calculate whether the number of participants in each cluster differed significantly with respect to their educational qualifications due to a violation of the chi-square assumption concerning minimum expected cell count.

Table 6.14 Demographic characteristics of psychopathic and non-psychopathic clusters

Cluster	Nationality			Ethnic group			Qualifications	
	British	South African	Mean age	Asian	Black	White	Yes	No
	%	%	*M*	%	%	%	%	%
Primary psychopathy	56.4	43.6	33.28	15.4	35.9	48.7	12.8	87.2
Secondary non-psychopathy	50.0	50.0	35.79	4.2	41.7	54.2	20.8	79.2
Secondary psychopathy	18.2	81.8	32.36	18.2	40.9	40.9	18.2	81.8
Non-psychopathy	62.9	37.1	41.23	17.1	22.9	60.0	28.6	71.4

The defining features of each subtype identified by the cluster analysis involving psychopathic and non-psychopathic participants are summarised in Table 6.15.

Table 6.15 Defining features of psychopathic and non-psychopathic clusters

Subtype	Defining features
Primary psychopathy (*n* = 39)	Higher scores on PCL-R Factor 2 (Affective) and lower scores on Factor 3 (Behavioural) than secondary psychopaths. Experienced fewer traumatic experiences and less dissociation. Predominantly British. Lower levels of substance misuse.
Secondary psychopathy (*n* = 24)	Higher scores on PCL-R Factor 3 (Behavioural) but lower scores on Factor 2 (Affective) than primary psychopaths. Experienced more traumatic experiences and more dissociation. Predominantly South African. Higher levels of substance misuse. More criminally versatile.
Secondary non-psychopathy (*n* = 22)	Similar scores on PCL-R Factor 2 (Affective) and Factor 3 (Behavioural) to secondary psychopaths and slightly less trauma and dissociation. Equally likely to be British or South African. More combined alcohol/drug misuse that other subtypes. Less criminally versatile than secondary psychopaths but more criminally versatile than primary psychopaths and non-psychopaths.
Non-psychopathy (*n* = 35)	Lower scores on all PCL-R Factors than all other clusters. Experienced more traumatic experiences and more dissociation than primary psychopaths, but less than secondary psychopaths or secondary non-psychopaths. Predominantly British. Less criminally versatile than all other clusters.

CHAPTER SEVEN

Discussion and Conclusions

Summary of Findings

The research question which this thesis sought to answer is: *Do subtypes of psychopathy exist among murderers, and if so, might the prevalence of these subtypes differ across cultures?* This question has been answered by addressing three research aims: i) to compare the trauma histories, dissociative experiences and psychopathic features of British and South African men convicted of murder and the associations among them; ii) to test potential aetiological models of psychopathy; and iii) to explore whether subtypes of psychopathy could be identified among men convicted of murder. With regards the first aim of the thesis, it was found that South African participants reported significantly more traumatic and dissociative experiences and possessed more psychopathic features than their British counterparts, and that there were some similar and some dissimilar patterns of associations among trauma, dissociation and psychopathy between the two groups.

With respect to the second aim of the thesis, it was found that a vicarious conditioning and a diminished affective responding model may both be invoked to explain the positive association found between trauma and psychopathy among murderers. With regards the third aim of the thesis, three subtypes of psychopathy were identified, two of which parallel variants of primary and secondary psychopathy described in the literature. South African participants more closely resembled the secondary psychopath described by Porter (1996), consistent with the expectation that South African individuals might experience more dissociation given the "culture of violence" in South Africa (Vogelman & Simpson, 1990). Findings suggest that subtypes of psychopathy exist among murderers and that these subtypes may differ in prevalence across cultures. The findings relating to each research aim shall now be discussed in relation to previous research in the field.

Discussion of Findings

The high prevalence of trauma found in the present research is consistent with previous studies which have found high levels of self-reported trauma among prisoners (Akyuz *et al*., 2007; Dutton & Hart, 1994; Fondacaro *et al.,* 1999; Gibson *et al*., 1999; Neller *et al*., 2006; Weeks & Widom, 1998). However, it is recognised that offenders might exaggerate past experiences of trauma or invent them altogether in an attempt to avoid taking responsibility for their offence (Langevin & Lang, 1988) and this must not be discounted in interpreting the findings of the current research. It is also recognised that offenders can be traumatised by their own offending (Kruppa *et al*., 1995), including murderers (Spitzer *et al.,* 2001). However, because factual trauma items were used to measure trauma as opposed to broad trauma items, participants were less likely to report trauma in relation to their offence.

The most frequently reported traumatic experiences in the present research were receiving news of serious injury or death of someone, fear of being seriously injured or killed or being physically abused, similar to Gibson *et al*. (1999) who found that two of the most commonly reported traumatic experiences among male prisoners were seeing someone injured or killed or being physically assaulted. However, although Gibson *et al.* found that being raped was one of the most frequently reported experiences, this was one of the least reported experiences in the present research.

It is possible that participants might have been sexually assaulted while incarcerated but may have been embarrassed or frightened to report this. As Gibson *et al.* note, prisoners might feel that they have to present themselves as strong or masculine or may be afraid of the consequences of portraying themselves as vulnerable within the prison setting. Individuals often feel that reporting an assault is too high risk given the hierarchical nature of the prison system and rules surrounding secrecy and loyalty (Gilligan, 1996; Toch, 1977). This might be particularly true of South African participants given the gang culture prevalent in South African prisons and might help to explain why South African participants reported significantly less physical/sexual experiences than British participants. However, it could be argued that British prisoners equally feel that they have to present themselves as strong or masculine and that the lower prevalence of self-reported abuse among South African participants may simply reflect a difference in the prevalence of abuse between these two groups.

Retrospective studies which obtain data from adults are likely to underestimate abuse because events in early childhood are often forgotten (Cawson *et al.,* 2000). For instance, Chu *et al.* (1999) found that childhood physical and sexual abuse was correlated with greater levels of amnesia, and Elliot (1997) found that nearly a third of US citizens who completed the *Traumatic Events Survey* (TES; Elliot, 1992) reported delayed recall, particularly those who observed the murder or suicide of a family member, sexual abuse survivors and combat veterans. The use of independent corroboration may have enhanced the validity of self-reported trauma, although this was not feasible given the constraints of the present research in terms of time and expense.

Some interesting differences were found between the samples with respect to the ages at which they experienced traumatic events. British participants reported significantly more sexual abuse under age ten, whereas South African participants reported significantly more physical abuse under age ten. In addition, South African participants reported experiencing significantly more traumatic experiences involving violence (e.g. being mugged, fearing that they would be seriously injured or killed) during adolescence than British participants. This is not surprising given the "culture of violence" in South Africa (Vogelman & Simpson, 1990) as highlighted by the research of Hirschowitz and Orkin (1997) which found that out of the 3,870 individuals in South Africa aged 16 to 64, approximately a quarter of these individuals have been exposed to one or more violent events, such as being attacked, participating in violence or witnessing one's home being burnt.

The finding that South African participants rated crime-related traumatic experiences and experiences involving violence as less distressing than British participants both at the time of their occurrence and also 'at present' can be interpreted in a number of ways. First, because South African participants found these experiences to be less distressing to begin with, it is logical that they would find them less distressing in the present also. Second, because South African participants received higher DES scores they might have less traumatic memories of their experiences and thus rated them as less distressing. However, it cannot be determined whether their dissociative experiences are related to the traumatic experiences they reported or whether they have a tendency to dissociate more than British participants for some other reason. Third, South African participants may have become 'dehumanised' (Chikane, 1986), or desensitised by the traumatic events they have experienced.

The high levels of crime and violence in South Africa might help to explain why South African participants rated crime-related events as less distressing; because these events occur more frequently in South Africa than in the UK, individuals may not be so psychologically affected by them. For example, one South African participant who had been convicted of stabbing a man to death during a fight in the street stated that:

> *If I hadn't had a knife, I wouldn't have done it...I should have stayed away from the area where I grew up because then I wouldn't have gotten involved in crime. Trouble is, everyone has a knife if not a gun here – it's the way of life...*

This quotation highlights that violence is often perceived as normal – as a way of life in some places, although it is chilling and somewhat difficult to comprehend that someone can speak about the crime-ridden streets where they have grown up with such indifference. Another South African participant who had been convicted of shooting a man in a rival gang stated that "it's what's expected...you have a reputation to live up to and so you just have to do it". Sadly, such comments are heard time and time again, and reflect the dehumanising effect of such environments. In reflecting upon some of the material from interviews with participants, a question which I would like to ask is 'At what point in a person's life do they stop feeling, and are they aware that they have stopped feeling?'

It was noted that a number of South African participants spoke about experiences that many individuals would consider to be traumatic, but they did not endorse the items on the THQ, which suggests that they recalled their experiences but did not consider them to be traumatic enough to endorse them. During some of the interviews, I noted that participants would circle 'No' for the THQ items surrounding physical abuse, but then spoke about being beaten up as children (usually by a parent) during their interview. In a few instances when this happened, and where it was appropriate to do so, I asked the individual why they had not circled 'Yes' for the questions surrounding physical abuse. One (British) participant replied:

> *Well, you know, I got beaten up a bit. Sometimes I probably deserved it when I was mouthy, so it's not really abuse. Loads of kids get a beating when they answer back.*

Another (South African) participant stated that:

> *I was beaten by my Uncle [who lived in the family home]. My Mother always acted like she didn't know what was going on, which made me feel neglected. I started to rebel by stealing and getting into fights. I became really impulsive...other people just wound me up. Some people just get really angry.*

Although he did not say so, this participant's comment suggests that he could understand the behaviour of his Uncle because he was impulsive and violent himself. The majority of comments echoed these kinds of response and suggest that a number of participants somehow 'minimise' their experiences of physical abuse. This would help to explain the observed discrepancy between some participants' THQ ratings and their responses to questions about their childhood and family relationships during the PCL-R interview. Such minimisation was more common in relation to physical abuse rather than sexual abuse.

Interestingly, Fondacaro *et al*. (1999) found that 41% of 211 male prisoners in the US who met the criteria for childhood sexual abuse did not consider themselves to be abused.[1] It has been suggested that societal influences may put pressure on men that make them reluctant to perceive themselves as victims (Finkelhor, 1984). This may be particularly true of South African men who may be more likely to grow up in a gang culture. It is also possible that South African individuals might perceive certain experiences as acceptable which other individuals may find unacceptable. For example, research on violence committed against intimate partners in South Africa has found that many individuals regard such violence as acceptable if it does not injure or leave a mark (Wood, 2003) or perceive it as a sign of love (Jewkes *et al*., 2001). Another potential reason why South African participants rated their traumatic experiences as less distressing than British participants might be because they reported experiencing more dissociation. Dissociation is believed to be an adaptive response to trauma (Perry *et al.*, 1995) and in effect 'protects' an individual from distressing thoughts and feelings. Therefore, an individual who is highly dissociative might retrospectively rate 'traumatic' experiences as being less traumatic than an individual who has not dissociated these distressing memories.

Research which has found that psychopaths show deficiencies in processing emotional information (Patrick *et al*., 1993; Patrick *et al*., 1994), are adept at focusing on events of interest to them while selectively 'tuning out' threatening stimuli (Ogloff & Wong, 1990) and have an inability to experience the emotional aspects of life events (Williamson *et al*., 1991) suggests that psychopaths may rate traumatic experiences as less distressing. Although it is possible that South African participants might have rated their traumatic experiences as less distressing *because* they received a higher mean PCL-R Total score, there was no significant difference between British and South African participants with respect to their mean score on PCL-R Factor 2, which reflects the affective features of psychopathy.

[1] The mean age of the South African sample in the present research (35.28) was higher than the mean age of Fondacaro *et al's* sample (32.0) and the South African sample was more ethnically diverse (35% White, 10% Asian, 55% Black) than Fondarcaro *et al's* sample (81% White).

Given some of the poignant comments made by participants in relation to their distress ratings of traumatic experiences, it would have been interesting to explore these ratings in much more depth. Although the purpose of the interviews with participants was to administer the THQ and DES and to conduct the PCL-R interview, certain questions included in these measures prompted me to think about more in depth questions about perceptions of trauma and participants' behaviour. Unfortunately, a comprehensive qualitative analysis of responses was not possible given the constraints of the present research; such complex questions require and deserve attention as a separate endeavour.

The high prevalence of dissociation found in the present research is consistent with previous studies which have reported high levels of dissociation among murderers (Hopwood & Snell, 1933; Holcomb & Daniel, 1988; Spitzer *et al.,* 2001), although the mean DES total score for the British sample is slightly lower than that reported by Baker and Beech (2004) for a sample of 15 male prisoners in the UK (26.31). It is possible that because the majority of the British sample in the present research were 'pure' murderers (83.3%), this sample may reflect a lower prevalence of dissociative experiences than 'nonpure' violent offenders. This is plausible given that dissociative experiences are believed to be associated with violence (e.g. Silva *et al.,* 2001). If an individual has only committed one offence (or one *type* of offence), they may experience less dissociation than an individual who has committed a variety of violent offences. On the other hand, it is important to note than the sample of violent offenders used in Baker and Beech's study was very small (n = 15) and so may not be representative of British violent offenders.

Although it is recognised that the high prevalence of dissociation found in the present research must be treated with caution as murderers might be likely to lie or be manipulative to minimise guilt or accountability (Rogers, 1997), it is likely that a number of these reports are valid because many individuals who report dissociative experiences either report their own crime or do not try to conceal it (Kopelman, 1987). This is true of approximately half of both the British and South African participants who pleaded guilty to their offence. It has been suggested that incarceration can exacerbate or even induce dissociative experiences (Snow *et al*., 1996), which might help to explain the high prevalence of dissociation found in the present research; offenders convicted of murder receive longer sentences than offenders convicted of other types of offence.

The prevalence of psychopathy found among British prisoners in the present research is lower than that found by Shine and Hobson (1997) in a study of 104 British prisoners (16.6% compared to 26.0%, respectively). The mean PCL-R Total score for the British sample in the present research was 20.13 compared to 24.10 in Shine and Hobson's study. However, it is worthy of note that the offenders in Shine and Hobson's study were serving sentences at a therapeutic prison, which traditionally requires a "personality disorder or psychopathic disorder" as a prerequisite for admission (Hobson & Shine, 1998, p.507). Therefore, higher levels of psychopathy would be expected in such a sample. The mean PCL-R Total score for the British sample in the present research (20.13) is higher than the mean score of 17.2 reported for 1,117 British male offenders reported in the PCL-R Second Edition manual (Hare, 2003b). This may be because the present sample consisted of offenders all convicted of murder, whereas the mean PCL-R Total score reported for British male prisoners in the PCL-R manual is from pooled studies which did not select offenders on the basis of offence type.[2] As noted previously in chapter two, murderers tend to receive higher PCL-R scores than other types of offender (Laurell & Daderman, 2007; Stone, 1998; Thomas, 2001; Woodworth & Porter, 2002).

The prevalence of psychopathy in the present research (22.5% for the British and South African samples combined) is similar to that found in other studies of murderers which have used a PCL-R cut-off score of 30 (e.g. Laurell & Daderman, 2007; Woodworth & Porter, 2002). The finding that a large proportion of murderers were psychopathic is in line with Laurell and Daderman's (2007) belief that consideration of psychopathy is necessary when planning treatment for homicide offenders. However, it is recognised that individuals who have been in the criminal justice system for a long period of time or who have been frequently exposed to psychological testing may be skilled at impression management, and be guilty of malingering when responding to the PCL-R (Kropp & Rogers, 1991). This may particularly apply to offenders convicted of serious offences such as murder. However, anecdotal evidence has found that even offenders who have been shown a smuggled copy of the PCL-R manual tend to obtain scores within a few points of those obtained earlier by psychologists (Hare, 1998). On the assumption that offenders are more likely to attempt to reduce their PCL-R score than increase it, it is possible that the PCL-R may have underestimated the prevalence of psychopathy among offenders in the present research.

[2] No other studies to date have reported the prevalence of psychopathic features or mean PCL-R scores for a South African offender sample and so the findings of the present research cannot be compared to any previous findings. However, research has found that North American samples receive significantly higher PCL-R scores than British samples (e.g. Cooke, 1998), and so the finding that the South African sample received a higher mean PCL-R Total score than the British sample in the present research is plausible.

The finding that the South African sample had higher PCL-R Total, Factor 1 (Interpersonal) and Factor 3 (Behavioural) mean scores than the British sample, but that there was no difference between the samples with respect to mean Factor 2 (Affective) score is consistent with Cooke *et al.* (2005), who found that the strongest difference between British and North American offenders was in the interpersonal and behavioural features of psychopathy and weakest for affective features.[3] Interestingly, other studies have also found that the interpersonal features of psychopathy tend to vary across cultures (Cooke & Michie, 1999). Cooke *et al.* (2005) claim that "the presence of specificity of effect – certain facets of the disorder varied across cultures, whereas others did not – increases the plausibility of cultural facilitation (Susser, 1973)" (p.292). The *cultural facilitation model* proposes that socialisation and enculturation suppress the development of certain aspects of personality disorders and facilitate others (Weisz *et al*. as cited in Cooke *et al*., 2005).

The cultural dimension of *individualism-collectivism* (Hofstede, 1980) proposes that individualistic cultures (found mostly in North Western Europe and English-speaking countries), place a premium on personal agency and autonomy, whereas collectivistic cultures (found mostly in Asian and African countries), attach more value to group goals and interpersonal relations (Kitayama & Markus, 1994). According to Hofstede, the UK is an individualistic culture (Koudelova & Whitelock, 2001), and so British individuals are more likely to attach value to autonomy. African cultures, on the other hand, are believed to be collectivist (Hofstede, 1980). From this perspective, South African individuals are likely to attach more value to group goals. An example of a group goal might be gang membership, which leads individuals to be socially deviant. Interestingly, there has been an increase in the rate of murder in countries with a higher index of collectivism (Lester, 2002) and South Africa has the third highest murder rate in the world (Pistorius, 2000).

The finding that physical/sexual abuse was significantly related to global psychopathy (PCL-R Total) in the present research for both British and South African participants is consistent with previous research which has found a correlation between abuse and psychopathy (e.g. Greer, 1964; Gregory, 1958; Jenkins & Hewitt, 1944; Robins, 1966; Weiler & Widom, 1996), and suggests that abuse may play an important role in the aetiology of psychopathy. The finding that general trauma/disaster was not related to psychopathy for either sample could be because experiences in this category (e.g. losing a loved one, natural disaster) might not affect people as

[3] Cooke *et al.* (2005) applied CFA and IRT methods to large samples of PCL-R ratings in the UK and North America, and found that the three-factor PCL-R structure was invariant across cultures, although items which reflected affective symptoms had the highest cross-cultural stability. However, PCL-R scores were not equivalent across cultures; the same level of psychopathy was associated with lower PCL-R scores in the UK.

much as other types of trauma, such as crime-related events or physical/sexual experiences because they are more socially accepted or expected. Crime-related events and physical/sexual abuse may be perceived as more of a personal violation than 'general' trauma (e.g. being involved in a natural disaster) which tends to affect a number of people at any one time. This is in keeping with the DSM-IV-TR (APA, 2000), which states that human-inflicted trauma, particularly that which employs gratuitous and degrading violence, is more likely than natural disasters to cause PTSD. Differences in perception might mean that certain experiences contribute to the development of psychopathic features whereas others do not.

A possible explanation for the association found between trauma and the behavioural features of psychopathy is that certain individuals might be born with a biological predisposition to seek external stimulation (Quay, 1977). Such individuals might be more likely to become involved in activities which increase the likelihood that they will experience certain traumatic events. For example, an individual who has a need for stimulation might be more likely to drive a car faster than an individual without this need for stimulation, which increases the likelihood that they will be involved in an accident. It is also possible that parents may react negatively to their child's predisposition to seek stimulation with excessively harsh or inconsistent discipline or rejection. Subsequently, the child may react to this treatment by rebelling and becoming involved in risky activities. This may then increase the probability of exposure to other offenders, which in turn increases the risk of involvement in criminal activity (Cohen *et al*., 1981; Hindelang *et al*., 1978).

The finding that trauma was positively and significantly related to dissociation[4] among both British and South African participants supports previous research which advocates a link between trauma and dissociation in offender populations (Hoover *et al*., 1992; Horton *et al*., 1990; Perna, 1996). However, it is recognised that the association between trauma and dissociation is susceptible to potential reporting biases. For example, Merckelbach and Muris (2001) claim that high DES scores are "accompanied by fantasy proneness, heightened suggestibility and susceptibility to pseudomemories" and that these factors "may promote a positive response bias to retrospective self-report instruments of traumatic experiences" (p.245). Merckelbach and Jelicic (2004) found that responses to broad trauma items better predicted dissociation than responses to factual trauma items, suggesting that dissociative symptoms

[4] Although trauma was positively and significantly related to dissociation for both samples, not all subscales of the THQ were positively and significantly related to all subscales of the DES; the specific patterns of correlations between the subscales were the same for each sample as follows: i) THQ total was related to DES total, amnesia and absorption, ii) crime-related events were not related to amnesia or depersonalisation, iii) general trauma/disaster was related to DES total, iv) physical/sexual experiences were related to DES total and absorption.

cause endorsement of vague trauma items. However, because the THQ requires respondents to respond to factual trauma items (e.g. have you ever been mugged?) rather than broad trauma items (e.g. have you ever been involved in a crime?), it might be that THQ items are less susceptible to reporting biases. Nevertheless, the association found between trauma and dissociation must be treated with caution.

The finding that the different PCL-R Factors had different patterns of correlations with trauma and dissociation supports the view of Hare and Neumann (2006), that findings of differential relations between psychopathy factors and various external correlates highlight the multidimensional nature of the psychopathy construct and the likelihood of multiple causal determinants in its manifestation. The differential patterns of associations found among trauma, dissociation and psychopathy for British and South African participants also suggests that there may be differences in the manifestation of psychopathic features across cultures. For example, crime-related trauma was positively and significantly related to the dissociative experience of absorption only among South African participants, and absorption was positively and significantly related to the affective features of psychopathy only among South African participants. South African participants reported significantly more crime-related trauma and absorption than British participants, although they did not possess more affective features.

Garbarino *et al*. (1991) believe that children develop a sense of personal self and morality in response to traumatic events in their lives. As reported in chapter four, South African participants reported more violence-related traumatic experiences (e.g. being mugged, witnessing someone be seriously injured or killed) than British participants and so it is possible that South African individuals might develop moral values in a different way to British individuals due to the amount of trauma they experience. This is a possible explanation for the finding that the affective features of psychopathy were related to crime-related events only among South African participants; PCL-R Factor 2 of the three factor model (Cooke & Michie, 2001) reflects the psychopathic characteristics which most closely resemble the personality traits related to morality such as a lack of remorse or guilt.

Because British participants reported more physical/sexual abuse than South African participants, this raises the question of whether abuse (instead of crime-related trauma) might be related to absorption and affective features. Interestingly, as reported in chapter four, although abuse was related to absorption among British offenders, neither abuse nor absorption was related to affective features. This finding suggests that Porter's diminished affective responding model cannot be invoked to explain psychopathy among British male murderers in the present research, as Porter (1996) posited that abuse is related to the affective features of psychopathy via the

mediating role of dissociation. Interestingly, abuse however, was related to the behavioural features of psychopathy among British participants, which provided initial support for a vicarious conditioning model. The findings of the SEM analyses presented in chapter five confirmed this.

The findings of the present research suggest that crime-related traumatic experiences as well as abusive experiences are important in the aetiology of psychopathy. Thus, it is possible that the SEM research conducted by Poythress *et al*. (2006) did not find support for the diminished affective responding model because they focused on abuse rather than trauma more generally. The findings of the current research indicate that future studies should address a wider variety of traumatic experiences rather than just childhood abuse.

Findings are in keeping with the *cycle of violence* theory (Curtis, 1963), which posits that abuse influences adult behaviour, predisposing abused individuals to become abusers themselves. Although there is evidence that trauma (particularly childhood trauma) is associated with violence (e.g. Freund & Kuban, 1994; Graham, 1996; Groth, 1979), the mechanism(s) underlying the cycle of violence continue to be debated. Weiler and Widom (1996) suggest that abuse or neglect may encourage the development of certain styles of coping which may be less than adaptive. Such maladaptive coping styles may help to explain the positive association found between trauma and the behavioural features of psychopathy in the present research. This idea can be seen alongside the concept of resilience discussed in a review of the literature in chapter two; it has been suggested that one of the most common reactions individuals exhibit in response to adverse experiences is a heightened sense of vulnerability (Perloff, 1983) and that environmental and individual risk factors are involved in an interactive process that may lead to vulnerability. Risk factors are the characteristics of an individual or the environment that are associated with an increased probability of maladaptive developmental outcomes (Compas *et al*., 1995). Thus, a psychosocial perspective may be useful in attempting to explain the relationship between trauma and psychopathy.

According to Weiler and Widom (1996), an alternative explanation for the cycle of violence is that experiences of abuse or neglect may lead to "bodily changes" (p.264), which in turn, relate to the development of psychopathy. In line with Porter's (1996) theory, they suggest that:

> *As a result of being beaten continually, a child might become 'desensitised' to future painful or anxiety-provoking experiences* [and that] *this desensitisation might influence the child's later behaviour, making him or her less emotionally and physiologically responsive to the needs of others, to be callous and lack empathy, and to lack remorse or guilt.* (Weiler & Widom, 1996, p.24)

The authors claim that such desensitisation may lead to nonresponsiveness to conditioning to punishment and that this is associated with the psychopath's need for external stimulation. Consistent with this suggestion, Eysenck (1998) claims that conscience is a conditioned response which is developed through socialisation to control an individual's behaviour. He also believes that individuals might not develop a conscience for one of two reasons. First, a permissive society results in conditioning experiences for conscience to either be missing or inadequate, which leads to antisocial behaviour. Second, the wrong experiences are reinforced and so the conditioned response to this reinforcement is also wrong. Although they refer to psychopaths in general, Weiler and Widom's view may be more applicable to secondary psychopaths than primary psychopaths as secondary psychopaths are believed to possess more of a need for external stimulation (due to their overactive BAS). As Lykken (1995) states: "...it is his overactive BAS that pushes him into stressful situations" (pp. 160-161).

Related to Lykken's belief that (secondary) psychopaths seek stimulation is Quay's (1977) view that the psychopath is born with a biological predisposition to seek external stimulation. Weiler and Widom claim that a deficiency in anticipating consequences of behaviour is associated with this need for stimulation and that:

> *Parents may react negatively to their child's physiological predisposition with excessively harsh or inconsistent discipline, rejection or retreat. In turn, the child may react to this parental treatment by developing antisocial behaviour and personality characteristics associated with the classic psychopath.* (Weiler & Widom, 1996, p.265)

Thus, child abuse and neglect may not directly contribute to the development of psychopathic features. Instead, these outcomes may be an indirect by-product of these adverse experiences (Weiler & Widom, 1996). Although it is not possible to draw conclusions regarding the *causal* links between the variables investigated in the present research, insight has been gained with respect to the associations among trauma, dissociation and psychopathy in an under-studied offender population.

Collectively, the findings of the present research suggest that a high level of dissociation may be necessary in order for it to mediate a relationship between trauma and psychopathy. In offenders with low levels of dissociation, the vicarious conditioning model may be the most plausible explanation of a relationship between trauma and psychopathy, whereas the vicarious conditioning model and diminished affective responding model may both help to explain the relationship between trauma and psychopathy among South African offenders. The finding that

South African participants reported more crime-related events and traumatic experiences involving violence under the age of ten and during adolescence is consistent with literature which indicates that during apartheid large numbers of children and adolescents in South Africa were exposed to, and directly involved in acts of violence (Straker *et al*., 1992); the average age of South African participants in the present research was 35.28, meaning that many of these men would have been born in the 1970s and reached adolescence in the 1980s. It was during the early 1980s that political violence in South Africa increased substantially and brought more people into active participation in the fight against the state and its forces (Gibson, 1993). During this time, the youth were the most active participants in resistance to apartheid which often involved violence (Freeman, 1993).

Findings of the present research suggest that crime-related trauma is related to the affective features of psychopathy, although findings suggest that a reasonably high level of crime-related trauma is necessary as opposed to a one-off experience; British participants reported crime-related events and experiences of absorption, but there was no correlation between them. On the other hand, South African participants reported significantly more crime-related events and also significantly more experiences of absorption, suggesting that there may be a threshold or a 'cut-off' level at which witnessing or experiencing crime-related events becomes detrimental for the psychological health of an individual (i.e. only high levels of crime-related trauma may lead to experiences of absorption and subsequently contribute to the development of the affective features of psychopathy).

Although findings suggest that South African individuals may be more characteristic of Porter's secondary psychopath, this is somewhat contradicted by the finding that British participants received higher scores on the THQ physical/sexual experiences domain; Porter (1996) refers to early abuse rather than traumatic experiences more generally. Findings therefore suggest that crime-related traumatic events and experiences which involve violence are also important in the aetiology of psychopathy; the SEM analyses presented in chapter five revealed that trauma (including crime-related events, general trauma and abuse) was positively and indirectly related to the affective features of psychopathy via the mediating role of dissociation. However, when the trauma construct was substituted with an abuse construct, the model no longer yielded this indirect effect. This might help to explain why Poythress *et al*. (2006) did not find support for a diminished affective responding model; they measured abuse alone and not other types of trauma.

The findings of the previous chapter suggest that subtypes of psychopathy may exist among male murderers which parallel primary and secondary psychopathy subtypes described in the literature. The finding that primary psychopaths were characterised by higher PCL-R Factor 2 (Affective) scores and lower Factor 3 (Behavioural) scores than secondary psychopaths is consistent with Cleckley's (1976) conceptualisation of the psychopath as being characterised by affective features such as shallow affect, lack of empathy and a lack of remorse. Similarly, the finding that secondary psychopaths were characterised by lower scores on Factor 2 and higher scores on Factor 3 is in keeping with previous research which has found that secondary psychopaths are characterised by lower scores on PCL-R Factor 1 (Blackburn, 1998).[5]

The finding that secondary psychopaths were characterised by higher levels of substance misuse is also in line with the findings of previous research (Vassileva *et al*., 2005). Furthermore, the finding that primary psychopaths were characterised by more instrumental violence, whereas secondary psychopaths were characterised by more reactive violence, is consistent with previous research (e.g. Falkenbach, 2005). It has been suggested that because of their underactive BIS, primary psychopaths are less prone to reactive violence and more likely to use instrumental violence to obtain some extrinsic goal (Cornell *et al*., 1996; Porter & Woodworth, 2006). Secondary psychopaths on the other hand, are more prone to reactive violence due to their overactive BAS and their greater susceptibility to stress and higher degree of impulsivity (Falkenbach, 2005).

The finding that secondary psychopaths received higher DES total scores than primary psychopaths (even after controlling for trauma) is consistent with Porter's (1996) theory that secondary psychopaths experience a *dissociation* or deactivation of emotion in response to trauma. This is in keeping with theories which propose that secondary psychopaths experience anxiety due to their overactive BAS (Lykken, 1995), unlike primary psychopaths who have a constitutionally fearless temperament (Lykken, 1995) and so do not experience such emotional deactivation. Although the findings of the present research are largely consistent with existing theories surrounding subtypes of psychopathy, no difference was found between primary and secondary psychopaths with respect to criminal versatility. However, research which has found that primary psychopaths tend to have more charges for violent offences, whereas secondary psychopaths have more charges for non-violent offences (Vassileva *et al*., 2005), has used the two-factor PCL-R model, which reduces the power of the external validation of clusters by including items assessing involvement in early and serious antisocial behaviour in one of the

[5] Blackburn (1998) refers to Factor 1 of the two-factor PCL-R model (Harpur *et al*., 1989) which reflects the Interpersonal/Affective features of psychopathy, rather than Factor 1 of the three-factor model (Cooke & Michie, 2001) used in the present research, which reflects the interpersonal features of psychopathy.

clustering variables (Swogger & Kosson, 2007). The use of the three-factor PCL-R model in the present research reduced the likelihood of distinguishing clusters on the basis of criminal versatility, as the items assessing antisocial behaviour were not included in the clustering variables. It is possible that the use of the three-factor model may give a more accurate reflection of the differences between subtypes of psychopathy with respect to criminal versatility.

The second cluster identified in the first cluster analysis presented in the previous chapter is similar to the *macho* subtype identified by Herve *et al*. (2000), which was characterised by lower scores on PCL-R Factor 1 (Interpersonal). However, it is felt that the term *macho* was not an appropriate name for such a cluster in the present research as this term implies that members of the cluster would be characterised by the features reflected by PCL-R Factor 1, such as glibness/superficial charm and a grandiose sense of self worth, whereas the cluster which was identified possessed *less* of these characteristics. However, in keeping with Herve *et al's* (2000) claim that such individuals lack the glibness and charm required for confidence games and instead manipulate others through force and intimidation, this cluster was named *intimidating psychopathy*.

The findings of the second cluster analysis presented in the previous chapter yielded some interesting findings with respect to psychopathic and non-psychopathic subtypes of murderer. Two clusters were identified which parallel subtypes of primary and secondary psychopathy described in the literature; a primary psychopathy subtype characterised by high scores on the affective domain of the PCL-R and lower scores on the behavioural domain; and a secondary psychopathy subtype characterised by high scores on the behavioural domain of the PCL-R and relatively lower scores on the affective domain. Two non-psychopathic subtypes were also identified; a *secondary non-psychopathy* cluster, characterised by similar PCL-R elevations to the secondary psychopathy subtype identified and slightly lower THQ and DES scores, but less psychopathic overall and less criminally versatile (although more so than the primary psychopathy cluster), and a *non-psychopathy* cluster, characterised by lower scores than all other clusters on all domains of the PCL-R. This cluster was also the least criminally versatile. The finding that psychopaths (primary psychopaths and secondary psychopaths) were younger than non-psychopaths is in line with previous research which has found that psychopathy declines with age (e.g. Blonigen *et al*., 2006; Harpur & Hare, 1994).

The identification of a *secondary non-psychopathy* subtype in the present research, similar in many respects to a *secondary psychopathy* subtype which was also identified, suggests that secondary psychopathy may reflect a dimensional construct rather than a taxon. This is plausible

given that Porter (1996) believes that secondary psychopathy constitutes a dissociative disorder; the findings of the present research suggest that different *levels* of secondary psychopathy may exist depending upon the severity of an individual's dissociative symptoms. This idea is in keeping with Mealey's (1995) belief that secondary psychopathy is a dimensional entity, whereas primary psychopathy reflects a categorical construct.

Interestingly, Del Gaizo and Falkenbach (2008) suggest that the features of secondary psychopathy might be associated with a lack of feeling emotions, but not a deficit in perceiving emotions. The high prevalence of dissociative experiences found among secondary psychopaths in the present research may help to explain why secondary psychopathy might be associated with a lack of feeling emotions. As Porter (1996) suggests, secondary psychopaths have experienced a "dissociation" or deactivation of emotion in response to early traumatic experiences. From this perspective, the secondary psychopath may *perceive* a traumatic experience to be distressing enough to dissociate, although dissociation subsequently prevents them from *feeling* emotion (i.e. dissociation acts like a blocking mechanism). However, it is open to question whether a) they perceive emotions in a normal way and then experience trauma which leads to a deactivation or dissociation of emotion in response to trauma (this could be termed 'spontaneous' dissociation), or b) they dissociate *because* they have a deficit in perceiving emotions. The former idea is more consistent with the conceptualisation of secondary psychopathy, whereas the latter idea is more in keeping with the conceptualisation of primary psychopathy (as primary psychopaths are believed to have a constitutional affective deficit). As with most studies on psychopathy, it is difficult to disentangle the causal paths of potential mechanisms which may underlie the development of psychopathic features.

The idea that secondary psychopaths seek external stimulation because they feel 'numb' is related to low arousal theory (Hare, 1970) discussed previously in chapter two (p.12), which proposes that psychopaths do not become aroused by stimuli that would be exciting or distressing to non-psychopaths and so they seek stimulation to increase their arousal level. The low arousal of psychopaths may be attributable to an unnaturally high aversion threshold, whereby to reach the threshold, extreme levels of aggression or violence would be required to have an aversive effect on psychopaths (Vien & Beech, 2006). It is plausible that dissociation could be related low arousal, although an important question is whether psychopaths seek stimulation following a dissociation or deactivation of a developing affective nature, or whether they are born with a biological predisposition to seek stimulation.

Strengths and Limitations of the Research

One of the strengths of the present research is that participants were selected randomly and that the sample encompassed offenders from a wide age range (18 to 70). This is important given that some studies have deliberately excluded offenders over the age of 40 and so may have not used representative samples (Poythress *et al*., 2006). A limitation of the present research is its small sample size, which limits the generalisability of findings, although a number of other studies which have examined the prevalence of psychopathy have also used small samples. For example, DeMatteo *et al*. (2006) investigated the prevalence of psychopathy using the PCL-R among 54 American non-criminal citizens. Research on psychopathy tends to use relatively small sample sizes as a PCL-R assessment takes between two and three hours to complete and thus requires resources beyond the scope of many studies.

The sample sizes of the psychopathy subtypes identified in the present research are in line with previous cluster analytic studies which have also tended to yield small clusters. For instance, Widom (1978) found that from a sample of 66 offenders, 4 offenders were named *psychopaths* who resembled a primary psychopathy subtype, and 12 offenders were identified as *secondary/neurotic psychopaths*.[6] The sizes of the subtypes found in the present research were larger than those found by Widom (1978) and are similar to other studies (Haapasalo & Pulkkinen, 1992; Herve *et al*., 2000). For example, Haapasalo and Pulkkinen (1992) identified a cluster of 27 Swedish adult offenders which they called *primary psychopathy,* similar to the 12 offenders identified in the first cluster analysis and the 39 participants identified in the second cluster analysis who were named primary psychopaths in chapter six. Although large sample sizes are desirable, it is not always possible to achieve given that in most offender samples, more offenders will be non-psychopathic than psychopathic (especially when a PCL-R cut-off score of 30 is used). Therefore, when only psychopaths are clustered, a proportion of the sample is often excluded from the analysis, resulting in small cluster sizes. Nevertheless, the small sizes of the clusters identified mean that the present findings must be treated as tentative.

A strength of the present research is that, unlike the vast majority of previous studies which have examined only physical and/or sexual abuse in relation to psychopathy, the present research explored the relationship between *trauma history* (including crime-related trauma and

[6] Widom's study involved female offenders and also identified 17 offenders who were named an *overcontrolled* subtype, and 17 offenders who were named a *normal criminal* subtype.

general trauma/disaster as well as physical/sexual abuse) and psychopathy, and thus permitted a more comprehensive investigation of the association between these constructs. Furthermore, use of columns for distress ratings added an interesting component to the information about the offenders' trauma histories. Another advantage of the present research is that, as discussed in chapter three, the PCL-R was used to measure psychopathy, which is the "gold standard" for assessing psychopathy (Edens *et al*., 2001b). In addition, all participants were assessed using the recommended procedure as recommended by the instrument's developer (Hare, 1991, 2003a).

A limitation of the research is the absence of inter-rater reliability for PCL-R ratings. It is recognised that this is one of the main limitations of the research as it may have led to overestimation or underestimation of psychopathy in the samples. This may be particularly true for PCL-R Factors 1 and 2, which reflect the interpersonal and affective features of psychopathy and so are more likely to be influenced by the rater's subjectivity. A number of studies conducted by joint researchers have had a second rater rate a random selection of cases. For example, Laurell & Daderman (2007) investigated psychopathy in a Swedish psychiatric sample of homicide offenders on the basis of file reviews alone, although they rated all 35 participants independently of each other in order to determine inter-rater reliability. They used the intraclass correlation coefficient (ICC; Bartko, 1966) to calculate inter-rater reliability, which considers the difference between the raters on each item (Öst as cited in Laurell & Daderman, 2007). The ICC for the overall mean value of psychopathy indicated a very high degree of inter-rater reliability, and the agreement between the two raters was significant on each individual PCL-R item.

This high level of inter-rater reliability is a strength of Laurell and Daderman's study with murderers which the present research was not able to achieve. Unfortunately, because the research was conducted by a single researcher, it was not possible for ratings to be performed by a second rater. Although individuals must be assessed by a second rater for clinical purposes, research involving the PCL-R sometimes does not involve a second rater. For example, Blackburn and Coid (1998) assessed 167 British adult male offenders using the PCL-R for research purposes and did not test for inter-rater reliability. However, it is worthy of note that although Serin (1993) found that inter-rater reliability was high between retrospective ratings and clinical ratings, agreement was not found between retrospective ratings and clinical ratings with respect to the categorical diagnosis of psychopathy. This could be attributable to the experience of the raters.

As Laurell and Daderman (2007) note, diagnosing psychopathy reliably requires understanding of what psychopathy and the PCL-R items mean. It is important to note that I received extensive training in the use of the PCL-R prior to conducting the present research.[7] However, it is also important to note that certain items were omitted more often than others, which was mainly due to insufficient file information. The two items which were omitted most often were item 2 (Grandiose Sense of Self Worth) and item 5 (Conning/Manipulative), which both contribute to Factor 1 which reflects the interpersonal features of psychopathy. Because files typically contain more information relating to antisocial behaviour (e.g. Poor Behavioural Controls, Juvenile Delinquency, Criminal Versatility) than the personality features of psychopathy, Factor 3 of Cooke and Michie's three-factor model (or Factor 2 of Harpur et al's two-factor model) is typically easier to rate. It would have been useful to compare the Factor ratings of a second rater in the present research to explore this further. Given the absence of inter-rater reliability and its associated benefits, the PCL-R ratings obtained in the present research must be treated tentatively.

A strength of the present research is that all participants were interviewed in a private room with only the researcher and the participant present. This minimised potential bias which might have occurred if a member of prison staff had been present. For example, participants may not have spoken as freely about their traumatic experiences, dissociative experiences or personal information asked during the PCL-R interview if another person had been present. In addition, participants may have exaggerated reports of trauma and/or dissociation if a prison officer had been present in an attempt to justify or avoid accepting responsibility for their offence. Whilst not everything participants said can be assumed to be completely accurate, the fact that they were informed that their participation in the research would not affect their care or release date should lend a certain degree of objectivity to the information obtained. However, it is recognised that there are a number of sources of potential bias which may have influenced the findings of the research.

First, differences in the cultural backgrounds of the tester and testee can increase the obtrusiveness of the presence of the tester (Van de Vijiver & Poortinga, 1992) and ethnic stereotypes of the tester can influence findings. The race of the researcher could have influenced THQ ratings as Black participants may have felt less comfortable rating traumatic experiences in the presence of a White researcher. The race of the researcher could have also influenced PCL-R ratings. For example, Barrigher (1997) found that the race of the rater can have a significant impact on PCL-R scores, with White raters giving significantly higher PCL-R scores

[7] This training was provided by the *Darkstone Research Group,* completion of which indicates that individuals have received formal training in the use of the PCL-R (Hare, 2003b).

to Black individuals. Therefore, the higher mean PCL-R score found for the South African sample in the present research could be explained by the fact that the PCL-R rater was White and the majority of South African participants were Black. However, other research has indicated that the race of the rater does not affect PCL-R ratings across groups (Cooke *et al*., 2004). Because the present research was conducted by a single researcher, the influence of rater bias could not be investigated. As Sullivan *et al.* (2006) note, future research should attempt to explore the impact of stereotypes and biases on PCL-R ratings.

Another potential source of bias is testee bias, which refers to problems establishing unbiased groups of participants (Van de Vijiver & Poortinga, 1992). The analyses reported in chapter four which attempted to control for the influence of demographic variables on group differences suggest that the different patterns of associations found among trauma, dissociation and psychopathy for British and South African participants could not be attributed to differences in age, ethnicity or education, although a number of other factors which could have biased findings were not considered, such as socioeconomic status (SES). Case-by-case matching was not used because although this technique provides rigorous control over potential social influences, a disadvantage of matching is that it shrinks large samples. In addition, matched groups are often unrepresentative of the larger population from which the samples are drawn (Meehl, 1970). This is particularly applicable to the present research because there were naturally more White British participants, whereas there were naturally more Black South African participants. Therefore, matching participants in terms of ethnicity is likely to mean that the matched groups are unrepresentative of British and South African offenders.

A further source of potential bias which could have influenced the findings of the present research is tester-testee interaction (Van de Vijiver & Poortinga, 1992), which refers to problems in establishing adequate communication between the tester and testee. An example of bias surrounding cultural loadings in stimuli is poor item translation (Van de Vijiver & Poortinga, 1992). An advantage of the present research is that neither the measures nor participant responses were translated as all participants were English-speaking. As stated previously in chapter three, nine potential South African participants could not speak English, which meant that the final sample excluded only a small number of men. However, it is recognised that the exclusion of these men could have influenced the findings of the research as valuable information about non-English-speaking South African offenders might have been lost. Although English was not the native language of all South African participants, no problems were encountered in the interviews with respect to communication. Unfortunately, it was not possible to determine whether PCL-R

items were unbiased across the two groups as item response theory (IRT) methods[8] are necessary to address this question (Cooke *et al*., 2005). Because large sample sizes are required for IRT analyses to be implemented appropriately, it was not possible to use IRT in the present research; a sample size of 120 would not permit such analyses. Therefore, as Sullivan *et al.* (2006) note, whether certain PCL-R items are more or less discriminating across ethnicity or are discriminating at different levels of psychopathy represent important questions that await further research.

Another potential source of bias which could have influenced the findings of the current research is the gender of the researcher. Male prisoners might be more likely to cooperate when interviewed by a female than by a male. They may also try to present themselves in a more positive light in the presence of a female. Such social desirability could have influenced scores on all research measures. With respect to the THQ and DES, participants may have been less likely to endorse certain traumatic experiences or admit to experiencing certain dissociative experiences in order to appear more 'normal' or masculine. However, on the other hand, they may have endorsed more items on the THQ or DES in the hope of attracting attention or sympathy. With regards PCL-R ratings, male prisoners might wish to portray themselves as more charming to a female interviewer than they would a male, which may result in them receiving higher scores on PCL-R Factors 1 and 2, which reflect the interpersonal and affective features of psychopathy (e.g. glibness, superficial charm).

As Van de Vijiver and Poortinga (1992) state, differential familiarity with particular response procedures such as multiple choice formats can threaten the validity of the results of research. British offenders are more likely to be familiar with response procedures than their South African counterparts as they are more likely to be administered psychometric instruments during their sentence. In particular, British offenders are more likely to have been assessed for psychopathy using the PCL-R as the PCL-R is commonly used by HM Prison Service but not by the South African Department of Corrections. Offenders who have been in the criminal justice system for a long period of time or who have frequently been exposed to psychological testing may be skilled at impression management and be guilty of malingering when responding to the PCL-R (Kropp & Rogers, 1991). However, anecdotal evidence has found that even offenders who have been shown a smuggled copy of the PCL-R manual tend to obtain scores within a few points of those obtained earlier by psychologists (Hare, 1998). On the assumption that offenders are more likely to attempt to reduce their PCL-R score than increase it, the PCL-R may have underestimated the prevalence of psychopathy among offenders in the present research.

[8] IRT estimates the relationship between item scores and a latent trait that underlies them. The trait level for each individual in a sample is estimated from the pattern of their item scores and consideration of the characteristics of the individual items (Cooke *et al*., 2005).

The use of SEM in the present research over other statistical methods which test associations among variables (e.g. multiple regression) was advantageous as it enabled measurement error to be controlled, which is not possible using other multivariate procedures. Other methods, such as multiple regression assume that error in the independent variable disappears. Byrne (2001) claims that applying such a method when there is error in the independent variables is tantamount to ignoring error, which may lead to inaccurate analyses. Such mistakes are avoided when SEM analyses are used. Another advantage of SEM over other multivariate procedures is that it enables associations among variables to be modelled simultaneously (Chin, 1998). This was useful for the present research which has sought to provide insight into the aetiology of psychopathy, which is likely to involve complex interactions among variables. For instance, according to the diminished affective responding model (Porter, 1996), trauma indirectly influences psychopathy via the mediating role of dissociation. Here, trauma (the exogenous variable) influences dissociation (the endogenous variable), but because dissociation also influences psychopathy, this subsequently transforms dissociation into an exogenous variable. SEM is an appropriate statistical technique for testing such a model because, as Tabachnick and Fidell (2000) note, SEM is useful when one dependent variable becomes an independent variable in a subsequent dependence relationship. Regression analysis cannot accommodate such complex modelling.

Because PCL-R Factor scores of the three-factor model were used as clustering variables rather than PCL-R Factors of the two-factor model in the present research, criterion contamination was reduced; unlike the two-factor model, the three-factor model does not include an item which measures criminal versatility, which means that criminal versatility can be more reliably used to externally validate clusters. As Patrick and Zempolich (1998) claim, criterion contamination is often a concern in research which uses the PCL-R to identify relationships between psychopathy and violence. Furthermore, the three-factor model provides a "more differentiated assessment of three domains generally recognized as important for defining psychopathy" (Swogger & Kosson, 2007, p.957).

Another advantage of the present research was the use of other clustering variables (THQ and DES total scores) in addition to PCL-R Factor scores, which enabled features considered important in defining subtypes of psychopathy to be taken into account; based on a review of the literature, it was believed that trauma and dissociation could be important features in defining subtypes of psychopathy. This is important because, as Poythress and Skeem (2006) suggest, similar psychopathy phenotypes may arise from different aetiologies which means that individuals with the same (or very similar) configuration of Factor scores may differ in ways that are obscured by the exclusion of clustering variables related to the aetiology of

psychopathy. A further strength of the current research is that two cluster analyses were performed; the first explored whether subtypes of psychopathy could be identified among psychopaths, identified by an a priori criterion (a PCL-R Total score of 30 or more), and the second cluster analysis explored whether subtypes of psychopathy could be identified among male murderers not selected according to this a priori criterion.

The problems of attempting to establish causality among the variables investigated in this thesis are well recognised. For example, although a significant positive correlation was found between trauma and psychopathy (for both samples), because psychopathy was not measured prospectively, it cannot be determined whether the psychopathic features of participants developed before or after their traumatic experiences. Second, although a significant positive correlation was found between trauma and dissociation (for both samples), it cannot be determined whether participants experienced high levels of dissociation because they experienced trauma or whether participants reported high levels of traumatic experiences because they experience dissociation. In addition, it cannot be determined whether the self-reported dissociative experiences reflect an individual's general experiences, or whether they have experienced dissociation only since their offence. As Spitzer *et al.* (2001) note, offenders can become traumatised by their own offending and research has found that incarceration can exacerbate or even induce dissociative symptoms (Snow *et al*., 1996). Thus, it is not possible to say whether traumatic experiences themselves contribute to the development of psychopathic features or whether it is a by-product of early traumatic experiences that contributes to the development of psychopathic features. Longitudinal prospective studies are required to do this. Unfortunately, the present research was limited in terms of time and resources due to being conducted for the purposes of self-funded PhD research. However, the findings of the research provide preliminary insight into whether subtypes of psychopathy might exist among murderers, and whether the prevalence of these subtypes may differ across cultures.

Contributions to Knowledge

The present research makes an original contribution to knowledge as it is the first piece of research to provide data regarding the prevalence of psychopathy and a mean PCL-R score for a South African offender sample. This is a worthwhile contribution as the overwhelming majority of research on psychopathy has been conducted with Canadian and American offenders and so it is not known whether there are differences in psychopathic features across cultural groups (Hare, 1991). The findings of the present research contribute to the literature surrounding the

comparison of PCL-R ratings across cultures, which has been dominated by studies comparing British and North American offender samples; the present findings indicate that South African male offenders convicted of murder receive higher PCL-R ratings than their British counterparts.

The present research also makes an original contribution to knowledge as it is the first piece of research to compare the lifetime traumatic experiences of British and South African offenders. This is important in a study which sought to explore a potential relationship between trauma and psychopathy. Although other studies have investigated the traumatic experiences of British offenders (e.g. Sarkar *et al*., 2005) and South African offenders (e.g. Abrahams & Jewkes, 2005), these studies have focused on childhood abuse (rather than lifetime trauma) and have not been comparative in their approach. Furthermore, the research makes an original contribution to knowledge as it is the first piece of research to explore the dissociative experiences of South African offenders convicted of murder (and hence to compare the dissociative experiences of British and South African offenders). Given that murders are often committed during dissociative episodes (e.g. Lewis, 1998; Tanay, 1969), this is a worthwhile contribution.

The present research makes an original contribution to knowledge as it is the first attempt to explore associations among trauma, dissociation and psychopathy among offenders in a cross-cultural study. Although two other studies to date (Skeem & Poythress, 2004; Poythress *et al*., 2006) have systematically explored associations among these constructs, both of these studies used samples of offenders in the US who were not selected on the basis of offence type. In addition, both of these previous studies looked at early abuse rather than lifetime trauma. The present research therefore, makes an original contribution to knowledge as it involved offenders outside of the US selected on the basis of offence type (i.e. murder) and explored associations among lifetime trauma, dissociation and psychopathy. In addition, the present research represents the first attempt to explore associations among these constructs in a British offender sample, Furthermore, it represents the first attempt to test the vicarious conditioning and diminished affective responding models using structural equation modelling on a sample of male murderers.

The present research provides fresh insight in a field which has, to date, been dominated by research surrounding *abuse* and psychopathy. Findings indicate that the diminished affective responding model may only explain the development of psychopathic features among individuals who have experienced high levels of trauma and dissociation. As suggested earlier in this thesis, the present findings suggest that there may be a threshold or a 'cut-off' level at which witnessing or experiencing crime-related trauma becomes detrimental for the

psychological health of an individual (i.e. only high levels of crime-related trauma lead to experiences of absorption and subsequently the affective features of psychopathy). These findings have implications for object relations theory. As suggested in chapter two, the psychopath could be seen as someone who relates to part objects and this is why they are perceived as selfish and callous. It is possible therefore, that different subtypes of psychopathy, characterised by different constellations of personality traits, may reflect different degrees of part-object relating depending on the type and/or severity of trauma they have experienced. This idea is in keeping with Kleinian theory (see chapter two for a discussion), which posits that individuals may revert to paranoid-schizoid tendencies such as part object relating when they experience trauma. This might help to explain why secondary psychopaths have supposedly experienced a dissociation of a developing affective nature and conscience, as suggested by Porter (1996). If an individual sees others as part objects rather than as whole beings, it is easier to feel less concern for them.

The psychopathic features of the secondary psychopath may also be explained from the viewpoint of Fairbairn (see chapter two for a discussion). Unlike Freud who believed that individuals are divided at birth, Fairbairn believes that we are whole and undivided at birth, but that trauma results in us becoming divided (Gomez, 1997). He refers to this division as the *schizoid position* and believes that inner conflict structures the self. Trauma results when the infant feels that an object (e.g. their mother) does not accept their love as love. The only way in which they can cope with this feeling is to separate the traumatic experience and relocate it internally.

Fairbairn saw the schizoid position as the basis for all personality development and claimed that individuals in a schizoid state feel cut-off and unreal as though separated from the world and their own feelings (Gomez, 1997). As noted previously in chapter two, this description of the schizoid person can be likened to descriptions of the dissociative experience of depersonalisation. Because the schizoid person has experienced intolerable relationships with others, they substitute inner relationships which are themselves problematic (Gomez, 1997). They scorn physical need and emotions and tend to treat others as part objects. As Gomez notes, the schizoid indifference for others led Freud to believe that such individuals could not be treated through psychoanalysis as they were unable to form a useful transference with the analyst. The characteristics of the schizoid person are consistent with certain characteristics associated with psychopathic individuals (e.g. disdain for emotional contact, or indifference or contempt for others), and it is noteworthy that a number of theorists in the present day believe that psychopaths are untreatable psychoanalytically. As mentioned above, the description of the schizoid person can be likened to descriptions of the dissociative experience of

depersonalisation, and it is interesting that Fairbairn himself, as Gomez (1997) notes, drew a parallel between the schizoid state and the state of dissociation. These parallels suggest that it is plausible that object relations theory, particularly Fairbairnian theory, may be invoked in an attempt to explain the phenomenon of secondary psychopathy.

Also relevant to the phenomenon of secondary psychopathy is Winnicott's object relations theory. As discussed in chapter two, Winnicott sees aggression as a part of relating which becomes distinct from love over time, rather than as a separate instinct like Freud and Klein (Gomez, 1997). Over time, an infant builds an integrated picture of an object as loving and hating, loveable and hateable and begins to take more responsibility for their part in the relationship. However, children who have not experienced stable care find it more difficult to integrate the different aspects of relationships and therefore create a coherent sense of self. A specific failure in a relationship at the stage when the child is able to perceive their own independence leads to a fault in the development of the capacity for concern, which Winnicott refers to as *deprivation*. Winnicott's theory can be likened to Porter's (1996) belief that abuse or abandonment lead to disillusionment and interfere with an individual's ability to form attachments. Although the secondary psychopath is "born with" the capacity for "empathetic responding" and positive attachments with others, they cope with trauma by dissociating their emotions (Porter, 1996). Winnicott's theory provides another example of how object relations theory may be used in an attempt to understand the features of psychopathy. More recently, theorists have advocated that disturbed object relations are central to personality disorder (e.g. Kernberg, 1996), including psychopathy (e.g. Gacono *et al.,* 1990; Meloy & Gacono, 1998 – see chapter two for a discussion of these studies).

Previous studies have made little reference to other types of trauma. For example, research is lacking with respect to the investigation of psychopathy among political dissidents. A variant of psychopathy called *dyssocial* psychopathy, which is believed to arise from allegiance to a culturally deviant subgroup (Lilienfeld, 1994; Lykken, 1995), has received little attention in the literature due to its deviance from the "Cleckleyan traits" (Stone, 1993, p.306). As Skeem, Poythress *et al.* (2003) note, many gang delinquents and political dissidents who use violence as a means of accomplishing their goals are presumably dyssocial psychopaths as such individuals are capable of loyalty to people, political causes, or both. Research which has found that Mexican American gang members receive low psychopathy ratings on the PCL:SV (Valdez *et al*., 2000) suggests that many gang members do not possess the interpersonal and affective features of primary psychopathy (Skeem, Poythress *et al.,* 2003). Given that dyssocial psychopaths exhibit antisocial and aggressive behaviours which they have learned from their culture (Bartol, 1995) and South Africa has been referred to as a "culture of violence"

(Vogelman & Simpson, 1990), it is possible that a proportion of the sample of the present research may be described as dyssocial psychopaths. As Barlow and Durand (2004) suggest, "many former gang delinquents fall into this category, as may some members of the Cosa Nostra and some ghetto guerillas in South Africa" (p.435).

Dyssocial psychopaths appear to be similar to the conceptualisation of the secondary psychopath in the literature who are characterised by the behavioural features of psychopathy and who have the capacity for guilt and love (Lykken, 1995). However, unlike secondary psychopaths, dyssocial psychopaths presumably have not experienced a dissociation of a developing affective nature in light of Culwell's (1998) comment that: "Dyssocial psychopaths can be said to have come about due to Bandura's social learning theory and his model for observational learning. They were effectively made antisocial by their environment" (p.8). It could be argued that although secondary psychopaths may have experienced a dissociation of a developing affective nature and conscience (Porter, 1996), the psychopathic features of dyssocial psychopaths may be explained in terms of a vicarious conditioning model.

The identification of subtypes of psychopathy poses important questions for the theoretical construct of psychopathy. Much of the literature on psychopathy refers to 'psychopaths' (typically identified by a cut-off score of 30 on the PCL-R as recommended by the instrument's developer). However, given emerging evidence that subtypes of psychopathy exist, an important question to ask is: "What actually *is* psychopathy?" Does the term apply only to criminals or deviant individuals, or can it also apply to individuals who do not actually *do* something criminal/socially unacceptable, but who possess the core personality traits of the psychopath? An example of this latter group is Hare's (1993) subcriminal psychopath who is believed to:

> *Never go to prison or any other facility. They appear to function reasonably well – as lawyers, doctors, psychiatrists, academics...without breaking the law, or at least without being caught and convicted. These individuals are every bit as egocentric, callous and manipulative as the average criminal psychopath; however, their intelligence, family background, social skills and circumstances permit them to construct a facade of normalcy and to get what they want with relative impunity.* (Hare, 1993, p.113)

Because the PCL-R is used widely in criminal justice systems around the world to undergird risk assessment, it is easy to lose sight of what it attempts to measure. The danger of associating the PCL-R with measures which assess risk for crime and violence is that it may become less of a measure of the core *personality* traits of psychopathy and more of a measure of criminality,

which some theorists dispute. For example, Johansson *et al.* (2002) claim that the construct of psychopathy should be "uncontaminated with criminality and socially deviant behavior, because these...can be considered to be strong correlates to psychopathy rather than core features and part of the definition of this disorder" (p. 82). These questions have important implications for individuals in the criminal justice system.

Implications of Findings

Implications for the treatment of offenders

The high prevalence of (self-reported) trauma found in the present research indicates that it may be useful to consider the trauma histories of individuals who commit murder when planning treatment interventions. This is in keeping with suggestions that the assessment of trauma and the effects of trauma would be useful in the evaluation of offenders (Heide, 1999; Heide & Solomon, 1997). This would be worthwhile as mental health professionals are often asked to evaluate violent offenders, particularly murderers (Lewis, 1999; Malmquist, 1996; Walker, 1989). Fondacaro *et al.* (1999) claim that any (mental health) assessment in prisons should include a thorough assessment of trauma and that treatment for the impact of trauma should be offered based on the assessment of trauma. However, consideration of trauma and its effects are lacking in the UK:

> *There currently appears to be little recognition within UK criminal justice policy of the extent of the impact of childhood maltreatment in respect to its relationship with subsequent offending behaviour.* (Falshaw, 2005, p. 426)

A possible reason why a history of abuse in offending behaviour is not given sufficient significance is the fear that abuse might be used to legitimise offending behaviour (Falshaw, 2005). However, it has been suggested that the present lack of success of interventions with offenders might be attributable to this lack of attention given to the effects of maltreatment (Cann *et al*., 2003; Falshaw *et al*., 2003). Falshaw (2005) believes that the implementation of suitable interventions could involve "incorporating vicitimization counselling as part of offender treatment" (p.426). Consideration of an offender's trauma history may provide insight into the development of psychopathic features and might aid the development of tailored treatment interventions for offenders. For example, an individual who has experienced crime-related

trauma and who scores more highly on PCL-R Factor 3 (Behavioural) than the other PCL-R Factors may have different treatment needs to an individual who has experienced sexual abuse and who scores highly on PCL-R Factor 2 (Affective).

The high prevalence of dissociation found in the present research indicates that it may be useful for offenders to be assessed for dissociative symptoms and/or dissociative disorders, as suggested by other researchers (e.g. Carlson & Putnam, 1993; Steinberg, 1995). Individuals presenting dissociative symptoms may benefit from treatment which focuses on developing effective coping strategies for traumatic memories. Kluft (1993) believes that the de-dissociation of memories should be an integral part of treatment because it allows early disconnected memories to be retrieved. This is achieved through psychotherapeutic strategies such as *hypnotic induction*, which enables the individual to gain control over dissociative processes (Beevers *et al.,* 1999), *abreaction*, which allows previously repressed painful emotions to be released (APA, 1980), and *fusion rituals*, which aim to bring dissociative experiences into a sense of unity and to formalise the subjective experience of therapy (Kluft, 1986). The higher prevalence of dissociative experiences found among South African offenders in the present research suggests that South African offenders may particularly benefit from an assessment of dissociative symptoms and/or disorders. Furthermore, findings indicate that early interventions with South African individuals who present dissociative symptoms in childhood or adolescence may prove beneficial in reducing the number of individuals who develop psychopathic features.

The high prevalence of psychopathy found in the present research suggests that it is important for murderers to be assessed for psychopathy. As Laurell and Daderman (2005) suggest, the construct of psychopathy may contribute to the understanding of the phenomenon of murder. Offenders are not currently routinely assessed for psychopathy in the UK; it is usual practice for an individual to be assessed using the PCL-R if it is believed that they are likely to receive a high score. Although emphasis is placed on the use of a cut-off score (typically 25 or 30) to determine whether an offender is psychopathic, it has been argued that the global label of psychopathy provides little "point of reference for clinical intervention" (Blackburn, 1988, p.511). For instance, Gacono *et al.* (1997) claim that there is "nothing the behavioral sciences can offer for treating those with psychopathy" (i.e. those who receive a PCL-R Total score of 30 or above). Brinkley *et al.* (2004) claim that in order to develop more effective treatment interventions for offenders, more focus should be placed on specific manifestations and aetiologies of psychopathy, which would involve:

> *...(a) questioning the assumption that psychopathy (as measured by Hare's Psychopathy Checklist-Revised; PCL-R, 1991) is an etiologically homogeneous entity, (b) identifying etiologically distinct variants of PCL-R psychopathy for study, and (c) specifying etiological mechanisms that may suggest tangible treatment targets.* (Brinkley *et al.,* 2004, p. 69)

The findings of the present research: i) question the assumption that psychopathy as measured by the PCL-R is an aetiologically homogeneous entity (as subtypes have been identified); ii) point to aetiologically distinct variants of psychopathy for further study (namely, primary and secondary psychopathy); and iii) specify aetiological mechanisms that suggest tangible treatment targets (because dissociation appears to mediate the relationship between trauma and psychopathy among secondary psychopaths, this suggests that the treatment of dissociative symptoms is a target worth pursuing). As Brinkley *et al.* (2004) note, understanding the root causes of antisocial behaviour is important because it allows prevention and treatment strategies to be developed that target key mechanisms: "without an adequate understanding of the underlying etiology [of psychopathy], prevention and treatment are likely to be ineffective because they may target the wrong mechanism for change" (pp.70-71).

The identification of psychopathy subtypes in the present research points to avenues of potential treatment targets. This is in keeping with previous suggestions that the identification of psychopathy subtypes may have implications for the treatment of offenders (e.g. Swogger & Kosson, 2007). As Falkenbach (2005) notes, even if primary psychopathy is untreatable, the identification of subtypes might allow for better treatment of other variants. For instance, because research has suggested that anxiety is a positive indicator of treatment efficacy (Salekin, 2002), it is possible that psychopaths who are resistant to treatment might be more akin to the primary psychopath, whereas those more amenable to treatment might be more characteristic of the secondary psychopath, who is characterised by higher levels of anxiety (Vassileva *et al*., 2005). Given their capacity for "moral training", Karpman (1948a) believed that secondary psychopaths (but not primary psychopaths), were amenable to psychotherapy, and Mealey (1995a) believes that secondary psychopaths may benefit from psychotherapy (as well as pharmacotherapy). Similarly, Porter (1996) claims that secondary psychopaths might represent a population for which early intervention or treatment in adulthood might be beneficial for society. It would be useful for future research to investigate the treatment responsivity of different subtypes of psychopath.

It has been suggested that interventions should be uniquely tailored to instrumental and reactive aggressors (Dodge, 1991; Vitiello & Stoff, 1997). For instance, Vitiello and Stoff (1997) claim that instrumentally aggressive individuals may be more likely to respond to behavioural therapy as they are more capable of behavioural control than reactive aggressors who are characterised by volatility and under-controlled emotion.[9] If primary psychopaths are characterised by instrumental aggression as suggested by the present research as well as other studies (e.g. Falkenbach, 2005), then Vitiello and Stoff's belief that individuals characterised by instrumental aggression may respond better to behavioural therapy is inconsistent with suggestions (e.g. Vassileva *et al.,* 2005), that primary psychopaths may be less amenable to treatment.

The finding that trauma was related to psychopathy among both British and South African offenders indicates that children who experience victimisation should be involved in treatment interventions at an early age, consistent with previous research (Lang *et al*., 2002; Meloy *et al.*, 2001). It may be possible to differentiate between children who appear to be at high risk for developing psychopathic features and other children who exhibit serious emotional and behavioural problems such as *conduct disorder* (CD), *attention deficit hyperactivity disorder* (ADHD) or *oppositional deviant disorder* (ODD) (Frick, 1998). Until recently, discussion about potential precursors to psychopathy has been based on speculations about what might have taken place during early childhood because investigations could not measure the emergence of personality traits and predispositions in behaviour at an early enough stage. However, the development of instruments like the *Antisocial Process Screening Device* (APSD; Frick & Hare, 2001) should help to resolve this problem by providing insight into the development of antisocial behaviour from adolescence to adulthood.

Attempts to investigate precursors to psychopathy are often affected by ethical issues such as labelling, and the suggestion that childhood and adolescent features believed to be risk factors for adult psychopathy may just be processes common in normally developing youth (Seagrave & Grisso, 2002). However, the features indicative of adolescent psychopathy are typically more serious variants of those found in 'normal' youths; an adolescent may possess certain psychopathic features but then grow out of them, although it is unlikely that an adolescent with traits and behaviours believed to be precursors to adult psychopathy will do so. This is supported by research which has found that normally developing adolescents typically obtain a score of less than five on the *Psychopathy Checklist: Youth Version* (PCL:YV; Forth *et al.*, 2003)[10] compared with an average score of at least 20 for young offenders (Forth *et al.,* 2003). Therefore, PCL:YV scores appear to be predictive of violent crime in early adulthood (Gretton & Hare, 2003).

[9] Vitiello and Stoff (1997) refer specifically to instrumental and reactive aggressive children.

[10] The PCL:YV was designed for use with young offenders and is strongly related to the PCL-R, both conceptually and empirically (Hare, 2003b).

Implications for the risk assessment of offenders

As well as having practical implications for the treatment of offenders, the findings of the present research also have practical implications for the risk assessment of offenders. Although the PCL-R was not designed as a risk-assessment tool, it has the ability to accurately predict risk and recidivism among offenders (Vien & Beech, 2006) and is routinely used as part of risk assessment (Quinsey *et al*., 1995). In fact, the PCL-R has been described as the "unparalleled" measure of violence risk (Salekin *et al*., 1996). Psychopathy is associated with severity and variety of criminal behaviour and adjudications in prison (Blackburn & Coid, 1998; Hart & Hare, 1997). Psychopathy is also reported to predict both violent and non-violent recidivism (Salekin *et al*., 1996; Serin, 1996; Seto & Barbaree, 1999). The identification of psychopathy subtypes may improve the ability of clinicians to predict such negative outcomes (Falkenbach, 2005), including the "future dangerousness" of offenders (Swogger & Kosson, 2007, p.953).

The findings of the present research suggest that not all murderers are psychopaths and that not all psychopaths present the same level of risk; although some individuals plan a murder, others commit murder 'on the spur of the moment'. The finding that the primary psychopathy subtype identified in the previous chapter was characterised by instrumental aggression, whereas the secondary psychopathy subtype was characterised by reactive aggression, is consistent with findings from previous studies (e.g. Falkenbach, 2005) and suggests that offenders may present differential levels of risk even though they may receive the same PCL-R Total score. Either alone or as an important element of actuarial risk measures[11] such as the *Violence Risk Appraisal Guide* (VRAG; Quinsey *et al*., 1998), the *MacArthur Iterative Classification Tree* (ICT; Monahan *et al*., 2001), and the HCR-20 (Webster *et al*., 1997), the PCL-R is used to guide clinical opinions that contribute to sentencing and parole decisions, hospital release decisions and even death penalty decisions (Edens *et al*., 2001a). Typically, it is the PCL-R Total score that drives the risk indices in these measures and so the capacity to distinguish individuals who receive high PCL-R scores who are at relatively low risk of reoffending could hold substantial clinical and legal implications (Skeem, Poythress *et al*., 2003).

[11] Actuarial measures of risk enable decisions to be made based on data which can be determined in a predetermined manner (Meehl, as cited in Dolan & Doyle, 2000). Decisions focus on small numbers of risk factors that are believed to predict violence across individuals and settings and therefore improve the consistency of risk assessment (Dolan & Doyle, 2000).

Actuarial measures of risk have been criticised as they fail to account for individual differences in risk (Dolan & Doyle, 2000). In keeping with these criticisms, the findings of the present research suggest that the risk assessment of offenders might be improved by utilising a more descriptive approach which addresses individual constellations of psychopathic features and aetiological factors. Hemphill and Hare (2004) claim that when practitioners make inferences about an offender's risk for violence and criminality, they should never base their opinions exclusively on the individual's PCL-R score. Similarly, Cunningham and Reidy (1998) suggest that a descriptive and explanatory approach is more likely to assist risk assessment, as case-specific information is used. They claim that descriptive, individualised information is more useful than a flawed diagnostic label[12] which has an associated misleading and prejudicial impact on the individual concerned. As Farrington (as cited in Andershed & Andershed, 2008) claims: "From the viewpoint of both explanation and prevention, research is needed to classify types of people according to their most influential risk factors and most important reasons for committing crimes" (p.84).

Given that a number of studies have found evidence for a relationship between trauma and offending behaviour (e.g. Jones, 2004) and that dissociation increases an individual's risk of reoffending (Putnam, 1994), it seems logical that the trauma histories and dissociative experiences of offenders be considered in relation to their assessment of risk. With reference to the specific population studied in the current research, murderers often commit their offences in the context of dissociative experiences (Lewis, 1998; Silva *et al*., 2001; Tanay, 1969; Taylor, 1997). As Moskowitz (2004) suggests, "long-term dissociative processes may predispose vulnerable individuals to violent behavior, and even homicide" (p.5). Specifically, he claims that dissociation is related to the development of four "types" of homicide offender. First, there are violent individuals who have dissociative identity disorder (DID) and who express violence through dissociated personality states. Second, there are those who engage in fantasy-driven violence and third are those who ordinarily present as meek but who experience "dissociative rage". The fourth "type" of murderer is the psychopathic individual who experiences trauma-induced emotional numbing similar to that seen in depersonalisation disorder (Moskowitz, 2004).

Thus, screening for dissociative symptoms may aid in the prediction of the likelihood or severity of violence among murderers (Taylor & Kopelman, 1984). However, as stated above, there is little recognition in the UK of the impact of childhood maltreatment and its relation to offending behaviour (Falshaw, 2005). If this reluctance could be overcome, the implementation

[12] It is important to note that Cunningham and Reidy (1998) refer to antisocial personality disorder (APD) rather than psychopathy per se.

of suitable interventions for offenders could involve "including a history of abuse as a risk factor within risk assessment tools" (Falshaw, 2005, p.426). Given the well-known link between abuse/trauma and dissociative experiences and the association between dissociation and violence as highlighted above, dissociation should be considered when assessing an offender's risk for recidivism.

Recommendations for Future Research

The finding from chapter four that South African individuals rated crime-related traumatic experiences as less distressing than British individuals raises the question of whether individuals might perceive experiences differently according to their cultural background. It is difficult to compare the traumatic experiences of individuals from different cultures, particularly abuse because definitions of abuse vary between countries, cultures and generations; there is often consensus in western countries about what constitutes maltreatment, although there is disagreement in certain areas such as the use of physical punishment and the age of consent to sexual intercourse (Cawson *et al*., 2000). In addition to problems surrounding the definition of abuse, there are difficulties in measuring its prevalence. For example, sexual abuse can involve physical abuse, and all forms of abuse involve an element of emotional abuse. Cawson *et al*. (2000) claim that "the treatment of children can generally be seen as a continuum, rather than there being an organic difference between abusive and nonabusive families or situations" (p.3).

As noted previously in chapter two, research has suggested that violence is accepted by communities in South Africa (Abrahams & Jewkes, 2005), which has been highlighted by other studies which have found that many South Africans regard intimate partner violence as acceptable if it does not injure or leave a mark (Wood, 2003), or perceive it as a sign of love (Jewkes *et al*., 2001). Similarly, Straus (1994) and Graziano (1994) have both referred to the concept of *cultural spillover*, which suggests that where cultural norms tolerate violence, a degree of "spillover" into non-legitimate violence is cultivated, as the line between discipline and abuse is often blurred (Whipple & Richey, 1997). It would be interesting for future research to explore such perceptions among British and South African offenders, as this may provide further insight into an association between trauma and psychopathy. For example, Fondacaro *et al.* (1999) claim that the potential mediating role of cognitive appraisal in the outcome of abuse requires further investigation.

Arzul (2005) believes that violent offenders have relatively sophisticated levels of cognitive functioning which are overwhelmed by states of negative affective arousal, leading to the violent enaction of a malevolent and need-gratifying world. Although previous research has compared the object relations of psychopaths and non-psychopaths (e.g. Gacono *et al*., 1990; Gacono & Meloy, 1990), no research to date has compared the object relations of different subtypes of psychopath. This is a fruitful direction for future research as it may inform the application of treatment interventions for offenders. Arzul (2005) believes that violent offenders with distorted patterns of object relations may "cognitively comprehend the potential benefits of therapeutic interventions, although the violent nature of their internal worlds may severely impair the development of a trusting therapeutic relationship" (p.63). This may apply to certain subtypes of psychopathy more than others.

Although the present research explored the 'current' dissociative experiences of male murderers, future research could investigate the dissociative experiences of murderers in relation to their offence. Previous studies have investigated the dissociative experiences of murderers (Hopwood & Snell, 1933; Holcomb & Daniel, 1988; Spitzer *et al*., 2001), although no previous research has compared the dissociative experiences of murderers in relation to their offence in a cross-cultural study. Given that South African offenders reported more dissociative experiences than British offenders in the present research, it would be interesting for future research to explore whether South African offenders experience more amnesia, absorption or depersonalisation at the time of committing murders. Such research could involve interviews with witnesses as well as the murderers themselves. Instruments that would be useful for this are the *Dissociative Violence Interview* (DVI; Simoneti *et al*, 2000) and the *State Scale of Dissociation* (SSD; Kruger & Mace, 2002).

There is concern that the current conceptualisation of psychopathy may not capture psychopathic features as they manifest in women (Hamburger *et al*. as cited in Falkenbach, 2005). For these reasons, it was not considered appropriate to include females in the present research. However, it would be interesting for future research to investigate whether similar subtypes to the ones identified in the present research exist among female murderers. Widom (1978) conducted a cluster analysis[13] on a sample of 55 female offenders in the US convicted of homicide, robbery, burglary, drug offences and prostitution. Psychopathy was measured using the *Special Hospitals Assessment of Personality and Socialization* (SHAPS; Blackburn, 1974), which is a 213-item inventory and consists of the Lie (L) and Psychopathic deviate (Pd) scales of the MMPI (Hathaway & McKinley, 1943), the *Welsh Anxiety Scale* (Welsh, 1956), the *Giedt*

[13] The cluster analysis was performed using the BMDP statistical computer programme BMDP2M (Dixon, 1975), which clusters cases in such a way that the two cases with the shortest distance between them are amalgamated and treated as one case, and then in turn, are clustered with others, and so on (Widom, 1978).

and Downing Extroversion scale (Giedt & Downing, 1961) and the *Tryon-Stein-Chu (TSC) scales* of Shyness, Depression and Tension (Stein, 1968). It also includes an Impulsivity (Im) scale (Blackburn, 1974) and Hostility (Ho) and Aggression (Ag) scales (Blackburn, 1974).

Widom (1978) identified a *psychopathic* subtype (n = 4), characterised by a high degree of hostility, poor socialisation, impulsivity, aggression and low anxiety. The characteristics of this cluster are consistent with the primary psychopathy described by Cleckley (Widom, 1978). A *secondary* or *neurotic* psychopathic subtype (n = 12) was also identified, who were more undersocialised, impulsive and anxious than the (primary) psychopathic subtype. Widom (1978) claims that the secondary psychopaths identified suffered from other subjective disturbance which suggests they are guilt-prone. These findings suggest that similar subtypes of psychopathy exist among female offenders, although due to the small sample size of the study (N = 55), findings must be treated with caution until studies with larger sample sizes replicate the findings. In addition, future research should use better validated measures of psychopathy (such as the PCL-R) for exploring subtypes.

As mentioned previously in this thesis, a variant of psychopathy which has not received much attention in the literature due to its deviance from the "Cleckleyan traits" (Stone, 1993, p.306), is *dyssocial psychopathy*. However, in light of Skeem, Poythress *et al's* (2003) statement that "we encourage further research on this potential variant of psychopathy, especially in countries characterized by loyal and intensely fierce underground political movements" (p.518), future research should investigate whether a dyssocial subtype can be identified among individuals in South Africa. It would also be interesting for future research to explore whether subtypes of psychopathy exist among particular groups or subcultures within a population of murderers, such as inner-city gangs, organised criminals, or terrorists. Furthermore, the present research could be replicated with offenders convicted of offences other than murder, which would enable distinctions to be made between murderers and other types of offender.

The present research focused on whether a secondary psychopathy subtype could be identified among male murderers, as variables which have been found to identify primary psychopaths were not examined. One of the main variables which has been used to distinguish primary and secondary psychopaths is anxiety. Although Cleckley (1964) believed that psychopaths are characterised by a lack of anxiety, Karpman (1941) proposed that although primary psychopaths lack anxiety, secondary psychopaths experience intense anxiety associated with underlying conflict and character neurosis. Consistent with this belief, Kosson and Newman (1995) identified "high anxious" and "low anxious" individuals with high PCL-R scores. Research has found that anxiety is negatively related to PCL-R Factor 1 (Interpersonal/Affective) of the two-

factor model, but is positively related to Factor 2 which assesses Social Deviance (Hare, 1991; Verona *et al*., 2001). It would be fruitful for future research to investigate whether scores on a measure of anxiety could distinguish subtypes of psychopathy among murderers.

As stated earlier in this chapter, a drawback of the small sample size of the present research is that it was not possible to test the vicarious conditioning and diminished affective responding models separately on the subtypes of psychopathy identified in the previous chapter. It would be worthwhile for future research to test potential aetiological models of psychopathy on samples which resemble different subtypes of psychopathy. As Hare and Neumann (2006) note, research should address the effects of different variables on subtypes of psychopathy using latent variable approaches.

The present research was not able to establish causality between trauma and psychopathy as prospective longitudinal studies are required to unravel causal processes. A potential direction for future research is to investigate whether certain features of psychopathy serve as developmental antecedents to others. For instance, longitudinal studies could investigate whether the behavioural features of psychopathy represent consequences of the interpersonal and affective features of psychopathy. Furthermore, research must adopt behaviour genetic designs in order to determine whether subtypes of psychopathy are more or less attributable to genetic or environmental factors (Vien & Beech, 2006). This is important given that the present research was not able to determine whether factors which influence psychopathy are environmental, genetic, or both.

As noted above, theorists who advocate the existence of psychopathy subtypes believe that secondary psychopaths may be more amenable to treatment than primary psychopaths (Karpman, 1948a; Mealey, 1995a; Porter, 1996). Therefore, it would be useful for future research to investigate the treatment responsivity of primary and secondary psychopaths. One promising area of future enquiry is the *positive emotionality* (PE) of primary and secondary psychopaths. PE refers to the experience of emotions associated with dominance, ambition, extraversion and engagement with others (Del Gaizo & Falkenbach, 2008). Primary psychopaths have higher levels of PE as they are characterised by social dominance, extraversion and striving for maximum extrinsic gain, whereas secondary psychopaths may have less PE, resulting from rejection and difficulty in social situations (Karpman as cited in Del Gaizo & Falkenbach, 2008). Studies have found that PE is positively related to the interpersonal and affective features of psychopathy and negatively related to the behavioural features of psychopathy (Del Gaizo & Falkenbach, 2008; Hicks *et al*., 2004; Verona *et al*., 2001).

It has been suggested that the investigation of PE in relation to psychopathy is important as it reflects lack of psychological distress and has implications for the treatment of psychopaths; the higher levels of PE found among primary psychopaths may lead to limited insight into problems and therefore suggests a lack of treatment amenability (Del Gaizo & Falkenbach, 2008). However, secondary psychopaths who have lower levels of PE and higher levels of *negative emotionality* (NE) and hence feel distress, might be more amenable to treatment (Hicks & Patrick as cited in Del Gaizo & Falkenbach, 2008). Because previous studies (cited above) which have investigated NE and PE in relation to psychopathy have used the two-factor model of psychopathy (Harpur *et al*., 1989), it would be interesting for future research to investigate associations between NE/PE and the PCL-R Factors of the three-factor model of psychopathy proposed by Cooke and Michie (2001).

The finding that primary psychopaths were characterised by instrumental aggression, whereas secondary psychopaths were characterised by reactive aggression is consistent with previous research (e.g. Falkenbach, 2005) and suggests that primary and secondary psychopaths may present different levels of risk for violent recidivism. Previous research (e.g. Patrick & Zempolich, 1998) has indicated that primary psychopaths are less prone to impulsive, violent behaviour laden with emotion in the face of personal loss, whereas secondary psychopaths are more likely to react angrily in the face of loss. It is possible that secondary psychopaths may be more at risk of violent recidivism given their propensity for reactive aggression. However, future research is needed to investigate the different levels of risk posed by different subtypes of psychopathy, both with respect to adjudications in prison and violent recidivism. Future research should compare the reconviction rates of different subtypes of psychopathy.

Conclusions

This thesis has attempted to answer the following research question: *Do subtypes of psychopathy exist among murderers, and if so, might the prevalence of these subtypes differ across cultures?* Although a definitive answer to this question cannot be provided due to the exploratory nature of the research, findings suggest that subtypes of psychopathy exist among male murderers, and that the prevalence of these subtypes may differ across cultures. South African murderers reported significantly more traumatic and dissociative experiences and possessed more psychopathic features than their British counterparts, and although trauma was positively and significantly related to trauma across cultures, findings suggest that dissociation plays a role in the aetiology of psychopathy only among individuals who have experienced high

levels of trauma. In particular, an interesting association was identified between crime-related trauma, absorption and the affective features of psychopathy among South African participants. Findings provide support for the existence of a secondary psychopathy subtype proposed by Porter (1996).

This thesis however, does not advocate that the complex relationship between trauma and psychopathy can be attributed solely to dissociation as it is recognised that a range of processes occur between an external event and the subsequent personality development and behaviour of an individual. Although the present research has not been able to disentangle the potential causal processes which may underlie the relationship between trauma and psychopathy, it has provided insight into the patterns of associations among trauma, dissociation and psychopathy.

Research into cultural variations in psychopathy remains in its infancy (Sullivan *et al*., 2006), and so the comparison of psychopathic features of British and South African offenders represents a step forward in the field. This is a worthwhile contribution given the increasing use of the PCL-R in correctional institutions with growing minority populations. The present research makes an original contribution to knowledge as it represents the first attempt to identify subtypes of psychopathy in a sample of murderers using trauma and dissociation as well as PCL-R scores as clustering variables. This is worthwhile given that our knowledge of psychopathy subtypes is "characterized much more by theory and informed speculation than by data" (Skeem, Poythress *et al*., 2003, p.526). Furthermore, a cross-cultural comparison of murderers represents a rare effort in the field.

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Appendices

Appendix A

Ethical Approval

Approval form from Brunel University ethics committee.

Removed following examination to preserve confidentiality.

Approval letter no.1 from HM Prison Service.

Removed following examination to preserve confidentiality.

Approval letter no.2 from HM Prison Service.

Removed following examination to preserve confidentiality.

Approval letter no.3 from HM Prison Service.

Removed following examination to preserve confidentiality.

Approval letter no.4 from HM Prison Service.

Removed following examination to preserve confidentiality.

Approval letter no.5 from HM Prison Service.

Removed following examination to preseve confidentiality.

Approval letter no.6 from HM Prison Service.

Removed following examination to preserve confidentiality.

Approval letter from the South African Department of Corrections.

Removed following examination to preserve confidentiality.

Appendix B

Consent Form

Consent Form

I am conducting some research in the UK and South Africa surrounding traumatic experiences, dissociative experiences (e.g. not remembering whether you have done something or whether you just dreamed it) and personality traits. This consent form outlines the purpose of the research and tells you of your rights as a potential participant.

The purpose of the research is to investigate whether traumatic experiences could be associated with dissociative experiences and whether these experiences might be associated with certain personality traits. The research is being conducted for a self-funded PhD and is not related to any research being conducted by Prison Service.

If you agree to participate, you will be asked to complete two short questionnaires and will be asked a variety of questions about your upbringing, employment history, past drug use (if any) and offence. However, if you do not feel comfortable with certain questions, you do not have to answer them. You will not be tape-recorded or filmed, but your responses will be written down. However, you have the right to withdraw your participation at any time and have your responses destroyed in front of you. You are welcome to ask questions at any time.

As part of this research, I would like to look at information in your prison file, including reports written about you in relation to therapy you have had, reports written by psychologists and police reports (although some of these may not apply to you). This is so that I can learn more about you and your personality. You are not under any obligation to consent to this.

If you decide to take part in the research, your responses to questions will remain completely anonymous and confidential and will not be stored in your prison file. You will not receive any payment for agreeing to participate and your participation or non-participation will not affect your sentence, care or future assessments in any way. If you are happy to take part in the research and for me to look at your prison file, please sign this consent form below to indicate that you agree to take part.

I ..... (insert name) consent to participate in research surrounding traumatic experiences, dissociative experiences and personality traits.

Signed (participant) ..... Date .....

Thank you

Michelle Newberry
PhD student

Appendix C

Research Measures

Trauma History Questionnaire (THQ; Green, 1996)

The following is a series of questions about traumatic life events. These types of events actually occur with some regularity although we would like to believe they are rare. I would like to know how they affect the way people feel about, react to, and/or think about things subsequently. Knowing about the occurrence of such events and reaction to them will help develop programs for prevention, education and other services. The questionnaire is divided into questions covering crime experiences, general disaster and trauma questions and questions about physical and sexual experience. For each event, please indicate (circle) whether it happened, and if it did, the number of times and your approximate age when it happened (give your best guess if you are not sure). Also, note the nature of your relationship with the person involved and the specific nature of the event if appropriate.

				# of times	**If yes**
Crime-Related Events					**approx age**
1.	Has anyone ever tried to take something directly from you by using force or the threat of force such as a stick up or mugging?	No	Yes	_____	_____
2.	Has anyone ever attempted to rob you or actually robbed you (i.e. stolen your personal belongings)?	No	Yes	_____	_____
3.	Has anyone ever attempted or succeeded in breaking into your home while you weren't there?	No	Yes	_____	_____
4.	Has anyone tried to or succeeded in breaking into your home while you were there?	No	Yes	_____	_____

General Disaster and Trauma

5.	Have you ever had a serious accident at work, in a car or somewhere else?	No	Yes	_____	_____
	If yes, please specify:				
	_____				
	_____				

6. Have you ever experienced a natural disaster such as a tornado, hurricane, flood, major earthquake etc, where you felt you or your loved ones were in danger of death or injury? No Yes _____ _____

   If yes, please specify:

   _____

   _____

7. Have you ever experienced a "man-made" disaster such as a train crash, building collapse, bank robbery, fire etc, where you felt you or your loved ones were in danger of death or injury? No Yes _____ _____

   If yes, please specify:

   _____

   _____

8. Have you ever been exposed to dangerous chemicals or radioactivity that might threaten your health? No Yes _____ _____

   If yes, please specify:

   _____

   _____

9. Have you ever been in any other situation in which you were seriously injured? No Yes _____ _____

   If yes, please specify:

   _____

   _____

10. Have you ever been in any other situation in which you feared you might be killed or seriously injured? No Yes _____ _____

    If yes, please specify:

    _____

    _____

11.	Have you ever seen someone seriously injured or killed?	No	Yes	_____	_____
	If yes, please specify:				
	_____				
	_____				
12.	Have you ever seen dead bodies other than at a funeral or had to handle dead bodies for any reason?	No	Yes	_____	_____
	If yes, please specify:				
	_____				
	_____				
13.	Have you ever had a close friend or family member murdered or killed by a drunk driver?	No	Yes	_____	_____
	If yes, please specify:				
	_____				
	_____				
14.	Have you ever had a spouse, romantic partner or child die?	No	Yes	_____	_____
	If yes, please specify:				
	_____				
	_____				
15.	Have you ever had a serious or life-threatening illness?	No	Yes	_____	_____
	If yes, please specify:				
	_____				
	_____				
16.	Have you ever received news of serious injury, life-threatening illness or unexpected death of someone close to you?	No	Yes	_____	_____
	If yes, please specify:				
	_____				
	_____				

17. Have you ever had to engage in combat while in military service in an official or unofficial war zone? No Yes _____ _____

    If yes, please specify:

    _____

    _____

Physical and Sexual Experiences

18. Has anyone ever made you have intercourse, oral or anal sex against your will? No Yes _____ _____

    If yes, please indicate nature of relationship with person (e.g. stranger, friend, relative, partner, sibling)

    _____

    _____

19. Has anyone ever touched private parts of your body or made you touch theirs under force or threat? No Yes _____ _____

    If yes, please indicate nature of relationship with person (e.g. stranger, friend, relative, partner, sibling)

    _____

    _____

20. Other than incidents mentioned in questions 18 and 19, have there been any other situations in which another person tried to force you to have unwanted sexual contact? No Yes _____ _____

21. Has anyone, including family members or friends ever attacked you with a gun, knife or some other weapon? No Yes _____ _____

22. Has anyone, including family members or friends ever attacked you without a weapon and seriously injured you?	No	Yes	_____	_____
23. Has anyone in your family ever beaten, "spanked" or pushed you hard enough to cause injury?	No	Yes	_____	_____

Other Events

24. Have you ever experienced any other extraordinarily stressful situation or event that is not covered above?	No	Yes	_____	_____

If yes, please specify:

_____

_____

Dissociative Experiences Scale (DES; Carlson and Putnam, 1993)

This questionnaire consists of twenty-eight questions about experiences that you may have had in your daily life. I am interested in how often you have these experiences. It is important, however, that your answers show how often these experiences happen to you when you are not under the influence of alcohol or drugs. To answer these questions, please determine to what degree, the experience described in the question applies to you and circle the number to show what percentage of the time you have the experience.

1. Some people have the experience of driving or riding in a car or bus or subway and suddenly realising that they don't remember what has happened during all or part of the trip.

(NEVER) 0 10 20 30 40 50 60 70 80 90 100 (ALWAYS)

2. Some people find that sometimes they are listening to someone talk and they suddenly realise that they did not hear part or all of what was said.

(NEVER) 0 10 20 30 40 50 60 70 80 90 100 (ALWAYS)

3. Some people have the experience of finding themselves in a place and having no idea how they got there.

(NEVER) 0 10 20 30 40 50 60 70 80 90 100 (ALWAYS)

4. Some people have the experience of finding themselves dressed in clothes that they don't remember putting on.

(NEVER) 0 10 20 30 40 50 60 70 80 90 100 (ALWAYS)

5. Some people have the experience of finding new things among their belongings that they do not remember buying.

(NEVER) 0 10 20 30 40 50 60 70 80 90 100 (ALWAYS)

6. Some people sometimes find that they are approached by people that they do not know who call them by another name or insist that they have met them before.

(NEVER) 0 10 20 30 40 50 60 70 80 90 100 (ALWAYS)

7. Some people sometimes have the experience of feeling as though they are standing next to themselves or watching themselves do something and they actually see themselves as if they were looking at another person.

(NEVER) 0 10 20 30 40 50 60 70 80 90 100 (ALWAYS)

8. Some people are told that they sometimes do not recognise friends or family members.

(NEVER) 0 10 20 30 40 50 60 70 80 90 100 (ALWAYS)

9. Some people find that they have no memory for some important events in their lives (for example a wedding or graduation).

(NEVER) 0 10 20 30 40 50 60 70 80 90 100 (ALWAYS)

10. Some people have the experience of being accused of lying when they do not think that they have lied.

(NEVER) 0 10 20 30 40 50 60 70 80 90 100 (ALWAYS)

11. Some people have the experience of looking in a mirror and not recognising themselves.

(NEVER) 0 10 20 30 40 50 60 70 80 90 100 (ALWAYS)

12. Some people have the experience of feeling that other people, objects and the world around them are not real.

(NEVER) 0 10 20 30 40 50 60 70 80 90 100 (ALWAYS)

13. Some people have the experience of feeling that their body does not seem to belong to them.

(NEVER) 0 10 20 30 40 50 60 70 80 90 100 (ALWAYS)

14. Some people have the experience of sometimes remembering a past event so vividly they feel as if they were reliving that event.

(NEVER) 0 10 20 30 40 50 60 70 80 90 100 (ALWAYS)

15. Some people have the experience of not being sure whether things that they remember happening really did happen or whether they just dreamed them.

(NEVER) 0 10 20 30 40 50 60 70 80 90 100 (ALWAYS)

16. Some people have the experience of being in a familiar place but finding it strange and unfamiliar.

(NEVER) 0 10 20 30 40 50 60 70 80 90 100 (ALWAYS)

17. Some people find that when they are watching television or a movie they become so absorbed in the story that they are unaware of other events happening around them.

(NEVER) 0 10 20 30 40 50 60 70 80 90 100 (ALWAYS)

18. Some people find that they become so involved in a fantasy or daydream that it feels as though it were really happening to them.

(NEVER) 0 10 20 30 40 50 60 70 80 90 100 (ALWAYS)

19. Some people find that they are sometimes able to ignore pain.

(NEVER) 0 10 20 30 40 50 60 70 80 90 100 (ALWAYS)

20. Some people find that they sometimes sit staring off into space, thinking of nothing and are not aware of the passage of time.

(NEVER) 0 10 20 30 40 50 60 70 80 90 100 (ALWAYS)

21. Some people sometimes find that when they are alone they talk out loud to themselves.

(NEVER) 0 10 20 30 40 50 60 70 80 90 100 (ALWAYS)

22. Some people find that in one situation they may act so differently compared with another situation that they feel almost as if they were two different people.

(NEVER) 0 10 20 30 40 50 60 70 80 90 100 (ALWAYS)

23. Some people sometimes find that in certain situations they are able to do things with amazing ease and spontaneity that would usually be difficult for them (for example, sports, work, social situations, etc.)

(NEVER) 0 10 20 30 40 50 60 70 80 90 100 (ALWAYS)

24. Some people sometimes find that they cannot remember whether they have done something or have just thought about doing this (for example, not knowing whether they have just mailed a letter or have just thought about mailing it).

(NEVER) 0 10 20 30 40 50 60 70 80 90 100 (ALWAYS)

25. Some people find evidence that they have done things that they do not remember doing.

(NEVER) 0 10 20 30 40 50 60 70 80 90 100 (ALWAYS)

26. Some people sometimes find writings, drawings, or notes among their belongings that they must have done but cannot remember doing.

(NEVER) 0 10 20 30 40 50 60 70 80 90 100 (ALWAYS)

27. Some people sometimes find that there hear voices inside their head that tell them to do things or comment on things that they are doing.

(NEVER) 0 10 20 30 40 50 60 70 80 90 100 (ALWAYS)

28. Some people sometimes feel as if they are looking at the world through a fog so that people and objects appear far away or unclear.

(NEVER) 0 10 20 30 40 50 60 70 80 90 100 (ALWAYS)

PCL-R Items[1]

Item 1: Glibness/Superficial Charm

Item 1 describes a glib, voluble, verbally facile individual who exudes an insincere and superficial sort of charm. He is often amusing and an entertaining conversationalist, is always ready with a quick and clever comeback and is able to tell unlikely but convincing stories that place him in a good light. He may succeed in presenting himself well and may even be quite likeable. However, he seems too slick and smooth to be entirely believable. He appears to have knowledge in many areas and may causally use technical terms and jargon effectively enough to impress most people. Careful questioning will usually reveal that his knowledge is superficial.

Item 2: Grandiose Sense of Self Worth

Item 2 describes an individual with a grossly inflated view of his abilities and self worth. He may impress as a braggart. He often appears self-assured, opinionated and cocky during the interview, perhaps giving the impression that he is performing or giving a press conference. His inflated ego and exaggerated regard for his own abilities are remarkable, given the facts of his life. He is not embarrassed about or sensitive to his current legal problems; he is convinced that his present circumstances are the result of bad luck, unfaithful friends or an unfair and incompetent criminal justice system. He may also see himself as the real victim of the 'alleged' crime because of the time he is forced to spend in jail. He does not see his future as being adversely affected by his contacts with the law. He feels that the skilled trades taught in prison are worthless or beneath him; he expresses an intention to pursue a career with status.

Item 3: Need for Stimulation/Proneness to Boredom

Item 3 describes an individual who demonstrates a chronic and excessive need for novel and exciting stimulation and an unusual proneness to boredom. He will usually express a strong interest in taking chances, 'living life in the fast lane' or 'on the edge' being 'where the action is' and in doing things that are exciting, risky or challenging. He may try and use many types of drugs. He frequently complains that school, work and long-term relationships are boring and tedious. He may comment that he has itchy feet, needs to be on the go and can't imagine working at the same job for any length of time. He will often refuse to attempt, or will readily quit, any task that he finds routine, monotonous or uninteresting.

Item 4: Pathological Lying

Item 4 describes an individual for whom lying and deceit are a characteristic part of his interactions with others. He is capable of fabricating elaborate accounts of his past even though he knows that his story can easily be checked. His readiness to lie and the apparent ease with which he carries it off (even with the people who know him well), can be remarkable. When

[1] Descriptions of the PCL-R items were taken from (and adapted from) the PCL-R rating booklet: Hare, R. (2003c). *The Psychopathy Checklist-Revised Second Edition rating booklet*. Toronto: Multi Health Systems.

caught in a lie or when challenged with the truth, he seldom appears perplexed or embarrassed: he simply changes his story or attempts to rework the facts so that they appear to be consistent with what he has said. He has an explanation or excuse for everything. Moreover, even after repeatedly breaking his promises and commitments to someone, he still finds it easy to make new ones on 'his word of honour'. He may freely discuss and take pride and pleasure in his ability to lie.

Item 5: Conning/Manipulative

Item 5 is concerned with the use of deceit and deception to cheat, defraud or manipulate others. The use of schemes and scams, motivated by a desire for personal gain (money, sex, status, power, etc) and carried out with no concern for their effects on victims, warrants a score of 2. Some of these operations are elaborate and well thought out, whereas others are quite simple; in each case, they are carried off in a cool self-assured or brazen manner. Conning and manipulative behaviours include criminal activities, such a collecting social assistance under several different names, passing bad checks, and setting up phoney business. However, they also include non-criminal activities. Sometimes the individual will describe how he 'uses' family members for their money, or how- unknown to his partners- he is involved in two or three intimate relationships at the same time. He may show a predilection for using dishonest and unethical practices that are of dubious legality or that make use of loopholes in the law.

Item 6: Lack of Remorse or Guilt

Item 6 describes an individual who shows a general lack of concern for the negative consequences of his actions, both criminal and non-criminal, have on others. He is more concerned with the effects that his actions have upon himself than he is about any suffering experiences by his victims or damage done to society. He may be completely forthright about the matter, calmly stating that he has no sense of guilt, that he is not sorry for the things he has done and that there is no reason why he should be concerned now that the matter is finished. On the other hand, he may verbalise some remorse, but his actions do not confirm his words. Lack of remorse may be indicated by a failure to appreciate the seriousness of his action (e.g. the feeling that his criminal sentences were too severe or that he was judged unfairly etc); by arguing that his victims, others, society or extenuating circumstances were really to blame; or by repeatedly engaging in activities that a re clearly harmful to others.

Item 7: Shallow Affect

Item 7 describes an individual who appears unable to experience a normal range and depth of emotion. At times, he may impress as cold and unemotional. Displays of emotion generally are dramatic, shallow and short-lived; they leave careful observers with the impression that he is playacting and that little real significance is going on below the surface. He may admit that he is unemotional or that he shams emotions. Sometimes the individual claims to experience strong emotions, yet he seems unable to describe the subtleties of various affective states. He may equate love with sexual arousal, sadness with frustration and anger with irritability. His emotions may not be consistent with his actions or with his situation.

Item 8: Callous/Lack of Empathy

Item 8 describes an individual whose attitudes and behaviour indicate a profound lack of empathy and a callous disregard for the feelings and welfare of others. He is only concerned with 'Number 1' and views others as objects to be manipulated. He is cynical and selfish. Any appreciation of the pain or discomfort of others is merely abstract and intellectual. He has no hesitation in mocking other people, including those who have experienced misfortune or who suffer from a mental and/or physical handicap. His contempt and lack of concern for others may lead him to describe himself as a 'loner by choice'. He views emotionality as a sign of weakness.

Item 9: Parasitic Lifestyle

Item 9 describes an individual for whom financial dependence on others is an intentional part of his lifestyle. Although able-bodied, he avoids steady, gainful employment; instead, he continually relies on family, relatives, friends or social assistance. He obtains what he wants by presenting himself as helpless or as deserving of sympathy and support, by using threats or coercion, or by exploiting his victims' weaknesses. His use of others in this way is not simply the result of temporary circumstances that prevent him from working or from supporting himself. Rather, it reflects a persistent pattern of behaviour in which others re called upon to support him and cater to his needs, no matter what the economic and emotional cost to them.

Item 10: Poor Behavioural Controls

Item 10 describes an individual with inadequate behavioural controls. He may be described as short-tempered or hot-headed. He tends to respond to frustration, failure, discipline, and criticism with violent behaviour or with threats and verbal abuse. He takes offence easily and becomes angry and aggressive over trivialities; these behaviours will often seem inappropriate, given the context in which they occur. They are often short-lived, and the individual may quickly act as if nothing out o the ordinary has happened. His behavioural controls, ordinarily not very strong, appear to be further weakened by alcohol.

Item 11: Promiscuous Sexual Behaviour

Item 11 describes an individual whose sexual relations are impersonal, casual or trivial. This may be reflected in frequent casual liaisons (e.g. 'one-night stands'), indiscriminate selection of sexual partners, maintenance of several sexual relationships at the same time, frequent infidelities, prostitution, or a willingness to participate in a wide variety of sexual activities. In addition, the individual may coerce others into sexual activity and may have charges or convictions for sexual assault.

Item 12: Early Behavioural Problems

Item 12 describes an individual who had serious behavioural problems as a child (i.e. age 12 and below). These problems may include persistent lying, cheating, theft, robbery, fire-setting, truancy, disruption of classroom activities, substance abuse (including alcohol and glue sniffing), vandalism, violence, bullying, running away from home and precocious sexual activities. These behaviours are more serious than those exhibited by most children, and they often result in complaints by other people, suspension or expulsion from school, or contacts with the police.

Item 13: Lack of Realistic, Long-Term Goals

Item 13 describes an individual who demonstrates an inability or unwillingness to formulate and carry out realistic, long-term plans and goals. He tends to live day to day and to change his plans frequently. He does not give serious thought to the future nor does he worry about it very much. He is seldom disturbed by the knowledge that he has done little with his life so far and that he is going nowhere. He may say that he is not interested in having a steady job or that he has not really thought about it much.. He may lead a nomadic existence and describe himself as a drifter. Sometimes, the individual claims to have specific goals. For example, he may state that he is thinking of becoming a lawyer, writer, brain surgeon, social worker, psychologist, airline pilot and so forth, but he is unaware of the qualifications required for these professions. Also, he wants to make it to 'easy street' and is interested in 'get-rich-quick' schemes. However, in such cases, questioning reveals that he has no idea of how to achieve these goals and that the goals appear unrealistic given his education and employment record.

Item 14: Impulsivity

Item 14 describes an individual whose behaviour is generally impulsive, unpremeditated and lacking in reflection or forethought. He usually does things on the 'spur of the moment' because he 'feels like it' or because an opportunity presents itself. He is unlikely to spend much time weighing the pros and cons of a course of action, or in considering the possible consequences of his actions to himself or others. He will often break off relationships, quit jobs, change plans suddenly, or move from place to place, on little more than a whim and without bothering to inform others.

Item 15: Irresponsibility

Item 15 describes an individual who habitually fails to fulfil or honour obligations and commitments to others. He has little or no sense of duty or loyalty to family, friends, employers, society, ideas or causes. His irresponsibility is evident in a variety of areas including financial dealings (a poor credit rating, defaulting on loans, failure to discharge debts, etc.); behaviour that puts others at risk (drunk driving, recurrent speeding, etc.); work behaviour (frequently late or absent, careless or sloppy performance not attributable to lack of ability, etc.); business relationships (violating contractual arrangements, not paying bills, etc.); and relationships with family and friends (failure to provide financial support for spouse or children, causing them unnecessary hardship, etc.).

Item 16: Failure to Accept Responsibility for Own Actions

Item 16 describes an individual who is unable or unwilling to accept personal responsibility for his own actions (both criminal and non-criminal) or for the consequences of his actions. He usually has some excuse for his behaviour, including rationalisation and placing the blame on others (society, his family, accomplices, victims, the system, etc.). In extreme cases, he may deny accusations made against him, despite overwhelming evidence. For example, he may claim that he is being 'framed' by others or that he has memory loss for the events in question. More frequently though, he will accept responsibility for his actions in a superficial manner, and then will greatly minimize or even deny the consequences of his actions. Examples here include admitting to assaults, but claiming the victims lied about physical injuries or admitting to thefts, but claiming that because the victims were insured, nobody really suffered.

Item 17: Many Short-Term Marital Relationships

Item 17 describes an individual who has many marital relationships. We define a marital relationship as a live-in relationship that involves some degree of commitment from one or both partners. Such relationships include formal and common-law marriages and both heterosexual and homosexual partnerships. It may be better to omit this item if he is very young or has spent much of his adult life in prison or out of effective contact with a pool of potential partners (unless he still manages to have many relationships, in which case a score of 2 can safely be given).

Item 18: Juvenile Delinquency

Item 18 describes an individual who has a history of serious antisocial behaviour as an adolescent, aged 17 and below. This includes both charges and convictions for criminal and statutory offences.

Item 19: Revocation of Conditional Release

Item 19 describes an individual who, as an adult (aged 18 or older), has violated a conditional release or escaped from an institution. Violations of conditional release include technical but non-criminal breaches (i.e. drinking alcohol while on parole), or new charges or convictions while on parole, mandatory supervision, probation, bail or restraining orders. Escapes from institutions include jail-breaking and violation of temporary absences. In serious cases, these violations result in automatic re-incarceration; in less serious cases, the individual may face a disciplinary hearing or new charges, but may be released back into the community. This item is omitted for individuals who have had no formal contact with the criminal justice system as an adult prior to the current offence.

Item 20: Criminal Versatility

Item 20 describes an individual whose adult criminal record involves charges or convictions for many different types of offences.

CODING GUIDE FOR VIOLENT INCIDENTS: INSTRUMENTAL VERSUS HOSTILE/REACTIVE AGGRESSION

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This is the coding guide we used to code violent crimes as instrumental or hostile/reactive forms of aggression. The coding guide is being made available to researchers. This is not an established clinical instrument and is intended only for research purposes. For additional information, see the published study:

Cornell, D. G., Warren, J., Hawk, G., Stafford, E., Oram, G., & Pine, D. (1996). Psychopathy of instrumental and reactive violent offenders. Journal of Consulting and Clinical Psychology, 64,783-790.

October 4, 1996. These coding guidelines were developed for research purposes with grant support of the Harry Frank Guggenheim Foundation. Project researchers include Drs. Dewey Cornell, Gary Hawk, and Janet Warren. We thank Ed Stafford, Guy Oram, and Denise Pine for their contributions to this project. These guidelines are subject to revision. Email dcornell@virginia.edu.

CODING GUIDE FOR VIOLENT INCIDENTS

The primary distinction is between instrumental and reactive/hostile aggression. Originally we attempted to make this distinction through a global rating based on the rater's overall evaluation of the incident. However, some violent incidents had both instrumental and reactive/hostile qualities. For example, a person planned and carried out a robbery, but in the course of the robbery became angry when a storekeeper resisted him, and shot him in anger. Therefore, we decided to give priority to the presence of instrumental qualities, based on the theory that reactive hostility is the more common, pervasive form of aggression in criminal behavior and that instrumental aggression in criminal behavior represents a more pathological development and elaboration of the capacity for reactive aggression.

In addition to coding for the presence of instrumental and reactive aggression, the coders will make secondary ratings of these specific aspects of the aggressive act:

1) Planning - degree of premeditation or preparation for aggression
2) Goal-directedness - degree to which aggression is motivated by some external gain or incentive such as money
3) Provocation - degree of provocation, frustration or threat from victim
4) Arousal - degree of anger experienced by aggressor
5) Severity of violence - degree of injury to victim
6) Relationship to victim - closeness of relationship between victim and aggressor
7) Intoxication - intoxication on drugs or alcohol during incident
8) Psychosis - presence of psychotic symptoms during incident

These secondary ratings reflect aspects of the aggressive act which are not necessarily independent of one another. For example, planning and goal-directedness may be correlated. However, each of the components can be distinguished conceptually from the others and we are able to identify specific cases which support these distinctions.

In our discussion of various aggressive acts, the secondary ratings (especially the first four) seem to tap characteristics which contribute to the primary distinction between reactive and instrumental aggression, but these ratings are not equivalent to it. We used the secondary ratings to examine several questions:

1) Is there a stable combination or set of decision rules for the secondary ratings which is equivalent to the primary distinction?

2) Do the secondary ratings permit a sub-classification or refinement of the primary distinction which improves upon it?

Subjects may be dishonest, inaccurate, or incomplete in their account of the offense. Consider all available sources. Code what you believe to be true, what actually happened. If the subject claims self-defense, but all other available information indicates otherwise, and the subject is of doubtful credibility, code what you believe to be true.

Instrumental Aggression

The two cardinal characteristics of instrumental aggression are goal-directedness and planning. The instrumental aggressor acts to obtain a readily apparent goal such as power, money, sexual gratification, or some other objective beyond inflicting injury on the victim. Examples of instrumental aggression include shooting a police officer in the course of a bank robbery, stabbing a homeowner during a burglary, and strangling a rape victim. Rape is almost always instrumental. Sadistic aggression is a special form of instrumental aggression in which the objective is some form of pleasure (e.g., power or sexual gratification) that stems from the infliction of pain or attainment of dominance over the other person. Instrumental aggression is initiated as a means to an end rather than as an act of retaliation or self-defense.

Instrumental aggression often involves planning or preparation. However, in some cases instrumental aggression involves relatively little planning, such as in the case of a criminal who engages in an opportunistic offense (e.g., unexpected opportunity to rob someone that involves assaulting the victim). In some cases, a subject may plan a robbery or burglary, and when something goes wrong, engages in an act of aggression, such as shooting someone in order to get away. In these cases the coder should consider that the subject's plans included the possibility of violence, even if there was no specific plan to shoot someone.

Instrumental aggression usually involves little or no provocation by the victim. In some cases subjects may be "provoked" into violence in the course of another crime, e.g., a robbery victim who insults the subject or resists the robbery in some way. These acts are still considered instrumental acts of aggression.

Instrumental aggressors are motivated by goals, not emotions. It follows that their level of emotional arousal, especially anger, is relatively low or is secondary to the act. Some instrumental aggressors try to calm themselves prior to an offense through drug use or drinking. In extreme cases, instrumental aggressors are not angry toward their victims and may have a cold, "business-like" attitude about their behavior. Nevertheless, many less hardened instrumental aggressors are nervous and highly aroused while committing a crime, even though it is not their arousal which motivates their actions.

The term "instrumental" should not be defined so broadly that it encompasses all aggressive behavior simply because there is a definable goal or desired outcome to the aggression, such as warding off an attacker or taking revenge on someone.

Aggressive behavior whose purpose is to defend against a threat or in some way respond to provocation is defined as reactive/hostile aggression. If the subject is engaged in some form of criminal activity, such as a drug deal, associated violence is almost always instrumental.

Reactive/Hostile Aggression

The two cardinal characteristics of reactive/hostile aggression are reaction to provocation and arousal of hostility. Aggressive behavior represents reactive hostility to the extent that the aggressor reacts to perceived provocation or threat by the victim. The provocation may include insults, threats of aggression, or other acts that frustrate and anger the aggressor. The objective of the aggressive act is to harm or injure the victim, in response to feelings of hostility that may include a mixture of anger, resentment, fear, or other distress aroused by the victim's actions. Typically, there should be some form of interpersonal conflict (argument, dispute, prior aggression) between aggressor and victim. In many cases the aggressor and victim have a prior relationship as relatives or acquaintances, but in other cases there is no prior relationship and the parties are strangers to one another.

Bear in mind that reactive/hostile aggression can involve extended time-frames. For example, an abused family member may plan an ambush to rid the family of the abuser. The most recent episode of abuse could be long before the aggressive reaction. The critical issue is that the reactive/hostile subject is reacting to an interpersonal conflict that arouses hostility.

3 - Clearly instrumental aggression
2 - Both reactive and instrumental qualities are prominent
(subsequently these cases combined with instrumental group)
1 - Clearly reactive hostile aggression

Do not consider "displaced anger" or any form of displacement from one situation to the next. Many instrumental offenders may be angry at someone else, upset over a failed relationship, lost job, etc. This provides a context for understanding the person, but it should not enter into the determination that a person engaged in instrumental versus reactive/hostile violence. A person who sets out to rob a bank is committing an instrumental act, regardless of any prior life stress. A person who is embroiled in an intense interpersonal conflict with the victim will commit a reactive/hostile offense.

SECONDARY SCALES FOR VIOLENT INCIDENTS

Planning

How much did the subject plan or prepare for the aggressive action? Consider both the length of time involved in preparation and the amount of preparatory activity.

4 - extensive planning (detailed plan or preparation, rehearsal)
3 - moderate planning (contemplation of action for more than 24 hours)
2 - some planning (action within 24 hours, some plan or preparation)
1 - very little or no planning (acts during argument or fight, no preparation)

Assign a (1) to actions which are part of contiguous event, such as pausing during an argument to grab and load a gun. Assign a (2) if there is a break in the argument where the subject leaves the scene of an argument and returns with a gun later in the day,

Goal-Directedness

How much is the subject motivated by an external incentive, goal, or objective beyond just responding to provocation or threat? Readily apparent goals include money, power, sexual gratification, or some other external goal of benefit to the aggressor. Do not include such goals as self-defense, escaping harm, taking revenge for previous aggression, or acting out of frustration.

4 - Clear, unequivocal goal-directedness (include shooting during crimes)
3 - Primary goal-directedness, with presence of other motives
2 - Secondary goal-directedness, in presence of other primary motives
1 - No apparent goal-directedness (motive to injury victim, retaliate, defend)

Provocation

Did the victim's actions provoke the subject's aggression? Include provocation that occurred prior to the incident (e.g.., prior abusive treatment).

6 - Exceptionally strong provocation (repeated assault, severe abuse)
5 - Very Strong provocation (assault)
4 - Strong (break-up of a romantic relationship, threat of major life change)
3 - Moderate provocation (serious argument or dispute, threat of assault)
2 - Mild provocation (insult, minor argument, confrontation with police)
1 - No apparent provocation

Consider the subject's personal point of view, even if the subject has a delusional perception of threat.

Arousal

How much emotional arousal, especially anger, did the subject experience at the time of the aggressive act? Just code the subject's mental state, not attitude toward the victim.

4 - Enraged, furious, described as "out of control" or "irrational"
3 - Angry, mad, extremely frightened (can be protracted state)
2 - Excited, very nervous, anxious
1 - Calm or tense at most

Arousal at the (4) level is extraordinary, and should be of short duration.

Severity of violence

7 - Extreme homicide (multiple killing, mutilation)
6 - Homicide
5 - Severe injury (lasting impairment or life-threatening injury, some rapes)
4 - Serious injury, requiring substantial hospital treatment (broken limb, rape, gunshot)
3 - Minor injury (e.g., bruises, minor medical treatment, attempted rape)
2 - Assault without injury
1 - No assault (e.g., threatened with weapon)

Relationship with victim

Code the degree of contact or closeness between aggressor and victim. The scores listed here are typical scores. Some relationships may require higher or lower scores than indicated. Generally give maximum scores to immediate family members, unless there has been prolonged separation or lack of contact that substantially alters the relationship (e.g., father who never lived in the home, mother who turned over care of child to grandmother). A step-parent may receive the same score as a parent if there appears to have been similar bonding and contact since early childhood. Code based on duration and closeness of relationship.

5 - Very close relationship (immediate family member, romantic partner)
4 - Close relationship (friend, relative, dating partner, etc.)
3 - Specific relationship (teacher, babysitter, etc.)
2 - Acquaintance
1 - Stranger

Intoxication

Code whether the subject was intoxicated at the time of the aggressive incident. Consider alcohol and other drugs. Primary concern is degree to which the person is impaired or has clouded consciousness. Consider how much intoxication played a role in the subject's actions.

4 - Severe intoxication (large quantities of alcohol or drugs, very impaired)
3 - Intoxicated
2 - Mild intoxication (e.g., 1 or 2 drinks)
1 - Not intoxicated

Generally code (4) for subjects who are "falling down drunk" or extremely impaired by multiple substances, etc.

Psychosis (reality testing, not mood)

4 - Substantial psychotic symptoms (e.g., bizarre or pervasive delusions)
3 - Moderate psychotic symptoms (intermittent voices or delusions)
2 - Non-psychotic disturbance (e.g., depersonalized)
1 - Not psychotic

Generally code (4) for subjects who are very impaired by psychosis and have active symptoms. What you might call "falling down psychotic." Code (3) for individuals with mild, residual symptoms or more circumscribed symptoms that do not seriously impair everyday functioning. A man with a paranoid delusion about the victim who is nevertheless able to hold a job and function in many social situations is a (3). An actively psychotic man living on the street is probably a (4).

Subject _____ Coder _____

VIOLENT INCIDENT CODING SHEET

Incident date:

Instrumental v Reactive/Hostile (code actual event, not just subject's claim)
- 4 - Clearly instrumental aggression (e.g., crime-related incident, drug deal)
- 3 - Primarily instrumental, some reactive qualities
- 2 - Primarily reactive hostile aggression, some instrumental qualities
- 1 - Clearly reactive hostile aggression (e.g., interpersonal conflict)

Planning (include plans for robbery, burglary, etc.)
- 4 - extensive planning (detailed plan or preparation, rehearsal)
- 3 - moderate planning (contemplation of action for more than 24 hours)
- 2 - some planning (action within 24 hours, some plan or preparation)
- 1 - very little or no planning (acts during argument or fight, no preparation)

Goal-Directedness (consider goals like financial gain, not just revenge)
- 4 - Clear, unequivocal goal-directedness (include shooting during crimes)
- 3 - Primary goal-directedness, with presence of other motives
- 2 - Secondary goal-directedness, in presence of other primary motives
- 1 - No apparent goal-directedness (motive to injure victim, retaliate, defend)

Provocation (includes provocation prior to incident, use subject's perception)
- 6 - Exceptionally strong provocation (repeated assault, severe abuse)
- 5 - Very Strong provocation (assault)
- 4 - Strong (break-up of a romantic relationship, threat of major life change)
- 3 - Moderate provocation (serious argument or dispute, threat of assault)
- 2 - Mild provocation (insult, minor argument, confrontation with police)
- 1 - No apparent provocation

Arousal (mental state, primarily code anger, but also consider other affects like fear)
- 4 - Enraged, furious, described as "out of control" or "irrational" or panicked (brief state)
- 3 - Angry, mad, extremely frightened (can be protracted state)
- 2 - Excited, very nervous, anxious, scared
- 1 - Calm or tense at most

Severity of violence (consider actual harm to victim, not subject's intention)
- 7 - Extreme homicide (multiple victims or multiple fatalities, mutilation)
- 6 - Homicide
- 5 - Severe injury (e.g., lasting impairment or life-threatening injury, some rapes)
- 4 - Serious injury, requiring substantial hospital treatment (e.g., broken limb, rape, gunshot)
- 3 - Minor injury (e.g., bruises, minor medical treatment, attempted rape)
- 2 - Assault without injury
- 1 - No assault (e.g., threatened with weapon)

Relationship with victim (if 2 or more victims, code highest)
- 5 - Very close relationship (immediate family member, romantic partner)
- 4 - Close relationship (friend, relative, dating partner, etc.)
- 3 - Specific relationship (teacher. babysitter, etc.) or between friend and acquaintance
- 2 - Acquaintance
- 1 - Stranger

Intoxication
- 4 - Severe intoxication (large quantities of alcohol or drugs, very impaired)
- 3 - Intoxicated
- 2 - Mild intoxication (e.g., 1 or 2 drinks)
- 1 - Not intoxicated

Psychosis (reality testing, not mood)
- 4 - Substantial psychotic symptoms (e.g., bizarre or pervasive delusions
- 3 - Moderate psychotic symptoms (intermittent voices or delusions)
- 2 - Non-psychotic disturbance (e.g., depersonalized)
- 1 - Not psychotic

CODER RELIABILITY STUDIES

We completed two reliability studies on the classification of instrumental and reactive offenders and the accompanying eight offense scales. In the first study, these scales were applied to a sample of 20 criminal defendants evaluated at the UVA Forensic Clinic. For five judges, the intraclass correlation coefficient for the scale distinguishing instrumental from reactive violence was .98. For 18 subjects all five judges agreed on violence type, and for the remaining two subjects four of five judges were in agreement. The other eight scales are listed below:

1) Planning (degree of planning and preparation prior to violence) .97;
2) Goal-directedness (presence of goals such as obtaining money) .94;
3) Provocation (subject's perception that victim provoked violence) .81;
4) Arousal (subject's degree of anger and excitement during violence) .83;
5) Severity of violence (degree of injury to victim) .97;
6) Relationship with victim (subject-victim relationship) .92;
7) Intoxication (alcohol or drug intoxication during violence) .96;
8) Psychosis (presence of psychotic symptoms during violence) .96.

In the second reliability study, we applied the slightly modified scales to records of 33 violent offenders incarcerated at the Staunton Correctional Center, a medium security state prison in Virginia. For 2 judges, the intraclass correlation for instrumental/reactive distinction was .93. The intraclass correlations for the other scales were all above .75, except for two scales: 1) the correlation for the provocation scale was .50, apparently because the records did not provide consistent information on the victim's behavior prior to the violent incident; and 2) the psychosis scale could not be used because none of the inmates were described as psychotic at the time of the offense.

Offense characteristics of instrumental and reactive violence. We examined the association between the instrumental/reactive classification and each of the eight offense variables for 50 Forensic Clinic defendants. These analyses were conducted for descriptive purposes to refine and clarify our conceptualization of instrumental and reactive aggression. Briefly, these analyses indicated that no single offense characteristic is synonymous with the instrumental/reactive distinction. The characteristics most strongly associated with instrumental violence are presence of a clearly definable goal, little or no provocation by the victim, and comparatively low levels of emotional arousal at the time of the offense. In contrast, reactive violence is associated most strongly with a lack of goal-directedness, little or no prior planning, provocation by the victim, and comparatively greater emotional arousal at the offense. Reactive violence more often involves family member victims, while instrumental violence is more often associated with acquaintances or strangers.

Categorical versus dimensional classification. We have found that *specific violent incidents* can be readily and reliably classified categorically as reactive or instrumental. Relatively few offenses pose classification difficulties, and in those cases we give greater weight to the presence of instrumental characteristics such as goal-directedness. However, the lifetime classification of violent offenders who have committed multiple offenses raises additional problems. Some offenders have extensive histories of reactive (or instrumental) violence while others have little or no history of violence prior to their recent offense. These cases suggest it may be viable to place subjects along a continuum for severity of reactive (or instrumental) violence.

Moreover, some offenders have a history of both reactive and instrumental violent offenses. (We have conducted detailed case studies of subjects with "mixed histories" of both instrumental and reactive violence, and it is clear that such individuals tend to be more similar to purely instrumental offenders, particularly in the presence of psychopathic characteristics.) A study by Vitiello, *et al. (1990)* found that violent juveniles fell into two groups, one an affective or reactive group, but the other a mixed group with both affective and predatory or instrumental aggression. Since persons can engage in both reactive and instrumental aggression, there is no reason why some offenders would not engage in both reactive and instrumental violence.

An alternative to the lifetime classification of offenders into instrumental, reactive, and mixed groups is to treat instrumental and reactive violence as separate dimensions. We are giving further consideration to this possibility. Our work linking instrumental violence to individual psychopathy is referenced below.

Cornell, D. G., Warren, J., Hawk, G., Stafford, E., Oram, G., & Pine, D. (1996). Psychopathy of instrumental and reactive violent offenders. *Journal of Consulting and Clinical Psychology, 64, 783-790.*

Offense Characteristics of Reactive and Instrumental Violent Offenders

	Reactive N=32	Instrumental N=18
Planning		
None	23	6
Some	6	11
Extensive	2	1
Goal Directedness		
Clearly goal-directed	0	12
Mixed motives	2	6
No apparent goal-directedness	30	0
Provocation by Victim		
Strong	6	0
Moderate	16	1
Weak or none	10	17
Arousal at Offense		
Enraged	5	0
Angry	21	1
Excited/tense	3	9
Calm	1	4
Harm to Victim		
Homicide	24	8
Serious injury	6	4
Not serious	2	6
Relationship to Victim		
Very close (family)	19	2
Close (friend)	7	2
Acquaintance	5	6
Stranger	1	8
Intoxicated at Offense		
Intoxicated	12	9
Some use	2	0
No use	18	9
Psychotic at Offense		
Clearly psychotic	5	0
Some disturbance	2	3
Not psychotic	25	15

Note: Classification based on most recent offense.
Incomplete information on some variables.

Appendix D

Supplemental Analyses

Statistical Significance of Differences in Correlations between Samples

In chapter four, the statistical significance of the difference between correlation coefficients among variables were reported (see Tables 4.14, 4.15 and 4.16). r values were converted into *Z* scores[1] and the following equation was used to calculate the observed value of *Z* (*Zobs* value):

$$Z_{obs} = \frac{Z_1 - Z_2}{\sqrt{\frac{1}{N_1 - 3} + \frac{1}{N_2 - 3}}}$$

where Z_1 refers to the z value for sample 1 and Z_2 refers to the z value for sample 2. N_1 refers to the sample size of sample 1 and N_2 refers to the samples size of sample 2.[2] Z_{obs} values are significant if $Z_{obs} \leq -1.96$ or ≥ 1.96 (Pallant, 2005). In the following calculations r_1 and r_2 refer to the correlation coefficients for the British sample and South African sample, respectively.

Difference in correlations between trauma and dissociation

THQ total and DES total

$r_1 = .41^{**}$ $Z_1 = .436$ $r_2 = .41^{**}$ $Z_2 = .436$

$$Z_{obs} = \frac{Z1 - Z2}{\sqrt{\frac{1}{N1 - 3} + \frac{1}{N2 - 3}}}$$

$$Z_{obs} = \frac{.436 - .436}{\sqrt{\frac{1}{60 - 3} + \frac{1}{60 - 3}}}$$

$$Z_{obs} = \frac{0}{\sqrt{\frac{1}{57} + \frac{1}{57}}}$$

$$Z_{obs} = \frac{0}{\sqrt{.0175 + .0175}}$$

$$Z_{obs} = \frac{0}{\sqrt{.035}}$$

$$Z_{obs} = \frac{0}{.1871}$$

$Z_{obs} = .00$

THQ total and amnesia

$r_1 = .29$ $Z_1 = .299$ $r_2 = .27$ $Z_2 = .277$

$$Z_{obs} = \frac{Z1 - Z2}{\sqrt{\frac{1}{N1 - 3} + \frac{1}{N2 - 3}}}$$

$$Z_{obs} = \frac{.299 - .277}{\sqrt{\frac{1}{60 - 3} + \frac{1}{60 - 3}}}$$

$$Z_{obs} = \frac{.022}{\sqrt{\frac{1}{57} + \frac{1}{57}}}$$

$$Z_{obs} = \frac{.022}{\sqrt{.0175 + .0175}}$$

$$Z_{obs} = \frac{.022}{\sqrt{.035}}$$

$$Z_{obs} = \frac{.022}{.1871}$$

$Z_{obs} = .12$

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[1] r values are converted into z scores for mathematical reasons, mainly to ensure that the sampling distributions are approximately normal (Pallant, 2005). *r* values were converted into z scores using a table of r and corresponding z values in McCall (1990), originally from Edwards, A. (1967). *Statistical methods (2nd edition).* Holt, Rinehart and Winston (as cited in Pallant, 2005).

[2] Sample 1 refers to the British sample and sample 2 refers to the South African sample.

THQ total and absorption

$r_1 = .46^{**}$ $Z_1 = .497$ $r_2 = .29$ $Z_2 = .299$

$$Zobs = \frac{Z1 - Z2}{\sqrt{\frac{1}{N1 - 3} + \frac{1}{N2 - 3}}}$$

$$Zobs = \frac{.497 - .299}{\sqrt{\frac{1}{60 - 3} + \frac{1}{60 - 3}}}$$

$$Zobs = \frac{.198}{\sqrt{\frac{1}{57} + \frac{1}{57}}}$$

$$Zobs = \frac{.198}{\sqrt{.0175 + .0175}}$$

$$Zobs = \frac{.198}{\sqrt{.035}}$$

$$Zobs = \frac{.198}{.1871}$$

$Zobs = 1.06$

THQ total and depersonalisation

$r_1 = -.06$ $Z_1 = -.060$ $r_2 = .19$ $Z_2 = .192$

$$Zobs = \frac{Z1 - Z2}{\sqrt{\frac{1}{N1 - 3} + \frac{1}{N2 - 3}}}$$

$$Zobs = \frac{-.060 - .192}{\sqrt{\frac{1}{60 - 3} + \frac{1}{60 - 3}}}$$

$$Zobs = \frac{-.252}{\sqrt{\frac{1}{57} + \frac{1}{57}}}$$

$$Zobs = \frac{-.252}{\sqrt{.0175 + .0175}}$$

$$Zobs = \frac{-.252}{\sqrt{.035}}$$

$$Zobs = \frac{-.252}{.1871}$$

$Zobs = -1.35$

Crime-related events and DES total

$r_1 = .18$ $Z_1 = -.182$ $r_2 = .31^{*}$ $Z_2 = .321$

$$Zobs = \frac{Z1 - Z2}{\sqrt{\frac{1}{N1 - 3} + \frac{1}{N2 - 3}}}$$

$$Zobs = \frac{.182 - .321}{\sqrt{\frac{1}{60 - 3} + \frac{1}{60 - 3}}}$$

$$Zobs = \frac{-.139}{\sqrt{\frac{1}{57} + \frac{1}{57}}}$$

$$Zobs = \frac{-.139}{\sqrt{.0175 + .0175}}$$

$$Zobs = \frac{-.139}{\sqrt{.035}}$$

$$Zobs = \frac{-.139}{.1871}$$

$Zobs = -.7$

Crime-related events and amnesia

$r_1 = .13$ $Z_1 = .131$ $r_2 = .10$ $Z_2 = .100$

$$Zobs = \frac{Z1 - Z2}{\sqrt{\frac{1}{N1 - 3} + \frac{1}{N2 - 3}}}$$

$$Zobs = \frac{.131 - .100}{\sqrt{\frac{1}{60 - 3} + \frac{1}{60 - 3}}}$$

$$Zobs = \frac{.031}{\sqrt{\frac{1}{57} + \frac{1}{57}}}$$

$$Zobs = \frac{.031}{\sqrt{.0175 + .0175}}$$

$$Zobs = \frac{.031}{\sqrt{.035}}$$

$$Zobs = \frac{.031}{.1871}$$

$Zobs = .17$

Crime-related events and absorption

$r_1 = .22 \quad Z_1 = .224 \quad r_2 = .34^{**} \quad Z_2 = .354$

$$Zobs = \frac{Z1 - Z2}{\sqrt{\frac{1}{N1 - 3} + \frac{1}{N2 - 3}}}$$

$$Zobs = \frac{.224 - .354}{\sqrt{\frac{1}{60 - 3} + \frac{1}{60 - 3}}}$$

$$Zobs = \frac{-.13}{\sqrt{\frac{1}{57} + \frac{1}{57}}}$$

$$Zobs = \frac{-.13}{\sqrt{.0175 + .0175}}$$

$$Zobs = \frac{-.13}{\sqrt{.035}}$$

$$Zobs = \frac{-.13}{.1871}$$

$Zobs = -.69$

Crime-related events and depersonalisation

$r_1 = .02 \quad Z_1 = .020 \quad r_2 = .17 \quad Z_2 = .172$

$$Zobs = \frac{Z1 - Z2}{\sqrt{\frac{1}{N1 - 3} + \frac{1}{N2 - 3}}}$$

$$Zobs = \frac{.020 - .172}{\sqrt{\frac{1}{60 - 3} + \frac{1}{60 - 3}}}$$

$$Zobs = \frac{-.152}{\sqrt{\frac{1}{57} + \frac{1}{57}}}$$

$$Zobs = \frac{-.152}{\sqrt{.0175 + .0175}}$$

$$Zobs = \frac{-.152}{\sqrt{.035}}$$

$$Zobs = \frac{-.152}{.1871}$$

$Zobs = -.81$

General trauma and DES total

$r_1 = .34^{**} \quad Z_1 = .354 \quad r_2 = .26^{*} \quad Z_2 = .266$

$$Zobs = \frac{Z1 - Z2}{\sqrt{\frac{1}{N1 - 3} + \frac{1}{N2 - 3}}}$$

$$Zobs = \frac{.354 - .266}{\sqrt{\frac{1}{60 - 3} + \frac{1}{60 - 3}}}$$

$$Zobs = \frac{.088}{\sqrt{\frac{1}{57} + \frac{1}{57}}}$$

$$Zobs = \frac{.088}{\sqrt{.0175 + .0175}}$$

$$Zobs = \frac{.088}{\sqrt{.035}}$$

$$Zobs = \frac{.088}{.1871}$$

$Zobs = .47$

General trauma and amnesia

$r_1 = .29^{*} \quad Z_1 = .299 \quad r_2 = .17 \quad Z_2 = .172$

$$Zobs = \frac{Z1 - Z2}{\sqrt{\frac{1}{N1 - 3} + \frac{1}{N2 - 3}}}$$

$$Zobs = \frac{.299 - .172}{\sqrt{\frac{1}{60 - 3} + \frac{1}{60 - 3}}}$$

$$Zobs = \frac{.127}{\sqrt{\frac{1}{57} + \frac{1}{57}}}$$

$$Zobs = \frac{.127}{\sqrt{.0175 + .0175}}$$

$$Zobs = \frac{.127}{\sqrt{.035}}$$

$$Zobs = \frac{.127}{.1871}$$

$Zobs = .68$

General trauma and absorption

$r_1 = .27^*$ $Z_1 = .277$ $r_2 = .13$ $Z_2 = .131$

$$Zobs = \frac{Z1 - Z2}{\sqrt{\frac{1}{N1 - 3} + \frac{1}{N2 - 3}}}$$

$$Zobs = \frac{.277 - .131}{\sqrt{\frac{1}{60 - 3} + \frac{1}{60 - 3}}}$$

$$Zobs = \frac{.146}{\sqrt{\frac{1}{57} + \frac{1}{57}}}$$

$$Zobs = \frac{.146}{\sqrt{.0175 + .0175}}$$

$$Zobs = \frac{.146}{\sqrt{.035}}$$

$$Zobs = \frac{.146}{.1871}$$

$Zobs = .78$

General trauma and depersonalisation

$r_1 = -.01$ $Z_1 = -.010$ $r_2 = .19$ $Z_2 = .192$

$$Zobs = \frac{Z1 - Z2}{\sqrt{\frac{1}{N1 - 3} + \frac{1}{N2 - 3}}}$$

$$Zobs = \frac{-.010 - .192}{\sqrt{\frac{1}{60 - 3} + \frac{1}{60 - 3}}}$$

$$Zobs = \frac{-.202}{\sqrt{\frac{1}{57} + \frac{1}{57}}}$$

$$Zobs = \frac{-.202}{\sqrt{.0175 + .0175}}$$

$$Zobs = \frac{-.202}{\sqrt{.035}}$$

$$Zobs = \frac{-.202}{.1871}$$

$Zobs = -1.08$

Physical/sexual experiences and DES total

$r_1 = .34^{**}$ $Z_1 = .354$ $r_2 = .47^{**}$ $Z_2 = .510$

$$Zobs = \frac{Z1 - Z2}{\sqrt{\frac{1}{N1 - 3} + \frac{1}{N2 - 3}}}$$

$$Zobs = \frac{.354 - .510}{\sqrt{\frac{1}{60 - 3} + \frac{1}{60 - 3}}}$$

$$Zobs = \frac{-.156}{\sqrt{\frac{1}{57} + \frac{1}{57}}}$$

$$Zobs = \frac{-.156}{\sqrt{.0175 + .0175}}$$

$$Zobs = \frac{-.156}{\sqrt{.035}}$$

$$Zobs = \frac{-.156}{.1871}$$

$Zobs = -.83$

Physical/sexual experiences and amnesia

$r_1 = .20$ $Z_1 = .203$ $r_2 = .46^{**}$ $Z_2 = .497$

$$Zobs = \frac{Z1 - Z2}{\sqrt{\frac{1}{N1 - 3} + \frac{1}{N2 - 3}}}$$

$$Zobs = \frac{.203 - .497}{\sqrt{\frac{1}{60 - 3} + \frac{1}{60 - 3}}}$$

$$Zobs = \frac{-.294}{\sqrt{\frac{1}{57} + \frac{1}{57}}}$$

$$Zobs = \frac{-.294}{\sqrt{.0175 + .0175}}$$

$$Zobs = \frac{-.294}{\sqrt{.035}}$$

$$Zobs = \frac{-.294}{.1871}$$

$Zobs = -1.57$

Physical/sexual experiences and absorption

$r_1 = .45^{**}$ $Z_1 = .485$ $r_2 = .32^{*}$ $Z_2 = .332$

$$Zobs = \frac{Z1 - Z2}{\sqrt{\frac{1}{N1 - 3} + \frac{1}{N2 - 3}}}$$

$$Zobs = \frac{.485 - .332}{\sqrt{\frac{1}{60 - 3} + \frac{1}{60 - 3}}}$$

$$Zobs = \frac{.153}{\sqrt{\frac{1}{57} + \frac{1}{57}}}$$

$$Zobs = \frac{.153}{\sqrt{.0175 + .0175}}$$

$$Zobs = \frac{.153}{\sqrt{.035}}$$

$$Zobs = \frac{.153}{.1871}$$

$Zobs = .82$

Physical/sexual experiences/depersonalisation

$r_1 = -.14$ $Z_1 = -.141$ $r_2 = .23$ $Z_2 = .234$

$$Zobs = \frac{Z1 - Z2}{\sqrt{\frac{1}{N1 - 3} + \frac{1}{N2 - 3}}}$$

$$Zobs = \frac{-.141 - .234}{\sqrt{\frac{1}{60 - 3} + \frac{1}{60 - 3}}}$$

$$Zobs = \frac{-.375}{\sqrt{\frac{1}{57} + \frac{1}{57}}}$$

$$Zobs = \frac{-.375}{\sqrt{.0175 + .0175}}$$

$$Zobs = \frac{-.375}{\sqrt{.035}}$$

$$Zobs = \frac{-.375}{.1871}$$

$Zobs = -2.00$

Differences in correlations between trauma and psychopathy

THQ total and PCL-R Total

$r_1 = .21$ $Z_1 = .213$ $r_2 = .32$ $Z_2 = .332$

$$Zobs = \frac{Z1 - Z2}{\sqrt{\frac{1}{N1 - 3} + \frac{1}{N2 - 3}}}$$

$$Zobs = \frac{.213 - .332}{\sqrt{\frac{1}{60 - 3} + \frac{1}{60 - 3}}}$$

$$Zobs = \frac{-.119}{\sqrt{\frac{1}{57} + \frac{1}{57}}}$$

$$Zobs = \frac{-.119}{\sqrt{.0175 + .0175}}$$

$$Zobs = \frac{-.119}{\sqrt{.035}}$$

$$Zobs = \frac{-.119}{.1871}$$

$Zobs = -.64$

THQ total and PCL-R Factor 1 (Interpersonal)

$r_1 = -.08$ $Z_1 = -.010$ $r_2 = .23$ $Z_2 = .234$

$$Zobs = \frac{Z1 - Z2}{\sqrt{\frac{1}{N1 - 3} + \frac{1}{N2 - 3}}}$$

$$Zobs = \frac{-.010 - .234}{\sqrt{\frac{1}{60 - 3} + \frac{1}{60 - 3}}}$$

$$Zobs = \frac{-.244}{\sqrt{\frac{1}{57} + \frac{1}{57}}}$$

$$Zobs = \frac{-.244}{\sqrt{.0175 + .0175}}$$

$$Zobs = \frac{-.244}{\sqrt{.035}}$$

$$Zobs = \frac{-.244}{.1871}$$

$Zobs = -1.30$

THQ total and PCL-R Factor 2 (Affective)

$r_1 = .03 \quad Z_1 = .030 \quad r_2 = .29^* \quad Z_2 = .299$

$$Zobs = \frac{Z1 - Z2}{\sqrt{\frac{1}{N1 - 3} + \frac{1}{N2 - 3}}}$$

$$Zobs = \frac{.030 - .299}{\sqrt{\frac{1}{60 - 3} + \frac{1}{60 - 3}}}$$

$$Zobs = \frac{-.269}{\sqrt{\frac{1}{57} + \frac{1}{57}}}$$

$$Zobs = \frac{-.269}{\sqrt{.0175 + .0175}}$$

$$Zobs = \frac{-.269}{\sqrt{.035}}$$

$$Zobs = \frac{-.269}{.1871}$$

$Zobs = -1.44$

THQ total and PCL-R Factor 3 (Behavioural)

$r_1 = .25 \quad Z_1 = .255 \quad r_2 = .25^{**} \quad Z_2 = .255$

$$Zobs = \frac{Z1 - Z2}{\sqrt{\frac{1}{N1 - 3} + \frac{1}{N2 - 3}}}$$

$$Zobs = \frac{.255 - .255}{\sqrt{\frac{1}{60 - 3} + \frac{1}{60 - 3}}}$$

$$Zobs = \frac{0}{\sqrt{\frac{1}{57} + \frac{1}{57}}}$$

$$Zobs = \frac{0}{\sqrt{.0175 + .0175}}$$

$$Zobs = \frac{0}{\sqrt{.035}}$$

$$Zobs = \frac{0}{.1871}$$

$Zobs = 0.0$

Crime-related events and PCL-R Total

$r_1 = .09 \quad Z_1 = .090 \quad r_2 = .27^* \quad Z_2 = .277$

$$Zobs = \frac{Z1 - Z2}{\sqrt{\frac{1}{N1 - 3} + \frac{1}{N2 - 3}}}$$

$$Zobs = \frac{.090 - .277}{\sqrt{\frac{1}{60 - 3} + \frac{1}{60 - 3}}}$$

$$Zobs = \frac{-.187}{\sqrt{\frac{1}{57} + \frac{1}{57}}}$$

$$Zobs = \frac{-.187}{\sqrt{.0175 + .0175}}$$

$$Zobs = \frac{-.187}{\sqrt{.035}}$$

$$Zobs = \frac{-.187}{.1871}$$

$Zobs = -.10$

Crime-related events and PCL-R Factor 1 (Interpersonal)

$r_1 = -.03 \quad Z_1 = -.030 \quad r_2 = .24 \quad Z_2 = .245$

$$Zobs = \frac{Z1 - Z2}{\sqrt{\frac{1}{N1 - 3} + \frac{1}{N2 - 3}}}$$

$$Zobs = \frac{-.030 - .245}{\sqrt{\frac{1}{60 - 3} + \frac{1}{60 - 3}}}$$

$$Zobs = \frac{-.275}{\sqrt{\frac{1}{57} + \frac{1}{57}}}$$

$$Zobs = \frac{-.275}{\sqrt{.0175 + .0175}}$$

$$Zobs = \frac{-.275}{\sqrt{.035}}$$

$$Zobs = \frac{-.275}{.1871}$$

$Zobs = -1.47$

Crime-related events and PCL-R Factor 2 (Affective)

$r_1 = -.09 \quad Z_1 = -.090 \quad r_2 = .32^* \quad Z_2 = .332$

$$Zobs = \frac{Z1 - Z2}{\sqrt{\frac{1}{N1 - 3} + \frac{1}{N2 - 3}}}$$

$$Zobs = \frac{-.090 - .332}{\sqrt{\frac{1}{60 - 3} + \frac{1}{60 - 3}}}$$

$$Zobs = \frac{-.422}{\sqrt{\frac{1}{57} + \frac{1}{57}}}$$

$$Zobs = \frac{-.422}{\sqrt{.0175 + .0175}}$$

$$Zobs = \frac{-.422}{\sqrt{.035}}$$

$$Zobs = \frac{-.422}{.1871}$$

$Zobs = -2.26$

Crime-related events and PCL-R Factor 3 (Behavioural)

$r_1 = .09 \quad Z_1 = .090 \quad r_2 = .24 \quad Z_2 = .245$

$$Zobs = \frac{Z1 - Z2}{\sqrt{\frac{1}{N1 - 3} + \frac{1}{N2 - 3}}}$$

$$Zobs = \frac{.090 - .245}{\sqrt{\frac{1}{60 - 3} + \frac{1}{60 - 3}}}$$

$$Zobs = \frac{-.155}{\sqrt{\frac{1}{57} + \frac{1}{57}}}$$

$$Zobs = \frac{-.155}{\sqrt{.0175 + .0175}}$$

$$Zobs = \frac{-.155}{\sqrt{.035}}$$

$$Zobs = \frac{-.155}{.1871}$$

$Zobs = -.83$

General trauma and PCL-R Total

$r_1 = -.05 \quad Z_1 = -.050 \quad r_2 = .20 \quad Z_2 = .203$

$$Zobs = \frac{Z1 - Z2}{\sqrt{\frac{1}{N1 - 3} + \frac{1}{N2 - 3}}}$$

$$Zobs = \frac{-.050 - .203}{\sqrt{\frac{1}{60 - 3} + \frac{1}{60 - 3}}}$$

$$Zobs = \frac{-.253}{\sqrt{\frac{1}{57} + \frac{1}{57}}}$$

$$Zobs = \frac{-.253}{\sqrt{.0175 + .0175}}$$

$$Zobs = \frac{-.253}{\sqrt{.035}}$$

$$Zobs = \frac{-.253}{.1871}$$

$Zobs = -1.35$

General trauma and PCL-R Factor 1 (Interpersonal)

$r_1 = -.18 \quad Z_1 = -.182 \quad r_2 = .15 \quad Z_2 = .151$

$$Zobs = \frac{Z1 - Z2}{\sqrt{\frac{1}{N1 - 3} + \frac{1}{N2 - 3}}}$$

$$Zobs = \frac{-.182 - .151}{\sqrt{\frac{1}{60 - 3} + \frac{1}{60 - 3}}}$$

$$Zobs = \frac{-.333}{\sqrt{\frac{1}{57} + \frac{1}{57}}}$$

$$Zobs = \frac{-.333}{\sqrt{.0175 + .0175}}$$

$$Zobs = \frac{-.333}{\sqrt{.035}}$$

$$Zobs = \frac{-.333}{.1871}$$

$Zobs = -1.78$

General trauma and PCL-R Factor 2 (Affective)

$r_1 = -.01$ $Z_1 = -.010$ $r_2 = .23$ $Z_2 = .234$

$$Zobs = \frac{Z1 - Z2}{\sqrt{\frac{1}{N1 - 3} + \frac{1}{N2 - 3}}}$$

$$Zobs = \frac{-.010 - .234}{\sqrt{\frac{1}{60 - 3} + \frac{1}{60 - 3}}}$$

$$Zobs = \frac{-.244}{\sqrt{\frac{1}{57} + \frac{1}{57}}}$$

$$Zobs = \frac{-.244}{\sqrt{.0175 + .0175}}$$

$$Zobs = \frac{-.244}{\sqrt{.035}}$$

$$Zobs = \frac{-.244}{.1871}$$

$Zobs = -1.30$

General trauma and PCL-R Factor 3 (Behavioural)

$r_1 = .00$ $Z_1 = .000$ $r_2 = .05$ $Z_2 = .050$

$$Zobs = \frac{Z1 - Z2}{\sqrt{\frac{1}{N1 - 3} + \frac{1}{N2 - 3}}}$$

$$Zobs = \frac{.000 - .050}{\sqrt{\frac{1}{60 - 3} + \frac{1}{60 - 3}}}$$

$$Zobs = \frac{-.05}{\sqrt{\frac{1}{57} + \frac{1}{57}}}$$

$$Zobs = \frac{-.05}{\sqrt{.0175 + .0175}}$$

$$Zobs = \frac{-.05}{\sqrt{.035}}$$

$$Zobs = \frac{-.05}{.1871}$$

$Zobs = -.27$

Physical/sexual experiences and PCL-R Total

$r_1 = .34^{**}$ $Z_1 = .354$ $r_2 = .51^{**}$ $Z_2 = .563$

$$Zobs = \frac{Z1 - Z2}{\sqrt{\frac{1}{N1 - 3} + \frac{1}{N2 - 3}}}$$

$$Zobs = \frac{.354 - .563}{\sqrt{\frac{1}{60 - 3} + \frac{1}{60 - 3}}}$$

$$Zobs = \frac{-.209}{\sqrt{\frac{1}{57} + \frac{1}{57}}}$$

$$Zobs = \frac{-.209}{\sqrt{.0175 + .0175}}$$

$$Zobs = \frac{-.209}{\sqrt{.035}}$$

$$Zobs = \frac{-.209}{.1871}$$

$Zobs = -1.12$

Physical/sexual experiences and PCL-R Factor 1 (Interpersonal)

$r_1 = .06$ $Z_1 = .060$ $r_2 = .38^{**}$ $Z_2 = .400$

$$Zobs = \frac{Z1 - Z2}{\sqrt{\frac{1}{N1 - 3} + \frac{1}{N2 - 3}}}$$

$$Zobs = \frac{.060 - .400}{\sqrt{\frac{1}{60 - 3} + \frac{1}{60 - 3}}}$$

$$Zobs = \frac{-.34}{\sqrt{\frac{1}{57} + \frac{1}{57}}}$$

$$Zobs = \frac{-.34}{\sqrt{.0175 + .0175}}$$

$$Zobs = \frac{-.34}{\sqrt{.035}}$$

$$Zobs = \frac{-.34}{.1871}$$

$Zobs = -1.82$

Physical/sexual experiences and PCL-R Factor 2 (Affective)

$r_1 = .13 \quad Z_1 = .131 \quad r_2 = .44^{**} \quad Z_2 = .472$

$$Zobs = \frac{Z1 - Z2}{\sqrt{\frac{1}{N1 - 3} + \frac{1}{N2 - 3}}}$$

$$Zobs = \frac{.131 - .472}{\sqrt{\frac{1}{60 - 3} + \frac{1}{60 - 3}}}$$

$$Zobs = \frac{-.341}{\sqrt{\frac{1}{57} + \frac{1}{57}}}$$

$$Zobs = \frac{-.341}{\sqrt{.0175 + .0175}}$$

$$Zobs = \frac{-.341}{\sqrt{.035}}$$

$$Zobs = \frac{-.341}{.1871}$$

$Zobs = -1.83$

Physical/sexual experiences and PCL-R Factor 3 (Behavioural)

$r_1 = .30^{*} \quad Z_1 = .310 \quad r_2 = .39^{**} \quad Z_2 = .412$

$$Zobs = \frac{Z1 - Z2}{\sqrt{\frac{1}{N1 - 3} + \frac{1}{N2 - 3}}}$$

$$Zobs = \frac{.310 - .412}{\sqrt{\frac{1}{60 - 3} + \frac{1}{60 - 3}}}$$

$$Zobs = \frac{-.102}{\sqrt{\frac{1}{57} + \frac{1}{57}}}$$

$$Zobs = \frac{-.102}{\sqrt{.0175 + .0175}}$$

$$Zobs = \frac{-.102}{\sqrt{.035}}$$

$$Zobs = \frac{-.102}{.1871}$$

$Zobs = -.55$

Differences in correlations between dissociation and psychopathy

DES total and PCL-R Total

$r_1 = .32^{**} \quad Z_1 = .332 \quad r_2 = .58^{**} \quad Z_2 = .662$

$$Zobs = \frac{Z1 - Z2}{\sqrt{\frac{1}{N1 - 3} + \frac{1}{N2 - 3}}}$$

$$Zobs = \frac{.332 - .662}{\sqrt{\frac{1}{60 - 3} + \frac{1}{60 - 3}}}$$

$$Zobs = \frac{-.33}{\sqrt{\frac{1}{57} + \frac{1}{57}}}$$

$$Zobs = \frac{-.33}{\sqrt{.0175 + .0175}}$$

$$Zobs = \frac{-.33}{\sqrt{.035}}$$

$$Zobs = \frac{-.33}{.1871}$$

$Zobs = 1.76$

DES total and PCL-R Factor 1 (Interpersonal)

$r_1 = .19 \quad Z_1 = .192 \quad r_2 = .55^{**} \quad Z_2 = .618$

$$Zobs = \frac{Z1 - Z2}{\sqrt{\frac{1}{N1 - 3} + \frac{1}{N2 - 3}}}$$

$$Zobs = \frac{.192 - .618}{\sqrt{\frac{1}{60 - 3} + \frac{1}{60 - 3}}}$$

$$Zobs = \frac{-.426}{\sqrt{\frac{1}{57} + \frac{1}{57}}}$$

$$Zobs = \frac{-.426}{\sqrt{.0175 + .0175}}$$

$$Zobs = \frac{-.426}{\sqrt{.035}}$$

$$Zobs = \frac{-.426}{.1871}$$

$Zobs = -2.28$

DES total and PCL-R Factor 2 (Affective)

$r_1 = .17^*$ $Z_1 = .177$ $r_2 = .58^{**}$ $Z_2 = .662$

$$Zobs = \frac{Z1 - Z2}{\sqrt{\frac{1}{N1 - 3} + \frac{1}{N2 - 3}}}$$

$$Zobs = \frac{.177 - .662}{\sqrt{\frac{1}{60 - 3} + \frac{1}{60 - 3}}}$$

$$Zobs = \frac{-.485}{\sqrt{\frac{1}{57} + \frac{1}{57}}}$$

$$Zobs = \frac{-.485}{\sqrt{.0175 + .0175}}$$

$$Zobs = \frac{-.485}{\sqrt{.035}}$$

$$Zobs = \frac{-.485}{.1871}$$

$Zobs = -2.59$

DES total and PCL-R Factor 3 (Behavioural)

$r_1 = .12$ $Z_1 = .121$ $r_2 = .32^*$ $Z_2 = .332$

$$Zobs = \frac{Z1 - Z2}{\sqrt{\frac{1}{N1 - 3} + \frac{1}{N2 - 3}}}$$

$$Zobs = \frac{.121 - .332}{\sqrt{\frac{1}{60 - 3} + \frac{1}{60 - 3}}}$$

$$Zobs = \frac{-.211}{\sqrt{\frac{1}{57} + \frac{1}{57}}}$$

$$Zobs = \frac{-.211}{\sqrt{.0175 + .0175}}$$

$$Zobs = \frac{-.211}{\sqrt{.035}}$$

$$Zobs = \frac{-.211}{.1871}$$

$Zobs = -1.13$

Amnesia and PCL-R Total

$r_1 = .13$ $Z_1 = .131$ $r_2 = .45^{**}$ $Z_2 = .485$

$$Zobs = \frac{Z1 - Z2}{\sqrt{\frac{1}{N1 - 3} + \frac{1}{N2 - 3}}}$$

$$Zobs = \frac{.131 - .485}{\sqrt{\frac{1}{60 - 3} + \frac{1}{60 - 3}}}$$

$$Zobs = \frac{-.354}{\sqrt{\frac{1}{57} + \frac{1}{57}}}$$

$$Zobs = \frac{-.354}{\sqrt{.0175 + .0175}}$$

$$Zobs = \frac{-.354}{\sqrt{.035}}$$

$$Zobs = \frac{-.354}{.1871}$$

$Zobs = -1.89$

Amnesia and PCL-R Factor 1 (Interpersonal)

$r_1 = .14$ $Z_1 = .141$ $r_2 = .36^{**}$ $Z_2 = .377$

$$Zobs = \frac{Z1 - Z2}{\sqrt{\frac{1}{N1 - 3} + \frac{1}{N2 - 3}}}$$

$$Zobs = \frac{.141 - .377}{\sqrt{\frac{1}{60 - 3} + \frac{1}{60 - 3}}}$$

$$Zobs = \frac{-.236}{\sqrt{\frac{1}{57} + \frac{1}{57}}}$$

$$Zobs = \frac{-.236}{\sqrt{.0175 + .0175}}$$

$$Zobs = \frac{-.236}{\sqrt{.035}}$$

$$Zobs = \frac{-.236}{.1871}$$

$Zobs = -1.26$

Amnesia and PCL-R Factor 2 (Affective)

$r_1 = .15 \quad Z_1 = .151 \quad r_2 = .41^{**} \quad Z_2 = .436$

$$Zobs = \frac{Z1 - Z2}{\sqrt{\frac{1}{N1 - 3} + \frac{1}{N2 - 3}}}$$

$$Zobs = \frac{.151 - .436}{\sqrt{\frac{1}{60 - 3} + \frac{1}{60 - 3}}}$$

$$Zobs = \frac{-.285}{\sqrt{\frac{1}{57} + \frac{1}{57}}}$$

$$Zobs = \frac{-.285}{\sqrt{.0175 + .0175}}$$

$$Zobs = \frac{-.285}{\sqrt{.035}}$$

$$Zobs = \frac{-.285}{.1871}$$

$Zobs = -1.52$

Amnesia and PCL-R Factor 3 (Behavioural)

$r_1 = .02 \quad Z_1 = .020 \quad r_2 = .32^{*} \quad Z_2 = .332$

$$Zobs = \frac{Z1 - Z2}{\sqrt{\frac{1}{N1 - 3} + \frac{1}{N2 - 3}}}$$

$$Zobs = \frac{.020 - .332}{\sqrt{\frac{1}{60 - 3} + \frac{1}{60 - 3}}}$$

$$Zobs = \frac{-.312}{\sqrt{\frac{1}{57} + \frac{1}{57}}}$$

$$Zobs = \frac{-.312}{\sqrt{.0175 + .0175}}$$

$$Zobs = \frac{-.312}{\sqrt{.035}}$$

$$Zobs = \frac{-.312}{.1871}$$

$Zobs = -1.67$

Absorption and PCL-R Total

$r_1 = .32^{*} \quad Z_1 = .332 \quad r_2 = .52^{**} \quad Z_2 = .576$

$$Zobs = \frac{Z1 - Z2}{\sqrt{\frac{1}{N1 - 3} + \frac{1}{N2 - 3}}}$$

$$Zobs = \frac{.332 - .576}{\sqrt{\frac{1}{60 - 3} + \frac{1}{60 - 3}}}$$

$$Zobs = \frac{-.244}{\sqrt{\frac{1}{57} + \frac{1}{57}}}$$

$$Zobs = \frac{-.244}{\sqrt{.0175 + .0175}}$$

$$Zobs = \frac{-.244}{\sqrt{.035}}$$

$$Zobs = \frac{-.244}{.1871}$$

$Zobs = 1.30$

Absorption and PCL-R Factor 1 (Interpersonal)

$r_1 = .12 \quad Z_1 = .121 \quad r_2 = .42^{**} \quad Z_2 = .448$

$$Zobs = \frac{Z1 - Z2}{\sqrt{\frac{1}{N1 - 3} + \frac{1}{N2 - 3}}}$$

$$Zobs = \frac{.121 - .448}{\sqrt{\frac{1}{60 - 3} + \frac{1}{60 - 3}}}$$

$$Zobs = \frac{-.327}{\sqrt{\frac{1}{57} + \frac{1}{57}}}$$

$$Zobs = \frac{-.327}{\sqrt{.0175 + .0175}}$$

$$Zobs = \frac{-.327}{\sqrt{.035}}$$

$$Zobs = \frac{-.327}{.1871}$$

$Zobs = -1.75$

Absorption and PCL-R Factor 2(Affective)

$r_1 = .14 \quad Z_1 = .141 \quad r_2 = .53^{**} \quad Z_2 = .685$

$$Zobs = \frac{Z1 - Z2}{\sqrt{\frac{1}{N1 - 3} + \frac{1}{N2 - 3}}}$$

$$Zobs = \frac{.141 - .685}{\sqrt{\frac{1}{60 - 3} + \frac{1}{60 - 3}}}$$

$$Zobs = \frac{-.544}{\sqrt{\frac{1}{57} + \frac{1}{57}}}$$

$$Zobs = \frac{-.544}{\sqrt{.0175 + .0175}}$$

$$Zobs = \frac{-.544}{\sqrt{.035}}$$

$$Zobs = \frac{-.544}{.1871}$$

$Zobs = -2.91$

Absorption and PCL-R Factor 3 (Behavioural)

$r_1 = .14 \quad Z_1 = .141 \quad r_2 = .37^{**} \quad Z_2 = .388$

$$Zobs = \frac{Z1 - Z2}{\sqrt{\frac{1}{N1 - 3} + \frac{1}{N2 - 3}}}$$

$$Zobs = \frac{.141 - .388}{\sqrt{\frac{1}{60 - 3} + \frac{1}{60 - 3}}}$$

$$Zobs = \frac{-.247}{\sqrt{\frac{1}{57} + \frac{1}{57}}}$$

$$Zobs = \frac{-.247}{\sqrt{.0175 + .0175}}$$

$$Zobs = \frac{-.247}{\sqrt{.035}}$$

$$Zobs = \frac{-.247}{.1871}$$

$Zobs = -1.32$

Depersonalisation and PCL-R Total

$r_1 = .07 \quad Z_1 = .070 \quad r_2 = .32^{*} \quad Z_2 = .332$

$$Zobs = \frac{Z1 - Z2}{\sqrt{\frac{1}{N1 - 3} + \frac{1}{N2 - 3}}}$$

$$Zobs = \frac{.070 - .332}{\sqrt{\frac{1}{60 - 3} + \frac{1}{60 - 3}}}$$

$$Zobs = \frac{-.262}{\sqrt{\frac{1}{57} + \frac{1}{57}}}$$

$$Zobs = \frac{-.262}{\sqrt{.0175 + .0175}}$$

$$Zobs = \frac{-.262}{\sqrt{.035}}$$

$$Zobs = \frac{-.262}{.1871}$$

$Zobs = -1.40$

Depersonalisation and PCL-R Factor 1 (Interpersonal)

$r_1 = .08 \quad Z_1 = .080 \quad r_2 = .30^{**} \quad Z_2 = .310$

$$Zobs = \frac{Z1 - Z2}{\sqrt{\frac{1}{N1 - 3} + \frac{1}{N2 - 3}}}$$

$$Zobs = \frac{.080 - .310}{\sqrt{\frac{1}{60 - 3} + \frac{1}{60 - 3}}}$$

$$Zobs = \frac{-.23}{\sqrt{\frac{1}{57} + \frac{1}{57}}}$$

$$Zobs = \frac{-.23}{\sqrt{.0175 + .0175}}$$

$$Zobs = \frac{-.23}{\sqrt{.035}}$$

$$Zobs = \frac{-.23}{.1871}$$

$Zobs = -1.23$

Depersonalisation and PCL-R Factor 2 (Affective)

$r_1 = .05 \quad Z_1 = .050 \quad r_2 = .246^{**} \quad Z_2 = .497$

$$Zobs = \frac{Z1 - Z2}{\sqrt{\frac{1}{N1 - 3} + \frac{1}{N2 - 3}}}$$

$$Zobs = \frac{.050 - .497}{\sqrt{\frac{1}{60 - 3} + \frac{1}{60 - 3}}}$$

$$Zobs = \frac{-.447}{\sqrt{\frac{1}{57} + \frac{1}{57}}}$$

$$Zobs = \frac{-.447}{\sqrt{.0175 + .0175}}$$

$$Zobs = \frac{-.447}{\sqrt{.035}}$$

$$Zobs = \frac{-.447}{.1871}$$

$Zobs = -2.39$

Depersonalisation and PCL-R Factor 3 (Behavioural)

$r_1 = .10 \quad Z_1 = .100 \quad r_2 = .12 \quad Z_2 = .121$

$$Zobs = \frac{Z1 - Z2}{\sqrt{\frac{1}{N1 - 3} + \frac{1}{N2 - 3}}}$$

$$Zobs = \frac{.100 - .121}{\sqrt{\frac{1}{60 - 3} + \frac{1}{60 - 3}}}$$

$$Zobs = \frac{-.021}{\sqrt{\frac{1}{57} + \frac{1}{57}}}$$

$$Zobs = \frac{-.021}{\sqrt{.0175 + .0175}}$$

$$Zobs = \frac{-.021}{\sqrt{.035}}$$

$$Zobs = \frac{-.021}{.1871}$$

$Zobs = -.11$

September 2008