Toward a clinically meaningful taxonomy of violent offenders:

The role of anger and thinking styles

by

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Refereed Conference Papers

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“The more that you read, the more things you will know. The more that you learn, the more places you’ll go.” (Dr Seuss, I Can Read With My Eyes Shut)
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List of Abbreviations

ABS       Australian Bureau of Statistics
AIC       Australian Institution of Criminology
ANZSOC    Australian and New Zealand Standard Offence Classification
HIVIP     High Intensity Violence Intervention Program
MIVIP     Moderate Intensity Violence Intervention Program
NOI       National Offence Index
PICTS     Psychological Inventory of Criminal Thinking Styles
SPSS      Statistical Package for the Social Sciences
STAXI-2   State-Trait Anger Expression Inventory-2
VIP       Violence Intervention Program
VRS       Violence Risk Scale
WHO       World Health Organisation
Abstract

Violent offender rehabilitation programs aim to reduce violent offenders’ risk of re-offending by targeting a range of needs, including anger regulation and crime-supporting cognitions, on the assumption that they are criminogenic for all violent offenders. Such programs have proven efficacy in reducing recidivism for some, but not all, violent offenders, although there have been few previous attempts to identify the particular offenders who benefit most. This thesis investigates whether different subtypes of violent offender can be identified on the basis of self-report measures of anger experience, expression and control and criminal thinking styles, and whether these subtypes differ in the extent of change in anger, criminal thinking and assessed risk of re-offending after completing a violent offender treatment program.

Study 1 involved 305 male violent offenders serving a custodial sentence in a Victorian correctional centre who were being assessed for participation in a violence intervention program. Predominantly classified as having a moderate risk of violent re-offending, this group held moderate levels of beliefs supportive of a criminal lifestyle when compared with offenders generally, and had lower trait anger, lower anger control and higher anger expression than members of the general population. Using scores from the State-Trait Anger Expression Inventory-2 (STAXI-2; Spielberger, 1999) and the Psychological Inventory of Criminal Thinking Styles (PICTS; Walters, 1995), cluster analysis was used to identify three distinct types of violent offenders. The ‘unregulated’ group had high levels of anger experience and expression and low levels of anger control, and held beliefs that were strongly supportive of a criminal lifestyle. The ‘regulated’ group demonstrated levels of anger and beliefs supporting criminal activity that were not in a range that warranted
treatment. Finally, the ‘overregulated’ group held low pre-program levels of anger experience and expression and an absence of beliefs supporting criminal activity.

Study 2 involved 131 male violent offenders from Study 1 who had completed a moderate or high intensity violent offender treatment program. Analysis of pre- and post-program data on anger, criminal thinking styles and violent re-offending risk for treatment completers revealed that the ‘unregulated’ group demonstrated the greatest reduction in these needs post-program. The ‘regulated’ group showed a reduction in anger experience and expression, an increase in anger control and changes in criminal thinking styles post-treatment, to a lesser degree than the ‘unregulated’ group. For the ‘overregulated’ group, however, treatment changes were limited, and there appeared no significant benefit to this group in participating in a program addressing these needs.

These findings offer support for the hypotheses that anger and criminal thinking style factors are not criminogenic for all violent offenders, and that violent offender treatment programs are likely to be most effective when targeted at particular violent offender types. The results are discussed in terms of implications for the future provision of violent offender treatment, particularly assessment for treatment suitability. It is concluded that providing treatment tailored to each of the three subtypes may help to promote higher levels of engagement in rehabilitation, achieve greater change in subtype-specific treatment needs and, ultimately, lead to greater reductions in violent re-offending and enhanced community safety.
Chapter 1. Introduction

Australian and international public health and policy makers have identified the prevention of violence and violent offending as a priority. Many acts of violence are committed by repeat offenders; accordingly, a strong rationale exists to provide treatment to those individuals who have a history of violent offending. An increasingly popular approach has been to implement group-based violence intervention programs given evidence that groups of offenders who complete appropriate treatment re-offend at lower rates than those who do not (see Andrews & Bonta, 2010b; Andrews et al., 1990). However, knowledge of the program mechanisms that reduce an individual offender’s propensity to re-offend is limited, and often restricted to group-level or program-level considerations. As a consequence, relatively little is known about the variables that explain which offenders benefit from treatment (and which do not) (Serin, Lloyd, Helmus, Derkzen, & Luong, 2013). This thesis investigates individual differences that exist between violent male offenders, and how these influence treatment performance. Specifically, the two studies reported examine the extent to which scores on self-report measures of emotional regulation (anger) and cognition (criminal thinking styles) can be used to identify the treatment needs of different subgroups of violent offenders. The findings of these studies are then discussed in terms of their implications for violent offender treatment.

Rationale

International surveys, including reports by the World Health Organisation (WHO), estimate that violence results in death for over 1.5 million people worldwide every year (Krug, Dahlberg, Mercy, Zwi, & Lozano, 2002) and is a leading cause of
death for people aged 15-44 years (WHO, 2009). Violence may have profound adverse effects on the physical and psychological health of victims (see Kessler, Davis, & Kendler, 1997; Kilpatrick, Acierno, Resnick, Saunders, & Best, 1997; Krug et al., 2002). The impact of violence affects many, including perpetrators, witnesses, family and friends, police, health and legal professionals and community members who may fear potential victimisation (Lorion, 2001). In addition, exposure to violence, either as a victim or a witness, is associated with an increased risk of engaging in violent behaviour (Sampson & Lauritsen, 1990).

A significant number of violent offences occur each year in Australia. These offences have a high economic cost. The crimes of homicide, assault and sexual assault were estimated to cost Australia over $3 billion in 2005, accounting for nearly 10% of the estimated total cost of all crime in that year (Rollings, 2008). Violent offences accounted for 6% of crime but over 25% of crime costs in 2005 (Mayhew, 2003). Criminal justice statistics indicate that in 2010, 204,555 people were victims of homicide, assault, sexual assault, robbery, kidnapping or abduction1 (Australian Institute of Criminology [AIC], 2012). The most commonly recorded violent crime was assault (excluding sexual assault)2. The State of Victoria (the jurisdiction in which this thesis is based) currently faces an increase in violent offending; rates of police-recorded violent ‘crimes against the person’3 have increased from 835 per 100,000 people in 2009-10 to 868.5 in 2010-11 (Victoria

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1 This value is likely lower than actual incidences of crime; crime statistics invariably underestimate the number of offences committed as not all crimes are reported or recorded.
2 Rates of assault appear to be decreasing since peaking in 2009; rates of victims of assault per 100,000 people increased from 623 in 1996 to 840 in 2007, and fell to 766 per 100,000 people in 2010 (AIC, 2012).
3 ‘Crimes against the person’ refers to offences of homicide, rape, sexual assault, robbery, assault, abduction and kidnapping.
Police, 2011). Given the high level of harm caused, violent crime is considered particularly serious and often attracts a custodial sentence. In 2010, the violent offences of homicide, assault, sexual offence or robbery were the ‘most serious offence’ recorded for 51.4% of all sentenced adult male prisoners across Australia (AIC, 2012); acts intended to cause injury (including assault; 19%), sexual assault (13%) and homicide (10%) were most common (Australian Bureau of Statistics [ABS], 2011b). In Victoria, violent offenders accounted for 44.5% of all male offenders as at June 2010 (Corrections Victoria, 2010).

Statistics which indicate that a significant number of prisoners re-offend post-release highlight the importance of providing effective rehabilitation to violent offenders. Of all Australian prisoners released in 2007-08, 38% had returned to prison under sentence by 30 June 2010 (AIC, 2012). In Victoria in June 2010, 49.9% of sentenced male prisoners had served prior prison sentences (Corrections Victoria, 2010). Re-offending rates for perpetrators of violent crime appear even higher: of the 54.5% of prisoners incarcerated for a violent offence in Australia in 2010-11, over 52% had served at least one prior prison sentence (ABS, 2011b).

Violent offender treatment programs aim to identify and change the individual characteristics that are associated with an increased risk of violent re-offending. Programs generally target a large number of psychological and behavioural factors that are considered relevant to violent offending. The current evidence base supporting the efficacy of these programs is limited, but it is possible to conclude that programs which follow best practice principles of offender

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4 An increase from 49% in 2007 (AIC, 2009).
rehabilitation\(^5\) will be most successful in reducing rates of violent re-offending (see Andrews & Bonta, 2010b; Andrews et al., 1990; Di Placido, Simon, Witte, Gu, & Wong, 2006; Fylan & Clarke, 2006; Gendreau, Goggin, French, & Smith, 2006; McGuire, 2008; Polaschek, Wilson, Townsend, & Daly, 2005; Serin et al., 2013; Smith, Gendreau, & Swartz, 2009; Wong, Gordon, & Gu, 2007; Wong et al., 2005).

**Aims**

Identifying the variables that determine which offenders are most likely to benefit from violent offender treatment is important as researchers and clinicians seek to understand the mechanisms that reduce an individual’s risk of re-offending (Serin et al., 2013). The aim of this thesis is to examine the proposition that violent offenders are a heterogeneous group and that violent offender treatment programs will be more effective for certain subgroups of offenders than for others. Specifically, this thesis investigates the extent to which violent offenders can be meaningfully classified into subtypes, and whether such classifications are useful in explaining the outcomes of group-delivered violent offender treatment.

**Outline**

This thesis begins by considering contemporary definitions of violence and the relationship of violence to the constructs of aggression, hostility, and anger.

\(^5\) The three core empirically-derived best practice principles state that, at a minimum, treatment intensity should be matched to risk level (treating the offenders who are mostly likely to reoffend; the risk principle), individual-level criminogenic needs (variables empirically associated with offending) should be targeted in treatment (the needs principle), and cognitive-behavioural techniques should be employed, tailored to individual responsivity factors such as literacy skills and learning styles (the responsivity principle) (see Andrews & Bonta, 2010b; Andrews et al., 1990). Other principles have also been identified, addressing factors such as program integrity, therapeutic alliance and treatment readiness.
These distinctions are crucial for any investigation of this type, given the considerable confusion that exists within the research community and amongst practitioners in defining violence and how this influences the selection of appropriate candidates for treatment. Integrated theories of aggression and violence are then reviewed, followed by an overview of current research that has sought to document the outcomes of violent offender treatment.

Evidence of the heterogeneity of violent offenders is then reviewed. The constructs of over- and under-controlled anger, instrumental and reactive aggression, criminal thinking styles and the relationships of these individual characteristics with violent behaviour are considered, leading to the rationale for the two empirical studies. The first study, a cross-sectional analysis of a sample of male violent offenders who were assessed for suitability for a violence intervention program, identifies subgroups of offenders, classified on the basis of their anger (experience, expression and control) and use of criminal thinking styles (to justify, rationalise and minimise violent offending). The second study provides a longitudinal analysis of treatment outcomes from the violent offender treatment program for the different subgroups identified in the first study. Finally, the findings are discussed in terms of the implications for the further development of theory and practice of violent offender assessment and treatment.
Chapter 2. Definitions

In any cursory reading of the existing literature on violence and violent offender treatment, it soon becomes apparent that a number of terms are utilised to describe overlapping constructs. Despite different meanings, terms such as ‘violence’, ‘aggression’, ‘anger’ and ‘hostility’ are often used interchangeably (see, e.g., Kingsbury, Lambert, & Hendrickse, 1997; Reidy, Shelley-Tremblay, & Lilienfeld, 2011). Researchers and clinicians clearly have difficulty agreeing on the necessary elements that denote an offence as violent (Fagan & Harstone, cited in Loeber, Farrington, & Waschbusch, 1998) and have drawn on a broad range of criteria in the psychological, criminological and sociological literature, including legal definitions of violent offending; violent offences in criminal history, index (current), most frequent or most serious offending; victim selection (e.g., spousal assault); attitudes (e.g., hostility); or emotions (e.g., anger). These definitional and methodological inconsistencies contribute to a lack of clarity regarding the main findings of research in this area (Kenny & Press, 2006; Serin & Preston, 2001). Accordingly, it becomes important to clarify the definition of ‘violent offending’ employed in this thesis, and the relationship of violent offending with several other associated constructs.

In this thesis, the term ‘violent offence’ is used to refer to acts of violence that contravene the legal code. Although offences are defined by a legislative framework, the labelling of an offence as ‘violent’ is based on a psychological definition of violence. Violent offending is considered a subset of violence, and violence a subset of aggression, as depicted in Figure 1. All acts of violence are considered aggressive, although not all acts of aggression are violent (Howells, Daffern, & Day, 2008).
Many definitions of aggression have been proposed, often stemming from differing perspectives across the disciplines of psychology, biology and sociology (Megargee & Hokanson, 1970). Definitions vary in breadth and scope. Rosenzweig (1977), for example, broadly defines aggression as encompassing constructive and destructive actions taken to overcome an obstacle or progress toward a goal. Gottfredson and Hirschi (1993), however, limit their definition of aggression to “unprovoked, senseless or unjustifiable violence or threat of violence” (p. 52). While Rosenzweig (1977) argues that aggression should not inherently imply negative behaviour (as the negative elements of aggression are captured by the terms ‘hostility’ and ‘violence’), definitions of aggression predominantly incorporate negative elements, considering the harmful intent or impact of the aggressive behaviour on others in defining the construct.
The concepts of intent and harm are generally considered to be important components of aggression (e.g., Averill, 1982; Bandura, 1973; Blackburn, 1993; Hamberger & Guse, 2002). This is reflected in Blackburn’s (1993) concise definition of aggression as the intentional infliction of harm (physical or psychological). For behaviour to be aggressive, it has been suggested that the perpetrator (actor) must intend and believe that the behaviour will cause harm or injury (Anderson & Bushman, 2002; Baron & Richardson, 1994), that it has a subjective probability of reaching the target, and that it will deliver a noxious stimulus to the target and/or remove the target from impeding the actor’s goal (Kaufmann, 1965).

There are variations in whether factors such as the nature and motivation of the target and the time frame of the act are considered. Anderson and Bushman (2002), for example, require aggressive behaviour to be carried out with the proximate (immediate) intent to cause. The aggressive behaviour may be directed at an individual (e.g., Anderson & Bushman, 2002), living being (e.g., Baron & Richardson, 1994) or a target (e.g., Kaufmann, 1965). Some researchers further require that the target be motivated to avoid the behaviour (e.g., Anderson & Bushman, 2002; Baron & Richardson, 1994).

Such definitions typically exclude acts of unintended aggression or harm that occurs as an accidental by-product of helpful actions and harmful acts that the victim does not want to avoid (e.g., pain administered in sexual masochism; see also Anderson & Bushman, 2002; Baumeister, 1989; Kingsbury et al., 1997). This highlights the importance of Okey’s (1992) observation that labelling any behaviour as aggressive requires knowledge of the social context of the behaviour, the actor’s intentionality, the harm caused to the target, and the target’s motivation to avoid harm.
Subtypes of aggression.

Several subtypes of aggression have been proposed across a range of disciplines. Primarily bimodal in classification, these include: reactive and proactive (Dodge & Coie, 1987), hostile and instrumental (Kingsbury et al., 1997), reactive and instrumental (Patrick & Zempolich, 1999) and affective and predatory aggression (McEllistrem, 2004; Meloy, 2006; Vitiello, Behar, Hunt, Stoff, & Ricciuti, 1990; Weinshenker & Siegel, 2002). While Barratt (1991) distinguished between three forms of aggression: spontaneous/impulsive, premeditated, and psychopathology/medically-related, the first two seemingly correspond to the dichotomous models proposed above.

Several elements are common to the typologies, despite differing nomenclature. There appears to be two distinct (though not necessarily mutually exclusive) subtypes of aggression. Distinguishing features include whether the act is planned / premeditated or impulsive, the presence (or not) of a perceived threat or provocation is present and immediacy of response to that threat, the intentionality of the aggression, the role of arousal and affect, and the presence of an external goal of aggression. In short, these two distinct forms of aggression are:

1. An instrumental, premeditated, non-affect-driven reward-seeking behaviour in which threats or injury facilitate achievement of non-injurious goals (e.g., harming a victim to obtain money; described as predatory, proactive, non-angry, planned, premeditated, offensive or cold-blooded); and

2. A reactive, affect-driven, highly aroused impulsive response to perceived threat, provocation or frustration, in which causing harm to the victim is thought to decrease unpleasant internal feeling states in the aggressor,
possibly through reduced physiological arousal or tension (described as hostile, expressive, angry, affective, defensive, impulsive or hot-blooded) (see Aronson, 1992; Barratt & Slaughter, 1998; Berkowitz, 1993; Blackburn, 1993; Bushman & Anderson, 2001; Buss, 1961; Cornell et al., 1996; DiGiuseppe & Tafrate, 2007; Dodge & Coie, 1987; Hodgins, 2007; Houston, Stanford, Villemarette-Pittman, Conklin, & Helfritz, 2004; Howells et al., 2008; Kingsbury et al., 1997; McEllistrem, 2004; McGuire, 2008; Meloy, 2006; Ramírez & Andreu, 2006).

There is some evidence that the basis for these two types of aggression lies in brain structure and functioning, mediated by different neural architectures. Reactive aggression appears related to a fight response to threat, mediated by subcortical systems, whereas instrumental aggression is likely uses the neural systems involved in goal-directed motor process (e.g., the temporal cortex and amygdala) (Blair, 2002, 2010; Fabian, 2010; Glenn & Raine, 2009; Panksepp & Zellner, 2004; Raine et al., 1998a; Raine, Stoddard, Bührle, & Buchsbaum, 1998b; Wall, Blanchard, & Blanchard, 2003).

The reactive-instrumental dichotomy has, however, been criticised for failing to capture the range of possible motivations for aggression, raising challenges in reliably categorising aggressive acts as either hostile (reactive) or instrumental, and for failing to consider that an individual may engage in instrumental and reactive aggression at the same time (see Anderson & Bushman, 2002; Barratt & Slaughter, 1998; Bushman & Anderson, 2001; Wall et al., 2003). For example, anger-mediated reactive aggression may not always be impulsive and unplanned: an individual may ruminate angrily over a perceived provocation for some time before engaging in aggression (Howells et al., 2008).
Violence

Notions of what constitutes violent behaviour differ considerably between and within societies and groups, at different times and in different contexts (Jones, 2000). Substantial variation also exists in what are considered to be the ‘critical’ features of a violent act (see Tolan, 2007; Tolan, Gorman-Smith, & Henry, 2006), although contemporary definitions of violence tend to vary along six dimensions, related to the level of the action, the nature and degree of force, the outcome of the force, the type of injury, significance and nature of the target and the intentionality of the action (Jackson, Zahn, & Brownstein, 2004).

The World Health Organisation (Krug et al., 2002) broadly defines violence as “the intentional use of physical force or power, threatened or actual, against oneself, another person, or against a group or community, that either results in or has a high likelihood of resulting in injury, death, psychological harm, maldevelopment or deprivation” (p. 4). This definition encompasses a wide range of acts of interpersonal violence, suicidal behaviour and armed conflict, including physical acts, threats and intimidation, and those that lead to some of the less obvious consequences of violence which compromise the well-being of individuals, families and communities. The notion of intent, generally central to violence (and aggression) definitions, allows violent acts to be differentiated from disease or accidental injury (Tolan, 2007).

Anderson and Bushman (2002) distinguish between aggression and violence in terms of the extent of harm inflicted. They define violence as aggression that has extreme harm as its goal (see also Meloy’s [2006] and Blackburn’s [1993] definitions of aggression as the intention to cause [psychological or physical] harm, and violence as the physical infliction of harm). These definitions identify violence
as goal-directed intentional behaviour. Uncertainty and disagreement still arise, however, when attempting to label an act as violent, particularly with regard to the operationalisation of notions of intent and harm. For example, some researchers have suggested that ‘violence’ should include intimidating, intentionally coercive or oppressive practices not clearly leading to physical harm (Chalk & King, 1998; Jouriles, McDonald, Norwood, & Ezell, 2001; Tolan, 2007; Tolan et al., 2006). Others argue that the identification of a behaviour as violent should be separated from the victim’s and observers’ perception of the threat and the extent of injury experienced (Heelas, 1982; Hines & Malley-Morrison, 2004).

Loeber et al. (1998) argue that there is a need to establish a common language for research into violence, to promote information communication and further develop policies and interventions. The lack of consensus about the definition of violence has implications for how we understand violence, identify risk factors and patterns of violence, and determine the most appropriate interventions and policies to reduce violence. The inconsistency in defining violence naturally has implications for the clarity and consistency of definitions of violent offending, contributing to challenges in violent offender research.

**Violent Offending**

Violent offending, or violent crime, forms a subcategory of violence, with violent offences being those acts of violence which contravene the legal code (Howells, 2010; Howells et al., 2008). In an Australian Institute of Criminology report, Bricknell (2008) defines violent crime as having the intention of causing or threatening physical harm or death to the victim, and includes the offence categories of homicide, assault, sexual assault and robbery (armed and unarmed). Similarly, the
Australian Bureau of Statistics (ABS, 2006) defines violence as any incident involving the occurrence, attempt or threat of either physical or sexual assault; physical assault involves the use of physical force with the intent to harm or frighten, with attempts or threats to inflict physical harm included only if a person believes it is likely to be carried out. The variance in these definitions may stem from cross-jurisdictional differences in local or Federal legislation. It is, however, criminal law that determines whether a behaviour is criminally violent (Blackburn, 1993; Kenny & Press, 2006; McGuire, 2008).

Criminal law in Australia, as in many countries, consists of common law (formed from decisions in legal cases) and statute law (laws made by Parliament). In Victoria, two pieces of legislation are particularly pertinent to discussions of violence and violent offending: the *Crimes Act 1958 (Vic)* and the *Sentencing Act 1991*. The *Crimes Act 1958 (Vic)* refers to violence in relation to particular offences, including unintentional killing in the course or furtherance of a crime of violence (Section 3A) or piracy with violence (Section 70A). No overarching legal definition of violence is provided, however, beyond the definition proscribed in Section 9AH that relates specifically to offences of family violence; there, violence is defined as actual or threatened physical, sexual or psychological abuse, including intimidation, harassment and property damage (see Appendix A for a comparison of Australian states and territories).

The *Sentencing Act 1991 (Vic)* outlines offences deemed to be violent or serious violent, although fails to provide a specific definition of violence. Violent offences proscribed in Clause 2, Schedule 1 of the *Sentencing Act 1991 (Vic)* are outlined in Table 1. Several offences are further codified as ‘serious violent’ in the *Sentencing Act 1991 (Vic)* (Clause 3, Schedule 1); these are also listed in Table 1.
Table 1

**Violent and Serious Violent Offence Classifications According to the Sentencing Act 1991 (Vic)**

<table>
<thead>
<tr>
<th>Violent offences</th>
<th>Serious violent offences</th>
</tr>
</thead>
<tbody>
<tr>
<td>Murder; manslaughter; child homicide; defensive homicide; intentionally or recklessly causing serious injury; intentionally causing a very serious disease; making threats to kill or inflict serious injury; kidnapping; intentionally causing, inflicting or intending to cause grievous bodily harm; or conspiring, inciting or attempting to commit any of the above offences.</td>
<td>Murder; intentionally causing serious injury, a very serious disease or grievous bodily harm; making threats to kill, injure or endanger life; or conspiring, inciting or attempting to commit any of these offences.</td>
</tr>
</tbody>
</table>

Defining violent offending according to legislation provides a degree of consistency within jurisdictions in the offences recognised as violent and that may prompt a referral for violence treatment. Comparing cross-jurisdictional data or research can be problematic, however, as actions considered violent in one jurisdiction may not be considered violent in others, contingent on law, cultural and societal norms.

Several offence categorisation tools have been developed to address this issue. The two systems utilised in this thesis are the Australian and New Zealand Standard Offence Classification system (ANZSOC; ABS, 2011a) and the National Offence Index (NOI; ABS, 2009). More detailed information regarding these systems is provided in Appendix B. Briefly, the NOI provides an ordinal ranking of offences according to perceived seriousness, to determine a principal or ‘most serious’ offence (ABS, 2009) that enables the representation of an offender by a
single offence in the case of multiple charges. The ANZSOC system, a system for classifying criminal behaviour in a manner that overcomes differences in legal definitions across jurisdictions, provides a framework for organising key behavioural characteristics of criminal offences. Of the 16 ANZSOC divisions, the first six are particularly relevant to violent offending: these are offences against the person, comprising culpable (intentional, negligent or reckless) acts that result in harm (physical or non-physical) against a specific person (ABS, 2011a).

**Challenges Associated With the Use of Legal Definitions to Identify Violent Offenders**

These classification systems attempt to overcome some of the cross-jurisdictional issues that arise in using legislation to identify violent offenders for research purposes. In practice, however, it can be challenging to identify violent offenders. For example, questions arise as to whether an offender who has convictions for both violent and sexual offences should be treated as a violent offender or a sex offender. Studies of criminal careers suggest that most violent offenders are generalist offenders who rarely conform to a narrow pattern of criminality (see Broadhurst & Maller, 1991; Farrington & Lambert, 1994; Indermaur & Ferrante, 1993; McGloin, Sullivan, & Piquero, 2009; Simon, 1997) and often engage in other types of offending (e.g., drug, property or sexual offences). As such, identifying violent offenders solely on the basis of their commission of a ‘violent offence’ may be problematic, for several reasons:

1. **Nature of behaviour and offence type**

Considerable disparity exists between those offences that are considered violent in research and clinical literature and those that are labelled violent in the
legislation. Clinical definitions of violence result in a greater range of offences designated violent, while ‘violent offences’ identified in legislation may capture a greater range of potentially non-violent behaviours.

The offence of assault provides an example. The offence is considered violent for clinical and legal purposes, although the behaviour constituting the assault charge may potentially be minor (e.g. touching that does not result in physical injury), such that the lay community would not consider it violent (Kenny & Press, 2006). Assault offences can be readily classified into common (or simple) assault or aggravated assault (Blackburn, 1993). Although researchers rarely classify individuals convicted of common assault as violent (Farrington, 1997), an offender may be inappropriately identified as violent for treatment purposes if classification is based solely on criminal conviction (Kenny & Press, 2006).

Acts that constitute a legal definition of a violent offence encompass diverse behaviours (including threatening, touching, pushing, hitting, striking, kicking, fighting or throwing objects). Labelling offenders as violent based only on their offending may fail to capture the frequency or considerable diversity of these behaviours (Taylor, 2003). Violent offenders admit to committing a higher number of violent offences than their records indicate (Farrington, 2000), and violent convictions generally do not reflect the frequency of an individual’s violent behaviours. Furthermore, charges may be downgraded prior to or during court proceedings; labelling an individual as violent (or not) on the basis of their final conviction may thus fail to capture the severity of the violent behaviour.

2. The role of intent and resulting level of harm

Criminal law commonly distinguishes between an accident (with no intent), negligence (failure to show due caution or care, resulting in an injury or harm),
recklessness (acting in a manner that greatly increases the potential for injury) and crimes, such as murder or assault, which require proof that the crime occurred (*actus reus*) and was intended (*mens rea*) (Tolan, 2007). As noted earlier, intent is a key component in psychological definitions of violence (e.g., Anderson & Bushman, 2002); intent is not necessary, however, for an action to be legally classified as violent. Some legislated violent offences require proof of intent (e.g., murder), some require the intention to use violence or an awareness that conduct may be violent (e.g., riot or affray; Section 93D, Crimes Act 1900 [NSW]) while others constitute reckless⁶ or negligent (unintended) action (e.g., manslaughter or recklessly causing serious injury; Clause 2, Schedule 1, *Sentencing Act 1991* [Vic]).

Psychological definitions of violence often emphasise the extent of physical harm resulting from the violent act, although as noted earlier, there is considerable disagreement regarding the extent and nature of the harm required to constitute a violent act. Some describe violence as inflicting physical injury (Blackburn, 1993). Others argue that the extreme harm intended by violence includes non-physical harm (Anderson & Bushman, 2002). Offences proscribed as violent in the legislation include those with a goal of extreme harm (e.g., murder or intentionally causing serious injury), but also several without extreme harm as the goal (e.g., acts of reckless or negligent behaviour that are not intended to cause extreme harm).

3. **Severity of behaviour**

Assessment of the severity of violent behaviour is crucial in clinical practice, particularly when determining suitability for treatment. Offences discriminate between levels of severity of the violent act *outcome*, but generally not between

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⁶ The term ‘reckless’ refers to the taking of an unjustified risk – that is, where a person realises their actions may have a particular (undesirable) consequence, but decides to proceed.
levels of severity of the violent act itself. For example, assault causing injury and assault causing *serious* injury differentiate the level of severity of the outcome of the violent act, but not the level of severity of the behaviour involved. The distinction between murder and manslaughter provides one exception: the extent of harm caused and the outcome of the act are the same in both offences; the distinction, instead, is based on intent and severity of the behaviour. Empirical studies also often fail to consider severity of the violent act, with researchers routinely dichotomously coding offenders as violent or non-violent (rather than by degrees of severity of violence; Kenny & Press, 2006).

In sum, the above review highlights a number of issues associated with defining violent offending that cause confusion in the classification and understanding of violent criminal behaviour. The lack of common language across disciplines affects inconsistency across legal and clinical domains and a lack of comparability across jurisdictions. The lack of a common clinical definition of violent offending creates inconsistency when determining which offences warrant referral to violent offending treatment. Furthermore, diversity in legislation, definitions and classifications of violent offending affects statistical reporting of violent crime and any understanding of the pattern of relationships observed between violence and other variables (Kenny & Press, 2006).

In this thesis, legal convictions form the basis for referral to an assessment for suitability for violent offender treatment; these convictions are not necessarily proscribed as violent in the legislation. Rehabilitation practice in Victoria relies on a criminal law determination of the illegality of behaviour, but does not consider whether legislation proscribes the offence as violent. This is important when
considering the broader application of the findings reported in this thesis to other jurisdictions.

**Serious Violent Offenders**

A final point that requires clarification regards the use of the ‘serious violent offender’ label, which appears periodically in the violent offender rehabilitation literature, clinical practice and legislation. The label has utility in the identification, assessment and treatment of those violent offenders considered to be at significant risk of re-offending, and is also used in legal settings to identify offenders who face potentially stricter sentences or parole requirements. However, the criteria attached to this label do differ across contexts.

As noted earlier, in legal settings, the *Sentencing Act 1991* (Vic) proscribes several offences as ‘serious violent’ (e.g., murder or manslaughter; outlined in Table 1 above). The purpose of this label is to provide an indication on an offender’s criminal record of their ‘serious offender’ status, for enhanced community protection (e.g., parole requirements).

In the context of research, the term ‘serious violent offender’ label appears most frequently in the broader criminological literature that considers developmental and life course perspectives on crime. Commonly referred to as ‘serious’ or ‘persistent’ violent offenders, the label separates the small number of individuals who commit a relatively large proportion of serious violent crime from the substantially larger proportion of those who act aggressively or violently at some point in their lives (e.g., Loeber et al., 1998; Moffitt, Caspi, Harrington, & Milne, 2002; Serin, 1995). ‘Serious violent offenders’ typically exhibit antisocial and aggressive behaviour from childhood or early adolescence that continues throughout
much of adulthood, engage in more frequent and more violent offending and are usually assessed as being at high risk of violent reoffending (Loeber & Hay, 1997; Moffitt, 2003; Serin & Preston, 2001; Whitehead, Ward, & Collie, 2007).

In clinical practice, application of the ‘serious violent offender’ label is used to prioritise assessment and treatment of particular offenders. Some jurisdictions use the label to identify offenders who are considered to be at high risk of violent reoffending. Others identify serious violent offenders on the basis of particular index offences (e.g., murder, manslaughter, kidnapping). This discrepancy again impacts on the ability to compare program evaluations from different jurisdictions. Furthermore, when serious violent offender labels are based on an individual’s index offence, rather than their assessed level of risk of violent reoffending, there is potential for finite clinical resources to be utilised for offenders at low risk of reoffending, at the expense of assessing and treating offenders who are at higher risk. This appears to disregard the best practice principles of offender rehabilitation, whereby the level of rehabilitation services provided to an offender should be proportional to that offender’s risk of reoffending (Bonta & Andrews, 2007).

**Definitions Employed in this Thesis**

The inconsistency and disparity in definitions of aggression, violence, violent offending and serious violent offenders that are used in legal, research and clinical arenas highlight the need to clarify terms that are utilised in this thesis.

Throughout this thesis, ‘aggression’ is defined as any form of behaviour with the goal of harming or injuring another living being who is motivated to avoid such treatment (Baron & Richardson, 1994; Howells et al., 2008; Parrott & Giancola, 2007). By virtue of the sample, and consistent with many researchers in the social
sciences (e.g., McGuire, 2008; Polaschek & Collie, 2004), ‘violence’ is used to refer to acts of personal violence, committed by one individual against another, in a context where such actions are specifically proscribed by societal norms and codified in formal law. As with most research in crime and justice, the term ‘violent offence’ is used to refer to acts of violence that contravene the legal code (Howells, 2010; Howells et al., 2008). While the offence is defined by a legislative framework, the labelling of an offence as violent is based on definitions of violence from the psychological literature. Thus the range of offences considered violent is broader in scope than those labelled as violent in the local (Victorian) legislation.

This thesis is limited in scope to discussion of male offenders, due to empirical evidence which suggests that female offenders have unique risk factors and treatment needs (e.g., Serin & Preston, 2001). Violence that is self-inflicted (e.g., suicide) or carried out as societal-sanctioned behaviour (e.g., police and military actions) is also excluded; extensive research demonstrates the distinct causes, impacts, outcomes and intervention needs for these forms of violence (see, e.g., Tolan & Guerra, 1994). Violence that is predominantly sexual or family-oriented is excluded for similar reasons (see Bowen & Gilchrist, 2004; Laws & O’Donohue, 2008; Serin & Preston, 2001; Tolan & Guerra, 1994).
Chapter 3. Contemporary Approaches to Violence and Aggression

The vast array of factors that are associated with violence illustrates the complex and multidimensional nature of violent behaviour and hints at the heterogeneity of violent offenders. The aim of this chapter is to establish that no single factor can explain why some people engage in violence in some situations; rather, that violence is the product of multiple interacting factors, with each causal factor able to explain only a small proportion of the individual differences in aggression and violence (see Anderson & Bushman, 2002; Dodge, Coie, & Lynam, 2006; Huesmann & Guerra, 1997; Rappaport & Thomas, 2004). For example, while aggression and violence appear to have evolved as a strategy for many species, expression (or inhibition) is dependent on factors including previous social experiences, the current social context and individual differences in an individual’s propensity for violence.

Integrated theories of violence attempt to provide an overarching framework for understanding human aggression and violence in its various forms, incorporating ecological, social, psychological, biological and economic factors into a single coherent theory that explains a greater proportion of individual differences. The current dominant integrated theory of aggression and violence, the General Aggression Model (Anderson & Bushman, 2002), is outlined, along with the Algebra of Aggression model proposed by Megargee (1993, 2009).

Causal Factors

Social factors associated with violence include environmental factors such as economic deprivation (Baron, 2004; Bellair, Roscigno, & McNulty, 2003; Eisler & Schissel, 2004), or residing in ‘socially disorganised’ neighbourhoods with high
residential mobility, high poverty levels, low collective efficacy or a limited sense of community (Cantillon, 2006; Morenoff, Sampson, & Raudenbush, 2001; Shaw & McKay, 1942; Tolan, Gorman-Smith, & Henry, 2003). Parental factors include family disruption (McNulty & Bellair, 2003; Sampson, 1986; Sampson & Groves, 1989), parental rejection or having parents with criminal convictions or limited education (Gray, 1997; Hoeve et al., 2009). Finally, social learning or modelling of aggression or violence contributes to the development of future violence (Agnew, 1992; Akers, 2009; Bandura, 1973, 1983, 2001; Blackburn, 1993; Gerbner, Gross, Morgan, Signorielli, & Shanahan, 2002; Mischel, 1973, 1999; Mischel & Shoda, 1995; Okey, 1992; Sutherland & Cressey, 1978).

Biological factors associated with violence include higher levels of hormones, particularly testosterone (Book, Starzyk, & Quinsey, 2001; Ellis, 2005; Raine, 2002; Rappaport & Thomas, 2004), and nutritional deficiencies (Carré, McCormick, & Hariri, 2011; Fishbein, 2001; Liu, 2011; Virkkunen, 1986). Neurological impairments are also associated with violence, including abnormal levels of some neurotransmitters (e.g., dopamine, serotonin, norepinephrine and monoamine oxidase) (Badawy, 2003; Ellis, 1991; Huizinga et al., 2006; Virkkunen, Goldman, Nielsen, & Linnoila, 1995), and the impact of brain injuries and diseases including Fetal Alcohol Spectrum Disorder (Fast & Conry, 2009; Fishbein, 2001; Raine et al., 2001; Streissguth et al., 2004), tumours, head injuries and central nervous system diseases such as Huntington’s chorea and epilepsy (Brower & Price, 2001; Ellis, 2005; Fishbein, 2001; Raine et al., 2001; Shiach, 1994; Williams, Cordan, Mewse, Tonks, & Burgess, 2010). Attention Deficit / Hyperactivity Disorder, with suspected biological causes including neurological damage, prenatal stress, food allergies and genetics, is also strongly associated with the early onset of
chronic delinquency and persistent violent behaviour (Eklund & Klinteberg, 2003; Moffitt et al., 2002; Nagin & Tremblay, 1999; Retz & Rösler, 2010). Others have theorised the involvement of innate aggressive instincts and evolution (Hobbes, 1651 cited in Baker, 1999; Freud, 1915; Lorenz, 1966; Wilson, 1975) and the inheritability of certain violent personality traits (Carey & DiLalla, 1994; Walters, 1992), although any relationship may be via a complex interaction of these factors with social conditions that increase the probability of violent behaviour.

The involvement of psychological factors in developing and maintaining violent behaviour for some individuals is well-established. Emotions such as anger (Cornell, Peterson, & Richards, 1999; Craig, 1982; Kay, Wolkenfeld, & Murrill, 1988; Lindqvist, Dåderman, & Hellström, 2005; Michie & Cooke, 2006; Novaco, 1976, 2011; Polaschek & Reynolds, 2000; Suter, Byrne, Byrne, Howells, & Day, 2002), shame (Daly & Wilson, 1988; Geer, Estupinan, & Manguno-Mire, 2000; Tangney, Wagner, Hill-Barlow, Marschall, & Gramzow, 1996), frustration and other ‘negative’ emotions (Dollard, Miller, Doob, Mowrer, & Sears, 1939) are well-researched causal factors. Mental illness (particularly delusional thoughts and hallucinations; Elbogen & Johnson, 2009; Monahan, 1992; Swanson, Holzer, Ganju, & Jono, 1990; Teasdale, 2009; Tedeschi & Felson, 1994), cognitive deficits (Ellis & Siegler, 1994; Loeber & Hay, 1997; Piquero, 2000) and impaired social skills (Polaschek & Reynolds, 2000) may also contribute to an individual’s propensity to act violently.

The relationship between aggression, violence, antisocial personality disorder (Coid et al., 2009; Friedmann, Melnick, Jiang, & Hamilton, 2008; Hodgins & Côté, 1993) and psychopathy (Cornell et al., 1996; Hare & McPherson, 1984; Hemphill, Hare, & Wong, 1998; Serin, 1991) has been extensively researched. Other
personality traits, including irritability, trait aggressiveness and narcissism (Bettencourt, Talley, Benjamin, & Valentine, 2006; Jones & Paulhus, 2010; Martinez, Zeichner, Reidy, & Miller, 2008), neuroticism and antagonism (McCrae & Costa, 1987), and paranoid and borderline personality disorders (Blackburn & Coid, 1999; Coid, 2002) have been associated with an increased risk of violence, as have other characteristics such as limited capacity for empathy (Burke, 2001; Jolliffe & Farrington, 2007; Owen & Fox, 2011), or dismissive or insecure attachment style (Allen, Hauser, & Borman-Spurrell, 1996; van Ijzendoorn & Bakermans-Kranenburg, 1997; Weiler & Widom, 1996).

The role that self-esteem plays in violent behaviour has been the subject of some contention (Ostrowsky, 2010); some suggest that violence is associated with low self-esteem (Donnellan, Trzesniewski, Robins, Moffitt, & Caspi, 2005; Walker & Bright, 2009b; Webster, 2006), while others argue that high self-esteem is a contributing factor (Baumeister, Bushman, & Campbell, 2000; Hughes, Cavell, & Grossman, 1997; Papps & O'Carroll, 1998; Salmivalli, 2001).

Finally, a range of cognitive processes are thought to be involved in violent behaviour (Berkowitz, 1989, 1993, 2010; Collins & Loftus, 1975; Crick & Dodge, 1996). These include developing scripts for violent behaviour (Abelson, 1981; Anderson & Bushman, 2002; Huesmann, 1988; Shahinfar, Kupersmidt, & Matza, 2001), misattribution of hostile intent (Copello & Tata, 1990; Seager, 2005; Serin & Kuriychuk, 1994), threat perception (Athens, 1980; Katz, 1988), high levels of impulsivity or low levels of behavioural inhibition, self-control or self-regulation (af Klinteberg, Andersson, Magnusson, & Stattin, 1993; Baron, 1983; Barratt, 1994; Caspi, 2000; DeWall, Baumeister, Stillman, & Gailliot, 2007; Gottfredson & Hirschi, 1990; Polaschek & Reynolds, 2000). In the context of physiological arousal
or excitation (Zillmann, 1983), these cognitive processes may change. The motivation to engage in violence (Bushman & Baumeister, 1998; Felson, 2009; Tedeschi & Felson, 1994) and the presence of criminal thoughts, cognitive distortions and violence-supporting beliefs (Barriga, Landau, Stinson, Liau, & Gibbs, 2000; Gudjonsson, Sigurdsson, Skaptadottir, & Helgadottir, 2011; Maruna & Mann, 2006; Sykes & Matza, 1957; Walker & Bright, 2009b; Walters, 2007a; Yochelson & Samenow, 1976) are strongly associated with violent offending.

General Aggression Model

The General Aggression Model (GAM; Anderson & Bushman, 2002; Anderson, Gentile, & Buckley, 2007) was developed to integrate a number of existing ‘mini-theories’ of aggression into a parsimonious unified theory. The GAM draws on theories including social learning and interaction, excitation transfer, affective aggression and script theory (Anderson & Bushman, 2002; DeWall, Anderson, & Bushman, 2011). As with other models of aggression and violence, the GAM is influenced by the definitions of aggression and violence utilised in its development: aggression is defined as any behaviour intended to harm another person who does not want to be harmed, and violence as any aggressive act that has extreme physical harm as its goal (Anderson & Bushman, 2002).

The GAM is a social-cognitive model which emphasises that aggressive acts rarely occur without the interaction of precipitating situational factors and predisposing personal characteristics (Anderson & Bushman, 2002), incorporating affective, behavioural, cognitive, psychophysiological, personological and situation variables, short and long term processes and decision processes (DeWall et al., 2011). Current situational variables (known as proximal causes and processes)
include both personological (e.g., mood, scripts, beliefs, values, long-term goals, schemata) and contextual variables (e.g., aggressive cues, provocation, substance use, incentives). Enduring causes and processes (referred to as distal factors) include biological and environmental modifiers manifest in personality that influence an individual’s preparedness to act aggressively (e.g., personality traits, genetic and neurophysiological disposition). According to the GAM, an individual constructs ‘knowledge structures’ from their experiences; these structures contribute to the establishment of personality and guide interpretations and behavioural responses to social and physical environments. Knowledge structures may become automatised with use, and may contain or be linked to affective states, behavioural programs and beliefs. Internal states (cognition, affect and arousal) are interconnected and influence subsequent decision-making and behavioural expression (Howells et al., 2008).

The GAM proposes that a single episodic cycle of aggression has three critical stages: (a) person and situation inputs; (b) present internal states (cognition, arousal, affect, brain activity); and (c) outcomes of appraisal and decision-making processes. A feedback loop may influence future cycles of aggression, producing a violence escalation cycle (Anderson, Buckley, & Carnagey, 2008; DeWall & Anderson, 2011). Figure 2 provides a pictorial outline of the GAM.

The General Aggression Model has consistently received support as a general model of aggression (for reviews, see Anderson & Bushman, 2002; DeWall & Anderson, 2011). The GAM has primarily been tested using laboratory aggression experiments, although an increasing body of empirical research has applied the model to aggression in the ‘real world’, including acts of intimate partner violence, intergroup violence and suicide. The GAM has also been used to explain non-violent
behaviour, and the non-occurrence of violence in relatively peaceful societies (see DeWall et al., 2011) although has been criticised regarding its failure to adequately explain aggression processes (Ferguson & Dyck, 2012). Nonetheless, it remains the dominant theory of aggression.

*Figure 2.* The General Aggression Model (Anderson & Bushman, 2002).
Algebra of Aggression

The Algebra of Aggression is an alternative framework that seeks to explain all forms of human aggression and violence (e.g., verbal, physical, legal, criminal, mild, extreme) by focusing on the factors that determine whether an individual performs a given aggressive act against a specific target at a particular point in time (Megargee, 1993, 2009, 2011). The framework proposes that at any given moment, multiple aggressive and non-aggressive responses may be competing for expression in a balance that may be altered by further interactions or changed conditions. At a particular moment, in specific circumstances, responses in which inhibitory factors outweigh aggression-promoting factors are blocked, while responses in which excitatory factors outweigh inhibitory factors compete with each other and with all possible non-aggressive responses. The behaviour chosen in an (often unconscious) internal bargaining process or ‘response competition’ is the behaviour that offers the most satisfaction at the least cost; the ‘reaction potential’ or net strength of an aggressive response is determined by balancing factors promoting and deterring each response. Figure 3 provides an approximate depiction of the Algebra of Aggression process. The Algebra of Aggression has not been subject to the rigorous empirical validation of the General Aggression Model, however provides a useful clinical tool to guide identification and interpretation of the complex factors contributing to violent behaviour.

Factors that promote or foster aggressive responses may be personal or situational. Personal factors are the intrinsic or extrinsic instigations to aggression, and habit strength (Megargee, 2011). Intrinsic instigation to aggression (or the conscious or unconscious drive to attack, injure or harm someone) is motivated by anger, hostility, rage or hatred and leads to angry (or reactive) aggression; sources
Figure 3. An approximate depiction of Megargee’s Algebra of Aggression.

may be psychological (e.g., frustration, aversive events, provocation, threats, attack or territorial intrusion) or physical (e.g., genetic predisposition, physical disease,
central nervous system disorders, hormones, fatigue, stress, pain or chemical influence). *Extrinsic* instigation leads to *instrumental aggression*, used as a means to acquire ends (other than injuring the target) or attain goals (e.g., acquisition, self-defence, dominance, power, self-esteem, enjoyment of aggression or the accomplishment of personal, social, religious, occupational or political objectives).

*Habit strength* refers to the prior extent of reinforcement of aggressive acts; stronger habit strength for a particular aggressive response increases the likelihood that the act or a similar behaviour will be chosen again. The framework suggests that angry aggression is reinforced by pain or discomfort inflicted on the victim, and instrumental aggression by attaining extrinsic goals through aggressive behaviour. Situational factors that foster aggressive responses range from environmental influences (e.g., being in a war zone) to specific stimuli (e.g., being cheered or jeered by bystanders). The most widely-researched situational factors facilitating aggression include crowding, contagion, anonymity, ambient temperature, architecture, access to potential victims and weapon availability (Megargee, 2009).

Factors that *inhibit* aggressive responses may also be personal (e.g., internal inhibitions, pragmatic concerns) or situational (e.g., presence of witnesses, barriers between the aggressor and target, perception that the target is physically superior or well-armed) (Megargee, 2011). The chief source of *internal inhibitions* are learnt ethical prohibitions (e.g., taboos, morals or conscientiousness) that may be general or specific, temporary or lasting, and vary as a function of the aggressive act, target and circumstances, largely determined by culture, family group and peer influences. Other sources of internal inhibitions include empathy, identification with a potential victim, or the involvement of physiological factors such as the inhibitory areas of the central nervous system, inhibitory actions of certain neurotransmitters (e.g.,
serotonin), hereditary and genetic influences, chemical influences or physical
disability or illness. Pragmatic concerns include fear that the intended act may not
achieve its objectives, or may elicit negative consequences (e.g., punishment,
retaliation or retribution).

In summary, the most useful theories of aggressive and violent behaviour are
multidimensional, and commonly consider affective, behavioural, cognitive,
situational and personal factors. The premise of this thesis is that typologies
differentiating violent offenders on the basis of behaviour (e.g., categories based on
offence types and classifications) have only limited utility in the selection of
appropriate candidates for violent offender treatment. Across differing contexts and
individuals, the same behaviour may serve different functions (e.g., instrumental
goal attainment or reactive removal of provoking stimulus) and be fostered by
different treatment needs (e.g., emotional dysregulation, entitlement beliefs). These
needs are inadequately recognised when violent offender types are distinguished
solely on the basis of behaviour. Consideration of the differences that exist in the
way violent offenders think and regulate angry emotion has the potential to improve
treatment outcomes.

Subtypes of Violence and Violent Offenders

The heterogeneity of the role of cognition and emotional regulation in violent
offending is perhaps most evident when considering the factors motivating
aggressive acts committed by males in licenced premises (e.g., Graham & Wells,
2003; Spence, Williams, & Gannon, 2009). Researchers have identified several
motivators: (a) ‘male honour and face saving’, an individual’s perception that their
‘masculine’ reputation is at stake (Archer, Holloway, & McLoughlin, 1995; Felson,
1982; Graham & Wells, 2003); (b) ‘addressing a grievance’, the perception that another’s actions are insulting or wrong (Archer et al., 1995; Graham & Wells, 2003); (c) ‘fighting for fun’, the perception that aggression is an enjoyable and pleasurable activity (Burns, 1980; Graham & Wells, 2003; Tomsen, 1997); or (d) emotions such as anger and frustration (perhaps elicited by situational aspects, e.g., overcrowding), leading the individual to act aggressively as a result of emotional dysregulation (Anderson & Bushman, 2002; Finney, 2004; Graham et al., 2011). Thus aggressive behaviour committed in a single environment may be motivated by heterogeneous thoughts and emotions that are overlooked by a behaviour-based classification system.

The two dominant violent offender typologies identified in the research are the instrumental/reactive violence classification, and the original undercontrolled/overcontrolled violent offender dichotomy, subsequently developed into a four-group taxonomy with the incorporation of personality research. These are considered next.

**Instrumental and reactive violence.**

The bimodal classification of subtypes of aggression has been applied to violent behaviour. Cornell et al. (1996) proposed a bimodal model of reactive and instrumental violence. Consistent with Berkowitz’s (1989) frustration-aggression hypothesis, *reactive violence* is described as violence in reaction to a dispute or interpersonal conflict, whereas *instrumental violence* is described as violence committed for a clearly identifiable purpose, other than in response to provocation or frustration, consistent with Bandura’s (1978) social learning theory. The model is more appropriately applied to acts, rather than actors, as perpetrators of aggression.
may engage in both reactive and instrumental acts, or may engage in acts that have multiple goals and functions (Howells, 2009). Application of the bimodal classification to violence has, however, been criticised for being too narrow in its explanation of why people commit violence, leading to attempts to account for the presence of dual motives during violent offences. Woodworth and Porter (2002), for example, adapted the traditional dichotomy to a four-level typology: purely reactive, reactive-instrumental, instrumental-reactive and purely instrumental violence. Nevertheless, the bimodal classification remains a useful way of identifying the functionality of violence for an individual, and has impacted on the treatment pathways for violent offenders.

**Overcontrolled and undercontrolled violent offenders.**

Megargee (1966, 1979) proposed a dichotomous typology of violent offenders based on the relationship between emotion inhibition and violent offending. This was in response to two key observations: many homicide offenders had no prior recorded history of assaultive behaviour (Berg & Fox, 1947; Berkowitz, 1962; Wolfgang, 1957); and assaultive offenders demonstrated lower levels of hostility and higher levels of control than non-assaultive offenders (Megargee & Mendelsohn, 1962). Megargee (1979) described ‘undercontrolled aggressive’ violent offenders as frequently and chronically angry, with lower anger tolerance, little self-control in conflict situations, lower inhibitions, and aggressive responses to frustration or provocation. Conversely, ‘chronically overcontrolled’ violent offenders experience low or no trait anger while committing acts of violence, and rarely experience or express anger even when provoked, partly due to rigid inhibitions blocking the expression of anger and violence. Undercontrolled violent offenders are
more frequently and less severely violent than overcontrolled violent offenders, who commit extremely violent acts once their threshold of control is breached.

Megargee’s theory has developed further through research utilising the Overcontrolled Hostility (OH) scale (Megargee, Cook, & Mendelsohn, 1967) and cluster analyses of personality traits to determine empirically distinct groups of violent offenders (Biro, Vuckovic, & Djuric, 1992; Blackburn, 1971, 1975, 1986, 1996; Blackburn & Coid, 1999; Henderson, 1982, 1983b; Holcomb, Adams, & Ponder, 1985; Kalichman, 1988; McGurk, 1978; McGurk & McGurk, 1979). Although methodologies, samples (e.g., violent offenders, general offenders, hospitalised forensic patients) and data sources (e.g., observer ratings, or, typically, MMPI-derived scales) have varied, four empirical clusters have consistently been identified: (a) ‘primary psychopath’; (b) ‘secondary psychopath’; (c) ‘controlled’; and (d) ‘inhibited’. The first two are considered subtypes of Megargee’s (1966) undercontrolled type, and the second two are subtypes of his overcontrolled type.

Overcontrolled and undercontrolled offenders are both thought to have low ego resiliency (Block & Block, 1980) and high continuity in stability of

7 Derived from the Minnesota Multiphasic Personality Inventory (MMPI; Hathaway & McKinley, 1967).
8 The ‘psychopath’ label used here differs from the more common construct of ‘psychopathy’, although some elements are related. While primary and secondary psychopath-type offenders often score highly on psychopathy scales such as Hare’s Psychopathy Checklist-Revised (PCL-R; Hare, 1991; Harpur, Hare, & Hakstian, 1989), this is not always the case. Blackburn (1986) found a high prevalence of psychopathy diagnosed in the undercontrolled primary psychopath-type offenders in his sample of homicide offenders committed to a secure hospital under a mental health act. However, McGurk and McGurk (1979) found no elevations on psychopathy scales in their primary and secondary psychopath types in a remand prisoner and prison officer sample.
characteristics (Asendorpf & van Aken, 1999). In comparison to undercontrolled offenders, overcontrolled offenders are typically more responsible, cautious and conscientious, less impulsive, tense, hostile and apprehensive, less assertive, tend to repress or deny conflict, and express less aggression and hostility outwards (du Toit & Duckitt, 1990; Henderson, 1982, 1983a, 1983b; Hershorn & Rosenbaum, 1991; Lane & Kling, 1979; Lane & Spruill, 1980; Quinsey, Maguire, & Varney, 1983; White, 1975; White, McAdoo, & Megargee, 1973). Overcontrolled offenders thus tend to be introverted, shy, dependent and emotionally unstable (Robins, John, Caspi, Moffitt, & Stouthamer-Loeber, 1996). Violence occurs following the accumulation of instigation to aggression (anger arousal) that develops into an explosion of anger and rage that exceeds excessive defences, and is often accompanied or preceded by intense feelings of despair and humiliation (see Megargee, 1966; Tsytsarev & Grodnitsky, 1995). Violent offenders have less control over their hostility than controlled non-violent offenders (Henderson, 1982, 1983a). Some researchers have found a higher prevalence of serious violent offences in overcontrolled offender groups (D'Silva & Duggan, 2010; Verona & Carbonell, 2000), although this may reflect study methodology. Violence pathology is thought to develop later than in undercontrolled offenders. Chambers (2010) argues that social learning theory does not appear to adequately explain why overcontrolled offenders engage in violence, suggesting that they should be more aware of the negative consequences of violence and be less likely to rehearse violent behaviour.

In contrast, undercontrolled offenders are described as impulsive, manipulative, low on emotional stability and have strong antisocial tendencies (McGurk, 1978; Robins et al., 1996). These offenders appear to commit a range of offence types, and commonly escalate conflict situations through arguments and
violence. In general population samples, undercontrolled-type traits are linked to aggression and offending behaviour (Caspi, 2000). Blackburn (1993), for example, suggested that undercontrolled individuals experience cognitive restructuring of morals following exposure to deviant modelling from others that neutralises the effects of violence and replaces them with positive reinforcements. Chambers (2010) proposed that social learning theory provides an appropriate explanation for progressive development of aggressive behaviour in this group, given that consistent and cumulative displays of aggression (Hart, Hofmann, Edelstein, & Keller, 1997), consideration of few social deterrents to crime (Caspi, 2000) and a lack of inhibition to act violently (Chambers, 2010) leads to violent offending. Some researchers have proposed that undercontrolled individuals may not have deficits in control or the capacity to inhibit their aggressive impulses; rather, they choose not to exercise that control due to identification with norms and values from socialisation in criminal subcultures (du Toit & Duckitt, 1990).

*Primary psychopath.*

The ‘primary psychopath’ (or ‘psychopath’) might be regarded as a subtype of undercontrolled violent offender. Primary psychopath-type violent offenders generally have higher levels of antisocial personality disorder and psychopathy (as measured by the PCL-R; Hare, 1991; Harpur, Hare, & Hakstian, 1989) than overcontrolled-type offenders, particularly on items suggesting interpersonal and affective deficits (e.g., callousness or lack of empathy, self-centredness, manipulation). Narcissistic, histrionic and paranoid personality traits are also seen in this population. Primary psychopath-type individuals tend to be extroverted, demonstrate high levels of impulsivity, poor socialisation, are least troubled by interpersonal sensitivities, have a moderate level of anxiety and paranoid suspicion,
but lack subjective distress, frequently have substance abuse histories, and direct hostility outwards to deal with interpersonal problems (Blackburn, 1971, 1986).

Primary psychopaths have been shown to have more extensive histories of offending with higher levels of criminality and more violent convictions. Violence appears instrumental, used as a means to achieve goals (Pardini et al., 2003). The development of violent offending appears associated with positive outcome expectancies of dominance and tangible rewards for violence and a lack of consideration or awareness of punishment (see Chambers, 2010; also Blackburn, 1971, 1986, 1995; Henderson, 1982, 1983a, 1983b; McGurk, 1978; McGurk & McGurk, 1979; O'Brien & Frick, 1996), driving forethought and modelling from others perceived as powerful or dominant (Bandura & Walters, 1963). Primary psychopath-type offenders are thus thought to reflect Moffitt et al.’s (2002) childhood-onset type offender.

Secondary psychopath.

The term ‘secondary psychopath’ (‘paranoid-aggressive’ or ‘disturbed’) is used to refer to a second subtype of undercontrolled violent offender. Secondary psychopath-type violent offenders similarly have high levels of antisocial personality disorder and psychopathy, though tend to score higher on PCL-R items suggesting antisocial behaviour (e.g., boredom, impulsivity, lack of planning) (Hare, 1991; Harpur et al., 1989). Passive-aggressive, avoidant, schizoid, paranoid, dependent and borderline personality traits are also seen in this population (Blackburn, 1986). Secondary psychopath-type individuals are introverted, impulsive, act out, have a more hostile-detached interpersonal style, significantly more psychopathology (particularly anxiety, paranoid schizophrenia, severe personality disorder, depression, psychosis and hypochondriasis, frequently have substance abuse
histories and higher levels of anger and hostility (Blackburn, 1986; McGurk, 1978; McGurk & McGurk, 1979). Blackburn (1998) suggests the secondary psychopath type differs from the primary psychopath in the degree of withdrawal; the secondary psychopath type is low in self-confidence, submissive and withdrawn while the primary psychopath type is extroverted, confident and dominant (see also Skeem, Johansson, Andershed, Kerr, & Louden, 2007).


**Controlled.**

The ‘controlled’ (‘overcontrolled’ or ‘normal’) type is a subtype of overcontrolled violent offender. Controlled violent offenders generally have a relatively normal personality profile, with few antisocial personality traits; compulsive and dependent traits are sometimes evident (Blackburn, 1986). Controlled individuals describe themselves as sociable, conforming and free of anxiety. Compared to other groups, they have higher defensiveness, denial and impulse control, lower anxiety and hostility, and express some interpersonal difficulties (Blackburn, 1986). They do not report psychological deviance, with the
exception of mild depressive tendencies, and distress is internalised (Caspi, 2000). Controlled offenders deny experiencing anger, report low trait anger and have no history of aggression. Emotional arousal (including anger) is dealt with through avoidance, denial or repression (Blackburn, 1971).

Controlled offenders have less significant criminal histories and less institutional misconduct. Causal factors for crime are likely to be environmental, rather than psychopathology, offences are more likely to be violent, and offenders are more likely to be treated as disordered, due to their unusual criminal behaviour (Chambers, 2010; McGurk, 1978; McGurk & McGurk, 1979). Violence is likely triggered by situationally-specific interpersonal problems, erupting into violence when experiencing a traumatic or dramatic provocation.

Inhibited.

The ‘inhibited’ (‘depressed inhibited’ or ‘excessively inhibited’) type is also a subtype of overcontrolled violent offender. Inhibited violent offenders generally have few antisocial personality traits. Introversion and inhibition are common personality traits in this population, with avoidant, schizoid, dependent and schizotypal traits also evident (Blackburn, 1986). Inhibited individuals are more likely to have a diagnosis of mental illness (particularly high levels of depression and moderate anxiety), a poor self-image and have more interpersonal and social difficulties, avoiding social interaction. They also have strong impulse control, and moderate hostility that is directed inward. Inhibited offenders have a history of experiencing strong feelings of anger that they have great difficulty expressing (Blackburn, 1971).

Inhibited offenders have less significant criminal histories and less institutional misconduct. Internalising of hostility appears to be a mechanism for
violence unique to this type (Blackburn, 1971). Violence is likely to be triggered by situationally-specific interpersonal problems, with anger levels increasing gradually over time to a level that impairs judgement and results in inappropriate violence at the next provocation (Chambers, 2010; McGurk, 1978; McGurk & McGurk, 1979). The stronger pattern of violence seen in the inhibited type compared to the controlled type appears associated with the experience of depression (Chambers, 2010). The inhibited type tends to be most prevalent in disordered and violent offenders and absent in non-violent offender and general population samples, perhaps because their unusual violent behaviour leads to higher representation in disordered samples (Chambers, 2010; McGurk, 1978; McGurk & McGurk, 1979).

Several longitudinal studies of general populations have found different developmental pathway between the subtypes (see Caspi, 2000; Hart et al., 1997). Caspi (2000) compared inhibited, undercontrolled and well-adjusted groups, and found differences evident as early as 3 years old. At age 3, inhibited individuals are introverted, fearful and upset, and by ages 13-15 demonstrate more internalising of distress. In personality assessment at age 18, they report being cautious, self-controlled, low in aggression, non-assertive, submissive and harm avoidant; friends describe them as unaffectionate, introverted and unpopular. By age 21, inhibited-type individuals are more likely to be diagnosed with depression and significantly less likely to have been involved in crime; Chambers (2010) suggested that this may result from a high perception and fear of being caught for crime.

In contrast, by age 3, undercontrolled individuals are impulsive, restless, negative, easily distracted and emotionally changeable (Caspi, 2000). By age 5-11, they demonstrate more externalising of problems, and by age 13-15 display more externalising behaviour and problems with internalising. In personality assessment at
age 18, they report enjoying dangerous activities, being impulsive, aggressive and socially alienated through feelings of betrayal and deception by others; friends describe them as unreliable and untrustworthy, with conflictual relationships. By age 21, undercontrolled individuals are more likely to have antisocial personality disorder and alcohol dependency, significantly more likely to have been involved in crime in the past 12 months, and have convictions for multiple crimes. Chambers (2010) suggests that criminal activity may be supported by the consideration of fewer social deterrents to offending. Thus the signs of aggressive tendencies are seen early in undercontrolled individuals, culminating in offending as an adult.

Within the subtypes of undercontrolled offenders, there are early differences in developmental pathways. The secondary psychopath traits of boredom, impulsivity and lack of planning and the primary psychopath traits of callousness, self-centredness and manipulation are observed in children from 6 years old (Frick, O’Brien, Wootton, & McBurnett, 1994; Pardini et al., 2003), indicating early differences in developmental pathways. By adolescence, secondary psychopaths demonstrate significantly higher behaviour dysregulation and higher personal distress and fearfulness, whereas primary psychopaths demonstrate deficits in cognitive and emotional empathy and negative relationships to personal distress and fearfulness (Pardini et al., 2003).

Undercontrol and the externalising of distress is well-developed in adolescence, while for inhibited individuals, internalising of hostility and distress appears to develop in adolescence (Kruh, Frick, & Clements, 2005; Salekin, Ogloff, Ley, & Salekin, 2002; Truscott, 1990). These traits are not predictive of violence in the same manner as the development of aggression and crime-supporting attitudes in undercontrolled individuals (Caspi, 2000); Chambers (2010) suggests instead that
the traits may represent the development of depression. Differences in brain function in areas managing attention, self-regulation, goal-directed behaviour and other executive cognitive functions have been linked to differences in subtypes, reflective of differences in developmental pathways.

Two particular areas of the brain appear to be associated with violence: the amygdala and the prefrontal cortex. Impaired amygdala function hinders the development of stimulus-punishment associations, stunting the development of empathy for others’ distress; impairment in this area is thought to be associated with the callous, unemotional traits of primary psychopaths (Blair, 2006). Amygdala dysfunction appears less related to the impulsivity of secondary psychopaths.

The role of the prefrontal cortex includes inhibition of aggression (Giancola, 1995); impairment reduces executive functions, including attention, self-regulation, planning, goal-directed behaviour and responding to changes in environmental demands. The violence of secondary psychopath-type individuals is thought to reflect greater impairment of these executive functions (Blair, 2010; Broomhall, 2005; Lykken, 1995; Ross, Benning, & Adams, 2007), particularly in the areas of cognitive flexibility, verbal inhibition and the ability to see future consequences, consistent with a higher degree of impulsivity. While both primary and secondary psychopaths have aggressive impulses from the amygdala and limbic situations, researchers suggest that these impulses are directed into more instrumental, goal-directed behaviour by primary psychopaths, while deficits in the executive cognitive function of self-regulation result in an inability to control these impulses by secondary psychopaths. Prefrontal cortex dysfunction from depression is also associated with impulsive behaviour (Drevets, 1998; Giancola, 1995), and may contribute to violent behaviour by inhibited individuals.
The instrumental / reactive violence dichotomy is evident in both overcontrolled and undercontrolled individuals. Chambers, Ward, Eccleston, and Brown (2009) examined the relationship between instrumental and reactive violence and overcontrolled and undercontrolled violent offenders using grounded theory analysis of interview transcripts from 35 assault offenders. They suggested that primary psychopath and controlled individuals appeared to commit instrumental violence, while secondary psychopath and inhibited offenders committed reactive violence, as outlined in Figure 4.

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<th>Instrumental Violence</th>
<th>Reactive Violence</th>
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<td>Undercontrolled</td>
<td>Primary Psychopath</td>
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*Figure 4.* The relationship of instrumental and reactive violence and undercontrolled and overcontrolled personality types.

**Implications for Treatment of Violent Offender Subtypes**

Researchers have suggested that the overcontrolled and undercontrolled type violent offenders require different treatment approaches to address the diverse risk factors that contribute to violent offending by each type. Undercontrolled-type (primary and secondary psychopath) offenders are likely to be at high risk of re-offending, given their offence supportive attitudes and propensity for violence (see, e.g. Chambers, 2010). Chambers suggests that given the early emergence of traits related to their offending, undercontrolled-type offenders would likely be receptive
to intervention at many stages throughout their life span, to prevent or address these emerging traits. Both undercontrolled types would benefit from treatment aimed at improving self-control, inhibiting the acting out of aggressive impulses, learning non-aggressive ways of responding to frustration, and developing social skills (Blackburn, 1986; Davey, Day, & Howells, 2005; Henderson, 1982; Hershorn & Rosenbaum, 1991; Lane & Spruill, 1980; Megargee, 1966; Quinsey et al., 1983; Verona & Carbonell, 2000). Additionally, primary psychopath type offenders would likely benefit from reward-oriented programs to reduce re-offending risk, given their lack of concern for punishment and sole focus on the positive outcomes of violence (Pardini et al., 2003). In contrast, secondary psychopath type offenders would likely obtain greater benefit from treatment aimed at improving self-control over their impulsivity, and treatment addressing executive cognitive function deficits (e.g., social-cognitive programs, anger management) (Paschall & Fishbein, 2002).

Programs aimed at improving anger and behaviour controls and targeting criminal attitudes and lifestyle appear more appropriate for repeat violent (undercontrolled) offenders, but seem unlikely to be of benefit for single violent (overcontrolled) offenders (D'Silva & Duggan, 2010).

Overcontrolled offenders are more likely to be assessed as low risk of re-offending, in part due to a lack of previous offending behaviour (Chambers, 2010). Subtle internal processes including rumination and internalised hostility appear to precede the uncharacteristic violent behaviour of overcontrolled offenders, and they would likely gain greater benefit from programs addressing rumination, increasing self-awareness of anger, improving communication of feelings and assertiveness training (Blackburn, 1986; Davey et al., 2005; Henderson, 1982; Hershorn & Rosenbaum, 1991; Lane & Spruill, 1980; Megargee, 1966; Quinsey et al., 1983;
Verona & Carbonell, 2000). Anger management programs aimed at controlling anger would likely be unproductive, and perhaps harmful for, individuals who ruminate (Davey et al., 2005), potentially leading to further suppression of anger. Instead, controlled individuals may benefit from treatment interrupting the cycle of violent fantasising that contributes to breach of anger control; inhibited individuals may benefit from treatment addressing internalised hostility, to manage depressive tendencies that may lead to explosive outbursts (Chambers, 2010).

Alternative treatment approaches for offenders engaging in reactive and instrumental violence would also be recommended. Offenders using violence reactively would likely benefit from treatment addressing their ability to self-regulate their violent impulses arising from anger (Cavell & Malcolm, 2007; Howells, 2010; Howells et al., 2008; Novaco, 2007); in contrast, instrumentally violent individuals would likely benefit from treatment challenging violence-supportive beliefs and identifying prosocial means of achieving desired outcomes. Indicative of differential outcomes of treatment on different thinking style, Walters (2009a) found that following an 8-hour, 6-session anger management program, the reactive criminal thinking of 47 medium security male offenders had reduced significantly from pre-program levels; there was no significant change in proactive criminal thinking. Walters suggested that skills-based programs were likely better at addressing reactive criminal thinking, while proactive criminal thinking may be better treated by targeting positive outcome expectancies, developing discrepancies, resolving ambivalence and ‘rolling with resistance’ (Miller & Rollnick, 2002).
Conclusion

This section reviewed current research on the causal factors of violence and contemporary dominant theories of aggression and violent offender typologies, concentrating particularly on the General Aggression Model, Algebra of Aggression model, and subtypes of instrumental and reactive violence and overcontrolled and undercontrolled violent offenders. These typologies indicate the diversity in development of violent offending and the role of anger and cognition in initiating and maintaining violent behaviour. This highlights the need for type-specific treatment addressing factors associated with violence. Typologies based on distinctions in emotional regulation (e.g., undercontrol or overcontrol) and cognition (e.g., instrumentality, reactivity, criminal thinking patterns) may have greater utility in identifying distinct treatment needs than typologies based on offence types.

Violent offender programs are increasingly multi-dimensional and attempt to address a wide range of factors, rather than targeting an individual’s specific treatment needs. The following chapter discusses current theories and trends in violent offender rehabilitation and issues of program effectiveness.
Chapter 4. Violent Offender Rehabilitation

The emphasis on rehabilitation as a strategy to reduce re-offending is evident in its inclusion as one of five principles of sentencing in Victoria’s *Sentencing Act 1991*, in conjunction with punishment, deterrence, denunciation and community protection. Violent offender rehabilitation programs represent a significant component of service delivery for correctional services in Australia (Day & Collie, 2013; Heseltine, Day, & Sarre, 2011) and internationally (e.g., Canada, New Zealand and the United Kingdom; see Cortoni, Nunes, & Latendresse, 2006; Polaschek et al., 2005; Serin, Gobeil, & Preston, 2009). Rehabilitation programs can best be regarded as a tertiary-level public health prevention approach to antisocial activity (Guerra, Tolan, & Hammond, 1994; McGuire, 2008), targeting individuals who have already been convicted of an offence.

The term ‘*rehabilitation*’ commonly refers to the provision of psychology-based interventions to offenders to reduce their risk of further offending and assist them to lead law-abiding lives. The term ‘treatment’ is also often used, although refers more broadly to any form of intervention designed to change how offenders think, feel and behave, including medical treatment, case work, counselling and education (see Crow, 2001; Day, Howells, & Rickwood, 2003; McGuire, 2002). Rehabilitation strategies typically focus on assessing causal (or risk) factors that contribute to offending behaviour and providing interventions that address those factors, with the aim of reducing an offender’s risk of re-offending. Violent offender rehabilitation programs are guided by theories of crime, theories of violence and aggression, and theories of behaviour change. Programs predominantly draw on general personality, cognitive and social learning perspectives of crime which emphasise individual differences in offending (Andrews & Bonta, 1994).
Evidence consistently and conclusively indicates that offenders provided with appropriate treatment re-offend at lower rates than those offenders who are excluded from treatment (see Andrews & Bonta, 2010b; Andrews et al., 1990). Meta-analytic reviews of program evaluations demonstrate reductions in re-offending rates by an average of 10-50%.

Programs that adhere most closely to the principles of the Risk-Need-Responsivity (RNR) model of offender rehabilitation (Andrews & Bonta, 2006) produce larger effect sizes (Andrews & Dowden, 2006; Andrews et al., 1990; Bonta, Wallace-Capretta, & Rooney, 2000; Gendreau & Andrews, 1990; Lipsey & Wilson, 1998; Lowenkamp & Latessa, 2004). The greatest potential for change occurs when more intensive programs are delivered to higher risk offenders (the risk principle), programs target dynamic individual factors empirically associated with offending\(^{10}\) (the need principle), and programs employ cognitive-behavioural and social learning perspectives tailored to individual needs and abilities that facilitate or hinder treatment (e.g., motivation, readiness to change, cognitive and psychological functioning, learning style, communication skills, literacy, age, gender, and culture) (see Andrews & Bonta, 2010; also Allen, MacKenzie, & Hickman, 2001; Andrews et al., 2012; Andrews et al., 1990; Birgden & McLachlan, 2004; Cullen & Gendreau, 1989; Day & Collie, 2013; Dowden & Andrews, 2004; Howells, Watt, Hall, & Baldwin, 1997; Husband & Platt, 1993; Ogloff & Davis, 2004; Ross & Fabiano, 1985; Ward, Melser, & Yates, 2007; Wilson, Bouffard, & MacKenzie, 2005).

\(^{10}\) Also referred to as ‘criminogenic needs’: empirically-determined dynamic risk factors directly associated with criminal behaviour that, when changed, are related to changes in recidivism risk. Static risk factors (e.g., age, gender, offending history) may predict re-offending, but are immutable to treatment. Addressing dynamic risk factors not directly related to offending behaviour (e.g., low self-esteem, physical or psychological illness) in treatment rarely results in reduced recidivism risk (Andrews & Bonta, 1994; Bonta & Andrews, 2007; Day & Howells, 2002).
Substantial evidence exists to suggest that cognitive-behavioural approaches, focusing on links between beliefs, attitudes and behaviours, are effective in the rehabilitation of adult offenders (e.g., Lipsey & Cullen, 2007; Lösel, 1995; McGuire, 2002, 2008; Polaschek et al., 2005), and more successful than other treatment approaches (see Day & Howells, 2002). Other empirically and theoretically important individual and program considerations include program integrity and quality, professional discretion, well-trained facilitators with skills including the ability to build strong therapeutic relationships with offenders and recognise therapeutic moments, and methods for enhancing offenders’ ability and opportunities to engage in treatment and motivation to change (Andrews, 2011; Andrews & Bonta, 2010a; Day & Doyle, 2010; Gendreau & Smith, 2011; Lowenkamp, Flores, Holsinger, Makarios, & Latessa, 2010; McMurrin, 2009; Polaschek, 2012; Ross, Polaschek, & Ward, 2008; Ward, Day, Howells, & Birgden, 2004).

Eight core risk factors directly associated with crime have been identified: criminal history (a static factor), and the dynamic antisocial attitudes, antisocial associates, antisocial personality pattern, substance abuse, family and marital relationships, lack of engagement in school or work, and lack of engagement in prosocial activities (Andrews & Bonta, 2010b). Other offending-related needs include poor problem solving skills, high impulsivity, low self-management, cognitive processing deficits and lack of empathy (Andrews, 1995; Howells & Day, 1999; McGuire, 2002). Violent offenders share many of these criminogenic needs with other offender types, since many violent offenders are generalist and engage in a range of offending (Howells et al., 2008). However, relatively little empirical research has sought to identify the specific criminogenic needs of violent offenders (see Polaschek & Collie, 2004).
Australian violent offender treatment programs aim to promote better understanding of violent offending and consequences of violence, identifying and challenging cognitive distortions associated with violence, improving arousal management, emotional regulation and coping strategies, enhancing perspective taking, problem solving, interpersonal and conflict resolution skills, and developing individualised relapse prevention plans (Heseltine, Howells, & Day, 2010). Education and role-modelling of new prosocial behaviours to replace antisocial and aggressive behaviours, while emphasising positive reinforcement contingencies for prosocial behaviour, is also important.

Violent offender programs internationally have been classified in terms of the following three types: anger management, cognitive skills or multi-modal (the latter based on the assumption that some components relate to the criminogenic needs of every offender; Polaschek & Collie, 2004). The evidence supporting the delivery of each type is considered next.

**Anger Management Programs for Violent Offending**

Cognitive-behavioural anger management programs were, until relatively recently, the most common approach to violent offender treatment. This stemmed in part from the extensive research demonstrating the efficacy of these programs in addressing specific anger problems in clinical settings (see Del Vecchio & O'Leary, 2004). Anger management programs are generally shorter in duration than other program types and focus on assisting offenders to recognise, monitor and find appropriate ways to express anger (Howells & Day, 1999). They aim to increase self-awareness of anger and triggers, strengthen anger control and decrease anger
arousal with social skill development, relaxation training, coping strategies and
cognitive restructuring (Howells, 1998; Walker & Bright, 2009a).

Anger management program evaluations with offending populations have
produced mixed results. Although several meta-analyses suggest that anger
management programs achieve at least moderate effect sizes with general
populations (e.g., Beck & Fernandez, 1998; DiGiuseppe & Tafrate, 2003;
Edmondson & Conger, 1996; Gansle, 2005; Sukhodolsky, Kassinove, & Gorman,
2004), studies with offender populations, however, produce less consistent findings.
Dowden, Blanchette, and Serin (1999), for example, found an 86% reduction in
violent re-offending in 110 participants over a 3-year follow-up after anger
management program completion. Conversely, evaluations of Australian anger
management programs with violent offenders reveal only small effects (Howells et
al., 2002; Watt & Howells, 1999); although these findings may result from shorter,
less intense programs than that evaluated by Dowden et al. (1999), the Australian
evaluations have found improvements in anger knowledge following treatment,
perhaps reflecting change at a psycho-educational level rather than a therapeutic
level (Heseltine et al., 2010; Howells et al., 2002; Howells et al., 2005; Watt &
Howells, 1999).

The limited effectiveness of anger management programs observed in
Australian evaluations may reflect issues resulting from the link assumed to exist
between anger and violence. While violent acts have been labelled as ‘angry
behaviours’ (see Howells, 2004), some studies have failed to find support for the link
between anger and violence (see Polaschek & Collie, 2004). Extensive research has
confirmed that anger is neither necessary nor sufficient for violence to occur
(Bandura, 1973; Blackburn, 1986; Howells, 2004; Novaco, 1976; Polaschek &
Collie, 2004) and anger is not implicated in acts of instrumental or sadistic violence. It would appear, then, that, anger management is inappropriate and unresponsive to the needs of violent offenders for whom violence is unrelated to anger (Jolliffe & Farrington, 2007; Loza & Loza-Fanous, 1999; Polaschek, 2006).

**Cognitive Skills Programs**

Cognitive skills programs vary significantly in duration (see Bush, 1995; Henning & Frueh, 1996; Robinson, 1995), but are generally shorter and less intense than multi-modal programs. Cognitive skills and cognitive self-change programs are two approaches that focus on violent offender cognitions. The first approach focuses on assisting offenders to acquire new capacities for thinking about and solving problems, particularly in the interpersonal and self-management domains; the second approach assists offenders to recognise and change the thought patterns and processes conducive to violent crime (e.g., ‘irrational thinking’) (see McGuire, 2008, Polaschek & Collie, 2004; also Bush, 1995; Serin & Preston, 2001; Yochelson & Samenow, 1976, 1977). Affect labelling, self-instruction and self-regulation are other examples of cognitively-based interventions, although limited guidance is available regarding the forms of cognition that should be targeted in treatment of violent offenders (Polaschek, Calvert, & Gannon, 2009; Polaschek & Collie, 2004).

Evaluations of cognitive skills and cognitive self-change program evaluations have produced mixed outcomes. Several studies have, however, reported reductions in recidivism after cognitive skills program completion (Hollin et al., 2008; Landenberger & Lipsey, 2005; Lipsey, Landenberger, & Wilson, 2007; McGuire et al., 2008; Palmer et al., 2007; Polaschek et al., 2005). Henning and Frueh (1996), for example, found significant reductions in recidivism rates at 2-year follow-up (an
average rate of 50% in treatment attendees compared with 71% in matched non-treatment attendees). A large-scale Canadian study \((n = 1444)\) demonstrated reductions in recidivism of up to 36% following completion of a 36 x 2 hour prison-based program (Robinson, 1995), with violent offenders less likely to be reconvicted than offenders convicted of property crimes. Similar large-scale cognitive skills program evaluations from England and Wales demonstrated reductions in recidivism rates following treatment completion, although at 2-year follow-up there was no difference in re-offending rates between treatment completers and matched controls (Cann, Falshaw, & Friendship, 2005; Falshaw, Friendship, Travers, & Nugent, 2004). Offenders who had dropped out of treatment had higher rates of recidivism, and there were inconsistent findings when comparing outcomes across risk categories.

Ward and Nee (2009) argue that the theoretical rationale for cognitive skills programs requires further development, and that programs should include the concepts of rationality, emotion, distributed cognition and embodiment to further conceptualise the relationship between cognitive skills and behaviour. As with anger management programs, cognitive skills programs are considered unlikely to meet the needs of serious high risk violent offenders who hold well-rehearsed, entrenched beliefs and attitudes about aggression and violence. They are based on a relatively narrow approach to changing cognitions that may be insufficient for reducing reoffending by violent offenders with multiple treatment needs.

**Multi-modal Programs**

Multimodal, or multi-faceted, programs are increasingly utilised in many jurisdictions. Programs are designed to address a range of treatment needs, based on
the assumption that many factors are involved in the causation and maintenance of
violent behaviours and that targeting a large number of psychological and
behavioural factors (e.g., social skills, cognition, anger management and substance
abuse) may achieve greater reductions in violent re-offending risk (Polaschek, 2006).
Programs consist of several discrete modules that address different treatment
domains; offenders are ostensibly matched to treatment modules responsive to their
individual needs. Programs are typically more intensive than anger management and
cognitive programs (e.g., over 300 hours for some programs). In Australia, programs
range from between 100-140 hours for moderate risk violent offenders and 180-450
hours for high risk violent offenders (Heseltine et al., 2011). The greater program
intensity theoretically allows for an enhanced level of individualisation of
therapeutic targets within treatment programs, and more time to achieve these.
However, multimodal interventions offered within correctional agencies tend to offer
a ‘one size fits all’ approach, attempting to address a broad range of criminogenic
needs relevant to the offender population. There is an assumption that by providing
interventions for a broad range of treatment targets, the program will provide
adequate coverage of most individual treatment needs.

Multimodal programs appear to achieve modest reductions in reoffending
rates. For example, an evaluation of the Canadian prison-based Violence Prevention
Program (Serin & Preston, 2001) compared program completers with matched
prisoners; program completers had lower rates of violent-reoffending than the non-
completers or comparison group (8.5%, 24.5% and 21.8% respectively)\textsuperscript{11} (Cortoni et
al., 2006). The program incorporated motivational enhancement, behavioural change
\textsuperscript{11} Results may have been confounded by higher levels of treatment motivation and
slightly higher rates of other violence-related program completions prior to current
program commencement for the program group than the matched group.
methods, and a focus on arousal management, impulsivity, aggressive beliefs, cognitive distortions, conflict resolution, empathy enhancement, problem solving and relapse prevention. An evaluation of New Zealand’s Rimutaka Violence Prevention Unit residential treatment program for high risk violent offenders also demonstrated reductions in violent recidivism at 2-year follow-up, with significantly fewer program completers reconvicted for a violent offence than a matched untreated sample (32% v 63%). The average number of days to violent re-offence was more than double that of the comparison group, although non-violent re-offending rates were not significantly different (Polaschek et al., 2005). This 330-hour cognitive-behaviour program includes modules on offence chain identification, offence-supportive thinking restructuring, emotional regulation, victim empathy, moral reasoning, problem solving, communication and relationship skills and relapse prevention planning. Finally, an evaluation of the 144-hour Canadian Persistent Violent Offender program (Serin, 1995; Serin et al., 2009) at five-year follow-up found few differences between program completers, non-completers and a matched sample who completed a program targeting anger and arousal management on measures of aggression, anger, hostility, impulsivity, empathy, institutional misconduct and returns to custody (Serin et al., 2009). Serin and colleagues proposed two alternative explanations: either the program lacked integrity and intensity, or the program was effective only with certain violent offender groups.

Relatively few violence-specific program evaluations have been reported. Program evaluations are affected by methodological and ethical issues concerning the random assignment of participants to non-treatment control groups and service delivery demands mean that many evaluations do not employ designs robust enough to establish causality. Studies also suffer from high rates of attrition (McGuire,
Treatment non-completion is a very real issue associated with increased risk of recidivism. Dowden et al. (1999) found the highest rates of violent re-offending by program drop-outs (40%), compared with untreated (17%) and program completer (5%) groups. Cortoni et al. (2006) found that violent re-offending rates were 4.25 times higher for treatment non-completers than treatment completers.

While most evaluations report some evidence of reducing general or violent recidivism, Polaschek and Collie (2004) concluded that programs require greater theoretical and empirical integrity. Joliffe and Farrington’s (2007) subsequent review of violent offender treatment identified 11 outcome studies meeting methodological criteria. Interventions with violent offenders were effective at reducing general and violent re-offending (by 8-11% and 8% respectively), however program effectiveness varied considerably according to factors including intervention content and delivery. Multi-modal treatments were reported to be more effective than those with a narrow focus, and programs that included cognitive skills, role-play and relapse prevention appeared to be particularly effective.

In a large scale review of meta-analyses of offender treatment, McGuire (2008) found numerous positive outcomes from treatment general or specific violent offending behaviour treatment; the most consistent effects were associated with methods derived from cognitive social learning theories (behavioural, cognitive, interpersonal and problem-solving), and emotional self-management approaches generally demonstrated reliable positive effects. McGuire again concluded that systematic, carefully-designed interventions can reduce violent re-offending, and

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12 Studies investigated the effects of intervention or treatment on adult male violent offenders (identified through official criminal justice system contact or self-report), measured at least one quantitative offending outcome variable, included a control group, had minimum sample size of 50, and were published between 1975 and 2007 (Joliffe & Farrington, 2007).
reiterated the need for higher quality outcome studies to further investigate the relationship between variables such as intervention methods, offence typologies and participant characteristics.

Conclusion

In summary, the evidence base regarding the effectiveness of psychological treatments in reducing violent re-offending, although limited, suggests that appropriate programs can achieve modest and socially significant effects in reducing general and violent re-offending. While anger regulation and cognitions are often targeted in violent offender programs, the effectiveness of these interventions seems compromised by the limited knowledge that exists about the specific types of cognitions that should be targeted and evidence that not all types of violent offending are caused by anger dysregulation. It appears then that programs may be differentially effective, achieving greater change in particular subtypes of violent offenders. The next two chapters provide an analysis of current knowledge about anger and thinking styles respectively.
Chapter 5. Anger

Many violent offender programs incorporate anger management interventions, based in part on the widely-held assumption that all violent offenders have anger problems (Loza & Loza-Fanous, 1999). The accurate identification of anger as a criminogenic need for violent offending is therefore crucial to ensuring that interventions address relevant treatment needs to reduce risk of recidivism. The following chapter reviews contemporary anger research, including anger definitions, the triggers, functions and temporal processes of anger and the relationship of anger, aggression, violence and cognition, highlighting potential areas of diversity between subtypes of violent offenders.

What is Anger?

Anger, like aggression and violence, is defined in different ways in the literature, incorporating physiological, cognitive, subjective and behavioural components. For centuries, anger has been viewed by many as a ‘bad’ emotion. While Darwin (1872/1998) optimistically viewed anger as an adaptive emotion that habitually leads to action (see Tavris, 1989), most theorists focused on maladaptive or dysfunctional concepts of anger, rooted in the historical conceptualisation of anger as a ‘passion’, an emotion by which one could be ‘gripped’ or ‘seized’, with the resultant loss of mental control potentially leading to ‘insanity’ or violence (see Novaco, 1994). Plato, for example, described anger as an extremely negative emotion that should be controlled through reason (see Tavris, 1989); Aristotle and Seneca similarly viewed anger as a strong emotion, provoked by the perception of being treated badly, that motivates a desire for vengeance (DiGiuseppe & Tafrate, 2007). The general theme of anger as an emotion that is provoked and motivates
action remains evident in more recent research, including the three dominant perspectives provided here.

Berkowitz (1993, 2010; Berkowitz & Harmon-Jones, 2004) defined anger as an experience of conscious feeling that forms part of the anger/affective aggression syndrome, a constellation of physiological patterns, behavioural tendencies and cognitions linked to the inclination to attack or injure an available target. Berkowitz required that anger experience be linked to an urge to hurt or destroy someone. Highlighting the subjectivity of labelling an emotion as anger, Berkowitz (2012) suggested that frustrations generate anger and aggressive inclinations only to the extent that they are ‘decidedly unpleasant’. Berkowitz also emphasised the different reactions resulting from anger as an affective reaction to precipitating circumstances (e.g., situational stressors) and the feelings and sensations that may accompany proactive or instrumental aggression (see also Hubbard et al., 2004; Potegal & Stemmler, 2010; Scherer, 2001).

Novaco (1976, 1978, 2010, 2011) proposed a model of anger that included subjective emotional states, environmental circumstances, physiological arousal, cognitions of antagonism and corresponding behavioural reactions. Novaco described anger as the combination of physiological arousal and subjective cognitive labelling of that arousal as anger or a similar emotion (e.g., annoyance, frustration or irritation). Cognitive labelling of the arousal is highly automatic; inherent in the label is an impulse to act confrontationally or antagonistically toward the perceived source of provocation. This action impulse (regulated by internal and external mechanisms of control) differentiates anger from other sources of arousal (e.g., being upset).

Finally, Spielberger (1999; Spielberger, Jacobs, Russell, & Crane, 1983; Spielberger & Reheiser, 2010) defined anger as a psychobiological emotional state
that varies in intensity (e.g., from mild irritation or annoyance to intense fury and rage) and fluctuates over time, accompanied by the activation of neuroendocrine processes and autonomic nervous system arousal. Lewis (2010) conversely noted that the terms ‘anger’, ‘aggression’, ‘rage’ and ‘wilfulness’ were often used interchangeably, choosing instead to separate anger and rage, rather than viewing rage as intense anger. Lewis described anger as having a restricted, focused response, a specific object, and appears bounded (i.e., it can be resolved); in contrast, rage is more intense, longer-lasting, less focused, generally diffused in occurrence and object, and may be a response to shame.

**Distinguishing Hostility and Anger**

As noted earlier, the terms ‘anger’, ‘hostility’ and ‘aggression’ are sometimes used interchangeably in the literature, despite their different, but related, theoretical conceptualisations (Parrott & Giancola, 2007). Anger generally refers to an emotional state. Hostility, in contrast, is variously defined as a behavioural response (Hart & Joubert, 1996); negative evaluations or attitudes of resentment, mistrust or hate (Blackburn, 1995); the experience of angry feelings in conjunction with a complex set of attitudes that provide motivation to cause injury, harm or damage (Spielberger & Reheiser, 2010); or the tendency to make violent threats towards others (Copello & Tata, 1990). Distinctions between the constructs include descriptions of anger as an emotion, hostility as an attitudinal disposition and aggression as harm-doing behaviour (Novaco, 2011); or view anger as an internal emotional response and hostility as the negative cognitive evaluation of people or events (Howells et al., 2008). Anger and hostility may, or may not, lead to aggressive behaviour. Additionally, the three constructs may all describe particular
events or acts, or may involve dispositional aspects. Given the overlap in conceptual definitions, several researchers coined the anger, hostility and aggression (AHA!) syndrome (Spielberger & Reheiser, 2010) to refer to the constructs collectively. Within the syndrome, anger refers to emotional states, hostility to antagonistic beliefs and aggression to harmful behaviour. Anger is viewed as the core component, strongly associated with hostility and often motivating aggressive behaviour.

**Causal Factors for Anger**

Anger has many causes, particularly obstacles to goal attainment, external agency and blame, and perceptions of actions as unjust or unfair (Berkowitz, 2010). While theoretical perspectives of anger vary across cognitive, behavioural, social learning theory and psychodynamic paradigms, the conceptualisation of anger across these perspectives typically includes a focus on the interrelatedness of angry thoughts, feelings and behaviour. Cognitive-behavioural perspectives regard anger as a multidimensional construct with physiological, cognitive, phenomenological and behavioural domains that interact with each other to influence the experience (or not) of anger (Day, Howells, Mohr, Schall, & Gerace, 2008). Novaco (1978) proposed that the cognitively-mediated emotional state of anger is determined by external events, internal cognitive processes (e.g., appraisal, expectation, self-talk) and behavioural reactions, with bidirectional causal relationships. Anger is considered an effective stress reaction that occurs in response to exposure to environmental demands or stressors (physical, biological, psychological or social) in the absence of coping resources.

Obstacles to goal attainment are consistently identified by appraisal theorists as causal factors for anger. Anger is generally viewed as a reaction to an adverse
event or situation, most likely to occur when the individual perceives that they have the ability to cope with the situation. This perception typically follows an appraisal and decision that sufficient power, control or resources are available to reinstate a goal or acquire a desired outcome. For anger to occur, researchers argue that the instigating occurrence must have held personal significance and relevance to a goal or motivation to attain that goal, an external agent must be considered responsible for the negative event, and the negative event must be perceived as unfair or improper (Averill, 1982; Ellsworth & Smith, 1988; Frijda, 1993; Lazarus, 1991; Ortony, Clore, & Collins, 1988; Roseman, 1996; Solomon, 1993). Researchers disagree, however, on how important the goal needs to be to generate anger (Berkowitz, 2010; Lazarus, 1991), whether anger occurs in response to voluntary and justified acts (Averill, 1982), whether the external agent must be perceived as having power to control the event (Weiner, Graham, & Chandler, 1982), whether aversive conditions may be internal (Berkowitz, 2010; Venable, Carlson, & Wilson, 2001), and whether blame may be consequential rather than antecedent for anger (Frijda, 1993; Quigley & Tedeschi, 1996; Stein & Levine, 1999).

Anger varies in intensity within and across situations, rising and falling within a given episode. Anger tends to escalate, even when provocation remains constant or is repeated, and typically outlasts the event that triggered it (Potegal, 2010). Anger then decays (gradually declining over time), is quenched when overridden, disrupted or terminated by an extrinsic process, or is expressed through catharsis, relieving psychological and physiological tension and the likelihood of further acts of anger (Potegal, 2010).
Functions of Anger

Anger has many functions, both adaptive and maladaptive. Positive functions of anger include energising behaviour; overriding inhibition; focusing attention on threatening elements; expressing negative sentiment; fear suppression; self-assertion; defending self-worth (by externalising blame for misfortune); instigating aggressive behaviour for survival and self-defence; signalling information about one’s personal state or situation for self-monitoring; and facilitating perseverance (Novaco, 1976, 2010). Anger motivates the removal of obstacles blocking goals, and angry feelings signal a need to search for and change anger-eliciting situations; an angry face also typically serves as an alert to others (Schultz, Grodack, & Izard, 2010). Lerner and colleagues (Lerner, Gonzalez, Small, & Fischhoff, 2003; Lerner & Keltner, 2000; Lerner & Tiedens, 2006) suggest that anger triggers optimism about one’s own outcomes, rather than the pessimism typically triggered by other negative emotions.

Anger has many negative or maladaptive functions as well. Freud, for example, emphasised the destructive, violent aspects of anger (Tavris, 1989). Anger may disrupt task performance and problem-solving, activate aggressive behaviour (Levey & Howells, 1990), instigate inappropriate aggression, impede social relationships, impair physical or psychological health and adjustment (Novaco, 2010), and is considered an instrument of interpersonal threat, intimidation, coercion and domination (Fridlund, 1991; Lennon & Eisenberg, 1987). Anger-regulation problems have been associated with a range of behavioural, psychological and physical health problems, including cardiovascular disease (Spielberger et al., 1985), substance abuse (Bond, Verheyden, Wingrove, & Curran, 2004), personality disorder (DiGiuseppe & Tafrate, 2007), organic brain disorder, including dementia (Rosen et al., 2002), depression, schizophrenia, psychoneuroses and post-traumatic stress
Individual Differences in Anger

State and trait anger.

The experience of anger differs between individuals in several ways. Early research considered anger a unidimensional conception, until Spielberger (1988) proposed two separate facets of anger: state and trait anger. State anger is the present, transient emotional experience of anger, a psychobiological state consisting of subjective feelings that vary in intensity and occur concurrently with activation or arousal of the autonomic nervous system (Spielberger, 1988; Spielberger & Reheiser, 2010). Trait anger refers to the predisposition to feel anger and perceive events as annoying or frustrating; trait anger is a personality state that explains individual differences in frequency and intensity of state anger experiences over time (Spielberger, 1988; Spielberger & Reheiser, 2010). Trait anger consists of two components: angry temperament and angry reaction (Spielberger et al., 1983). Angry temperament refers to individual differences in the disposition to experience angry feelings and express anger without provocation; angry reaction reflects the frequency of angry feelings when unfairly criticised or otherwise treated badly or unjustly.

Frequent experiences of state anger leads to the development of trait anger (Spielberger, 1988). Individuals high in trait anger perceive a wider range of situations as anger-provoking and experience state anger more frequently than those low in trait anger (Deffenbacher, 1992; Spielberger, 1988; Spielberger & Reheiser, 2010). Stable individual differences in the frequency and intensity of anger arousal are evident from the first year of life (Denham, Lehman, Moser, & Reeves, 1995;
Izard, Libero, Putnam, & Haynes, 1993; Lemery, Goldsmith, Klinnert, & Mrazek, 1999), and are thought to arise from both genetic and environmental influences (Schultz et al., 2010).

**Anger experience, expression and control.**

Spielberger (1988) developed a model of anger subtypes in recognition of clear individual differences in the proclivity to express anger, and the need to distinguish between anger experience (the subjective experience of anger varying in duration and intensity) and anger expression (the tendency to act on anger by expressing, suppressing or actively coping with it). Spielberger’s model, based on the factor structure of the State-Trait Anger Expression Inventory (STAXI; Spielberger, 1988) comprised three anger subtypes: anger-out, anger-in and anger-control. The factors reflect how often anger is experienced but suppressed (anger-in), expressed toward others or objects (anger-out) or controlled (anger-control-out) (Spielberger, Krasner, & Solomon, 1988). Individuals with high anger-out scores frequently engage in either verbal or physical expression of anger, endorsing items such as “[when] I lose my temper, I strike out at whatever infuriates me”. High anger-in scores are associated with suppressing anger expression (e.g., “I boil inside, but I don’t show it; I keep things in”). Individuals with high anger-control scores have strong anger experiences, but are vigilant about controlling expression of these feelings. Anger-in and anger-out subscales are empirically independent (Spielberger et al., 1988).

Spielberger (1988) theorised that high trait anger and anger expression (anger-out) would be associated with aggression, while high anger suppression and control (anger-in and anger-control) scores would be associated with a lack of
aggression. Berkowitz (2012) suggested that individuals scoring highly on either the anger-in or anger-out scales experience strong psychophysiological reactions to a triggering event and likely have an urge to attack an appropriate target because they feel angry and are “boiling inside”. High anger-in scores, however, indicate strong inhibition or suppression of this aggressive impulse. Berkowitz suggested that cognitive controls appeared vital in this process of inhibiting and separating aggressive impulses from automatic, anger-related physiological reactions.

The factor of anger control is somewhat more contentious. Some researchers have suggested that extreme anger may be associated with a sense of loss of control, with some individuals reporting periodic experiences of very impulsive angry outbursts in the context of feeling out of control (Fava et al., 2000; Potegal, 2010; Roseman, Wiest, & Swartz, 1994; Stemmler, 2010). Even at low intensity, some individuals experience anger as not completely volitional (Sukhodolsky, Golub, & Cromwell, 2001). Conversely, some appraisal theorists argue that anger is preceded by a sense of control: individuals will not become angry unless they believe that they can cope with the provocative occurrence. Other researchers have found that some individuals describe a sense of control accompanying their anger, rather than clearly preceding it (see Berkowitz, 2010; also Geen, 1968; Harmon-Jones, Sigelman, Bohlig, & Harmon-Jones, 2003; Roseman, Spindel, & Jose, 1990). Berkowitz (2010) suggests that if angry people always think (consciously or unconsciously) that they can master a disturbance before becoming angry, then angry outbursts may stem less from a deficit in control, and more from a choice not to use that control. Thus anger control appears to be a point of individual difference.

Spielberger’s (1988) model of anger has received strong empirical support. The STAXI, and its successor, the State-Trait Anger Expression Inventory-2
(STAXI-2; Spielberger, 1999), have frequently been used in offender research, though application with violent offenders specifically has been limited.

**Anger, Aggression and Violence**

Anger is the emotional state most commonly identified as an antecedent for aggression and violence (Howells et al., 2008; Novaco, 1997). While anger is neither necessary nor sufficient for violence (Bandura, 1973; Blackburn, 1986; Howells, 2004; Novaco, 1976, 1994; Polaschek & Collie, 2004), anger is recognised as a contributing factor in the presence of other environmental and intrapersonal conditions, and considered a significant antecedent for many violent offences. Anger has consistently been identified as a risk factor in the prediction of violent behaviour and recidivism among violent offenders (e.g., Douglas & Skeem, 2005; Novaco, 1994; Zamble & Quinsey, 1997), and the relationship between overcontrolled and undercontrolled anger and violent behaviour has been explored in detail (e.g., D'Silva & Duggan, 2010; Megargee, 1966; Verona & Carbonell, 2000).

Some researchers have argued that anger arousal facilitates aggression (Rule & Nesdale, 1976); others suggest that the relationship is mutual, with anger levels influencing aggression levels and vice versa (Novaco, 1976). Factors that determine whether provocation will induce aggression include the magnitude and appraisal of provocation, reinforcement contingencies, expected outcomes, modelling influences, situational constraints and preferred coping styles; these factors also influence aggression in the absence of anger (Novaco, 1976). Anger is thought to cause disorganisation of cognitive processes, impulsive reactions and behaviour disruption; the combination of agitation, frustration and hostile internal dialogue cumulatively stimulates aggressive behaviour (Novaco, 1976). Furthermore, the average violent
offender may have difficulty controlling the expressive, disruptive, defensive and instigative functions of anger. Polaschek and Reynolds (2000) suggest that violent offenders tend to over-label their arousal such that anger is their predominant emotional experience. Some violent offenders find anger satisfying, and may deliberately expose themselves to arousing situations so that they feel justified in their subsequent use of violence.

In prisoner samples, many researchers have found a predictive relationship between anger and violence: anger (self-reported and staff-rated) predicted general recidivism (Wood & Newton, 2003), adult violence without a weapon (Michie & Cooke, 2006) and adolescents’ physical and verbal aggression (Cornell et al., 1999). Anger also predicted male adolescents’ motivation for offending on probation (Gudjonsson & Sigurdsson, 2007). Other studies with incarcerated offenders, however, have suggested mixed results. Two studies found that anger was not predictive of violence (Loza & Loza-Fanous, 1999; Mills & Kroner, 2003); in both studies prisoner-reported anger levels were lower than standardised norms and other prisoner samples (Baker, Van Hasselt, & Sellers, 2008; Ford, 1991; Lindqvist et al., 2005; Suter et al., 2002), perhaps indicative of measurement reactivity. Loza and Loza-Fanous (1999), for example, compared STAXI scores for 122 violent and 142 non-violent Canadian prisoners; there was no difference in STAXI scores between the violent and non-violent offenders. The constructs measured by STAXI subscales may not have been treatment needs for the violent offender group. Alternatively, within the group, some subgroups may have differed significantly on certain constructs (e.g., anger control); when analysed as an entire group, however, high and low scores may have been offset to an average similar to the non-violent offender group. Insufficient details are provided in this study to determine if this is the case.
Many researchers argue that poor anger control often contributes to violent offending, and therefore can be considered a criminogenic need for a large proportion of violent offenders (see Andrews, 1995; Howells & Day, 1999; Louw, Strydom, & Esterhuyse, 2005; Megargee, 2009; Powis, 2002; Tavris, 1989). While the relationship between anger and violence is well-researched, comparisons of violent offender program outcomes for offenders with overcontrolled anger, undercontrolled anger and ‘normal’ anger control have been limited. As explored earlier, the control or regulation of anger is a key component of the overcontrolled / undercontrolled dichotomy first proposed by Megargee (1966). Both overcontrolled and undercontrolled violent offenders have deficits in anger control, excessively or insufficiently controlling their anger respectively (although some researchers argue that levels of anger control are ‘normal’ in one type or the other in some samples).

Using the four-type classification discussed above, conforming violent offenders appear to have deficits in anger experience while inhibited violent offenders have deficits in anger expression.

The reactive / instrumental dichotomy of violence and aggression also clearly delineates the role of anger in some violent offending. Anger generally forms a significant part of affect-driven, highly-aroused reactive violence. The role of anger in instrumental violence is not as definite: anger is not necessarily involved in premeditated, non-affect-driven instrumental violence, although this type of violence may still occur in the context of anger. Some researchers argue that instrumental and reactive violence is affected by levels of behavioural inhibition, drawing on Gottfredson and Hirschi’s (1990) suggestion that antisocial behaviour results from low self-control (impulsivity, risk seeking, present orientation, temper and carelessness) in interaction with criminal opportunity. In the presence of weak
behavioural inhibition, lower levels of anger are needed for an individual to engage in instrumental aggression and violence to take control of a situation that is causing anger, conduct a tactical appraisal and determine whether to use the threat of force to subdue perceived opponents (Driscoll, Zinkivskay, Evans, & Campbell, 2006). For individuals with stronger behavioural inhibition, higher levels of anger are needed to cross a higher threshold before engaging in reactive violence to express anger. Driscoll et al. (2006) suggest that individuals engaging in reactive (or expressive) violence have higher levels of emotional arousal and less ability to monitor and control their behaviour, triggering a loss of self-control with the aim of discharging anger (although not necessarily with the intent to harm a target).

Conclusion

Overall, anger appears to be related to violent offending in one of the following ways:

- Insufficient anger control (likely associated with reactive violence);
- Excessive anger control and insufficient anger experience;
- Excessive anger control and insufficient anger expression;
- ‘Normal’ levels of anger control; or
- No involvement of anger (possibly associated with instrumental violence).

Several factors are involved in the experience, expression and control of anger that may represent treatment needs for violent offenders. The success of anger management interventions with some, but not all, violent offenders indicates that there are may be some groups of violent offenders for whom particular anger factors are criminogenic, and it is these groups for whom anger management programmes
are effective. While the typology of overcontrolled and undercontrolled anger is still
evident in research, it has been somewhat ignored in violent offender treatment.
Many programs appear to focus on addressing undercontrolled anger, likely
associated with reactive aggression and violence. Instrumental aggression and
violence, however, may not be associated with anger dysregulation, and violent
offenders who have engaged in instrumental aggression may have treatment needs
that remain unaddressed in these programs. It does not make sense to offer anger
management interventions to violent offenders who have normal or low levels of
anger (Howells, 2004). The treatment need of overcontrolled anger has largely been
ignored in the literature. Davey et al. (2005) reported that the majority of theoretical
and clinical analyses of anger associated with violence to date had focused on
understanding and managing high levels of angry experience and low levels of anger
control. This remains true, despite ever-increasing clinical and empirical
observations of individuals with histories of extreme violence who report
antecedents of inhibited or unexpressed anger contributing to violent offending.
Chapter 6. Criminal Thinking

Cognition is frequently implicated in the effect of a stimulus on the experience of anger, generally through appraisal. Crime-supportive cognitions appear to be a condition that facilitates the use of violence in the presence and in the absence of anger. The following chapter will investigate crime-supporting cognitions, and explore their role in violent offending, and in the instrumental / reactive and undercontrolled / overcontrolled typologies discussed above.

Cognition is considered a key component in a range of theories of aggression and violence, and as with anger, crime-supporting cognitions are considered a treatment need for many violent offenders. A series of meta-analyses have demonstrated that antisocial cognitions are one of the top four dynamic predictors of general recidivism (Andrews & Bonta, 2010b; Andrews, Bonta, & Wormith, 2006; Jones, Miller, & Lynam, 2011), predicting future criminality better than traditional criminological variables such as family structure and social class (Walters & DeLisi, 2013). Many cognitive-behavioural rehabilitation programs include components to address antisocial cognitions, and large scale longitudinal evaluations support the conclusion that changes in cognitive constructs are associated with changes in rates of offending (see Andrews & Bonta, 2010a; also Ashford, Wong, & Sternbach, 2008; Hubbard & Pealer, 2009; Lowenkamp, Hubbard, Makarios, & Latessa, 2009; McGuire et al., 2008). However, evaluations of programs addressing criminal cognitions of violent offenders have demonstrated limited efficacy in reducing violent offender recidivism rates.

Limited empirical evidence is available indicating the types of criminal cognitions that should be targeted in treatment (Polaschek & Collie, 2004). Thus there is a need to understand the nature of criminal cognition and how it deviates
from non-criminal thinking and decision making (Walters, 2009b), and how violence-supportive cognitions deviate from general criminal cognitions. It is important to determine the types of violence-supportive cognitions that underpin violent behaviour, so that these can be targeted with treatment to reduce rates of reoffending by violent offenders. The rationale for examining crime-supporting cognitions is that this is a common basis for treatment, and is often assumed to be problematic for most violent offenders. Research of treatment programs addressing cognitions suggests, however, that this is not the case for all.

**Definition of Criminal Thinking**

Criminal thinking is defined as cognition designed to initiate and/or maintain criminal activity, and violence-supportive cognition is defined as cognitions that contribute to the initiation or maintenance of violent behaviour; that is, thoughts that give permission to break the law and to behave violently. Criminal thinking constitutes the attitudes, values and beliefs supportive of crime and is considered one of the ‘big four’ criminogenic needs vital in predicting and managing recidivism risk (Andrews & Bonta, 2010b; Andrews et al., 2006; Jones et al., 2011). Attitudes are the evaluative cognitions and feelings that organise an individual’s decision to act toward a person, thing or action; antisocial attitudes are the thoughts, feelings and behaviours supportive of criminal conduct.

Criminal thinking is relative to the society in which it takes place, and needs to be viewed within cultural, temporal and developmental contexts (Walters, 2009b). Cultural context acknowledges that a culture defines what is criminal. Temporal context refers to the crime initiation and maintenance phases: criminal thinking may contribute to the initiation phase (explaining how crime begins) and the maintenance
phase (explaining how crime continues), although the role of criminal thinking likely varies across the phases. Developmental context, finally, is exemplified by comparing Dodge’s (1991) proactive and reactive aggression distinction in children with Walters’ (2006c) proactive and reactive criminal thinking in adults. Criminal thinking is a necessary, but not sufficient, condition for criminal behaviour: a criminal act requires criminal thoughts and the decision to act on those thoughts (Walters, 2009b). Cognitive factors are partially responsible for crime continuity, with antisocial cognition seemingly exerting its influence over crime-related constructs by mediating important crime relationships (e.g., serving as a link between past and future criminality) (Walters & DeLisi, 2013).

Structure of Cognition

Cognitive factors often exert their effect by mediating relationships between other variables (Bandura, 1986). Cognition consists of three key components: cognitive structures, processes and content (see Fiske & Taylor, 1991; Hollon & Kriss, 1984; Huesmann, 1988; Ingram & Kendall, 1986; Monsell, 1981; Turk & Salovey, 1985). The nature of cognition is to construct an individual’s perception of the world, selectively encode information, perform behaviour measured against values and expectations, and impose structure on one’s own actions. Cognitive structures form the basic architectural components of the information processing network that guides the structure of cognition in memory (Kendall, 1992; Rumelhart, 1984). Cognitive structure refers to the architecture or form of the cognitive content, and the relationship of that content to other concepts in memory. Within the cognitive structures of the long term memory, memory nodes make up networks of information through connections to other nodes containing similar information.
Activation of one node, though sensory priming, causes the activation of related nodes; this pattern of node activation is a cognitive process known as a ‘schema’ (Anderson & Bushman, 2002; Rumelhart, 1984). Cognitive content, or cognitive products, such as attributions, decisions, thoughts and accessed beliefs, are the end result of information processing (Hollon & Kriss, 1984; Kendall, 1992) stored in long-term memory and consciously accessed.

Cognitive processing refers to the complex mechanisms that lead to cognitive content or knowledge (Collie, Vess, & Murdoch, 2007); the mechanisms by which pre-existing knowledge structures affect subsequent understanding of the world. Cognitive processing includes processes such as perception, encoding, appraisal, interpretation, acquisition, rehearsal and retrieval of information. Schemas are used in cognitive processing to perceive, guide attention, encode, alter or retrieve information to assess the stimuli we encounter and help us make sense of the world around us (Crick & Dodge, 1994; Hollon & Kriss, 1984), influencing the processing and inhibition of information at a pre-conscious level. Schemas are generally defined as clusters of beliefs, attitudes and other types of cognition that are closely associated in enduring networks as a result of experience and learning (Huesmann, 1988), although the term ‘schema’ has several diverse meanings in psychology (Ward, 2000). Implicit theories are a form of schema (Polaschek et al., 2009) that are composed of structured interconnected belief networks organised around an underlying dominant theme or theory and guide behaviour implicitly, allowing individuals to predict and anticipate what usually happens during a social situation (Ward, 2000). Scripts are collections of simple event schema that contain information about the events that happen in an environment, how an individual
should respond and behave during those events and the likely outcomes. Scripts evolve over time, guided by factors such as culture.

**Criminal Cognition**

Criminal thinking is defined by content, structure and process. Some individuals entertain criminal thoughts without ever acting on them (content) (Walters, 2009b). Others demonstrate a pattern of thinking that follows some of the same rules and conventions as criminal thinking (process), yet are not chronic offenders. Criminal thought content describes what an offender thinks or imagines at the various stages of committing an offence, criminal thought structure refers to the nature of the schema that underpin this thought, and criminal thought process entails how an offender thinks, including biases and deficits in information processing that may promote the use of offending as a goal-attainment or problem-solving strategy (see Collie et al., 2007). Cognitive deficiencies (the absence of thinking; e.g., not thinking of the consequences of behaviour) are distinguished from cognitive distortions (i.e., distorted processing of social information) (Kendall, Ronan, & Epps, 1991). Cognition may contribute to violent offending in a variety of ways, including through offending-supportive cognitive processes, cognitive processing deficits, or cognitive content, such as violence-supportive beliefs. These impacts may occur at the pre-conscious information-processing level, or the conscious cognitive product level. The relationship between some of these cognitions and violence remains controversial (Maruna & Mann, 2006), however, and there is little guidance regarding which cognitions should be targeted in rehabilitation and how (Polaschek et al., 2009).
Criminal thinking, according to the lifestyle theory of crime (Walters, 1990, 2009b) is hierarchically organised. At the lowest level of the hierarchy are schemes, or meanings; schemes develop through ongoing interactions with the environment, with new information being assimilated into existing schemes, or accommodated through the creation of a new scheme to conceptualise the information (Walters, 2009b). Criminal schemes (e.g., getting even with someone for a perceived injustice) may be content schemes (encompassing the specific acts of the crime – the act itself, target and deterrents) or process schemes (involving the steps taken to enact the crime – motive, opportunity, priority). Schemes are guided and reinforced by higher order cognition.

The second level of the hierarchy is comprised of schematic subnetworks (groups of interrelated schemes that help promote criminal behaviour); the juxtaposition of the content and process schematic subnetworks for crime set the stage for criminal behaviour (Walters, 2009b). Content schematic subnetworks are cognitive templates focused on a central theme (e.g., crime and justice). Process schematic subnetworks are groups of schemes that focus on the means by which a crime is planned, enacted and later justified, but are devoid of crime. Process schematic subnetworks include criminal thinking styles (e.g., entitlement, discontinuity), criminal attributions (e.g., blaming others), self-efficacy for crime (e.g., belief that “I am good at crime”), outcome expectancies for crime (e.g., crime will bring power, respect and money), criminal goals and criminal values (e.g., self-centred, hedonistic).

Finally, the top level of the hierarchy consists of uniquely-organised belief systems (collections of content and process schematic subnetworks) that are global impressions the individual forms of themselves (self-view; through reflected
appraisals, social comparisons, self-representations, role identity, possible self), the external environment (world-view), the past (past-view; through recollections), the present (present-view; through perceptual and executive functions) and the future (future-view; through anticipations). Although there is very limited research into the belief systems of violent offenders, Walters (2009b) speculates that habitually violent offenders have negative and antisocial self-views, world-views that highlight mechanistic, fatalistic and malevolent sides of life, past-views dominated by past criminal exploits, present-views affected by processing and decision-making deficits and future-views that anticipate the benefits and minimise the costs of future crime.

It is difficult to separate criminal thought content and process, as the two are tightly linked. Measures designed to assess criminal thinking generally focus on either one or the other. For examples, the Psychological Inventory of Criminal Thinking Styles (PICTS; Walters, 1995) measures criminal thinking process. The question arises whether criminal thinking styles are an indication of general antisociality or whether they are context-specific. That is, as with anger, whether criminal thinking styles are an indication of trait- or state-based factors. The following sections will briefly outline some of the more dominant perspectives of cognitions involved in general and violent offending, before focusing particularly on a discussion of the influence of criminal thinking styles as a cognitive process.

**Violent Crime-Supporting Content and Process Cognitions**

A variety of theories have been developed to explain the role of cognition in aggression, violence and violent offending, and generally indicate a cyclical relationship. Aggression results from cognitions associated with frustration at goal attainment or provocation (Berkowitz, 1990; Dollard et al., 1939), as discussed
earlier. Aggression also biases the cognitive processes involved in social learning, information processing and decision making (Bandura, 1978, 1983, 1986; Dodge & Crick, 1990; Dodge, Price, Bachorowski, & Newman, 1990b; Huesmann, 1988; Milner & Webster, 2005; Novaco & Welsh, 1989). Aggressive individuals selectively attend to and recall aggressive cues from the environment, and have difficulty identifying non-aggressive solutions to situations. Several social information processing and other cognitive biases are associated with aggression and violence, including biases in social attribution for negative events and attentional, goal-setting, problem-solving and representational deficits (Crick & Dodge, 1996; Howells et al., 2008). Social learning may also be fundamentally impeded in violent offenders due to impaired executive cognitive functioning (e.g., attentional control, goal planning, abstract reasoning, cognitive flexibility, hypothesis generation, temporal response sequencing and the ability to use information contained in working memory) (Giancola, 1995; Hawkins & Trobst, 2000; Moffitt, Lynam, & Silva, 1994; Raine, 2002).

Several schemas, such as the hostile attribution bias (Dodge, Bates, & Pettit, 1990a) and violence-supportive implicit theories (Polaschek et al., 2009), have been implicated in violent offending, affecting social learning and information processing. Frequent violent thoughts reinforce schemas and promote aggression, assisting in the perpetuation and increased risk of violent and aggressive behaviour (Grisso, Davis, Vesselinov, Appelbaum, & Monahan, 2000). The hostile attribution bias refers to the tendency to attribute hostile intent to others’ behaviour, even when there is no objective evidence with which to do so (e.g., interpreting an unexpected bump from another individual as having malicious intent, even when independent others view the intent as ambiguously benign) (Nasby, Hayden, & DePaulo, 1980; Polaschek et
The hostile attribution bias appears a relatively automatic occurrence for highly aggressive people (see, e.g., Tiedens, 2001; Zelli, Huesmann, & Cervone, 1995); there has, however, been limited research with offender groups specifically (Polaschek et al., 2009). Of the few studies that have examined the hostile attribution bias in violent offenders, the results of two (Copello & Tata, 1990; Seager, 2005) could not be generalised to violent offenders held in general prison populations, because all violent offender populations studied were either diagnosed with psychopathy or personality disorder, or scored highly on Hare’s (1991) Psychopathy Check List-Revised (PCL-R). A third found no relationship between violent behaviour and hostile attribution bias in a study of 150 American violent prisoners, but cited measurement error as a possible explanation (Vitale, Newman, Serin, & Bolt, 2005).

The identification of other schemas in violent offending behaviour remains a focus of research. Notably, there are some differences in terminology, with some researchers (e.g., Huesmann, 1988) using the terms ‘schema’ and ‘script’ interchangeably, while others (e.g., Ward & Keenan, 1999) choose to use the term ‘implicit theory’ instead of schema. Some consider implicit theories, structured, connected belief networks organised around an underlying theme or theory, to be a type of schema (Polaschek et al., 2009). The structures are thought to guide behaviour implicitly and allow individuals to predict and anticipate likely occurrences in social situations (Ward, 2000) through the construction of hypotheses about others’ beliefs, intentions and desires. Once developed, well-formed implicit theories are highly resistant to revision, with individuals likely to ignore or disregard evidence that contradicts or invalidates an implicit theory (Polaschek et al., 2009).
Belief systems supportive of violence may be formed through misinterpretations of conflictual social interactions that are then used in future situations (Beck, 1999). When an individual negatively perceives another’s intentionality (perhaps guided by the hostile attribution bias), they have a tendency to protect and control their threatened or hurt self-image with violence. Beck identified seven rigid schemas held by violent offenders toward authorities, partners, outsiders and others; including: (a) ‘I need to fight back’; (b) ‘physical force gets respect’; (c) ‘nobody can be trusted’; and (d) ‘if you don’t get even, people will walk over you’. These beliefs may be viewed as separate schema, or as beliefs contained within a single ‘hostile world’ schema (Mann & Beech, 2003). Other schema related to violence include believing in violence as a way of preserving an honourable self-image (Cohen, Nisbett, Bowdle, & Schwarz, 1996), protecting themselves or their gang members from perceived threats (honour crimes) or protecting other less capable individuals (vigilante crimes) (Lopez & Emmer, 2002).

Toch (1992) identified a typology of violent offenders differentiated on the basis of approaches to interpersonal situations that promoted violence. Two broad approaches were identified that made violence more likely: self-preserving strategies, concerned with consolidating and increasing social status for self- or others’ appraisal (types included rep-defending, norm-enforcing, self-image defending, self-image promoting, self-defending and pressure-removing), and approaches that dehumanise others, with little importance placed on others’ rights and needs compared to getting one’s own needs met (types included bullying, exploitation, self-indulging or catharting).

Polaschek and colleagues (Polaschek et al., 2009; Polaschek & Donovan, 2006) identified four violence-related implicit theories in investigating the offence
accounts from predominantly Maori and Pacific Island male violent prisoners. The ‘beat or be beaten’ implicit theory referred to the need to act violently to achieve or maintain agency, status and autonomy in a violent world. The theory was associated with a prevailing hostile view of others and enjoyed widespread support. Two subtypes of ‘beat or be beaten’ were identified: ‘self-enhancement’ (proactively seeking out opportunities for violence as a way of enhancing status) and ‘self-preservation’ (closely linked to the hostile attribution bias: resentful, mistrustful of others and ‘forced’ into violence by others’ intent to prey on them). The ‘I am the law’ implicit theory referred to a belief of moral superiority and being entitled or obliged to use violence to attack, harm or discipline others for the protection of family, friends or social order. These implicit theories were underpinned by an assumption of the normalisation of violence as a helpful, acceptable and effective problem-solving strategy to either enhance or retain status or achieve a positive outcome for his social group, with little or no lasting negative consequences. Finally, the ‘I get out of control’ implicit theory referred to a belief in being unable to self-regulate their own behaviour without assistance (sometimes attributing this to uncontrollable anger or rage, substance use or life stressors).

Similarities are evident in the implicit theories identified by Polaschek et al. (2009) and earlier research with seriously violent men. The ‘beat or be beaten: self-preservation’ implicit theory, seemingly associated with a hostile attribution bias, appeared similar to Toch’s (1992) ‘self-defending’ or ‘self-image defending’ and to Lopez and Emmer’s (2002) ‘honour crime’ type of defending or protecting one’s own image. ‘Beat or be beaten: self-enhancement’ was similar to Toch’s (1992) ‘self-image promoting’ strategy for violence. The ‘I am the law’ theory bore similarity to Lopez and Emmer’s (2002) ‘honour crime’ type of defending the image
and reputation of a gang, and Nisbett’s (1993) identification of the belief that a man has the right to take the law into his own hands to protect himself, his property and family. The ‘I get out of control’ implicit theory seemed more related to an individual’s observation of their experience of deficits in self-regulation, rather than a belief about relationships and self-image. Polaschek et al. (2009) considered that this may stem from actual difficulties in self-regulation rather than an excuse for violence, and suggested an association with the lack of control and impulsivity identified in unregulated individuals (e.g., Caspi, Henry, McGee, Moffitt, & Silva, 1995; Henry, Caspi, Moffitt, & Silva, 1996).

The use of schemas and biased processing may lead to a range of cognitive distortions used to justify and rationalise aggressive and violent behaviour. Cognitive distortions are consciously accessed beliefs that result from distorted processing of social information at a pre-conscious level (Guyll & Madon, 2003) and provide frameworks used by offenders to neutralise, minimise and justify maladaptive behaviours before, during and after offending (Barriga & Gibbs, 1996). The idea of cognitive distortions providing rationalisations of offending behaviour stemmed from Freud’s (1946) theories of defence mechanisms including projection and reaction formation. Ward (2000) posited that cognitive distortions emerge from causal theories organised as maladaptive implicit theories of victims, offences and the world. The offender interprets and explains the victim’s actions, desires and beliefs through mental representations contained in these theories, thereby justifying and maintaining future offending behaviour. Offenders use cognitive distortions to protect their self-image after antisocial behaviour, by alleviating negative feelings about themselves and their behaviours and justifying their offending (Bandura, 1991; Sykes & Matza, 1957; Ward, 2000).
Sykes and Matza (1957) recognised in their extensive research with general offenders that the vast majority saw themselves as conventional rather than as antisocial and sought to justify, neutralise and rationalise their actions. Five types of cognitive distortions were identified: (a) denial of responsibility (‘it was an accident’); (b) denial of injury (‘no one got hurt’); (c) denial of victim (‘the victim was asking for it’); (d) condemning the condemners (‘society is the real culprit’); and (e) appealing to higher loyalties (‘I couldn’t let my mates down’). The cognitive distortions most commonly found in recent literature include denial of accusation, denial of blame, justification, minimisation, mislabelling, external blame attribution, ‘self-serving’ thinking, rationalisation and immediate gratification (Barriga, Hawkins, & Camelia, 2008; Barriga et al., 2000; Ward, 2000). However, research has not yet clearly separated the types of cognitions that occur before, during and after the offence (e.g., the thinking errors that contribute to the initiation of the offence and those that later justify the behaviour).

Cognitive distortions have been separated into two categories: primary self-serving and secondary (Barriga & Gibbs, 1996; Barriga et al., 2000; Gibbs, 2003; Gibbs, Potter, & Goldstein, 1995). Primary cognitive distortions (self-centred attitudes, thoughts and beliefs) manifest as beliefs in one’s own views, needs and expectations to the extent that others’ views are inconsequential or disregarded (e.g., one can do whatever they want, as they are above the law). Secondary cognitive distortions support primary distortions by rationalising and justifying offending behaviour (Barriga & Gibbs, 1996; Gibbs et al., 1995), and include blaming (e.g., attributing blame to external sources such as other people, provocation or intoxication), minimising (e.g., viewing violent behaviour as not harmful, and possibly commendable), mislabelling (e.g., using dehumanising labels for others)
and assuming the worst (e.g., attributing hostile intent to others or holding a pessimistic view of a situation or ability to change).

Most literature on cognitive distortions and offending comes from sexual offending research, although a few studies have examined the distorted perceptions and cognitions of violent offenders specifically (e.g., Dodge et al., 1990b; Hollin & Howells, 1989). Chereji, Pintea, and David (2012) found a large weighted average effect size (.82) for the relationship between cognitive distortions and violence in a meta-analysis of 14 studies of violent and non-violent prisoners. Self-report or behavioural ratings (in the form of a violent index offence, condemnation, prior violent convictions or staff rating of violence) had no significant influence on this relationship. In a comparison of violent offenders, child molesters and rapists, Milner and Webster (2005) found significant differences in the prevalence and types of distortions (schemas) used. The distortion most prevalent in the violent offenders was ‘grievance/revenge’; in contrast, ‘sense of worthlessness’ was most prevalent for child molesters. The ‘grievance/revenge’ distortion was also used to a much lesser extent by the sexual offenders; this distortion may therefore contribute to violent offending particularly.

Novaco and Welsh (1989) examined cognitive distortions typical of violent males in violent interactions. They suggested that pre-existing schemas affect the labelling of an emotional state; cognitive processing associated with violent behaviour may affect that labelling during the processes of encoding, interpreting and cognitively representing internal and external cues. The distortions may include a tendency to see aggression, hostility and provocation everywhere; increased exposure to aggression leading to more readily perceiving aggression; successful problem-solving with anger and violence leading to the increased likelihood of using
violence in future problem-solving; a tendency to perceive one’s own behaviour as situationally determined, while attributing others’ behaviour to their personality (e.g., natural aggressiveness); deficiencies in the ability to adopt alternative roles; a tendency to be sure that violence is the ‘normal way’ to act in specific situations; and a tendency to maintain a belief in the first impressions of another’s intentions, even in the face of contrary evidence (maximised by high arousal).

**Criminal thinking styles and the PICTS.**

The widest exploration of offender cognitive distortions was undertaken by Walters (1995, 1996, 2005a, 2006a; Walters & DeLisi, 2013; Walters, Frederick, & Schlauch, 2007) throughout the development and revision of the Psychological Inventory of Criminal Thinking Styles (PICTS) measure. Few psychometric instruments are specifically designed to measure criminal attitudes, beliefs or cognitions. The PICTS, one of the few empirically validated tools available, is designed to measure criminal thought processes thought to promote and maintain a criminal lifestyle. The 80-item self-report questionnaire asks respondents to reflect upon and describe their own thinking style as a means of assessing information processing characteristics (Collie et al., 2007), measuring distortions such as entitlement, rationalisation.

The PICTS is underpinned by Walters’ (1990) criminal lifestyle model and the earlier theoretical work of Yochelson and Samenow (1976), who identified 52 thinking errors thought to characterise the thinking of the criminal personality. Walters (1990) proposed that criminal lifestyle was formed through the interaction between offender and environment: individuals decide whether to offend, with external conditions constraining these decisions. Positive outcomes reinforce
behaviour, and with repetition the choice becomes entrenched. Walters viewed
criminal lifestyle not as a momentary lapse in judgement, but as an enduring
collection of four primary behavioural characteristics: irresponsibility, self-
indulgence, interpersonal intrusion and social-rule breaking. Walters (1995) argued
that these characteristics are influenced by three interdependent dynamic factors:
conditions (the predisposing factors that may lead to criminality), choices (that direct
behavioural responses) and cognitions (that maintain the criminal lifestyle).

Walters (1990) identified eight common and interrelated thinking styles
denoting the lifestyle criminal: Mollification (externalising blame for offending),
Cutoff (low tolerance for frustration, ability to rapidly eliminate anxiety or guilt),
Entitlement (belief of privilege or status), Power Orientation (controlling others and
surroundings with aggressive displays), Sentimentality (self-centred atonement,
despite past criminality), Super-optimism (lack of consequential thinking or
overestimate of the ability to avoid negative consequences), Cognitive Indolence
(poor reasoning or a tendency to take short-cuts in thinking), and Discontinuity (loss
of direction toward goal attainment).

Using factor analysis, Walters (1995) identified four factors thought to reflect
behavioural characteristics of a criminal lifestyle: avoidance of harm
(irresponsibility), denial of harm (self-indulgence), interpersonal hostility
(interpersonal intrusiveness) and self-deception (social rule-breaking). Egan,
McMurran, Richardson, and Blair (2000) criticised Walters’ finding for the large
amount of shared variance in the study, and proposed instead that two aspects of
criminal thinking were measured by the PICTS: lack of thoughtfulness (cognitive
indolence about offending and others’ feelings), and wilful criminality (active
justifications of offending). These factors bore similarity to a two-factor model
identified in research on social processing deficits in psychopaths (Pardini et al., 2003). ‘Lack of thoughtfulness’ appeared similar to the callous/unemotional traits associated with deficits in cognitive and emotional empathy deficits, and ‘wilful criminality’ bore similarity to the ‘impulsivity/conduct’ factor reflecting behavioural dysregulation, disinhibition and attention deficits (Chambers, Eccleston, Day, Ward, & Howells, 2008; Egan et al., 2000; Pardini et al., 2003).

Walters (2005a) subsequently proposed a four-factor model with two major factors (Proactive and Reactive Criminal Thinking) and two minor factors (Interpersonal Hostility and Denial of Harm). The Reactive Criminal Thinking scale was constructed to measure the impulsivity, reaction to environmental cues and avoidance of thinking about negative aspects of crime thought to embody the ‘lack of thoughtfulness’ factor. The Proactive Criminal Thinking scale was developed to measure the instrumentality thought to drive the ‘wilful criminality’ factor, associated with a sense of privilege, attributions of blame, and perceptions of oneself as a victim and ‘nice guy’ (despite criminal actions). Table 2 provides an outline of the behavioural, affective and cognitive features of Walters’ proactive and reactive criminal predation.

The original four-factor structure was also retained, comprising Problem Avoidance (reflecting a tendency to use crime and substance use to run from problems), Infrequency (extreme hostility toward others), Self-Assertion / Deception (tendency to assert one’s will over the environment to achieve one’s own objectives, regardless of the impact on others or how unrealistic the goals are) and Denial of Harm (rationalisation and minimisation of harm done to others from own involvement in crime) (Walters, 2010). Chambers et al. (2008) suggests that Walters’ (1995, 2010) denial of harm factor bears similarity to Barriga and Gibbs’ (1996)
Table 2

*Behavioural, Affective and Cognitive Features of Proactive and Reactive Criminal Predation (Walters, 2005)*

<table>
<thead>
<tr>
<th>Feature</th>
<th>Proactive</th>
<th>Reactive</th>
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<tbody>
<tr>
<td>Behavioural</td>
<td>Planned / premeditated</td>
<td>Spontaneous / impulsive</td>
</tr>
<tr>
<td></td>
<td>Scheming / cold-blooded</td>
<td>Emotional / hot-headed</td>
</tr>
<tr>
<td></td>
<td>Calculated / manipulative</td>
<td>Changeable / capricious</td>
</tr>
<tr>
<td>Affective</td>
<td>Anticipation (of positive outcomes)</td>
<td>Anger (at perceived injustice)</td>
</tr>
<tr>
<td>Cognitive</td>
<td>Attitude of privilege</td>
<td>Loss of focus</td>
</tr>
<tr>
<td></td>
<td>Rationalisation</td>
<td>Weak personal control</td>
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</tbody>
</table>

minimising and mislabelling distortions, with both referring to an offender’s denial that their actions are injurious to others. The interpersonal hostility factor (Walters, 2010) and assuming the worst distortion (Barriga & Gibbs, 1996) both outline the attribution of hostile intentions to others (perhaps reflecting frequent use of the hostile attribution bias). Barriga and Gibbs’ (1996) self-centred primary distortions seem similar to Walters’ (2010) self-deception factor, reflecting thoughts that one’s actions are correct regardless of others’ thoughts and feelings. While Chambers et al. (2008) suggested that Walters’ (2010) problem avoidance factor appeared most closely related to the self-centred primary cognitive distortion (Barriga & Gibbs, 1996), it seems plausible that this factor may relate to the distortion of blaming others, in that avoiding problems through substance use is then associated with blaming subsequent offending behaviour on the substance use.

Research indicates that the PICTS has good reliability and validity with male and female offenders (Walters, 1995; Walters & Elliott, 1999; Walters, Elliott, & Miscoll, 1998; Walters et al., 2007; Walters & Mandell, 2007) and is capable of
clearly differentiating offenders based on their risk level (Palmer & Hollin, 2003; Walters, 1995). Maximum security American prisoners significantly differed from medium and minimum security groups on all PICTS scales in Walters’ (1995) study. Palmer and Hollin (2003) found that minimum, medium and high risk male English prisoners scored significantly differently on seven of the eight thinking style scales; all except the Sentimentality scale. PICTS scales have also been associated with several offence history variables (e.g., age at first offence, number of previous convictions, extent and length of offending history) (Palmer & Hollin, 2003; Walters, 1995), providing further emerging evidence linking cognitive factors to offending chronicity and severity. In a sample of maximum security American prisoners, the Reactive Criminal Thinking scale, but not the Proactive Criminal Thinking scale, predicted subsequent total, aggressive and non-aggressive disciplinary infractions (Walters, 2005b, 2006c, 2007b). There has been limited research to date examining the Proactive and Reactive Criminal Thinking scales specifically with violent offenders.

Walters (2009a) suggested that different patterns of criminal thinking (e.g., proactive or reactive) result in different program outcomes. Cognitive behavioural program evaluations from the United States and Canada found significant reductions in the all PICTS scores, particularly the Cutoff, Cognitive Indolence, Discontinuity and Current Criminal Thinking Style scales (Walters, Trgovac, Rychlec, DiFazio, & Olson, 2002). In contrast, an English evaluation found the greatest reduction in Cognitive Indolence scale scores, with not all thinking style scale scores changing between pre- and post-program assessment (Blud, Travers, Nugent, & Thornton, 2003). It is unclear whether offender subtypes (particularly violent offenders) may be
identified that demonstrate different patterns of criminal thinking and differential program outcomes.

**Conclusion**

Research on violent offender cognitive processing generally shows that violent offenders perceive threat and hostility more readily than less violent individuals. However, there has been limited research into other forms of cognitive processing, particularly regarding the patterns of criminal thinking styles used by violent offenders specifically. It is likely that certain cognitions predispose an individual towards violence, and certain cognitions are reinforced by violence and aggression, maintaining a cycle of violent behaviour. While research has compared violent offenders’ cognitive distortions with those of sexual offenders, no research to date has determined whether there are groups within the violent offender population which differ according to the cognitive distortions that they use to justify or neutralise their violent offending behaviour. Table 3 outlines the factors or primary categories of distortions identified in various studies of general and violent offenders using general and violence-specific measures of offence-related cognitions. The question remains whether clear patterns of thinking styles (or distortions) can be ascertained for subtypes of violent offenders, and whether these patterns are linked to particular offence types.
### Table 3

*Similarities in Factors Identified in Measures of General and Violent Offending Cognition*

<table>
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<tbody>
<tr>
<td>*Doucette-Gates, Firestone, and Firestone (1999) (FAVT)*¹</td>
<td>Negative critical thoughts</td>
<td>Perceived disrespect / disregard</td>
<td>Social mistrust</td>
<td>Overt aggression expression</td>
</tr>
<tr>
<td><em>Lopez and Emmer (2002) (offender interviews)</em></td>
<td>Vigilante crimes (to protect others)</td>
<td>Honour crimes – self-preservation (to protect self [physical])</td>
<td>Honour crimes – gang crimes</td>
<td>Honour crimes – self-preservation (to protect one’s honour, respect, dominance)</td>
</tr>
<tr>
<td><em>Polaschek et al. (2009) (offence accounts)</em></td>
<td>Beat or be beaten – self-enhancement (Violence is normal)</td>
<td>I get out of control</td>
<td>Beat or be beaten – self-preservation (Violence is normal)</td>
<td>I am the law (Violence is normal)</td>
</tr>
<tr>
<td><em>Toch (1992) (offender interviews)</em></td>
<td>Approaches that dehumanise others</td>
<td>Self-preservation</td>
<td></td>
<td></td>
</tr>
<tr>
<td>*Walker (2005) (MVQ)*²</td>
<td>Machismo</td>
<td>Acceptance of violence</td>
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<tr>
<td>Barriga and Gibbs (1996) (How I Think Questionnaire)</td>
<td>Primary distortions (Self-centred)</td>
<td>Secondary distortions (Blaming others)</td>
<td>Secondary distortions (Minimising/mislabelling)</td>
<td>Secondary distortions (Assuming the worst)</td>
</tr>
<tr>
<td>Egan et al. (2000) (PICTS)</td>
<td>Wilful criminality</td>
<td>Lack of thoughtfulness</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Walters (2006c) (PICTS)</td>
<td>Proactive</td>
<td>Reactive</td>
<td>Infrequency (was Interpersonal Hostility)</td>
<td>Denial of harm</td>
</tr>
</tbody>
</table>

* Data collected from violent offender samples or using a violence-specific measure.

1Firestone Assessment of Violent Thoughts. For more detail, see Appendix I.

2Maudsley Violence Questionnaire. For more detail, see Appendix I.
Chapter 7. Patterns of Anger and Criminal Thinking

Significant individual differences exist in how anger and criminal thinking influence violent offending. Anger experience, expression and control and the patterns of cognitive distortions used to initiate and maintain offending and alleviate uncomfortable feelings in response to offending have the potential to differ between subtypes of violent offenders. The relationship between crime-supporting cognitions and anger is somewhat unclear; these cognitions may mediate the relationship between overcontrolled or undercontrolled anger and violence, and may initiate violent offending to achieve goals in the absence of anger (i.e., instrumental violence). Can individual differences in cognitive processes of criminal thinking and the role of overcontrolled or undercontrolled anger with instrumental or reactive violence be used to identify clinically meaningful subtypes of violent offenders for treatment purposes? Does consideration of criminal thinking patterns add value to the overcontrolled/undercontrolled typology or the instrumental/reactive dichotomy in identifying treatment needs? This section will briefly discuss contemporary research of the interaction between cognition and anger before considering possible associations between anger overcontrol and undercontrol, instrumental and reactive violence and criminal thinking styles.

Interactions between Affect (Anger), Cognition (Criminal Thinking) and Violence

Across many paradigms, emotional processes and cognitive processes, content and structures are considered inextricably linked in a cyclical, reciprocal relationship (Frijda, 1993; Lewis, 1995; Novaco, 1978; Teasdale, 1983). Cognitions lead to emotions and emotions affect subsequent cognitions. Emotions, including
anger, prime some cognitive components (Tiedens, 2001). Anger influences attention, perception, depth and direction of information processing, interpretation of social stimuli, evaluation, attribution, risk perception, risk preference, judgement and decision-making processes and outcomes (Cohen, Eckhardt, & Schagat, 1998; Dodge, 1991; Litvak, Lerner, Tiedens, & Shonk, 2010; Smith & Waterman, 2003; Tiedens, 2001; Wilkowski & Robinson, 2008). Anger is also an emotional consequence of cognitive processing, and violence and aggression comprise behavioural consequences. The likelihood of each consequence is influenced by the cognitions that are held and activated in a situation, including schemas, scripts, implicit theories and cognitive distortions that may support instrumental or reactive aggression and violence (Beck, 1999; Chereji et al., 2012; DiGiuseppe, Eckhardt, Tafrate, & Robin, 1994; Ellis, 1994; Novaco, 2007).

Considerable research supports the link between cognitions and emotion-related aggression (reactive aggression). Hostile attribution biases, antisocial beliefs (e.g., distrust of authority figures, greater tolerance of deviant acts; perceptions of the world as hostile and unsafe, endorsement of aggressive solutions, identification with delinquent peers), social problem solving deficits and social cognitive learning cognitions (including self-efficacy, outcome expectations and outcome values), cognitive distortions, threat perception (e.g., threat to self-image, social status or property), and irrational beliefs or attributions about others’ intentions have all been associated with reactive and proactive physical, verbal and indirect aggression and violence (Andrews & Bonta, 1994; Boldizar, Perry, & Perry, 1989; Crick & Dodge, 1994, 1996; DiGiuseppe & Tafrate, 2007; Dodge et al., 1990b; Farrington, 1990; Fives, Kong, Fuller, & DiGiuseppe, 2011; Granic & Butler, 1998; Polaschek et al., 2009; Steinberg & Dodge, 1983; Webster-Stratton & Lindsay, 1999). The
relationship seems present from childhood. Intentions toward aggression mediate aggressive behaviour (Welsh & Gordon, 1991), with thinking process a more important mediator than anger.

Research examining the role of anger in affecting attention and information processing has focused on state and trait anger and hostility. Hostile thinking is considered one of the main cognitive mechanisms in violence (Baker et al., 2008; Dodge & Crick, 1990; Dodge et al., 1990b; Firestone, Nunes, Moulden, Broom, & Bradford, 2005; James & Seager, 2006; Nasby et al., 1980; Seager, 2005; Simourd & Mamuza, 2000; Stanford et al., 2003; Tiedens, 2001). State anger arousal motivates interpretations of anger and hostility in others (Schiffenbauer, 1974; compare with Carlson, Felleman, & Masters, 1983), and heightens the significance an individual ascribes to an event (Schultz et al., 2010). Angry and agitated individuals tend to search for causality and blameworthiness, and attribute more negative intent to others’ behaviour (Eckhardt & Jamison, 2002; Keltner, Ellsworth, & Edwards, 1993; Lerner, Goldberg, & Tetlock, 1998; Mayer & Hanson, 1995). State anger influences decision-making, motivating a reduced focus on the risk of negative outcomes and greater focus on expectations of positive outcomes (Keltner et al., 1993; Lermise & Dodge, 1993; Lerner & Keltner, 2000). Anger appears to ‘prime’ harm-related emotion schemas (Keltner et al., 1993). Individuals with high trait anger use the hostile attribution bias more commonly (see, e.g., Anderson & Bushman, 2002; Berkowitz, 1993; Hazebroek, Howells, & Day, 2001; Lim, Day, & Casey, 2011) and have an increased propensity to respond aggressively following hostile appraisals (Bettencourt et al., 2006). Hostile interpretations are, however, stronger predictors of reactive aggression and aggression expectancy than trait anger (Lim et al., 2011), perhaps because anger does not always lead to aggression.
The relationship between hostile attribution bias and violence was discussed in detail above. Some researchers found no difference in violent and non-violent offenders’ use of the hostile attribution bias (e.g., Copello & Tata, 1990); others have found that violent offenders had higher levels of trait anger, interpretation of more hostile intent and increased levels of aggressive expectancy following interpersonal provocation (Lim et al., 2011). While the direction of the relationship between trait anger and the hostile attribution bias is unclear, the association between biased interpretations of social information and individual differences in aggressive outcomes does appear directly linked to individual differences in anger (Cohen et al., 1998; Tiedens, 2001).

Cognitive distortions involved in anger and violence are generated by narrow, automatic thinking. Research into specific cognitive distortions indicates that anger induction may lead to irrational or distorted thoughts such as catastrophising, overgeneralisation and dichotomous thinking (Eckhardt, Barbour, & Davison, 1998; Eckhardt & Jamison, 2002; Zillmann, 1994). Cognitive distortions allow offenders to use their anger to justify their behaviour, and avoid the experience of negative emotions (e.g., anger) (e.g., Barriga et al., 2000; Walters, 1995, 2009b; Ward, 2000; Ward, Hudson, & Marshall, 1995). Anger can be generated and maintained through irrational or dysfunctional beliefs (Ellis, 1994), cognitive appraisals of unfairness, attributions of blame, cynicism, mistrust of others, antisocial beliefs and beliefs that justice does not prevail (Averill, 1983; Ford, 1991; Frijda, 1993; Granic & Butler, 1998; Hazaleus & Deffenbacher, 1985; Lopez & Thurman, 1986; Ortony et al., 1988; Yuen & Kuiper, 1991).

Aggression is seen as the end product of a sequence of cognitive-affective processes (Berkowitz, 1990, 1993; Berkowitz & Harmon-Jones, 2004): aversive
events produce negative affect, which automatically stimulates thoughts, memories, motor reactions and physiological responses associated with the fight-or-flight response. Fight associations lead to rudimentary feelings of anger; flight associations lead to fear. Individual reactions to aggress or flee depend on personal attributes (e.g., genetic predisposition, prior learning and conditioning) and recognition of situational factors that inhibit or promote aggression. Higher-order cognitive processing then leads to an aggressive behavioural response. This explanation seems particularly suited to explaining hostile aggression, although the priming and spreading activation processes are relevant to other types of aggression (Anderson & Bushman, 2002). Hostile aggression is elicited by the aversiveness of a provoking event rather than the cognitive appraisal of the event: cognitions make the event more aversive (Berkowitz, 1993).

Individuals high in trait anger, hostility or aggression demonstrate information processing biases in the attentional and interpretation stages (see Guyll & Madon, 2004; Orobio de Castro, Slot, Bosch, Koops, & Veerman, 2003; Schultz et al., 2010; Tiedens, 2001), demonstrated by a tendency to orient to angry faces and anger-oriented information (Parrott, Zeichner, & Evces, 2005; Putman, Hermans, & van Honk, 2004; van Honk et al., 2003; van Honk, Tuiten, de Haan, vann de Hout, & Stam, 2001), less accurately recognising and more frequently attributing anger or hostility to facial expressions, or negativity to event explanations (Arsenio, Cooperman, & Lover, 2000; Epps & Kendall, 1995; Schultz, Izard, & Bear, 2004; Wenzel & Lystad, 2005). This may indicate a desire to detect anger and threat quickly to maintain dominance within their environment (van Honk et al., 2003), or reflect a tendency to expect that others will have similar feelings and motivations (Wingrove & Bond, 2005).
Individual differences are apparent in the strength and consistency of influence of state anger over attention and information processing (Schultz et al., 2010). State anger motivates attention and information processing to facilitate the rapid removal of threats or obstacles (Bodenhausen, 1993; Lerner et al., 1998; Schultz et al., 2010; Tiedens, 2001; Zillmann, 1994) with narrower cognitive processing of perception and interpretation. Individuals high in trait anger tend to use anger- and threat-related schemas when state anger is high (Schultz et al., 2010).

Attributions influence anger arousal and aggression (Quigley & Tedeschi, 1996; Tiedens, 2001); attribution theorists argue that causal attributions about responsibility determine feelings (e.g., anger) that guide subsequent behaviour (e.g., aggression) (Matthews & Norris, 2002). Triggering events precipitate cognitive and physiological processes that the individual labels as ‘anger’, and this is a stage in which cognitive processing biases may impact. The progression from anger to violence appears to depend largely upon the disinhibition of internal control; pro-violent or pro-criminal cognitive processes may contribute to this disinhibition.

Some information processing biases appear more relevant to anger, aggression and violent behaviour than others (e.g., attentional cueing, attribution error) (Hazaleus & Deffenbacher, 1985; Novaco & Welsh, 1989). Information specifically relevant to the attribution of responsibility, such as intentionality, avoidability and motive, serves to arouse or reduce anger and retaliatory aggression (Ferguson & Rule, 1983).

Anger (and other negative affective) arousal may lead to the experience of diminished cognitive control over behaviour, disengaging from the ‘self-system’ (e.g., less integrated and meaningful self-awareness, diminished guilt, increased focus on immediate concerns) (Baumeister, Heatherton, & Tice, 1994) and increasing the likelihood of antisocial or aggressive behaviour in the event of
negative affective arousal (Day, 2009). An extreme affective state may override relatively appropriate cognitive processes and beliefs with erroneous, mood-congruent but simplistic inferences about another’s underlying intentions, beliefs and desires that allow abusive, disinhibited behaviour (Polaschek & Ward, 2002). Gross (1998, 2001; Gross & John, 2003) differentiated between self-control processes used before the emotion is fully developed (e.g., situation modification, attentional deployment, reappraisal) and those operating after the emotion arises (e.g., response suppression). Strategies used in later processing stages require considerable mental effort and are therefore less effective with more intense emotional states (e.g., suppression lessens the open display of emotion, but often fails to decrease the experience of the affective state, and may impair memory for the emotion-producing occurrence). Strategies that operate relatively early require less mental effort, and are relatively unaffected by emotion intensity.

The above indicates the significant impact of anger on cognitive processing. Anger and cognition are also associated in violent offending through rumination. Rumination reflects a specific style of anger expression: an inward, suppressive style in which the anger-provoking incident is suppressed and subsequently thought about, prolonging the anger experience and increasing the tendency to dwell on previous anger experiences (Linden et al., 2003; Sukhodolsky et al., 2001). Four factors of rumination have been identified: angry afterthoughts, angry memories, revenge fantasies and understanding of causes (Sukhodolsky et al., 2001). While ‘understanding of causes’ may be somewhat functional in helping to isolate why a stimulus led to anger (Chambers, 2010), ‘fantasies of revenge’ appear highly dysfunctional, directly associated with an inability to forgive the antagonist, long-held grievances and outward anger expression (Barber, Maltby, & Macaskill, 2005;
Linden et al., 2003). The Mollification criminal thinking style may be associated with rumination in the focus on blaming others, and Proactive Criminal Thinking may be evident in instrumental planning to express anger and use crime to remove the subject of rumination (rather than reacting and expressing anger immediately).

Models of anger tend to emphasise the role of cognitive processes (see, e.g., Novaco, 1975). How, then, might criminal thinking styles impact on these cognitive processes? The Mollification thinking style, in which blame is externalised, may prompt an individual to blame another individual for blocking them from goal attainment or provoking them, eliciting feelings of frustration and anger. Cutoff seems related to anger in that it represents rapid elimination of deterrents to crime: perhaps if an individual experiences uncomfortable feelings (e.g., anxiety or guilt) they may deter from offending, they may rapidly replace these feelings with the more comfortable emotion of anger. Entitlement and Power Orientation thinking may similarly prompt anger if an individual perceives that someone or something is standing in the way of them receiving the privilege or status to which they believe they are entitled, or not doing what the individual expects from them or refusing to be controlled by the individual. Of course, Entitlement and Power Orientation criminal thinking may contribute to the maintenance of violent offending in the absence of anger. Sentimentality (or self-centred atonement) may reflect to an extent the thinking described in Polaschek et al.’s (2009) ‘I am the law’ implicit theory, or the ‘honour crime’ type described by Lopez and Emmer (2002), with a belief that they are doing something nice for others, to feel better about themselves; anger may stem from the belief that others have been wronged. Cognitive Indolence may prompt anger in that the poor reasoning or short-cuts in thinking may include cognitive biases such as the hostile attribution bias. The Superoptimism and
Discontinuity thinking styles seem less likely to contribute to anger: Discontinuity relates to a loss of direction toward goal attainment, or distraction from a goal, rather than being blocked from attaining that goal, and Superoptimism reflects a lack of consequential thinking and the belief that the individual can avoid the negative consequences typically associated with a criminal lifestyle.

Anger may be elicited by a variety of criminal thinking styles, and may impact on the criminal thinking that leads to initiation and maintenance of criminal behaviour, particularly violent offending. Research comparing differences in anger and cognitive processes of subtypes of violent offenders has been limited, but will now be reviewed.

**Anger and Cognitive Processing Differences in Violent Offender Subtypes**

**Instrumental and reactive violence.**

The reactive / instrumental dichotomy of violence and aggression also clearly delineates the role of anger in some violent offending. Anger generally forms a significant part of affect-driven, highly-aroused reactive violence. The role of anger in instrumental violence is not as definite: anger is not necessarily involved in premeditated, non-affect-driven instrumental violence, although this type of violence may still occur in the context of anger. Some researchers argue that instrumental and reactive violence is affected by levels of behavioural inhibition, drawing on Gottfredson and Hirschi’s (1990) suggestion that antisocial behaviour results from low self-control (impulsivity, risk seeking, present orientation, temper and carelessness) in interaction with criminal opportunity. In the presence of weak behavioural inhibition, lower levels of anger are needed for an individual to engage in instrumental aggression and violence to take control of a situation that is causing
anger, conduct a tactical appraisal and determine whether to use the threat of force to subdue perceived opponents (Driscoll et al., 2006). For individuals with stronger behavioural inhibition, higher levels of anger are needed to cross a higher threshold before engaging in reactive violence to express anger. Driscoll et al. (2006) suggest that individuals engaging in reactive (or expressive) violence have higher levels of emotional arousal and less ability to monitor and control their behaviour, triggering a loss of self-control with the aim of discharging anger (although not necessarily with the intent to harm a target).

**Overcontrolled and undercontrolled offenders.**

Primary psychopath-type offenders’ cognitions appear related to instrumental offending (Lykken, 1995) or planned violence. Cognitive distortions used seem to include justifications associated with wilful criminality (Egan et al., 2000) and self-regulation standards appear to adapt to include deviant beliefs (Chambers et al., 2009). Offending by primary psychopaths appears to be against victims that are well-known, allowing the offender to justify and plan their offence against the victim (Chambers, 2010). Their victim group appears somewhat similar to the controlled-type offender (Blackburn, 1971). Chambers et al. (2009) found that primary psychopath-type individuals used distortions or justifications including victim blaming, demonising the victim or ‘mislabelling’ (Barriga & Gibbs, 1996; Barriga et al., 2000; Gibbs, 2003; Gibbs et al., 1995), allowing the individual to view their behaviour as punishing a ‘bad person’. This may have been due to an inflated self-image or a judgement of the justice system as inadequate, alleviating the perceived risks of violent offending – this appears similar to the ‘I am the law’ or ‘honour crime’ type thinking described above (Lopez & Emmer, 2002; Polaschek et al.,
Active justifications appear well-developed in primary psychopath-type, persistent, offenders (Chambers et al., 2009) and assist them to engage particularly in planned violence. Proactive criminal thinking may be more prevalent in the instrumental offending of primary psychopath-type individuals, and corresponds with positive outcome expectancies for crime, but not with hostile attribution bias (Walters, 2007a). Proactive criminal thinking correlates significantly with prior arrests for ‘instrumental’ crimes (e.g., burglary and robbery), but not with ‘reactive’ crimes (e.g., assault and domestic violence) (Walters et al., 2007). With regard to the role of anger, primary psychopath-type offenders have deficits in anger control, excessively controlling their anger.

Secondary psychopath-type offenders appear to use cognitions reflective of a lack of thoughtfulness (Egan et al., 2000), comprising cognitive indolence about offending and the feelings of others. Their impulsive violence is reflective of reactive / expressive offending (Lykken, 1995), with victims tending to be strangers or acquaintances (Blackburn, 1971) giving little opportunity for planning or repeat offending (Chambers, 2010). Deficits in anger control, with insufficient control, are thought to play a role in the violent offending of secondary psychopaths. Reactive criminal thinking may be more evident in the reactive offending by secondary psychopath-type individuals (Walters, 2007a). Reactive criminal thinking correlates with hostile attribution bias, but not positive outcome expectancies for crime (Walters, 2007a), and correlates with prior arrests for ‘reactive’ crimes (e.g., assault and domestic violence) but not ‘instrumental’ crimes (e.g., burglary and robbery) (Walters et al., 2007). However, in a qualitative study of differences in thought processes of the four offender types, Chambers et al. (2009) found that undercontrolled offenders generally appeared pleased with the outcomes of their
violent behaviour, using distortions to justify their offending), apart from one secondary psychopath-type who seemed to be trying to desist from crime, but behaved impulsively in a stressful situation.

Inhibited-type offenders, who are usually peaceful, but commit reactive violence, tend to be unhappy with their behaviour and do not use distortions to justify their offending (Chambers et al., 2009). The rumination of inhibited individuals appears more consistent with the angry memories rumination style (Sukhodolsky et al., 2001), in which blame is internalised rather than directed at the antagonist (Barber et al., 2005). High levels of rumination increase cognitive load to the extent that judgement becomes impaired, resulting in inappropriate levels of violence at the next provocation (Davey et al., 2005). Chambers et al. (2009) found that inhibited individuals committed reactive violence without conscious planning, instead placing themselves in a situation with their antagonist that degenerated due to the individual’s emotional state. The violent offence seemed to signify a culmination of internalised anger contributing to a depressive state and that eventually resulted in a highly impulsive and destructive state. The inhibited individual then felt dissatisfied with their violence (consistent with their non-violent morals) as they felt out of control during the offence (Chambers et al., 2009). Deficits in anger expression are thought to be associated with offending by inhibited individuals.

Controlled-type offenders seem to consider violence against their personal morals, however in Chambers et al.’s (2009) study, they appeared satisfied with the outcome of their violence; their justifications indicated how their control relating to a non-violent philosophy may have been breached. As with primary psychopaths, Chambers and colleagues found that controlled individuals used distortions or justifications including victim blaming, demonising the victim or ‘mislabelling’
(Barriga & Gibbs, 1996; Gibbs et al., 1995). However, the unusual breach of control appeared to reflect rumination focused on punishing a single victim for committing a transgression that the individual could not cope with (Chambers et al., 2009), with a cognitive rehearsal of violent revenge (Sukhodolsky et al., 2001) that allowed violence against that victim while maintaining non-violent morals toward others (Chambers et al., 2009). This group had a lengthier period of rumination than primary psychopath offenders; the length of rumination was proportional to the perceived cost of behaving violently (Chambers et al., 2009) and appeared consistent with McGurk’s (1978) finding of the role of long-term thought processes in offending by controlled individuals. Mental rehearsal of the violent punishment prepared the controlled offender to commit the violent offence in a strategic manner, consistent with this group reporting the highest level of planning in their offending (Chambers et al., 2009); the primary psychopath type likely did not require this prolonged period of rumination as violence was a more familiar problem-solving tool for them (Chambers et al., 2009). Mollification, Entitlement and Proactive criminal thinking styles may be more prevalent in this subtype. Conforming / controlled violent offenders are thought to have deficits in anger experience that contribute to their violent offending.
Chapter 8. Study Rationale and Research Questions

This review of the published literature shows that only limited attention has been paid to the identification of subgroups of violent offenders, despite the obvious implications that this has for intervention. It is suggested that a potentially useful method of classifying subtypes of violent offender is on the basis of their criminal thinking styles and anger. Given the ‘one size fits all’ approach to violent offender treatment, it is important to consider whether rehabilitation programs are addressing the treatment needs of all violent offenders, or whether these needs may be better met by providing different violent offender subtypes with programs more appropriately tailored to differing treatment needs. The primary rationale for the studies in this thesis is therefore to establish whether subtypes of violent offenders can be identified, and whether these subtypes perform differently in treatment.

Previous research into the patterns of anger of violent offenders has led to the identification of several different offender types. These have included those who overcontrol or undercontrol their anger, or those for whom violence is an angry response to provocation or an instrumental, goal-driven act motivated by other emotional experiences (e.g., desire for money). While the relationship of anger and violent offending has been well-researched, there have been very few previous attempts to compare program efficacy for offenders who have problematic over- or undercontrol of their anger.

Studies investigating the cognitive processes of violent offenders have been less conclusive. Whilst it has been generally shown that violent offenders perceive threat and hostility more readily than less violent individuals, there has been limited investigation into other forms of cognitive processing specific to violent offenders, most notably patterns of criminal thinking. Given that cycles of violent behaviour are
likely maintained by cognitions that predispose an individual toward violence and by
cognitions that are reinforced by violence and aggression, it is likely that violent
offenders utilise different patterns of criminal thinking styles to justify their
antisocial behaviour. Cognitive distortions and emotional dysregulation comprise
two significant risk factors that appear to be targeted in multi-modal programs.

Aims and Hypotheses

The research questions that this thesis seeks to answer are: a) whether violent
offenders can be meaningfully categorised into subtypes on the basis of their patterns
of anger and criminal thinking styles, and b) whether these subtypes perform
differently in violent offender treatment.

It is hypothesised that the following subtypes of violent offenders will be
identified on the basis of their patterns of anger and criminal thinking styles. The
hypothesised types are:

1. Instrumental, with strong cognitive distortions to justify offending, and
   normal levels of anger regulation;

2. Reactive/undercontrolled anger, with more strongly held beliefs
   supportive of a criminal lifestyle, as the group makes no attempt to
   control their anger, and likely to be assessed as at high risk of violent re-
   offending;

3. Reactive/overcontrolled/inhibited anger, rumination about provocation
   that may affect judgement, and weaker criminal beliefs due to a strongly
   held belief in the importance of inhibiting responses;
4. Reactive/overcontrolled/conforming, likely to hold weaker criminal beliefs associated with a belief in the importance of inhibiting responses, and likely to be assessed as at low risk of violent re-offending.

It is hypothesised that the subtypes will differ in the extent of changes in anger and criminal thinking effected by the violent offender treatment program, although no predictions are made about the direction of these differences. It is also hypothesised that the groups will differ regarding pre-program re-offending risk levels and post-program changes in risk rating. The second type is expected to demonstrate the highest risk of re-offending pre-program and the greatest reduction in risk post-program.

**Contribution and Implications**

The identification of subtypes of violent offenders has a number of implications for psychological practice. By recognising the heterogeneity in treatment needs related to anger and criminal thinking, programs may be better tailored to the criminogenic needs of violent offenders. This will help to improve program selection, reduce the delivery of content that may be irrelevant to some offenders and increase the delivery of content more relevant to specific offender types, and, ultimately, improve program effectiveness.
Chapter 9. Identifying Subtypes of Violent Offender

Aim

The aim of this study is to determine whether subgroups of violent offenders can be identified on the basis of their patterns of anger and criminal thinking.

Method

Participants.

Data from 379 male offenders serving custodial sentences at Marngoneet Correctional Centre, a medium-security treatment prison in Victoria, Australia, collected between April 2006 and January 2011, were used in this study. Offenders had at least one violent index or prior conviction, and had been assessed for suitability to participate in a group-based violent offender treatment program. After data cleaning and screening procedures (described below), the final sample comprised 305 male violent offenders.\(^{13}\)

At the time of pre-program assessment, participants were aged between 18 and 59 years old ($M = 31.76$ years, $SD = 8.19; n = 305$). The sample included a higher proportion of Indigenous offenders (7.5%) than the state-wide imprisonment rate of Indigenous adult males (6.2% in 2010; Corrections Victoria, 2010), although both rates far exceed the percentage of Victorian Indigenous residents (0.7%; ABS, 2012). Offenders’ cultural backgrounds are reported in Table 4. Over half of the sample reported that they were single (58.9%, $n = 270$), with at least one child (61%, $n = 236$). Compared with a survey of all adult male prisoners in Victoria at 30 June

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\(^{13}\) The violent offender treatment program is not intended for family violence-oriented offenders. Offenders with convictions for family violence were generally removed from the current sample during the screening and assessment process, however those remaining may have had unadjudicated or historical family violence offences.
2010 (Corrections Victoria, 2010), the current sample held higher levels of education attainment, with a greater proportion completing secondary, tertiary, trade or technical qualifications (13.8% v 5.4%), and a higher rate of pre-imprisonment employment (40.7% v 21.3%). Additional sample demographics, including education level, marital and parental status, can be found in Appendix C.

Table 4

*Offender-Identified Cultural Background as a Percentage of the Sample of 305 Male Participants*

<table>
<thead>
<tr>
<th>Variable</th>
<th>Sample</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ethnicity:</td>
<td></td>
</tr>
<tr>
<td>Australian</td>
<td>62.3</td>
</tr>
<tr>
<td>Indigenous Australian</td>
<td>7.5</td>
</tr>
<tr>
<td>Pacific Islander</td>
<td>2.3</td>
</tr>
<tr>
<td>New Zealander / Maori</td>
<td>3.0</td>
</tr>
<tr>
<td>European</td>
<td>6.6</td>
</tr>
<tr>
<td>Asian</td>
<td>3.6</td>
</tr>
<tr>
<td>Middle Eastern</td>
<td>2.6</td>
</tr>
<tr>
<td>Other</td>
<td>4.3</td>
</tr>
<tr>
<td>Unknown</td>
<td>7.9</td>
</tr>
</tbody>
</table>

The proportion of violent and serious violent index and prior offences are reported in Table 5. For the purposes of this study, an offence was classified as violent or serious violent if it was listed in Clauses 1 or 2 of Schedule 1 of the *Sentencing Act 1991* (Vic). Of the 305 offenders, 73.4% had committed violent index offences, 25.9% of which were serious violent offences. The index offence charge was not provided for 4.6% of the sample. The most prevalent index offences were armed robbery or attempted armed robbery (23.6%), intentionally causing
serious injury (17%), recklessly causing serious injury (8.9%), aggravated burglary (8.5%), murder or attempted murder (6.6%), manslaughter (4.3%), burglary (3.6%), intentionally cause injury (3.2%), robbery (2.6%), recklessly cause injury (2%), making threats to kill (1.6%), false imprisonment (1%) and kidnapping (1%).

Table 5

<table>
<thead>
<tr>
<th>Variable</th>
<th>Sample</th>
</tr>
</thead>
<tbody>
<tr>
<td>Index offence(s)</td>
<td></td>
</tr>
<tr>
<td>Violent</td>
<td>73.4</td>
</tr>
<tr>
<td>Serious violent</td>
<td>25.9</td>
</tr>
<tr>
<td>Unknown</td>
<td>4.6</td>
</tr>
<tr>
<td>Prior offence(s)</td>
<td></td>
</tr>
<tr>
<td>Violent</td>
<td>63.9</td>
</tr>
<tr>
<td>Serious violent</td>
<td>11.8</td>
</tr>
<tr>
<td>Unknown</td>
<td>5.6</td>
</tr>
</tbody>
</table>

*Classified according to Clauses 1 and 2, Schedule 1, Sentencing Act 1991 (Vic).

Prior offending characteristics are provided in Table 6. Most offenders (87.2%) had prior convictions, with an average 2.7 prior offences ($SD = 1.51$). Many (63.9%) had committed at least one violent prior offence, including 11.8% who had committed serious violent prior offences. Prior offending history was unavailable for 5.6% of the sample, and 7.2% had no prior offences. Offenders had served an average 4 prior prison sentences ($SD = 3.79; n = 250$) and 1.9 community orders ($SD = 2.73; n = 215$)$^{14}$. Prior offending and sentencing statistics were considered to be

$^{14}$ The average number of prior sentences exceeds the average number of prior offences. This appears an artefact of the poor quality dataset with missing data, including underreporting of prior offences, resulting in a substantial underestimate of prior convictions.
Table 6

Prior Offending Characteristics as a Percentage of the Sample

<table>
<thead>
<tr>
<th>Variable</th>
<th>n</th>
<th>M</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of prior offences</td>
<td>288</td>
<td>2.7</td>
<td>1.5</td>
</tr>
<tr>
<td>Number of prior prison sentences</td>
<td>251</td>
<td>4.0</td>
<td>3.8</td>
</tr>
<tr>
<td>Number of prior community orders</td>
<td>215</td>
<td>1.9</td>
<td>2.7</td>
</tr>
<tr>
<td>Number of prior breaches</td>
<td>219</td>
<td>1.7</td>
<td>2.1</td>
</tr>
</tbody>
</table>

Note. Demographic information was missing for several cases; the sample size for each characteristic is provided.

underestimates as data was unavailable for offences committed outside of Victoria.

Violent re-offending risk was assessed using the Violence Risk Scale (VRS; VRS; Wong & Gordon, 2006). This measure is described below. Of the 305 violent offenders, the greatest proportion were assessed as being at moderate risk of future violent re-offending (50.8%); 25.2% were at high risk, and 8.2% at low risk. VRS scores were unknown for 15.7% of the sample. The primary problem areas or treatment targets identified by the VRS for the 305 violent offenders are reported in Figure 5. These were calculated by determining the percentage of violent offenders for whom each dynamic factor was rated 2 or 3 out of 3.

Overall, emotional control was assessed as a treatment target related to violence for 88% of the sample. Clinicians considered this risk factor a treatment target for individuals displaying angry reactions or emotional outbursts resulting in
Table 7

*Most Serious Index and Prior Offences, Categorised Using the ANZSOC and NOI Classification System, as a Percentage of the Sample*

<table>
<thead>
<tr>
<th>Division</th>
<th>Index offences</th>
<th>Prior offences</th>
</tr>
</thead>
<tbody>
<tr>
<td>01 Homicide and related offences</td>
<td>12.8</td>
<td>6.9</td>
</tr>
<tr>
<td>02 Acts intended to cause injury</td>
<td>23.3</td>
<td>37.0</td>
</tr>
<tr>
<td>03 Sexual assault and related offences</td>
<td>0.3</td>
<td>0.7</td>
</tr>
<tr>
<td>04 Dangerous or negligent acts endangering persons</td>
<td>13.1</td>
<td>3.3</td>
</tr>
<tr>
<td>05 Abduction, harassment and other offences against the person</td>
<td>2.6</td>
<td>2.0</td>
</tr>
<tr>
<td>06 Robbery, extortion and related offences</td>
<td>26.2</td>
<td>18.7</td>
</tr>
<tr>
<td>07 Unlawful entry with intent/burglary, break and enter</td>
<td>12.1</td>
<td>11.8</td>
</tr>
<tr>
<td>08 Theft and related offences</td>
<td>2.6</td>
<td>4.9</td>
</tr>
<tr>
<td>09 Fraud, deception and related offences</td>
<td>0.0</td>
<td>0.0</td>
</tr>
<tr>
<td>10 Illicit drug offences</td>
<td>0.3</td>
<td>0.7</td>
</tr>
<tr>
<td>11 Prohibited and regulated weapons and explosives offences</td>
<td>0.3</td>
<td>0.3</td>
</tr>
<tr>
<td>12 Property damage and environmental pollution</td>
<td>0.7</td>
<td>0.3</td>
</tr>
<tr>
<td>13 Public order offences</td>
<td>0.0</td>
<td>0.0</td>
</tr>
<tr>
<td>14 Traffic and vehicle regulatory offences</td>
<td>0.0</td>
<td>0.0</td>
</tr>
<tr>
<td>15 Offences against government procedures, government security and government operations</td>
<td>0.3</td>
<td>0.0</td>
</tr>
<tr>
<td>16 Miscellaneous offences</td>
<td>0.3</td>
<td>0.7</td>
</tr>
<tr>
<td>No offences</td>
<td>0.0</td>
<td>7.2</td>
</tr>
<tr>
<td>Unknown</td>
<td>4.9</td>
<td>5.6</td>
</tr>
<tr>
<td>Total</td>
<td>99.8&lt;sup&gt;a&lt;/sup&gt;</td>
<td>100.1&lt;sup&gt;a&lt;/sup&gt;</td>
</tr>
</tbody>
</table>

<sup>a</sup>Totals do not add to 100% due to rounding.
significant physical or psychological harm to others or property destruction, or for individuals who tended to ‘bottle-up’ feelings or act passively until they ‘exploded’ later (Wong & Gordon, 2000). Rigid or stereotypical thinking patterns or cognitive distortions excusing, justifying, rationalising, blaming or minimising of offences were considered problematic for 72% of the sample. Criminal attitudes facilitating the use of violence were considered treatment needs for 71.3%.

*Figure 5.* Percentage of violent offenders for whom VRS dynamic risk factor were considered treatment targets.
Measures.

Anger.

Trait anger, anger expression and anger control were measured using the State-Trait Anger Expression Inventory-2 (STAXI-2; Spielberger, 1999), a 57-item self-report measure. The STAXI-2 consists of the State Anger scale and subscales (Feeling Angry, Feeling Like Expressing Anger Verbally and Feeling Like Expressing Anger Physically), Trait Anger scale and subscales (Angry Temperament and Angry Reaction), anger expression scales (Anger Expression-In, Anger Expression-Out) and anger control scales (Anger Control-In and Anger Control-Out). STAXI-2 items are scored on a 4-point Likert scale, from 1 (‘almost never’) to 4 (‘almost always’); higher scores indicate higher levels of trait anger, expression or control that may impair optimal functioning. Raw scores are converted to T-scores using gender and age-specific norms.

The state anger scale and subscales measure an individual’s current anger levels; these were not utilised in the current study, as state anger at the time of assessment would have been affected by situational factors (e.g., current prison experiences) rather than factors present at the time of the violent offence. Trait anger scales assess the frequency of angry feelings over time, with items including “I am a hot-headed person” (Angry Temperament) and “It makes me furious when I am criticised in front of others” (Angry Reaction). The Anger Expression-Out (AX-O) scale measures the frequency that anger is expressed outwardly through physically or verbally aggressive behaviour (e.g., “I strike out at whatever infuriates me”). Anger Expression-In (AX-I) assesses the frequency of anger suppression (e.g., “I’m irritated a great deal more than people are aware of”). Anger Control-Out (AC-O) measures the frequency of attempts to control outward expression of anger (e.g., “I
can stop myself from losing my temper”). Finally, Anger Control-In (AC-I) assesses the frequency of an individual’s attempts to control angry feelings by actively calming themselves (e.g., “I take a deep breath and relax”).

The STAXI-2 is based upon a solid conceptual model of anger and has strong psychometric properties across a wide range of normative groups (Eckhardt, Norlander, & Deffenbacher, 2004). Spielberger (1999) reported internal consistency Cronbach alpha coefficients ranging from 0.73 to 0.95 for the STAXI-2 scales. The STAXI-2 has been validated in an Australian forensic sample (Dear, Watt, & Dockerill, 2003).

**Criminal thinking styles.**

Criminal thinking style patterns were measured using the PICTS (Walters, 2010), an 80-item self-report measure designed to assess thinking styles hypothesised to support and maintain a criminal lifestyle. PICTS items assume involvement in criminality and/or the criminal justice system. The measure comprises multiple scales, including General Criminal Thinking, composite scales (Proactive Criminal Thinking and Reactive Criminal Thinking), general content scales (Current Criminal Thinking and Historical Criminal Thinking), validity scales (Confusion-Revised and Defensiveness-Revised), factor scales (Denial of Harm, Infrequency, Problem Avoidance and Self-Assertion/Deception), the Fear-of-Change scale and eight thinking style scales (Cognitive Indolence (Ci), Cutoff (Co), Discontinuity (Ds), Entitlement (En), Mollification (Mo), Power Orientation (Po), Sentimentality (Sn) and Superoptimism (So)).

Each thinking style scale contains 8 items that are rated on a 4-point Likert scale from 1 (disagree) to 4 (strongly agree). Higher scale scores indicate the
presence of each thinking style, except for the reverse-scored Defensiveness-Revised scale. Scores are converted to T-scores using gender-specific norms. Example items include: “I believe that I am a special person and that my situation deserves special consideration” (Entitlement), “Why should I be made to appear worthless in front of my friends and family when it is so easy to take from others?” (Power Orientation), “I have trouble controlling my angry feelings” (Cutoff), and “I tend to put off until tomorrow what should have been done today” (Cognitive Indolence). When interpreting thinking style scores, Walters (2010) recommends identifying the three highest thinking style scale scores and determining a differentiated profile of thinking styles most likely to influence actions and decisions.

Norms were generated from 450 minimum, medium and maximum security male American federal prisoners for all scales (Walters, 1995), with the exception of the Fear-of-Change scale that was normed on 100 medium security American federal prisoners (Walters, 1995, 2002a, 2002b; Walters & Elliott, 1999; Walters et al., 1998; Walters & Mandell, 2007). Validation studies indicate good reliability and validity of the PICTS for male and female offenders (Walters, 1995; Walters & Elliott, 1999; Walters et al., 1998). Walters (2010) reported internal consistency Cronbach alpha coefficients ranging from .55 (Sentimentality) to .79 (Discontinuity) for the eight thinking style scales, and scores of .93, .83 and .91 for the General, Proactive and Reactive Criminal Thinking scales respectively. Test-retest reliability of the General, Proactive and Reactive Criminal Thinking scales has been well-documented with general offenders, with statistics ranging from .81 to .93, .78 to .96 and .70 to .88 respectively (Walters, 2002b, 2006b, 2006c; Walters & Mandell, 2007; Walters et al., 2002). Administration set appears to have a modest effect on overall PICTS score elevations: T-scores on each thinking style scale were approximately 5
points higher when a group of inmates completed the measure as part of commencing a treatment program than when they had earlier completed the measure as part of a routine intake procedure (Walters, 2006b; Walters et al., 2007). Overall patterns of scale elevations did not vary across administrations.

The factor structure of the PICTS has been the subject of debate. Walters (1995) initially identified four factors underlying criminal thinking (problem avoidance, infrequency, self-assertion and denial of harm) using the PICTS. This finding was later validated in a study of 227 female inmates (Walters et al., 1998). In contrast, Egan et al. (2000) argued the presence of two factors: lack of thoughtfulness (cognitive indolence regarding offending and others’ feelings) and wilful criminality (active justifications of offending). Palmer and Hollin (2003) identified a single general factor, but could not validate these findings in a young adult male English offender sample (Palmer & Hollin, 2004). Confirmatory factor analysis of PICTS profiles demonstrated support for the original 4-factor (problem avoidance, infrequency, self-assertion, denial of harm) and 8-factor (thinking style) models (Walters, 2005a). Walters also constructed two composite factors: 1) Reactive Criminal Thinking, to measure impulsivity and reaction to environmental cues, embodying Egan et al.’s (2000) lack of thoughtfulness factor; and 2) Proactive Criminal Thinking, measuring the instrumentality Egan and colleagues identified as wilful criminality. Most researchers currently believe that the PICTS structure consists of two major factors (Problem Avoidance/Lack of Thoughtfulness and Self-Assertion/Deception/Wilful Criminality) and two minor factors (a response style factor and Denial of Harm) (Walters, 2010).

The four factor scales were not utilised in this study, due to high correlations with other scales and limited evidence to suggest that these scales would add
additional information (Walters, 2010). Additionally, the Historical Criminal Thinking scale was not used, as the scale measures past identification with a criminal belief system (Walters, 2010) that, therefore, cannot be altered with treatment. The Current Criminal Thinking (denoting current identification with a criminal belief system) and Fear-Of-Change (FOC) scales (measuring apprehension regarding change and the degree to which that fear impacts on effective intervention) were used as pre-program indicators of treatment needs in the current study. The PICTS validity scales were also used, as outlined below.

**Violence risk.**

The Violence Risk Scale (VRS; Wong & Gordon, 2000, 2006) was used to assess each individual’s risk of violent re-offending (and therefore their suitability for the moderate or high intensity violence intervention program) and to examine between-cluster differences. The VRS consists of 26 items rated by clinicians on a 4-point Likert scale from 0 to 3 using information gained from a semi-structured interview and file review. A 0-rating indicates that the clinician believes the factor has no relationship with the offender’s violence, a 3-rating indicates that the clinician believes that the factor has a consistent and significant relationship with the offender’s violence. There are six static variables (Current age; Age of first violent conviction; Number of juvenile convictions; Violence throughout the lifespan; Prior release failures/escapes; Stability of family upbringing) and 20 dynamic variables (Violent lifestyle; Criminal personality; Criminal attitude; Work ethic; Criminal peers; Interpersonal aggression; Emotional regulation/control; Violence during institutionalisation; Weapon use; Insight into violence; Mental illness; Substance abuse; Stability of relationships; Community support; Released to high-risk
situations; Violence cycle; Impulsivity; Cognitive distortion; Compliance with supervision; Security level of releasing institution).

The total VRS score (the sum of static and dynamic variable ratings) indicates the level of violence risk; a higher score indicates greater risk of violence and a greater number of problem areas linked to violence (Wong & Gordon, 2006). Total VRS scores range from 0 to 78; scores from 0 to 35 indicate low risk of future violence, from 36 to 50 indicate moderate risk, and from 51 to 78 indicate high risk. Dynamic risk factors rated 2 or 3 are considered problem areas closely linked to violence that require treatment (criminogenic needs) (Wong & Gordon, 2006). The offender’s Stage of Change (pre-contemplation, contemplation, preparation, action, maintenance) is rated for each treatment target at initial assessment, and is used post-treatment to determine response to treatment and reduction in violence risk.

The VRS risk factors are derived primarily from general personality, cognitive and social-learning theories (see Lewis, Olver, & Wong, 2013; Wong & Gordon, 2000; also Andrews & Bonta, 2006). The measure is used in many correctional services and has been validated on a wide range of populations internationally, including adult male offenders, medium-security forensic psychiatry patients, high-risk and personality-disordered offenders (Dolan & Fullam, 2007; Lewis et al., 2013; Wong & Gordon, 2000, 2006; Wong & Parhar, 2011; Wong et al., 2005). The measure has acceptable internal consistency, although Cronbach alpha coefficients were somewhat lower in the current study than those reported by Wong and Gordon (2006) for the static (.59 v .69), dynamic (.77 v .94) and total VRS (.79 v .93) scales. Research indicates high interrater reliability (with interclass correlations from .80 to over .90) and reasonable concurrent validity (see, e.g., Dolan & Fullam, 2007; Lewis et al., 2013; Wong & Gordon, 2006; Wong & Parhar, 2011).
Two measures of response bias were utilised: the Marlowe-Crowne Social Desirability Scale – Short Form (MC-C; Reynolds, 1982), a measure of socially desirable responding, and the PICTS Confusion-revised and Defensiveness-revised validity scales (Walters, 2010), indicators of defensive or overly positive responding.

The MC-C is a 13-item alternate version of the 33-item Marlowe-Crowne Social Desirability Scale (MC; Crowne & Marlowe, 1960) that was developed to measure an individual’s tendency to distort self-presentation toward a socially desirable bias. The MC-C uses a forced choice true-false format, and scores range from 0 (low social desirability) to 13 (high social desirability). Research indicates that the MC-C has acceptable to good psychometric properties, including internal consistency scores from .62 to .76 (Ballard, 1992; Loo & Thorpe, 2000; Reynolds, 1982; Zook & Sipps, 1985) and 6-week test-retest correlations of .74 (Zook & Sipps, 1985). Andrews and Meyer (2003) have developed forensic norms for the MC-C.

The PICTS validity scales provide an indication of the presence of ‘fake bad’ and ‘fake good’ (defensive, impression management) responding by individuals in the sample. On the Confusion-revised scale, T-scores between 65 and 80 indicate moderate exaggeration of psychological problems, and scores between 81 and 100 indicate either a ‘fake bad’ response style, reading or language difficulties or haphazard responding (Walters, 2010). While some researchers remove cases with scores over 80 and these scores are considered invalid for clinical interpretation, Walters (2010) suggests that scores between 81 and 100 may still be valid for research purposes. Scores over 100 are considered invalid even for research purposes. In the current study, scores between 81 and 100 on the Confusion-revised scale were deemed valid and retained, primarily because two of the nine items
contributing to this scale score were expected to skew positively given the nature of
the sample (“Nobody tells me what to do and if they try I will respond with
intimidation, threats or I might even get physically aggressive”; and “I have trouble
controlling my angry feelings”) and removal of these cases was considered likely to
result in an unrepresentative violent offender sample. Cases with scale scores over
100 were removed.

Walters (2010) suggests that scores between 55 and 65 on the Defensiveness-
revised scale may indicate potentially moderately defensive responding, or may
reflect ego strength. Walters further indicates that scores over 65 reflect an extremely
defensive response style and desire to impression manage that invalidates the profile
for clinical interpretation, but makes no mention of validity for research. Cases with
scores in this range were therefore retained. Uncertainty surrounds the underlying
mechanisms of impression management and defensive responding, and evidence is
inconclusive for the assumption that high impression management scores indicate
underreporting of psychopathology or antisocial behaviour by offenders in
correctional settings (see Appendix E for further information). Data collection often
occurred at a time of high anxiety and concern that responses could impact on
decisions including prison release or further treatment recommendations.

Procedure.

Ethics approval was granted by the Human Research Ethics Committee of
Deakin University and the Department of Justice Ethics Committee. During
screening assessments with Corrections Victoria prison-based clinical staff,
participants gave informed consent for data collection for research purposes and
were advised that all demographic and psychometric data would be de-identified.
Corrections Victoria prison-based clinical staff administered the VRS interview protocol during the individual assessment of an offender’s suitability to participate in the violence intervention program. The same staff then administered a test battery (including the STAXI-2, PICTS and MC-C) to individuals found suitable for a Moderate or High Intensity Violence Intervention Program prior to program commencement, and scored each measure. This test battery included a measure of treatment readiness (the Client Evaluation of Self and Treatment [CEST]; Joe, Broome, Rowan-Szal, & Simpson, 2002; see also Garner, Knight, Flynn, Morey, & Simpson, 2007), however scores from this measure were not available for the current study.

Test scores, demographic characteristics (including age, ethnicity, education, employment, marital and parental status) and offending information (including index and prior convictions, prior prison sentences and previous compliance with community orders) were provided in a de-identified SPSS file. Extensive cleaning of the dataset was undertaken due to significant limitations in the data, including missing values and incorrectly coded variables.

**Data cleaning and screening.**

Seventy-four cases were removed from the original dataset due to missing demographic information (index and prior offences) and scores on at least two of the three primary measures\(^\text{15}\). Seven cases in the original sample of 379 had index or prior sexual offences. Four cases were deleted due to missing data; the remaining three cases were retained for analysis, despite an acknowledgement that previous cases may have been those offenders who were assessed as unsuitable for a program, based on VRS score, and therefore did not participate in further assessment.
research has identified unique criminogenic needs of sexual offenders (see Wong, Olver, & Stockdale, 2009). Case 1 had an index sexual offence of sexual penetration of a child under 16 years, and several prior violent offences, including making threats to kill. Case 2 had an index violent offence of murder, and a prior sexual offence of aggravated rape. Case 3 had an index violent offence of armed robbery, and several prior offences, including attempted rape. The rationale for retaining these cases was that the violent offences were serious and current.

Prior to analysis, data was screened for accuracy of entry, missing values, distribution of variables, multicollinearity, homoscedasticity and assumptions of normality. Where it was clear that data entry errors had been made (with values outside test score ranges), these scores were deleted and treated as missing values (with the exception of the Marlowe-Crowne Social Desirability Scale – Short Form). Several outliers were detected. These were not removed or rescaled: the scores were within the possible and expected range for a prison population and considered representative of the sample. Furthermore, the mean and the 5% trimmed mean on each variable were similar and therefore the cases were retained (Tabachnick & Fidell, 2007).

As noted above, missing values were problematic in this dataset: all STAXI-2 variables were missing for 17 cases, all PICTS scores for 1 case and all VRS variables for 48 cases. In total, 18 cases were excluded from cluster analysis due to missing STAXI-2 \( (n = 1) \) or PICTS \( (n = 17) \) scores, leaving a cluster analysis sample of 287 cases. Several other cases were missing scores on at least one scale on a measure. For the single case missing several STAXI-2 variables and the single case missing several PICTS variables, an expectation maximisation approach was used to replace the missing values. Descriptive analyses conducted before and after the
missing value replacement procedures indicated minimal differences in means or standard deviations as a result of the inputted values. Finally, 40 cases were missing scores for at least one VRS variable. Prorated static, dynamic and total VRS scores were calculated for these cases using the formula provided in the VRS manual (Wong & Gordon, 2000).

Assumptions of normality were examined using the Kolmogorov-Smirnov statistic and indicated a significant result (< .05) on all STAXI-2, PICTS, MC-C and VRS items except for the PICTS Reactive Criminal Thinking scale and the total VRS score. Further analysis of scatterplots, histograms, skewness and kurtosis confirmed that the Reactive Criminal Thinking and total VRS scores were normally distributed. The MC-C scores were negatively skewed, and all others were positively skewed. This deviation from normality was considered acceptable given the violent offender sample, as Tabachnick and Fidell (2007) indicate that such violations are common in prison populations and that skewness and kurtosis do not make a substantive difference in analysis with reasonably large samples (over 200).

Raw STAXI-2 and PICTS scores were standardised to improve comparability and interpretation using the PICTS gender-specific norms (Walters, 2010) and the STAXI-2 gender- and age-specific norms in the STAXI-2 manual (Spielberger, 1999). Collinearity between variables was examined with Spearman’s rho and Cohen’s (1988) guidelines were used to interpret the size of relationships between variables. Assumptions of multicollinearity between several of the variables were met. Correlations are presented in Appendix D.

The final stage of the data screening process involved checking the social desirability scores for the PICTS and MC-C. Data from the MC-C could not be used to identify social desirable responding due to errors in data entry resulting in
unreliable data (for further information, please see Appendix E). Examination of
PICTS validity scales indicated that on the Df-r scale, 47 cases (15.5%) scored
between 55 and 65 and 6 (2%) scored over 65. On the Cf-r scale, 63 (20.8%) scored
between 65 and 80, and 9 (3%) scored between 81 and 100. There were no scores
over 100 on the Cf-r. Therefore, all cases were retained.

**Results**

Several sets of results are presented in this section. Firstly, descriptive
statistics relating to anger and criminal thinking styles for the 305 violent offenders
are presented, followed by the cluster analysis process and outcomes.

**Level of need for treatment.**

Mean pre-program STAXI-2 T-scores on trait anger, anger expression and
anger control scales were calculated (presented in Table 8) and compared to general
population norms\(^{16}\). The violent offender sample scored significantly lower on Trait
Anger \((t(939) = 2.02, p < .05)\), Angry Reaction \((t(945) = 7.6, p < .05)\), Anger Control-
Out \((t(953) = 2.72, p < .05)\) and Anger Control-In \((t(945) = 1.68, p < .05)\), and
significantly higher on the overall Anger Expression Index \((t(907) = 2.24, p < .05)\).
Average T-scores for all STAXI-2 scales were below the level at which follow-up
treatment is recommended \((t = 65)\) (Spielberger, 1999).

\(^{16}\) The STAXI-2 general population norms are based on scores from 1,644 ‘normal
adults’ (977 females, 667 males), including managerial, technical and clerical
personnel, participants in stress management programs, health care managers and
professionals, insurance company employees, and undergraduate and graduate
students. Prison inmate norms were available for the original STAXI (Spielberger,
1988), however are not available for the updated STAXI-2 (Spielberger, 1999).
Table 8

*Mean STAXI-2 Pre-program T-Scores for the 288 Violent Offenders for Whom Scores Were Available*

<table>
<thead>
<tr>
<th>STAXI-2 scale</th>
<th>$M$</th>
<th>$SD$</th>
<th>$T$-score range</th>
</tr>
</thead>
<tbody>
<tr>
<td>Trait Anger</td>
<td>49.3</td>
<td>12.07</td>
<td>32-80</td>
</tr>
<tr>
<td>Angry Temperament</td>
<td>49.8</td>
<td>11.42</td>
<td>38-80</td>
</tr>
<tr>
<td>Angry Reaction</td>
<td>43.5</td>
<td>9.79</td>
<td>28-78</td>
</tr>
<tr>
<td>Anger Expression-Out</td>
<td>50.7</td>
<td>11.35</td>
<td>26-80</td>
</tr>
<tr>
<td>Anger Expression-In</td>
<td>50.8</td>
<td>11.06</td>
<td>28-80</td>
</tr>
<tr>
<td>Anger Control-Out</td>
<td>45.9</td>
<td>10.89</td>
<td>20-80</td>
</tr>
<tr>
<td>Anger Control-In</td>
<td>47.8</td>
<td>10.19</td>
<td>22-66</td>
</tr>
<tr>
<td>Anger Expression Index</td>
<td>53.0</td>
<td>11.33</td>
<td>24-80</td>
</tr>
</tbody>
</table>

Mean pre-program PICTS $T$-scores were also calculated (see Table 9) and compared to offenders generally. The violent offender group held a moderate level of beliefs supportive of a criminal lifestyle (indicated by the General Criminal Thinking scale score). Overall, the group demonstrated some signs of hostile, impetuous and emotional criminality, engaging in impulsive, disorganised, outer-directed, non-deliberate criminal actions (indicated by Proactive and Reactive Criminal Thinking scale scores), although the difference between these scores was insufficient to infer a trend. Average criminal thinking style scores ranged from 47.4 (Sentimentality) to 56.8 (Cutoff), reflecting the absence of a distinct pattern of criminal thinking across the sample, and all at levels that were not excessive relative to other offenders. However, the wide ranges of $T$-scores on each scale demonstrated notable variability in responses across the group. The mean Fear of Change score for
Table 9

Mean PICTS Pre-program T-Scores for the 304 Violent Offenders for Whom Scores Were Available

<table>
<thead>
<tr>
<th>PICTS Scales</th>
<th>M</th>
<th>SD</th>
<th>T-score range</th>
</tr>
</thead>
<tbody>
<tr>
<td>General Criminal Thinking</td>
<td>52.99</td>
<td>10.27</td>
<td>33-82</td>
</tr>
<tr>
<td>Proactive Criminal Thinking</td>
<td>52.88</td>
<td>10.53</td>
<td>38-87</td>
</tr>
<tr>
<td>Reactive Criminal Thinking</td>
<td>56.26</td>
<td>10.23</td>
<td>39-86</td>
</tr>
<tr>
<td>Confusion-Revised</td>
<td>56.43</td>
<td>11.28</td>
<td>43-95</td>
</tr>
<tr>
<td>Defensiveness-Revised</td>
<td>44.72</td>
<td>10.22</td>
<td>19-76</td>
</tr>
<tr>
<td>Mollification</td>
<td>49.35</td>
<td>9.88</td>
<td>38-80</td>
</tr>
<tr>
<td>Cutoff</td>
<td>56.84</td>
<td>10.33</td>
<td>40-86</td>
</tr>
<tr>
<td>Entitlement</td>
<td>51.83</td>
<td>10.26</td>
<td>38-87</td>
</tr>
<tr>
<td>Power Orientation</td>
<td>51.50</td>
<td>11.16</td>
<td>39-92</td>
</tr>
<tr>
<td>Sentimentality</td>
<td>47.38</td>
<td>9.13</td>
<td>26-75</td>
</tr>
<tr>
<td>Superoptimism</td>
<td>50.46</td>
<td>10.05</td>
<td>34-79</td>
</tr>
<tr>
<td>Cognitive Indolence</td>
<td>53.70</td>
<td>9.35</td>
<td>36-80</td>
</tr>
<tr>
<td>Discontinuity</td>
<td>55.27</td>
<td>10.53</td>
<td>38-82</td>
</tr>
<tr>
<td>Current Criminal Thinking</td>
<td>55.13</td>
<td>10.51</td>
<td>39-84</td>
</tr>
<tr>
<td>Fear of Change</td>
<td>53.65</td>
<td>12.08</td>
<td>36-88</td>
</tr>
</tbody>
</table>

The group was in the average range. The Current Criminal Thinking scale score also fell in the average range (T score < 60), indicating that current belief systems consistent with a criminal lifestyle were weak, absent or hidden (Walters, 2010).

17 Low scores (T-score < 40) may suggest a general lack of emotional insight, while high scores (T-score ≥ 60) reflect concern or apprehension about the prospect of behavioural change (Walters, 2010).
**Identifying subtypes of offender.**

Cluster analysis was used to determine whether subtypes of violent offenders demonstrated significantly different patterns of anger type and criminal thinking styles. The cluster analysis sample consisted of 287 cases.

The clustering procedure and decision-making process is outlined in full in Appendix F. Briefly, given the exploratory nature of this study, a range of variable sets were utilised and a hierarchical clustering procedure was initially undertaken to identify the number of clusters suggested by the data. Hierarchical clustering agglomeration coefficients suggested the possibility of 2-5 clusters. \( k \)-means clustering was then used to determine the most meaningful and parsimonious solution. For each \( k \) and each variable set, five sets of random initial runs were conducted. Cluster solution stability was indicated by minimal variability in the sum of squared distances or cluster membership across each of the five solutions for each \( k \), and further clarified with clustering procedure outcomes for each \( k \) value on half of the sample, randomly selected. Finally, two-step clustering was undertaken to validate the clustering solutions. For each \( k \)-solution, after selecting the optimal cluster solution, cluster composition and the significance of variables in distinguishing clusters was examined. Between-group multivariate analyses of variance (MANOVA) were conducted with clustering variables as criterion variables and cluster membership as the between-group variable. Separate post-hoc one-way analyses of variance (ANOVA) were conducted using the clustering variables. Significance of MANOVA and ANOVA F-tests was expected, given that cluster analysis is used to maximise between-cluster differences.

Several variable sets were analysed to select the most parsimonious and clinically meaningful method of identifying violent offenders for rehabilitation.
programmes. The clustering process began broadly with the General Criminal Thinking and Anger Expression Index and gradually became more inclusive, using the eight STAXI-2 and eight criminal thinking styles variables to capture meaningful cluster differences allowing violent offender subtypes to be identified and classified with variables relevant for treatment. The process was then broadened again (using the Trait Anger, Anger Expression-In, Anger Expression-Out, Anger Control-In, Anger Control-Out and eight thinking styles scales) to simplify variables required for clustering and reduce multicollinearity. While the clustering analysis processes were also undertaken only with anger scales and only with criminal thinking style scales, these solutions did not capture the full pattern of interaction explained by using anger and thinking style scales to analyse subtypes of violent offenders.

Selection of the optimal cluster solution involved examination of the different cluster solutions looking at internal criteria, including appropriateness of cluster size and distribution of scale variables within clusters. The optimal clustering solution chosen utilised the five STAXI-2 variables of Trait Anger, Anger Expression-In, Anger Expression-Out, Anger Control-In and Anger Control-Out and the eight criminal thinking styles. This was considered the simplest solution that provided meaningful information on between-group differences to identify treatment targets. In deciding between the 3-cluster and 4-cluster solution for this variable set, two-step clustering analyses was undertaken. Results from the two-step analysis confirmed that a 3-cluster solution provided the best fit for this group of violent offenders. The resulting profile types are described using the clustering variables, risk rating, demographic information and the Fear of Change and Current Criminal Thinking scales.
**Cluster descriptions.**

The three clusters consisted of 129, 100 and 58 cases respectively and differed significantly on all anger and criminal thinking style measures ($p < .05$). Table 10 provides the mean STAXI-2 and PICTS scale scores for the groups. Demographic and offending characteristics for each cluster are provided in Appendix G, including ethnicity, education, employment status, marital and parental status, the proportion of violent and seriously violent index and prior offences and ANZSOC classifications of the most serious index and prior offences.

**Between-cluster differences.**

Clusters were compared on demographic factors to ascertain any clear trends differentiating the groups. No significant differences were found for offender age, marital status, parental status, violent or seriously violent index or prior offences, number of prior offences or number of prior community orders. Due to the small number of cases in each category, between-cluster differences could not be assessed for education attainment, ethnicity, or index or prior offending, although trends suggested that Cluster 2 offenders committed a greater proportion of reckless or negligent acts, while Cluster 3 had a higher proportion of robbery offences and a lower proportion of homicide-related offences (including murder and manslaughter). Cluster 3 offenders had served significantly more prison sentences, $\chi^2(2, n = 234) = 7.52, p < .05$. A significantly greater proportion of Cluster 2 offenders engaged in employment prior to incarceration, $\chi^2(2, n = 231) = 6.41, p < .05$.

The clusters differed significantly with regard to the proportion of low, moderate and high risk offenders, $\chi^2(4, n = 242) = 17.54, p < .01$. Cluster 3 had a
Table 10

**Mean STAXI-2 and PICTS T-Scores for the Three Clusters**

<table>
<thead>
<tr>
<th>Measure</th>
<th>Cluster 1</th>
<th>Cluster 2</th>
<th>Cluster 3</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>($n = 129$)</td>
<td>($n = 100$)</td>
<td>($n = 58$)</td>
</tr>
<tr>
<td><strong>STAXI-2</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Trait Anger</td>
<td>50.87</td>
<td>39.34(^b)</td>
<td>62.93(^a)</td>
</tr>
<tr>
<td>Angry Temperament</td>
<td>51.01</td>
<td>41.62</td>
<td>61.55(^a)</td>
</tr>
<tr>
<td>Angry Reaction</td>
<td>44.87</td>
<td>36.54(^b)</td>
<td>52.79</td>
</tr>
<tr>
<td>Anger Expression-Out</td>
<td>51.39</td>
<td>43.40</td>
<td>61.69(^a)</td>
</tr>
<tr>
<td>Anger Expression-In</td>
<td>53.42</td>
<td>43.84</td>
<td>57.21(^a)</td>
</tr>
<tr>
<td>Anger Control-Out</td>
<td>43.78</td>
<td>53.68</td>
<td>37.10(^b)</td>
</tr>
<tr>
<td>Anger Control-In</td>
<td>45.69</td>
<td>54.16</td>
<td>41.55(^b)</td>
</tr>
<tr>
<td>Anger Expression Index</td>
<td>56.07</td>
<td>42.96</td>
<td>63.76(^a)</td>
</tr>
<tr>
<td><strong>PICTS</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>General Criminal Thinking</td>
<td>54.26(^d)</td>
<td>43.22</td>
<td>67.26(^c)</td>
</tr>
<tr>
<td>Proactive Criminal Thinking</td>
<td>53.45</td>
<td>44.42</td>
<td>66.48(^c)</td>
</tr>
<tr>
<td>Reactive Criminal Thinking</td>
<td>58.74(^d)</td>
<td>46.75</td>
<td>66.98(^c)</td>
</tr>
<tr>
<td>Confusion-revised</td>
<td>57.20</td>
<td>48.05</td>
<td>68.47</td>
</tr>
<tr>
<td>Defensiveness-revised</td>
<td>42.58</td>
<td>52.92</td>
<td>35.66</td>
</tr>
<tr>
<td>Mollification</td>
<td>50.36</td>
<td>42.49</td>
<td>59.91</td>
</tr>
<tr>
<td>Cutoff</td>
<td>59.26</td>
<td>47.14</td>
<td>68.17(^c)</td>
</tr>
<tr>
<td>Entitlement</td>
<td>52.01</td>
<td>44.40</td>
<td>64.47(^c)</td>
</tr>
<tr>
<td>Power Orientation</td>
<td>50.32</td>
<td>43.78</td>
<td>67.22(^c)</td>
</tr>
<tr>
<td>Sentimentality</td>
<td>48.08</td>
<td>42.82</td>
<td>53.91</td>
</tr>
<tr>
<td>Superoptimism</td>
<td>50.01</td>
<td>43.72</td>
<td>63.59(^c)</td>
</tr>
<tr>
<td>Cognitive Indolence</td>
<td>55.88</td>
<td>45.78</td>
<td>62.55(^c)</td>
</tr>
<tr>
<td>Discontinuity</td>
<td>57.36</td>
<td>47.04</td>
<td>64.55(^c)</td>
</tr>
<tr>
<td>Current Criminal Thinking</td>
<td>57.74</td>
<td>45.51</td>
<td>65.72(^c)</td>
</tr>
<tr>
<td>Fear of Change</td>
<td>55.35</td>
<td>46.24</td>
<td>63.02(^c)</td>
</tr>
</tbody>
</table>

*Note.* All STAXI-2 scale T-scores below 65. \(^a\)STAXI-2 percentile score in high range (75\(^{th}\) percentile or higher); \(^b\)STAXI-2 percentile score in low range (25\(^{th}\) percentile or lower). \(^c\)PICTS score in high range; \(^d\)PICTS score in moderate range, indicating problematic use of this distortion.
significantly greater proportion of high risk offenders than Clusters 1 or 2. The proportion of low, moderate and high risk offenders is outlined in Table 11.

Table 11

*Proportion of Low, Moderate and High Risk Offenders in Each Cluster*

<table>
<thead>
<tr>
<th>VRS Risk Rating</th>
<th>Cluster 1 (%)</th>
<th>Cluster 2 (%)</th>
<th>Cluster 3 (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low Risk</td>
<td>9.3</td>
<td>11.0</td>
<td>0.0</td>
</tr>
<tr>
<td>Moderate Risk</td>
<td>55.8</td>
<td>49.0</td>
<td>41.4</td>
</tr>
<tr>
<td>High Risk</td>
<td>22.5</td>
<td>19.0</td>
<td>44.8</td>
</tr>
<tr>
<td>Missing VRS score</td>
<td>12.4</td>
<td>21.0</td>
<td>13.8</td>
</tr>
</tbody>
</table>

VRS dynamic risk factors were considered treatment targets for a greater proportion of Cluster 3 offenders, while Cluster 2 had the lowest proportions, as shown in Figure 6. Kruskal-Wallis and Mann-Whitney U tests were conducted to determine whether treatment targets different significantly between clusters. While the clusters differed significantly on several self-report STAXI-2 and PICTS scale scores, this was not reflected in the clinician-assessed VRS dynamic risk factors of emotional control and cognitive distortions. The proportion of offenders for whom these risk factors were considered treatment targets was not significantly different between clusters. Criminal attitudes were considered a treatment target for a significantly higher proportion of Cluster 3 violent offenders, $\chi^2(2, n= 240) = 6.22, p < .05$. For further information, please see Appendix H.
Discussion

It was hypothesised that clinically meaningful subtypes of violent offender would be evident, differing with respect to treatment needs of anger experience, expression and control and the use of criminal thinking to justify offending. Four subtypes were hypothesised: (a) instrumental, with strong cognitive distortions and normal levels of anger regulation; (b) an undercontrolled type, with reactive...
violence, strongly held beliefs supportive of a criminal lifestyle, low anger control, and likely high risk of violent re-offending; (c) an overcontrolled inhibited type, with reactive violence, rumination about provocation that likely colours judgements, and fewer criminal beliefs due to a strongly held belief in the importance of inhibiting responses; and (d) an overcontrolled conforming-type, with reactive violence, weaker criminal beliefs, and likely low risk of violent re-offending.

The hypothesis was partially met: distinct subtypes were identified on the basis of their anger and criminal thinking. The most parsimonious solution that provided the best fit for the current violent offender sample was a three-cluster solution, identified using the Trait Anger, Anger Expression-In, Anger Expression-Out, Anger Control-In, Anger Control-Out and eight Thinking Style scale variables. This three cluster solution appeared similar to the three-cluster solutions identified in research using personality measures (e.g., using the OH scale), with non-disordered samples. The labels of “regulated”, “overregulated” and “unregulated” were chosen for the three groups in an attempt to create a distinction from, and avoid confusion with, previously identified typologies (e.g., overcontrolled / undercontrolled), as the current typologies were based on motivation for violent offending rather than a reaction to anger.

**Cluster descriptions.**

**Cluster 1: “Regulated”**.

Violent offenders in Cluster 1 \((n = 129)\), labelled “regulated”, had average scores on all scales, with scores falling between those of the other clusters. All STAXI-2 anger scale scores were in the *normal* range, indicating that these offenders described themselves as being unlikely to experience, express and control anger in
ways that interfered with optimal functioning. Offenders in this group were more prone to experience, outwardly express or suppress their anger and less likely to monitor or prevent the outward expression of their anger or attempt to calm down or reduce their anger than those in Cluster 2.

The moderately elevated General Criminal Thinking score indicated that this group of violent offenders held belief systems supportive of a criminal lifestyle, and showed a trend towards employing Reactive Criminal Thinking that was impulsive, disorganised and outer-directed criminal thinking. The group did not appear to overtly express thoughts of a proactive or planned criminal nature; rather, the group consisted of violent offenders who were hostile, impetuous and emotional, with criminal activities related to reactions to situations rather than planning or forethought. Furthermore, the group often viewed others with suspicion, and may have frequently misinterpreted others’ intentions hostile. A differentiated three-scale profile was evident (Cutoff, Discontinuity and Cognitive Indolence), indicating the thinking styles most likely to influence Cluster 1 offenders’ actions and decisions.

The Cutoff scale reflects impulsivity and the tendency to dismiss (or use substances to eliminate) common deterrents to crime. The Discontinuity scale measures the propensity to lose sight of goals and be easily side-tracked by situational events, and is associated with being fragmented, flighty and unpredictable. The Cognitive Indolence scale assesses a tendency to take short cuts and seek easy solutions to problems, invariably resulting in trouble from those to whom the offender is accountable (e.g., parent, spouse, supervisor), and may reflect laziness, irresponsibility and a lack of motivation.
Cluster 2: “Overregulated”.

Violent offenders in Cluster 2 \((n = 100)\), labelled “overregulated”, had the lowest levels of trait anger and anger expression and the highest levels of anger control. Trait Anger and Angry Reaction scale scores were in the low range, indicating that this group reported generally experiencing relatively little anger. The group expressed their anger the least often and work hardest to control their anger by preventing the outward expression of anger, or attempting to calm down. While still in the normal range, anger control scores were at the upper end of the range, indicating a trend toward issues with overcontrol that may result in passivity, depression, withdrawal and a lack of awareness of assertive communication.

Violent offenders in this group had the lowest PICTS scale scores. The General Criminal Thinking scale score indicated that any criminal belief system was weak, absent or hidden. The group did not appear to overtly express thoughts of a proactive or planned criminal nature or exhibit cognitive features associated with reactive or impulsive criminality. There was no trend toward either Proactive or Reactive Criminal Thinking. The thinking style profile was undifferentiated, with all \(T\)-scores below 50.

Cluster 3: “Unregulated”.

Violent offenders in Cluster 3 \((n = 58)\), labelled “unregulated”, had the highest levels of trait anger and anger expression and the lowest levels of anger control. Trait Anger, Angry Temperament, Anger-Expression-Out, Anger Expression-In and Anger Expression Index scale scores were in the high range, indicating that these offenders likely experienced and expressed angry feelings in a way that interfered with optimal functioning. Anger may have caused difficulty in
interpersonal relationships and contributed to the development of medical conditions such as high blood pressure or coronary artery disease (Spielberger, 1999). The group reported experiencing anger frequently and intensely, were quick-tempered, impulsive and lacked anger control, but were not necessarily vicious or vindictive in attacking others. They frequently expressed anger through verbally or physically aggressive behaviour directed at others or at objects, with little provocation. The group had the lowest levels of energy expended in attempting to control their anger, however did suppress their intense anger in some situations.

This group had the highest PICTS scale scores. A current belief system supportive of a criminal lifestyle was evident in the moderately high elevation of the General and Current Criminal Thinking scales. No trend toward Proactive or Reactive Criminal Thinking was evident. The group reported high levels of Proactive Criminal Thinking that suggested their thinking was devious, calculating and scheming, with goal-directed criminal activity and positive outcome expectancies for crime (e.g., money, power or status). The group also reported high levels of Reactive Criminal Thinking score, indicating they were generally higher in impulsivity, reactivity and lack of restraint than Cluster 1 violent offenders.

Notably, six of the eight thinking style scores were in the high range at levels warranting treatment. A four-scale differentiated profile (Cutoff, Power Orientation, Discontinuity and Entitlement) was evident. Cutoff and Discontinuity scale scores (described above) were higher than for Cluster 1. The Power Orientation scale measures a desire for power and control, and the Entitlement scale reflects a sense of ownership, privilege and uniqueness that gives permission to violate the laws and rights of others. This group demonstrated the greatest concern or apprehension regarding the prospect of behavioural change.
Conclusion

The identification of three subtypes of violent offenders recognises the heterogeneity present in the violent offender population. It suggests that anger and criminal thinking may not be treatment needs for all violent offenders, and therefore that rehabilitation programs may inappropriately target these needs in some violent offenders. It is important to examine differences in violent re-offending risk, given that this is often a key determinant in whether a violent offender is deemed suitable for a violence intervention program. The high risk group had the highest levels of anger experience and expression, lowest levels of anger control, and the highest and strongest criminal thinking style scores; however, none of these variables were at levels considered to warrant treatment according to the authors of the measures (Spielberger, 1999; Walters, 1995). Comparisons between clusters revealed that the ‘unregulated’ group had a significantly greater proportion of high risk offenders, the ‘regulated’ group had a significantly greater proportion of moderate risk offenders and the ‘overregulated’ group demonstrated a trend toward a more low risk offenders.

Limitations.

There are several limitations associated with this study. Firstly, the measures of anger and criminal thinking were self-report, and therefore responses may have been distorted or affected by comprehension, insight, psychological defensiveness, impression management, deception, motivation and the ability to self-reflect and report on internal experiences (e.g., Collie et al., 2007). The measure of criminal thinking pertained to offending generally; perhaps it would be more appropriate to use a violence-specific cognitive measurement (e.g., Maudsley Violence...
Questionnaire [MVQ; Walker, 2005] or Firestone Assessment of Violent Thoughts [FAVT, Doucette-Gates et al., 1999]) to capture the violence cognitions that may distinguish subtypes (for further description of these tools, see Appendix I).

Secondly, the dataset used in the study was problematic, with poorly entered data and a number of missing variables, which likely impacted on the quality of the data used to identify groups. Thirdly, while a therapist-rated risk assessment tool was used, assessments were at times conducted by inexperienced clinicians, and interrater reliability could not be determined. The use of clinical judgement and override appeared reasonably prevalent, and assessment of risk may have been affected in part by factors including availability of the next program, time remaining to an offender’s earliest estimated date of release and Adult Parole Board requirements. Additionally, the use of the VRS as a risk assessment tool to highlight treatment needs results in limited consideration of treatment needs outside of those factors measured by the VRS.

Fourth, multicollinearity was an issue in the variables used to identify clusters, and these clustering variables were then used to analyse findings. While the variables were ecologically relevant, they were also invariably related (e.g., cognition and emotion). Fifth, with regard to ecological validity, while the data came from a real treatment environment in prison, the offenders were asked to reflect on their criminal thinking styles and anger – this did not measure these factors directly as they occurred during the offending episode. Finally, the findings are not generalisable. Results are from a single violent offender sample in a medium security therapeutic community, a specific cohort of violent offenders specifically selected for assessment and treatment in a therapeutic prison. The therapeutic community environment likely affects the violent offenders in this sample, with strict caveats on
behaviour and possible removal of many offenders who lack motivation or have significant difficulty controlling their impulsivity. Furthermore, it is unclear whether these differences are arbitrary, not discrete, and raises the question of whether neat categories can be imposed on the violent offender population, or whether boundaries for classification are always going to be somewhat fuzzy, affected by the research samples and psychometric measures used.

In conclusion, three violent offender types were identified with different treatment needs pertaining to anger and criminal thinking styles. Anger and criminal thinking do not appear to be criminogenic for all violent offenders, with group scores below the levels at which treatment is recommended; however, clear clusters can be identified based on their levels of anger and their use of criminal thinking to justify their offending.
Chapter 10. Treatment Outcome Study

Aims and Hypotheses

This study aims to examine the extent of change in anger, criminal thinking and re-offending risk demonstrated by a group of violent offenders following the completion of a violence intervention program, and determine whether this differs across the subtypes of violent offenders identified in Study 1. The study also aims to examine whether these changes affect recidivism rates at two-year follow-up.

It is hypothesised that the violent offender sample will demonstrate change in levels of anger experience, expression and control, patterns of criminal thinking and assessed risk of recidivism following program completion, although the extent of this change is uncertain. It is further hypothesised that the three subtypes will differ in the extent of changes in anger, criminal thinking and violence recidivism risk effected by the violent offender treatment program, although no predictions are made about the direction of these differences. With regard to rates of re-offending, it is hypothesised that the overall sample will have lower rates of violent re-offending than the recidivism rates seen in Victoria, and that the clusters will differ with respect to recidivism rates, although the extent of this difference is uncertain.

Method

Participants.

The dataset used in Study 1 was also used in this study and is described in the previous chapter. The dataset contained psychometric measures collected from participants following completion of a group-based moderate or high intensity violent offender program. The majority of cases from Study 1 either did not complete a program, were found unsuitable for a program, or post-program
psychometric data was unavailable. After data cleaning procedures, the longitudinal sample used in the current study comprised 131 participants (43.1% of the 305 cases used in Study 1).

At the time of post-program assessment, participants were aged between 19 and 55 years old ($M = 32.48$ years; $SD = 7.54$; $n = 131$). Over 8% of the violent offenders who completed a program were Indigenous, a rate that exceeds the proportion of Indigenous offenders in Study 1 (7.5%) and the state-wide Indigenous adult male imprisonment rate (6.2% in 2010; Corrections Victoria, 2010). Offenders’ cultural backgrounds are reported in Table 12. Compared with the overall sample, the violent offenders who completed a violence intervention program had higher levels of education attainment, with a greater proportion completing secondary, tertiary, trade or technical qualifications (17.5% v 13.8%) and a higher rate of pre-imprisonment employment (43.5% v 40.7%). Most of the sample reported being

Table 12

*Offender-Identified Cultural Background as a Percentage of the 131 Male Participants who Completed a Violence Intervention Program*

<table>
<thead>
<tr>
<th>Ethnicity</th>
<th>Treatment completion group</th>
</tr>
</thead>
<tbody>
<tr>
<td>Australian</td>
<td>62.6</td>
</tr>
<tr>
<td>Indigenous Australian</td>
<td>8.4</td>
</tr>
<tr>
<td>Pacific Islander</td>
<td>2.3</td>
</tr>
<tr>
<td>New Zealander / Maori</td>
<td>2.3</td>
</tr>
<tr>
<td>European</td>
<td>3.1</td>
</tr>
<tr>
<td>Asian</td>
<td>6.9</td>
</tr>
<tr>
<td>Middle Eastern</td>
<td>1.5</td>
</tr>
<tr>
<td>Other</td>
<td>7.6</td>
</tr>
<tr>
<td>Unknown</td>
<td>5.3</td>
</tr>
</tbody>
</table>
single (54.3%, n = 116) with at least one child (60.9%, n = 110). Further demographic information, including education level, marital and parental status, is reported in Appendix I for the longitudinal sample and for the MIVIP and HIVIP treatment completer groups.

The majority of the sample (74.8%) completed the moderate intensity program (MIVIP) while the remainder completed the high intensity program (HIVIP). These programs are described below. The MIVIP completion group were aged 19 to 52 years (\(M = 32.3\) years, \(SD = 7.0; n = 98\)) at post-program assessment and the HIVIP completion group were aged between 20 and 55 years (\(M = 33.1\) years; \(SD = 9.0; n = 33\)) at pre-program assessment. A greater proportion of Indigenous Australian and Pacific Islander males completed the HIVIP (15.2% and 6.1% respectively) than the MIVIP (6.1% and 1% respectively); the reverse trend was seen in participants of European and Asian descent. The HIVIP completers had higher levels of education attainment and higher rates of unemployment prior to incarceration than the MIVIP completers.

Using the Sentencing Act 1991 (Vic) criteria to classify offences, 72.5% of the 131 cases had committed violent index offences, 26.7% of which were serious violent offences. The most prevalent index offences were armed robbery or attempted armed robbery (22.1%), intentionally causing serious injury (19.1%), aggravated burglary (11.5%), recklessly causing serious injury (7.6%), murder or attempted murder (5.3%), manslaughter (3.8%), cause serious injury (3.1%), robbery (3.1%), intentionally cause injury (2.3%), make threat to kill (2.3%) and reckless cause injury (2.3%), burglary (1.5%) and kidnapping (1.5%). The index offence charge was unavailable for 6.1% of the sample.
Most offenders (85.5%) had prior convictions, with an average 2.7 prior offences ($SD = 1.5$). Many (64.9%) had committed at least one violent prior offence, including 16% who had committed serious violent prior offences. Prior offending history was unavailable for 8.4%, and 6.1% had no prior offences. Offenders had served on average 4.3 prior prison sentences ($SD = 4.02; n = 111$) and 1.8 community orders ($SD = 2.61; n = 98$). Both the MIVIP and HIVIP groups had completed similar numbers of prior prison and community sentences (see Appendix I). Prior offending and sentencing statistics were again considered underestimates, as data was limited to offending within Victoria and prior offending was underreported in data collection. Current and prior offending characteristics are provided in Appendix I, including the proportion of offenders in the longitudinal sample and the MIVIP and HIVIP treatment completer groups with violent and serious violent index and prior offences and the average number of prior offences, breaches, prior prison sentences and community orders served.

Offence types were classified using the ANZSOC (ABS, 2011a) and NOI (ABS, 2009) frameworks. The proportion of offences in each division for the overall sample is reported in Table 13. The majority of index and prior offences were located in the first six divisions, relating to culpable acts resulting in harm against a specific person (ABS, 2011a). The ANZSOC classifications for the most serious index and prior offences for the MIVIP and HIVIP treatment completers is provided in Appendix I.

Violent re-offending risk was assessed using the VRS (Wong & Gordon, 2006). At pre-program assessment, the greatest proportion of the treatment completer sample had been assessed as being at moderate risk of violent re-offending (see
Table 13

_Most Serious Index and Prior Offences, Categorised Using the NOI and ANZSOC Classification Systems, as a Percentage of the 131 Treatment Completers_

<table>
<thead>
<tr>
<th>Division</th>
<th>Treatment completers</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Index</td>
</tr>
<tr>
<td>01 Homicide and related offences</td>
<td>11.5</td>
</tr>
<tr>
<td>02 Acts intended to cause injury</td>
<td>26.0</td>
</tr>
<tr>
<td>03 Sexual assault and related offences</td>
<td>0.0</td>
</tr>
<tr>
<td>04 Dangerous or negligent acts endangering persons</td>
<td>12.2</td>
</tr>
<tr>
<td>05 Abduction, harassment and other offences against the person</td>
<td>1.5</td>
</tr>
<tr>
<td>06 Robbery, extortion and related offences</td>
<td>25.2</td>
</tr>
<tr>
<td>07 Unlawful entry with intent/burglary, break and enter</td>
<td>13.0</td>
</tr>
<tr>
<td>08 Theft and related offences</td>
<td>1.5</td>
</tr>
<tr>
<td>09 Fraud, deception and related offences</td>
<td>0.0</td>
</tr>
<tr>
<td>10 Illicit drug offences</td>
<td>0.8</td>
</tr>
<tr>
<td>11 Prohibited and regulated weapons and explosives offences</td>
<td>0.8</td>
</tr>
<tr>
<td>12 Property damage and environmental pollution</td>
<td>0.8</td>
</tr>
<tr>
<td>13 Public order offences</td>
<td>0.0</td>
</tr>
<tr>
<td>14 Traffic and vehicle regulatory offences</td>
<td>0.0</td>
</tr>
<tr>
<td>15 Offences against government procedures, government security and government operations</td>
<td>0.0</td>
</tr>
<tr>
<td>16 Miscellaneous offences</td>
<td>0.0</td>
</tr>
<tr>
<td>No offences</td>
<td>0.0</td>
</tr>
<tr>
<td>Unknown</td>
<td>6.9</td>
</tr>
<tr>
<td>Total</td>
<td>100.2</td>
</tr>
</tbody>
</table>

*A Totals do not add to 100% due to rounding.

Table 14). As expected, a higher proportion of high risk offenders completed the HIVIP and a greater proportion of moderate risk offenders completed the MIVIP –
the level of assessed risk forms the basis for determining the intensity of the program that the offender is recommended for.

Table 14

*Percentage of Offenders in Each Violent Recidivism Risk Category at Pre-program Assessment for the Treatment Completer Group and Separated by Program Type*

<table>
<thead>
<tr>
<th>Violence Risk Scale (VRS) rating</th>
<th>Treatment completers ((n = 131))</th>
<th>MIVIP Treatment completers ((n = 98))</th>
<th>HIVIP Treatment completers ((n = 33))</th>
</tr>
</thead>
<tbody>
<tr>
<td>High risk</td>
<td>19.1</td>
<td>5.1</td>
<td>60.6</td>
</tr>
<tr>
<td>Moderate risk</td>
<td>71.8</td>
<td>83.7</td>
<td>36.4</td>
</tr>
<tr>
<td>Low risk</td>
<td>6.9</td>
<td>9.2</td>
<td>0.0</td>
</tr>
<tr>
<td>Unknown</td>
<td>2.3</td>
<td>2.0</td>
<td>3.0</td>
</tr>
</tbody>
</table>

Limitations in the dataset affected the calculation of the average interval between pre-program and post-program testing. Data was missing or clearly incorrectly entered (with post-testing dates preceding pre-testing dates) for a significant number of cases, and this restricted the sample available for the treatment outcome study. For example, post-program test scores were available for only 168 of the 305 cases in Study 1; of these, 16.7% did not have completion dates recorded for pre-program or post-program assessments, and 4.2% had input errors, with data suggesting that post-program testing occurred before pre-program testing. Removal of these cases resulted in a total final sample of 131 cases in the current study, with an average interval between pre-program and post-program assessment of 232.2 days \((SD = 157.64, n = 103)\). This average interval was substantially longer than program duration as pre-program scoring of the VRS was often completed several months prior program commencement.
Measures.

Psychometric measures.

The State-Trait Anger Expression Inventory-2 (STAXI-2; Spielberger, 1999), Psychological Inventory of Criminal Thinking Styles (PICTS; Walters, 2010) and Violence Risk Scale (VRS; Wong & Gordon, 2006) were used in Study 2. These measures were described in Study 1.

The STAXI-2 and PICTS were used to investigate levels of trait anger, anger expression, anger control and patterns of criminal thinking styles prior to and post-program. The VRS was used to assess pre-program violent re-offending risk and post-program response to treatment for all identified treatment targets. Socially desirable responding was assessed using the PICTS Confusion-revised and Defensiveness-revised scales\(^{18}\). The PICTS Fear-of-Change (FOC) scale was used to determine offenders’ levels of concern or apprehension about the prospect of behavioural change prior to and following program completion, to assess whether levels of fear changed and whether FOC scale responses were associated with the extent of change on other scales.

Recidivism.

Every effort was made to obtain data from Corrections Victoria pertaining to subsequent re-offending by prisoners in the sample. Unfortunately, the extraction of recidivism data for this cohort required resources that Corrections Victoria could not provide to the project and the information could not be obtained from other sources.

\(^{18}\) As with Study 1, data was collected using the Marlowe-Crowne Social Desirability Scale – Short Form (MC-C; Reynolds, 1982), however due to data collection errors, this measure could not be used as an indicator of impression management or socially desirable responding (see Appendix E).
Re-offending data were therefore not available, preventing the examination of the effects on recidivism of any change in the use of criminal thinking or the experience, expression or control of anger. That is, the influence of program completion and addressing of treatment needs on rates of re-offending, a key component of any program evaluation, could not be ascertained.

**Violence Intervention Program (VIP).**

The violence intervention program completed by offenders in the current sample is delivered at the Marngoneet Correctional Centre, a medium-security therapeutic prison in Victoria in which all prisoners participate as members of the neighbourhood community. The 394-bed facility is arranged in four neighbourhoods, each with a targeted clinical purpose: violence, drug and alcohol abuse, employment and parenting, and sexual offending (and protection). Offenders transferring to Marngoneet Correctional Centre must have a minimum of 6 months left to serve, be assessed as moderate to high risk of general re-offending and have a medium or minimum security classification.

Participants are initially screened with a Victorian Intervention Screening Assessment Tool (VISAT; Ross, Pollard, Van den Bossche, Thomas, & Brown, 2005) Risk/Need Assessment completed by assessment officers after being sentenced and imprisoned to identify areas that may require further assessment. After reception into the violence neighbourhood, participants are assessed with a clinician-administered risk/need analysis if their VISAT violence module score is one or greater. If the clinical analysis outcome indicates suitability for offence-specific treatment, participants are then assessed for violence intervention program eligibility. Program criteria include a history of violent offending (at least two
current or prior violent convictions), assessment of moderate to high violent recidivism risk (assessed using the VRS) and treatment readiness (assessed by clinical judgement of issues including mental health, intellectual capacity and group dynamics). Prior to undertaking the violence intervention program, participants complete a 6-session module aimed at increasing treatment readiness and motivation, exploring ambivalence to change, increasing self-efficacy, encouraging preparation for change and increasing familiarity with group process.

Two versions of the violence intervention program are delivered at Marngoneet Correctional Centre: the 180-hour, 6-month high intensity program (HIVIP) delivered three times per week, and the 120-hour, 4-month moderate intensity program (MIVIP) delivered twice a week. Typically, scores on the VRS determine the program intensity that an offender receives: scores between 35 and 50 facilitate a referral to the moderate intensity program, and scores of 51 and above result in referral to the high intensity program. Clinical override can be used if an offender’s risk score appears inconsistent with their presentation, offending history and treatment needs. The program is multi-modal, incorporating cognitive behavioural treatment and anger management. Based on the multifactorial Social Learning Theory and Social Cognitive Theory, the program incorporates personal attributes, situational factor, cognitions and emotions and adopts best practice principles. The program aims to reduce violent re-offending risk by increasing self-awareness and self-management, improving conflict resolution and problem solving skills, and better regulating affective responses and behavioural outcomes.

The HIVIP and MIVIP incorporate the same seven core modules:

1. Introduction, including group forming, defining violence, introducing the cognitive behavioural model and core beliefs;
2. Life Pathways, including significant life events, core beliefs and decision-making processes;

3. Offence Process, including violent offending patterns, offence similarities and differences, offending-related thoughts, feelings, beliefs and behaviours;

4. Prosocial Thinking, incorporating intensive cognitive-behavioural treatment addressing thinking errors, cognitive distortions and schemas;

5. Managing Emotions (HIVIP) or Anger and Violence (MIVIP), incorporating recognition, control and management strategies for emotions, including anger;

6. Victim Awareness, addressing personal experiences of victimisation, empathy, and recognising impacts of violence; and

7. Self-Management, including identifying risk factors and strategies, social supports and goal setting.

Several supplementary modules were also delivered to offenders in the current sample as adjunct to the moderate and high intensity program addressing particular areas of treatment need: Interpersonal Relationships, Masculinity and Violence, and Substance Use and Violence. The violence programs incorporate psychometric measures administered prior to and following program completion. After finishing the program, most participants are transferred to other prisons prior to release on parole.

**Procedure.**

The procedure for ethics approval, data collection and data provision to researchers was outlined previously in Study 1. A test battery including the STAXI-2
and PICTS were administered by Corrections Victoria prison-based clinical staff on the final day of group-based programs to offenders who completed the moderate or high intensity violence intervention program at the treatment prison. Corrections Victoria clinical staff then scored each measure and completed the stage of change component of the VRS interview protocol following program completion. Data were provided to researchers in a de-identified SPSS file. Extensive cleaning of the dataset was undertaken by the researchers due to significant limitations in the data, including missing values and incorrectly coded variables.

**Data screening and cleaning.**

Missing data was a significant issue in this study. Of the 305 cases used in Study 1, 194 (63.6%) completed a violence intervention program. Several cases (12.8%) did not complete a program (perhaps due to unsuitability for a group-based program or because of time constraints before their Earliest Estimated Date of release [EED]), and information pertaining to program completion was unavailable for 23.6%. Post-program psychometric data was available for only 132 of the cases who completed a program. One case was subsequently removed due to invalid responding on post-program assessment measures (see below). Removal of this case resulted in a final sample of 131 male offenders. Of the three cases with sexual offences (see Study 1), one case was utilised in the longitudinal sample: Case 2, with an index violent offence of murder and a prior sexual offence of aggravated rape.

As with Study 1, data were screened prior to analysis for accuracy of entry, missing values, distribution of variables, multicollinearity, homoscedasticity and assumptions of normality. Where it was clear that data entry errors had been made, with values outside test score ranges, these scores were deleted and treated as
missing values (with the exception of the MC-C scale). Several outliers were detected. These were not removed or rescaled as the scores were within the possible and expected range for a prison population and considered representative of the sample. Furthermore, given the similarity between the mean and the 5% trimmed mean on each variable, the cases were retained (Tabachnick & Fidell, 2007).

As noted earlier, missing values were problematic in this dataset, including for post-program psychometric measures: all STAXI-2 variables were missing for 31 cases, all PICTS scores for 32 cases and all VRS stage of change variables for 19 cases. No case was missing values on more than one measure. No missing value replacement methods were used for the STAXI-2 or PICTS missing values. Given the small sample size and the significant number of cases with missing values on a single measure, replacing values was considered likely to impact on the accuracy of the representation of responses. Finally, for the 61 cases missing at least one VRS variable, post-program VRS scores on these variables were calculated by subtracting the Stage of Change score from the pre-program VRS score, following the process of calculating post-program VRS scores outlined by Wong and Gordon (2006).

Assumptions of normality were examined using the Kolmogorov-Smirnov statistic and indicated a significant result (< .05) on all STAXI-2, PICTS, MC-C and VRS items except for the STAXI-2 Anger Control-Out, Anger Control-In, Anger Expression Index scales, PICTS Cutoff and Defensiveness scales and the total VRS score. Further analysis of scatterplots, histograms, skewness and kurtosis confirmed that the Anger Control-Out, Anger Control-In, Anger Expression Index, Cutoff, Defensiveness and total VRS score scales were normally distributed. All other scores were positively skewed. This deviation from normality was considered acceptable given the violent offender sample, as Tabachnick and Fidell (2007) indicate that such
violations are common in prison populations, however the small sample size increases the vulnerability of analyses to violations of the normality assumption. Raw PICTS and STAXI-2 scores were standardised to assist with comparability and interpretation using the PICTS gender-specific norms (Walters, 2010) and STAXI-2 gender- and age-specific norms (Spielberger, 1999).

**Socially desirable responding.**

As noted in Study 1, data from the Marlowe-Crowne Social Desirability Scale – Short Form could not be used due to errors in data entry that resulted in unreliable data. Several PICTS validity scales were also examined. Inspection of the data revealed that no participant failed to answer more than five of the PICTS items. On the Df-r scale, 14 cases (10.7%) scored between 55 and 65 and 1 (0.8%) scored over 65. On the Cf-r scale, 8 cases (6.1%) scored between 65 and 80 and 2 cases (1.5%) scored between 81 and 100. One case scored over 100 on the Cf-r; this case was removed as responding was invalid for research purposes (Walters, 2010). These findings suggest that respondents may have engaged in less impression management in post-program responding. No significant differences in impression management or ‘faking bad’ were found between offenders assessed as being at low, moderate or high risk of re-offending post-program.

**Results**

Several sets of results are presented in this section. Firstly, changes in pre- and post-program anger, thinking style and violence recidivism risk scores of the 131 violent offenders are examined. Differences in post-program measures between the clusters identified in Study 1 are examined, followed by an analysis of changes from
pre-program to post-program within and between changes. Program effects for the MIVIP and HIVIP are also presented, to identify whether any differential effects observed across clusters are artefacts of program intensity.

**Group analyses: Pre- and post-program comparisons.**

Pre- and post-program average STAXI-2, PICTS and VRS scores were compared for the 131 treatment completers group to examine post-program change.

**Changes in anger and criminal thinking.**

Mean STAXI-2 post-program scale scores were in the normal range for the group on all scales except for the Angry Reaction scale score, which fell in the low range. Average pre-program and post-program STAXI-2 scale scores were significantly different ($p < .05$) on all scales, with the exception of Anger Control-Out ($p > .05$). Paired-sample tests and effect sizes are reported in Table 15. Post-program scores were significantly lower than pre-program scores on Trait Anger, Angry Temperament, Angry Reaction, Anger Expression-Out, Anger Expression In and Anger Expression Index, with small to moderate effect sizes. Anger Control-In was significantly higher following program completion, with a small effect size.

All post-program PICTS scale scores were in the average range, suggesting that any criminal belief system held by the overall violent offender treatment completer group was weak, absent or hidden. In comparing PICTS scores from pre-program and post-program assessment, the 131 violent offenders who completed treatment scored significantly lower on all of the eight criminal thinking styles, General Criminal Thinking, Proactive Criminal Thinking, Reactive Criminal
Table 15

Mean Pre- and Post-program STAXI-2 and PICTS t-scores and Paired Sample t-tests Comparing Pre-program and Post-program Scores

(Wilcoxon Signed Ranks test) for the 131 Violent Offenders who Completed a Treatment Program

<table>
<thead>
<tr>
<th>Scales</th>
<th>Pre-program</th>
<th>Post-program</th>
<th>Z</th>
<th>Effect size</th>
<th>Effect size rating</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>M</td>
<td>SD</td>
<td>r</td>
</tr>
<tr>
<td></td>
<td>(n = 124)</td>
<td>(n = 100)</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>STAXI-2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Trait Anger</td>
<td>48.85</td>
<td>45.24</td>
<td>-2.75**</td>
<td>-0.18</td>
<td>Small</td>
</tr>
<tr>
<td>Angry Temperament</td>
<td>49.32</td>
<td>46.22</td>
<td>-2.52*</td>
<td>-0.17</td>
<td>Small</td>
</tr>
<tr>
<td>Angry Reaction</td>
<td>43.55</td>
<td>41.18</td>
<td>-2.56*</td>
<td>-0.17</td>
<td>Small</td>
</tr>
<tr>
<td>Anger Expression-Out</td>
<td>50.06</td>
<td>47.48</td>
<td>-2.23*</td>
<td>-0.15</td>
<td>Small</td>
</tr>
<tr>
<td>Anger Expression-In</td>
<td>50.41</td>
<td>47.28</td>
<td>-3.41**</td>
<td>-0.23</td>
<td>Small</td>
</tr>
<tr>
<td>Anger Control-Out</td>
<td>45.58</td>
<td>48.04</td>
<td>-1.48</td>
<td>-0.10</td>
<td>NS</td>
</tr>
<tr>
<td>Anger Control-In</td>
<td>47.31</td>
<td>49.92</td>
<td>-2.47*</td>
<td>-0.17</td>
<td>Small</td>
</tr>
<tr>
<td>Anger Expression Index</td>
<td>53.27</td>
<td>49.14</td>
<td>-3.35**</td>
<td>-0.22</td>
<td>Small</td>
</tr>
<tr>
<td>PICTS</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>General Criminal Thinking</td>
<td>53.21^a</td>
<td>49.08</td>
<td>-4.87**</td>
<td>-0.32</td>
<td>Medium</td>
</tr>
<tr>
<td>Proactive Criminal Thinking</td>
<td>52.71</td>
<td>50.18</td>
<td>-3.05**</td>
<td>-0.20</td>
<td>Small</td>
</tr>
<tr>
<td>Reactive Criminal Thinking</td>
<td>56.08^a</td>
<td>52.38</td>
<td>-4.50**</td>
<td>-0.30</td>
<td>Medium</td>
</tr>
<tr>
<td>Scales</td>
<td>Pre-program</td>
<td>Post-program</td>
<td>Z</td>
<td>Effect size</td>
<td>Effect size rating</td>
</tr>
<tr>
<td>---------------------</td>
<td>-------------</td>
<td>--------------</td>
<td>--------</td>
<td>-------------</td>
<td>-------------------</td>
</tr>
<tr>
<td></td>
<td>M</td>
<td>SD</td>
<td>M</td>
<td>SD</td>
<td>r</td>
</tr>
<tr>
<td>Mollification</td>
<td>49.44</td>
<td>9.88</td>
<td>46.57</td>
<td>8.02</td>
<td>-3.45**</td>
</tr>
<tr>
<td>Cutoff</td>
<td>56.67</td>
<td>10.17</td>
<td>53.15</td>
<td>8.89</td>
<td>-3.80**</td>
</tr>
<tr>
<td>Entitlement</td>
<td>51.63</td>
<td>10.19</td>
<td>48.67</td>
<td>8.70</td>
<td>-3.17**</td>
</tr>
<tr>
<td>Power Orientation</td>
<td>51.61</td>
<td>11.73</td>
<td>47.71</td>
<td>9.64</td>
<td>-3.74**</td>
</tr>
<tr>
<td>Sentimentality</td>
<td>47.92</td>
<td>9.26</td>
<td>44.84</td>
<td>9.09</td>
<td>-3.78**</td>
</tr>
<tr>
<td>Superoptimism</td>
<td>51.06</td>
<td>9.90</td>
<td>48.91</td>
<td>10.39</td>
<td>-2.53*</td>
</tr>
<tr>
<td>Cognitive Indolence</td>
<td>53.80</td>
<td>8.77</td>
<td>49.98</td>
<td>8.09</td>
<td>-5.39**</td>
</tr>
<tr>
<td>Discontinuity</td>
<td>55.27</td>
<td>10.44</td>
<td>52.67</td>
<td>9.65</td>
<td>-3.49**</td>
</tr>
<tr>
<td>Current Criminal Thinking</td>
<td>54.91</td>
<td>10.21</td>
<td>51.11</td>
<td>9.30</td>
<td>-4.47**</td>
</tr>
<tr>
<td>Fear of Change</td>
<td>53.17</td>
<td>12.39</td>
<td>50.30</td>
<td>11.36</td>
<td>-2.62**</td>
</tr>
</tbody>
</table>

*Note. All STAXI-2 scale T-scores below 65. Significance values are 2-tailed. *p < .05, **p < .01. Effect size rating (Field, 2005): r = .1 (small), r = .3 (medium), r = .5 (large). *PICTS score in moderate range, indicating problematic use of this distortion. All other PICTS scores in average range.*
Thinking, Current Criminal Thinking and Fear of Change scales \((p < .05)\), with small to medium effect sizes. Effect sizes are outlined in Table 15.

**Change in violence risk.**

Comparison of pre- and post-program VRS scores for the 131 cases indicated significant change \((\chi^2(4,112) = 45.32, p < .01)\) in the proportion of offenders at each risk level. VRS scores were unavailable for 2.3% of cases pre-program and 14.5% post-program. The proportion of low risk offenders increased from 6.9% pre-program to 15.3% post-program, while the proportion of high risk offenders remained constant (19.1%). The proportion of moderate risk offenders reduced from 71.8% pre-program to 51.1% post-program. Regarding individual-level risk assessment change, of the seven cases assessed as being at low risk pre-program, five remained low risk; the risk assessment of two indicated increased risk (moderate) post-program. Eighty-five cases were assessed pre-program as being at moderate risk; post-program, 60 remained at moderate risk, 10 were low risk and 11 were high risk. Finally, of the 20 cases assessed as being at high risk of violent re-offending pre-program, 14 remained high risk post-program, 5 were moderate risk and 1 was assessed as being at low risk.

The violent offenders demonstrated change in several of the treatment targets associated with violence following program completion (see Figure 7). Pre-program values were calculated by determining the proportion of the sample with ratings of 2 or 3 on each dynamic risk factor. Post-program scores of 2 and above remained treatment targets; scores below two indicated that the risk factor no longer warranted treatment. As the figure demonstrates, the proportion of violent offenders requiring treatment for each dynamic risk factor generally reduced from pre-program to post-
Figure 7. Percentage of violent offenders for whom VRS dynamic risk factors were considered treatment targets (rated 2 or 3) prior to and following the VIP.

As Figures 7, 8 and 9 demonstrate, change was observed in the percentage of violent offenders assessed as having treatment targets of violent lifestyle, criminal attitudes, criminal personality, interpersonal aggression, emotional control, weapon use, substance abuse, stability of relationships, community support, release to high...
Figure 8. Percentage of the violent offenders whom completed the HIVIP for whom VRS dynamic risk factors were rated 2 or 3 pre-program and post-program.

Risk situations, violence cycle, impulsivity, compliance with community supervision and security level of anticipated release institution. The dramatic change in the latter treatment target likely reflects the clinician-anticipated move of many treatment completers to minimum security facilities following program completion, to assist with re-integration processes.
Figure 9. Percentage of the violent offenders whom completed the MIVIP for whom VRS dynamic risk factors were rated 2 or 3 pre-program and post-program.

**Within-cluster comparisons: Pre- and post-program.**

The characteristics of the cases in each cluster who completed a violence intervention program are outlined in Appendix J, including the most serious offence type\(^{19}\). Mean pre- and post-program STAXI-2 and PICTS scores for each cluster are

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\(^{19}\) Categorised using the ANZSOC (ABS, 2011a) and NOI (ABS, 2009) classification systems.
provided in Table 16. Average pre-program and post-program scores were compared within each cluster using paired-samples t-tests. These are presented in Table 17.

Cluster 1: “Regulated”.

In Cluster 1, paired-samples t-tests indicated that post-program scores were significantly lower than pre-program scores on the Trait Anger, Anger Expression-In and Anger Expression Index scales and significantly higher on the Anger Control-Out and Anger Control-In scales \((p < .05)\), with moderate to large effect sizes \((\text{eta squared} = .10 \text{ to } .28)\). There were no significant differences on the Angry Temperament, Angry Reaction and Anger Expression-Out scales between pre- and post-program testing. All anger scale scores remained in the normal range.

Post-program, criminal thinking style scale scores for violent offenders in Cluster 1 were all in the average range, suggesting that any criminal belief system held by offenders in this cluster was absent, weak or hidden, and that offenders in this cluster did not overtly express proactive criminal thoughts or engage in impulsive criminality. Post-program scores were significantly lower than pre-program scores on the General Criminal Thinking, Proactive Criminal Thinking, Reactive Criminal Thinking, Mollification, Cutoff, Sentimentality, Cognitive Indolence, Discontinuity, Current Criminal Thinking and Fear of Change scales \((p < .05)\), with moderate to large effect sizes \((\text{eta squared} = .12 \text{ to } .36)\). There were no significant differences on the Entitlement, Power Orientation or Superoptimism thinking style scales between pre- and post-program testing. While the three-scale elevation observed in the pre-program scores (Cutoff, Discontinuity and Cognitive Indolence) was visible in the pattern of post-program scores, this could not be interpreted as scores were below the level recommended for profile interpretation.
Cluster 2: “Overregulated”.

Paired samples \( t \)-tests indicated that two scales were significantly lower following program completion: the Anger Control-Out scale, \( t(26) = 2.93, p < .01 \), with a large effect size (\( \eta^2 = .25 \)), and the Power Orientation thinking style scale, \( t(27) = 2.17, p < .05 \), with a large effect size (\( \eta^2 = .15 \)). There were no significant differences between pre- and post-program testing on any other anger or criminal thinking style scale. Trait Anger and Angry Reaction scores remained in the low range, indicating that the violent offenders in this cluster experience relatively little anger generally. All other anger scale scores remained in the normal range, and all criminal thinking style scales were in the average range.

Cluster 3: “Unregulated”.

Cluster 3 violent offenders demonstrated the greatest reduction in anger and thinking style scale scores. Paired sample \( t \)-tests indicated that Cluster 3 pre-program and post-program scores were significantly different (\( p < .05 \)) on all anger scales with the exception of Anger Expression-In (\( p > .05 \)), with large effect sizes (\( \eta^2 = .21 \) to \( .37 \)). The Anger Control-In and Anger Control-Out scales were significantly higher post-program, while all other scales (except Anger Expression-In) were significantly lower following program completion. Scores on the STAXI-2 obtained following program completion were all in the normal range.

Post-program scores were significantly lower (\( p < .05 \)) on all PICTS scales, with the exception of the Superoptimism scale which was not significantly different between pre- and post-program testing (\( p = .05 \)). The effect size for each of the significant PICTS scale differences was large (\( \eta^2 = .18 \) to \( .54 \)). While the General Criminal Thinking, Proactive Criminal Thinking and Reactive Criminal
Table 16

Mean Pre- and Post-program STAXI-2 and PICTS t-scores for the Three Subgroups Identified Using Cluster Analysis in Study 1.

<table>
<thead>
<tr>
<th>Measure</th>
<th>Cluster 1</th>
<th>Cluster 2</th>
<th>Cluster 3</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Pre</td>
<td>Post</td>
<td>Pre</td>
</tr>
<tr>
<td></td>
<td>$M$</td>
<td>$SD$</td>
<td>$M$</td>
</tr>
<tr>
<td><strong>STAXI-2</strong></td>
<td>$(n = 59)$</td>
<td>$(n = 48)$</td>
<td>$(n = 41)$</td>
</tr>
<tr>
<td>Trait Anger</td>
<td>50.41</td>
<td>10.11</td>
<td>45.63</td>
</tr>
<tr>
<td>Angry Temperament</td>
<td>50.37</td>
<td>9.51</td>
<td>46.33</td>
</tr>
<tr>
<td>Angry Reaction</td>
<td>44.75</td>
<td>8.19</td>
<td>42.21$^a$</td>
</tr>
<tr>
<td>Anger Expression-Out</td>
<td>51.07</td>
<td>8.62</td>
<td>48.42</td>
</tr>
<tr>
<td>Anger Expression-In</td>
<td>54.66</td>
<td>8.63</td>
<td>49.88</td>
</tr>
<tr>
<td>Anger Control-Out</td>
<td>43.39</td>
<td>8.91</td>
<td>48.46</td>
</tr>
<tr>
<td>Anger Control-In</td>
<td>45.36</td>
<td>9.30</td>
<td>49.33</td>
</tr>
<tr>
<td>Anger Expression Index</td>
<td>57.31</td>
<td>8.28</td>
<td>50.13</td>
</tr>
<tr>
<td><strong>PICTS</strong></td>
<td>$(n = 59)$</td>
<td>$(n = 48)$</td>
<td>$(n = 41)$</td>
</tr>
<tr>
<td>General Criminal Thinking</td>
<td>54.17$^c$</td>
<td>5.23</td>
<td>49.38</td>
</tr>
<tr>
<td>Proactive Criminal Thinking</td>
<td>53.20</td>
<td>7.12</td>
<td>49.85</td>
</tr>
<tr>
<td>Reactive Criminal Thinking</td>
<td>58.68$^c$</td>
<td>6.76</td>
<td>53.10</td>
</tr>
<tr>
<td>Measure</td>
<td>Cluster 1</td>
<td></td>
<td>Cluster 2</td>
</tr>
<tr>
<td>-------------------------------</td>
<td>-----------</td>
<td>----------</td>
<td>-----------</td>
</tr>
<tr>
<td></td>
<td>M</td>
<td>SD</td>
<td>M</td>
</tr>
<tr>
<td>Mollification</td>
<td>49.78</td>
<td>7.89</td>
<td>46.90</td>
</tr>
<tr>
<td>Cutoff</td>
<td>59.19</td>
<td>6.32</td>
<td>53.63</td>
</tr>
<tr>
<td>Entitlement</td>
<td>51.69</td>
<td>7.82</td>
<td>49.21</td>
</tr>
<tr>
<td>Power Orientation</td>
<td>49.27</td>
<td>6.76</td>
<td>47.33</td>
</tr>
<tr>
<td>Sentimentality</td>
<td>48.71</td>
<td>7.94</td>
<td>45.85</td>
</tr>
<tr>
<td>Superoptimism</td>
<td>50.29</td>
<td>7.77</td>
<td>47.63</td>
</tr>
<tr>
<td>Cognitive Indolence</td>
<td>55.83</td>
<td>6.63</td>
<td>50.58</td>
</tr>
<tr>
<td>Discontinuity</td>
<td>57.25</td>
<td>8.47</td>
<td>53.29</td>
</tr>
<tr>
<td>Current Criminal Thinking</td>
<td>57.63</td>
<td>7.50</td>
<td>52.00</td>
</tr>
<tr>
<td>Fear of Change</td>
<td>55.56</td>
<td>10.63</td>
<td>51.69</td>
</tr>
</tbody>
</table>

Note. All STAXI-2 scale T-scores below 65. aSTAXI-2 percentile in low range (25th percentile or lower); bSTAXI-2 percentile in high range (75th percentile or higher). cPICTS score in moderate range; dPICTS score in high range, indicating problematic use of this distortion.
Table 17

Paired-sample t-tests Comparing Mean Pre-program and Post-program Scores for the Whole Group and for the Three Clusters.

<table>
<thead>
<tr>
<th>Variable</th>
<th>Treatment completers</th>
<th>Cluster 1</th>
<th>Cluster 2</th>
<th>Cluster 3</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>($n = 97$)</td>
<td>($n = 48$)</td>
<td>($n = 27$)</td>
<td>($n = 22$)</td>
</tr>
<tr>
<td><strong>STAXI-2</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Trait Anger</td>
<td>2.87**</td>
<td>0.08</td>
<td>2.38*</td>
<td>0.11</td>
</tr>
<tr>
<td>Angry Temperament</td>
<td>2.54*</td>
<td>0.06</td>
<td>1.84</td>
<td>0.07</td>
</tr>
<tr>
<td>Angry Reaction</td>
<td>2.55*</td>
<td>0.06</td>
<td>1.29</td>
<td>0.03</td>
</tr>
<tr>
<td>Anger Expression-Out</td>
<td>2.31*</td>
<td>0.05</td>
<td>1.20</td>
<td>0.03</td>
</tr>
<tr>
<td>Anger Expression-In</td>
<td>3.16**</td>
<td>0.09</td>
<td>2.96**</td>
<td>0.16</td>
</tr>
<tr>
<td>Anger Control-Out</td>
<td>-1.94</td>
<td>0.04</td>
<td>-2.55*</td>
<td>0.12</td>
</tr>
<tr>
<td>Anger Control-In</td>
<td>-2.68**</td>
<td>0.07</td>
<td>-2.77**</td>
<td>0.14</td>
</tr>
<tr>
<td>Anger Expression Index</td>
<td>3.70***</td>
<td>0.12</td>
<td>4.32***</td>
<td>0.28</td>
</tr>
<tr>
<td><strong>PICTS</strong></td>
<td>($n = 100$)</td>
<td>($n = 48$)</td>
<td>($n = 27$)</td>
<td>($n = 21$)</td>
</tr>
<tr>
<td>General Criminal Thinking</td>
<td>5.47***</td>
<td>0.23</td>
<td>4.26***</td>
<td>0.28</td>
</tr>
<tr>
<td>Proactive Criminal Thinking</td>
<td>3.03**</td>
<td>0.08</td>
<td>2.62*</td>
<td>0.13</td>
</tr>
<tr>
<td>Reactive Criminal Thinking</td>
<td>5.01***</td>
<td>0.20</td>
<td>4.66***</td>
<td>0.32</td>
</tr>
<tr>
<td>Mollification</td>
<td>3.47**</td>
<td>0.11</td>
<td>2.71**</td>
<td>0.13</td>
</tr>
<tr>
<td>Cutoff</td>
<td>4.14***</td>
<td>0.15</td>
<td>4.24***</td>
<td>0.28</td>
</tr>
<tr>
<td>Variable</td>
<td>Treatment completers</td>
<td></td>
<td>Cluster 1</td>
<td></td>
</tr>
<tr>
<td>--------------------------</td>
<td>----------------------</td>
<td>-----------</td>
<td>-----------</td>
<td>-----------</td>
</tr>
<tr>
<td></td>
<td></td>
<td>$t$</td>
<td>$\eta^2$</td>
<td></td>
</tr>
<tr>
<td>Entitlement</td>
<td></td>
<td>3.26**</td>
<td>0.10</td>
<td></td>
</tr>
<tr>
<td>Power Orientation</td>
<td></td>
<td>4.16***</td>
<td>0.15</td>
<td></td>
</tr>
<tr>
<td>Sentimentality</td>
<td></td>
<td>4.17***</td>
<td>0.15</td>
<td></td>
</tr>
<tr>
<td>Superoptimism</td>
<td></td>
<td>2.31**</td>
<td>0.05</td>
<td></td>
</tr>
<tr>
<td>Cognitive Indolence</td>
<td></td>
<td>6.15***</td>
<td>0.28</td>
<td></td>
</tr>
<tr>
<td>Discontinuity</td>
<td></td>
<td>3.82***</td>
<td>0.13</td>
<td></td>
</tr>
<tr>
<td>Current Criminal Thinking</td>
<td></td>
<td>5.16***</td>
<td>0.21</td>
<td></td>
</tr>
<tr>
<td>Fear of Change</td>
<td></td>
<td>2.90**</td>
<td>0.08</td>
<td></td>
</tr>
</tbody>
</table>

*Note.* Significance values are 2-tailed. *$p < .05$, **$p < .01$, ***$p < .001$. A more conservative significance level of .01 was adopted to reduce the possibility of a Type I error. Rating of association strength (Cohen, 1988): 0.01 to 0.05 = small association; 0.06 to 0.14 = medium association; 0.15+ = large association.
Thinking scales remained moderately elevated, the elevations were less than pre-program. Following program completion, only the Superoptimism thinking style remained in the high range, with the seven other thinking style scales in the average range. Notably, the Superoptimism scale was not in the original 4-scale differentiated elevation pre-program. The post-program thinking style profile was undifferentiated.

**Between-cluster comparisons: Post-program scores and pre- and post-program changes.**

Post-program anger and criminal thinking measure scores were compared across the three clusters using multivariate analyses of variance to determine whether the significant differences seen pre-program remained at post-program assessment. Tests of between-subject effects were significant \( p < .05 \) for all thinking style variables and anger variables, with the exception of the anger control variables (Anger Control-In and Anger Control-Out). Closer inspection revealed that Clusters 2 and 3 had significantly different \( p < .05 \) post-program scores on the Trait Anger, Angry Temperament, Angry Reaction, Anger Expression-Out and Anger Expression Index scales, while Clusters 1 and 2 differed \( p < .05 \) on the Anger Expression-In scale. There were no other significant between-cluster differences on anger scales. The three clusters were significantly different \( p < .05 \) on all thinking style variables with the exception of Clusters 1 and 3 on the Sentimentality, Discontinuity, Current Criminal Thinking and Fear of Change scales and Clusters 1 and 2 on Sentimentality, Superoptimism and Fear of Change scales. Notably, Clusters 2 and 3 had significantly different scores on all variables.
Mixed between-within subjects analyses of variance were then conducted to determine whether the treatment completer group and the three clusters demonstrated similar or differing levels of change on the anger and criminal thinking style variables following completion of a VIP. There were significant interactions between cluster membership and each of the anger variables (with the exception of Anger Expression-In) and PICTS variables (with the exception of Sentimentality, Superoptimism and Fear of Change). There were moderate to large main effects for all STAXI-2 and PICTS variables (except Anger Control-Out). The main effect comparing the three clusters was significant on all variables, suggesting the three clusters had significantly different amounts of change between pre-program and post-program assessment on all PICTS and STAXI-2 variables. Table 19 provides the $F$ statistics for the interaction effects, main effects and between-subjects effects.

The proportion of offenders who completed the MIVIP and the HIVIP were compared between the groups to examine whether differences in outcomes may have been a reflection of treatment intensity (see Table 18). Clusters differed significantly

Table 18

*Percentage of Offenders in Each Cluster (Identified in Study 1) Who Subsequently Completed a Moderate or High Intensity Violence Intervention Program*

<table>
<thead>
<tr>
<th>Program Intensity</th>
<th>Cluster 1 (n = 129)</th>
<th>Cluster 2 (n = 100)</th>
<th>Cluster 3 (n = 58)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Moderate intensity VIP</td>
<td>46.5</td>
<td>43.0</td>
<td>34.5</td>
</tr>
<tr>
<td>High intensity VIP</td>
<td>21.7</td>
<td>15.0</td>
<td>25.9</td>
</tr>
<tr>
<td>No program completed</td>
<td>7.0</td>
<td>17.0</td>
<td>17.2</td>
</tr>
<tr>
<td>Treatment completion uncertaina</td>
<td>24.8</td>
<td>25.0</td>
<td>22.4</td>
</tr>
</tbody>
</table>

*aIncludes those who were found unsuitable for a program, did not complete a program that they began, did not have post-program psychometric measures recorded or did not have program completion information recorded.
Table 19

Interaction Effects, Main Effects and Between-subjects Effects from Mixed Between-within Subjects Analyses of Variance Comparing Effects of Cluster Membership on Differences in Pre- and Post-program Scores on STAXI-2 and PICTS Scales

<table>
<thead>
<tr>
<th>Variable</th>
<th>Interaction effects (by cluster)</th>
<th>Main effects</th>
<th>Between-subjects effects</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>$F$ partial $\eta^2$</td>
<td>$F$ partial $\eta^2$</td>
<td>$F$ partial $\eta^2$</td>
</tr>
<tr>
<td><strong>STAXI-2</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Trait Anger</td>
<td>5.66* 0.11</td>
<td>9.70** 0.09</td>
<td>27.3** 0.37</td>
</tr>
<tr>
<td>Angry Temperament</td>
<td>3.67* 0.07</td>
<td>7.70** 0.08</td>
<td>13.46** 0.22</td>
</tr>
<tr>
<td>Angry Reaction</td>
<td>6.97** 0.13</td>
<td>9.84** 0.10</td>
<td>19.02** 0.29</td>
</tr>
<tr>
<td>Anger Expression-Out</td>
<td>4.11* 0.08</td>
<td>8.08** 0.08</td>
<td>12.64** 0.21</td>
</tr>
<tr>
<td>Anger Expression-In</td>
<td>2.17 0.04</td>
<td>8.92** 0.09</td>
<td>10.39** 0.18</td>
</tr>
<tr>
<td>Anger Control-Out</td>
<td>7.91** 0.14</td>
<td>3.29 0.03</td>
<td>13.59** 0.22</td>
</tr>
<tr>
<td>Anger Control-In</td>
<td>3.98* 0.08</td>
<td>6.47* 0.06</td>
<td>6.02** 0.11</td>
</tr>
<tr>
<td>Anger Expression Index</td>
<td>6.97** 0.13</td>
<td>12.15** 0.11</td>
<td>27.34** 0.37</td>
</tr>
<tr>
<td><strong>PICTS</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>General Criminal Thinking</td>
<td>7.88** 0.15</td>
<td>39.87** 0.30</td>
<td>79.49** 0.63</td>
</tr>
<tr>
<td>Proactive Criminal Thinking</td>
<td>3.30* 0.07</td>
<td>9.72** 0.10</td>
<td>70.26** 0.60</td>
</tr>
<tr>
<td>Reactive Criminal Thinking</td>
<td>6.97** 0.13</td>
<td>31.19** 0.25</td>
<td>35.38** 0.43</td>
</tr>
<tr>
<td>Variable</td>
<td>Interaction effects (by cluster)</td>
<td>Main effects</td>
<td>Between-subjects effects</td>
</tr>
<tr>
<td>---------------------------</td>
<td>----------------------------------</td>
<td>--------------</td>
<td>--------------------------</td>
</tr>
<tr>
<td></td>
<td>(F)</td>
<td>partial (\eta^2)</td>
<td>(F)</td>
</tr>
<tr>
<td>Mollification</td>
<td>3.94*</td>
<td>0.08</td>
<td>19.91**</td>
</tr>
<tr>
<td>Cutoff</td>
<td>7.67**</td>
<td>0.14</td>
<td>23.31**</td>
</tr>
<tr>
<td>Entitlement</td>
<td>5.75**</td>
<td>0.11</td>
<td>14.44**</td>
</tr>
<tr>
<td>Power Orientation</td>
<td>7.32**</td>
<td>0.14</td>
<td>26.55**</td>
</tr>
<tr>
<td>Sentimentality</td>
<td>2.18</td>
<td>0.05</td>
<td>17.34**</td>
</tr>
<tr>
<td>Superoptimism</td>
<td>1.21</td>
<td>0.03</td>
<td>6.27*</td>
</tr>
<tr>
<td>Cognitive Indolence</td>
<td>4.32*</td>
<td>0.09</td>
<td>39.07**</td>
</tr>
<tr>
<td>Discontinuity</td>
<td>4.70*</td>
<td>0.09</td>
<td>16.74**</td>
</tr>
<tr>
<td>Current Criminal Thinking</td>
<td>5.93**</td>
<td>0.11</td>
<td>33.68**</td>
</tr>
<tr>
<td>Fear of Change</td>
<td>2.72</td>
<td>0.06</td>
<td>9.38**</td>
</tr>
</tbody>
</table>

Note. * \(p < .05\). ** \(p < .01\). Rating of association strength (Cohen, 1988): 0.01 to 0.05 = small association; 0.06 to 0.14 = medium association; 0.15+ = large association.
in the intensity of the program completed, $\chi^2(4, n = 217) = 9.48, p < .05$. More
Cluster 1 and 2 offenders completed the MIVIP and more Cluster 3 offenders
completed the HIVIP.

There was no significant interaction between cluster membership and VRS
risk rating after program completion ($\chi^2(4, n = 106) = 2.92, p = .57$) (see Table 20).
The proportion of high risk offenders in Cluster 3 was lower after program
completion.

Table 20

*Percentage of Offenders in Each Violence Recidivism Risk Category By Cluster at
Pre-program and Post-program Assessment*

<table>
<thead>
<tr>
<th>VRS Risk Rating</th>
<th>Cluster 1 ($n = 59$)</th>
<th>Cluster 2 ($n = 41$)</th>
<th>Cluster 3 ($n = 24$)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Pre-program</td>
<td>Post-program</td>
<td>Pre-program</td>
</tr>
<tr>
<td>Low Risk</td>
<td>8.5</td>
<td>16.9</td>
<td>7.3</td>
</tr>
<tr>
<td>Moderate Risk</td>
<td>76.3</td>
<td>52.5</td>
<td>75.6</td>
</tr>
<tr>
<td>High Risk</td>
<td>15.3</td>
<td>18.6</td>
<td>12.2</td>
</tr>
<tr>
<td>Missing VRS score</td>
<td>0.0</td>
<td>11.9</td>
<td>4.9</td>
</tr>
</tbody>
</table>

The proportion of violent offenders in each cluster for whom VRS risk
factors remained treatment targets post-program is depicted in Figure 10.
Figure 10. Percentage of violent offenders in each cluster with VRS dynamic risk factor ratings of 2 or 3 pre-program (top graph) and post-program (bottom graph).
Discussion

It was hypothesised that the violent offender sample would demonstrate change in levels of anger experience, expression and control, patterns of criminal thinking and assessed risk of violence recidivism following the completion of a violence intervention program, although the extent of change was not predicted. This hypothesis was supported. After completing the MIVIP or HIVIP, the violent offender sample reported a reduction in the frequency of self-reported anger experience and expression, and an increase in the frequency of attempts to control angry feelings through actively calming themselves. There was no significant change in the frequency of attempts to control outward anger expression. The sample demonstrated a reduction in the strength or presence of a belief system supportive of a criminal lifestyle and in the use of all eight criminal thinking styles thought to support and maintain a criminal lifestyle. The group also appeared to demonstrate a significant reduction in assessed risk of violent re-offending, with an increase in the number of low risk offenders in the sample and a reduction in the number of moderate risk offenders. However, when examined more closely, several offenders initially assessed as being at low risk were subsequently considered at moderate risk (2 of 7 cases), and several initially considered moderate risk were later assessed as being at high risk of re-offending (11 of 85 cases). This may reflect an increase in risk of violent recidivism as a result of treatment. A more likely explanation, however, may be that these offenders minimised their level of risk in pre-program assessment but were unable to sustain this ‘fake good’ presentation for the duration of the program, with disclosures during program providing facilitators with information to re-score the dynamic risk factors more accurately.
It was then hypothesised that the three violent offender subtypes identified in Study 1 would demonstrate differential change in anger, criminal thinking and violence risk following the completion of a violence intervention program, although no predictions were made about the direction of these differences. This hypothesis was met. Cluster 1 (‘regulated’) violent offenders demonstrated significantly lower scores on most anger experience and expression scales, significant improvement on both anger control scales and a significant reduction in the strength or presence of most criminal thinking styles after completing a violence intervention program. Cluster 2 (‘overregulated’) violent offenders demonstrated significant reductions in the frequency of attempts to control outward anger expression and in the use of the Power Orientation thinking style (controlling people and situations with aggressive displays); no other changes were observed in this cluster.

Cluster 3 (‘unregulated’) violent offenders demonstrated the greatest change in anger and thinking style scale scores, with significant reductions on all anger experience and expression scales (apart from Anger Expression-In, measuring frequency of anger suppression), significant increases in anger control scales, and significant reductions in the use of all criminal thinking styles (except for Superoptimism, signifying a lack of consequential thinking or overestimating the ability to avoid negative consequences). Differences between pre- and post-program scores on anger and criminal thinking styles measures were significantly different between the three clusters (apart from the Anger Expression-In and Sentimentality scales). The unregulated group demonstrated the greatest amount of change between pre- and post-program assessment, while the overregulated group demonstrated the least amount of change.
Finally, it was hypothesised that the overall sample would demonstrate lower re-offending rates at 2-year follow-up than the rates of re-offending in Victoria generally, and that the groups would differ with regard to the extent of change in re-offending rates. This hypothesis could not be tested as re-offending data could not be obtained.

These findings suggest that different types of violent offenders gained differential benefit from the completion of the multi-modal violence intervention program. The unregulated group appeared to gain the most benefit from treatment, at least in demonstrating the most change in problematic criminal thinking styles and anger, although this may have signified regression toward average scores – the group with the highest scores had the most room to change. The regulated group also appeared to gain some benefit in reducing the strength of criminal thinking and improving management of anger. The overregulated group, however, appeared to gain minimal benefit from completing the program, with few changes in anger or criminal thinking.

There are several possible explanations for these findings. The most obvious explanation for this is that the overregulated group did not experience difficulties in these areas prior to the program, and therefore (as would be expected), there was limited change effected by a program that attempted to address these issues. What is somewhat concerning, however, is that cases in this group had higher scores on measures of strength of distortions and anger experience and reported making fewer attempts to control anger expression. While these findings were not statistically significant (perhaps due to the small sample size), the effect size was moderate to large on several scales. This may therefore reflect a deterioration in these treatment needs following program completion. Alternatively, it may reflect an increase in
insight and awareness of the presence of anger or criminal thinking or the recognition of problems associated with overcontrolled anger that was not present prior to program completion, or an increased willingness to be honest about their experience and subsequent learning of strategies to manage these issues. Similarly, the regulated and unregulated groups may have had more insight initially into their issues with criminal thinking and anger experience, expression and control.

Alternatively, given that the program contained elements aimed at addressing treatment needs evident in the regulated and unregulated groups prior to the program, these two groups may have engaged more with program content, and therefore obtained greater benefit than the overregulated group. Based on the availability of post-program scores for the three groups, the overregulated group may have had the greatest attrition rate from the program, although definitive conclusions regarding attrition rates cannot be drawn. Levels of motivation and willingness to participate in a program may have been enhanced in the unregulated and regulated groups by stronger beliefs about Adult Parole Board expectations regarding program completion, given the higher proportion of violent and serious violent offences in these groups.

The proportion of violent and serious violent offences in the overregulated group was higher than may have been expected given the group’s low levels of anger and criminal thinking. This rate appeared somewhat consistent with previous findings regarding levels of serious violent offending by overcontrolled groups (e.g., D'Silva & Duggan, 2010; Verona & Carbonell, 2000), although in contrast to these studies, the overregulated group had the lowest levels of violent and serious violent offending when compared to the unregulated and regulated groups.

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20 Categorised according to Schedules 1 and 2 of the *Sentencing Act 1991* (Vic).
Other potential explanations for the finding of differential programs outcomes include the nature of the therapeutic relationship between program facilitators and prisoners. Program facilitators may have focused more on unregulated offenders, seeing these prisoners as more challenging and potentially more rewarding to work with. Ruptures in the therapeutic alliance may be more common with those offenders with more problematic anger experience and control and greater use of criminal thinking, with repairs resulting in a stronger therapeutic relationship. Additionally, the programs are delivered within a treatment community; changes seen in anger and criminal thinking may in part be the result of modelling learning observed through interactions with prosocial members of the therapeutic community. Finally, program dosage, at 120 hours for moderate risk and 180 hours for high risk, may be below the dosage recommended for moderate and high risk offenders according to best practice principles (see, for example, Bourgon & Armstrong, 2005; Sperber, Latessa, & Makarios, 2013).21

Limitations.

One of the main limitations in this study was the inability to obtain recidivism data to provide a longitudinal picture of the outcomes of changes effected by the program. While this issue is not uncommon, the absence of recidivism data (a key outcome indicator) significantly hindered the extent of evaluation of treatment outcomes. It was expected that the recidivism data would be released by Corrections.

21 Bourgon and Armstrong (2005), for example, found in a sample of inmates receiving treatment that moderate risk offenders with 3 or less criminogenic needs benefited from 100 hours of treatment; high risk offenders with 3 or less criminogenic needs and moderate risk offenders with multiple needs required 200 hours of treatment to reduce recidivism, and high risk offenders with a number of criminogenic needs required more than 300 hours of treatment to reduce recidivism.
Victoria following approval of the research protocol. As noted earlier, however, Corrections Victoria could not provide sufficient resources to extract the data, and their support was required to obtain the information. Change in psychometric measures should not be relied on to determine whether an offender has been successfully treated; rather, behavioural outcomes should also be examined. However, no other behavioural measures (e.g., institutional misconduct, participation in program) were available for use in this research.

Another key limitation to this study is the lack of a comparison control group; it was unclear whether the offenders who did not have post-program measures available were unsuitable for the program or withdrew during the program. Thus the change observed in the three clusters could not be compared with other offenders who did not complete a violence intervention program. Other notable limitations include the poor quality of the data obtained, with a number of incorrect or missing values and missing demographic and offending information that required extensive cleaning. This directly affected the size of the sample that could be used for post-program and limited the ability to draw inferences regarding attrition rates and reasons for program non-completion (e.g., being unsuitable or withdrawing from the program).

As with Study 1, this study was limited by possible distorted responding on self-report measures that may have been affected by comprehension, insight, psychological defensiveness, impression management, deception, motivation and the ability to self-reflect and report on internal experiences (e.g., Collie et al., 2007). Furthermore, as with Study 1, the measure of criminal thinking may have been more relevant had it been a violence-specific cognitive measurement tool (e.g., MVQ

The absence of a measure of reliable change presents another limitation in assessing the extent of meaningful change made by participants. Changes in psychometric scores do not necessarily result in changes in recidivism rates and the predictive value of psychometrics on recidivism outcome currently has limited support in the literature, although given the practical difficulties in conducting rigorous program evaluation with recidivism data, this remains a topic of research (e.g., Beech, Erikson, Friendship, & Ditchfield, 2001; Beech & Ford, 2006; Friendship, Falshaw, & Beech, 2003; Marques, Wiederanders, Day, Nelson, & Van Ommeren, 2005; Wakeling, Beech, & Freemantle, 2013). Furthermore, measurement error may affect raw score comparisons. Some methods have tried to account for this. Measures of Clinically Significant Change (see, for example, Kazdin, 2003) or the Reliable Change Index aid in calculating whether change observed across treatment is meaningful. Calculation of reliable change is not possible with the VRS because necessary psychometric properties are unavailable, and therefore the use of a measure of Clinically Significant Change or the Reliable Change Index method is recommended to alleviate this issue in future studies.

As noted in Study 1, the quality and accuracy of the therapist-rated risk assessment tool (VRS) administered at pre-program assessment may have been affected by factors including the offenders’ impression management and deception and the experience and training of the assessor. Post-program VRS assessments are administered by program facilitators, and may also be affected by positive or negative bias in a number of ways as the clinicians who conducted the VRS are not blind to program status. Program facilitators may have a (possibly subconscious)
desire to demonstrate greater program efficacy as a positive reflection of their capabilities and competencies in program delivery skills, for personal gain (e.g., if pay increases are linked with performance), or to portray more positive change and reduction in risk for an offender than may be the case as a result of a relationship or attachment developed with the offender over the course of the program or manipulation or deception by the client. Facilitators may also believe that the basis of the program is highly effective, and therefore (consciously or unconsciously) attempt to reflect that. In contrast, however, facilitators may hold a negative view of the program (perhaps because it is does not fit with their ideal therapeutic mode), and therefore hold the belief that the program is not as effective, potentially biasing scoring of post-program measures used in part to evaluate change effected by the program. Finally, facilitators may have formed negative views of an offender or experienced transference or counter transference that results in bias or judgement when re-assessing the offender. Training and quality assurance measures are essential to overcome these potential issues and ensure adherence to best practice principles. Neutral evaluation of post-program violence risk using the VRS may also result in different risk ratings. Interrater reliability for the measure at pre- and post-program assessment could not be calculated from the information provided in the dataset, and the number of clinicians who conducted the VRS was unavailable.

Finally, the results of this study should not be generalised to other violent offender populations. The findings are based on a single violent offender sample in a medium security treatment community that comprises a specific cohort of violent offenders specifically selected for this prison. The strict restrictions on behaviour at this prison may exclude offenders who lack motivation, have significant difficulty
controlling their impulsivity, or are classified as requiring incarceration in a maximum security location.

**Conclusion**

In conclusion, there is evidence that the three violent offender types identified in Study 1 demonstrated different levels of change on measures of anger, criminal thinking and violence recidivism risk following the completion of a moderate or high intensity violence intervention program. The implications of these findings are discussed further in the following chapter.
Chapter 11. Discussion and Conclusions

This thesis aimed to investigate whether violent offenders could be categorised in clinically meaningful ways based on patterns of criminal thinking and anger experience, expression and control, to improve treatment of violent offending. The high recidivism rates of violent offenders\textsuperscript{22} highlight the need for treatment of violent offending behaviour. Violent offender treatment programs aim to change individual characteristics that are associated with an increased risk of violent re-offending. While an extensive body of research has demonstrated the need to target criminogenic needs in treatment, relatively little is known about the specific needs of subgroups of violent offenders.

The primary aim of this thesis was to examine the proposition that violent offenders are a heterogeneous group and that violent offender treatment programs are more effective for certain subgroups of offenders than for others. Whilst a plethora of risk factors (and treatment needs) associated with violent offending have been identified in research, the current studies focused on examining anger experience, expression and control and criminal thinking patterns. These factors are often assumed to be criminogenic for all violent offenders, despite evidence that individuals may commit violence in the presence or absence of anger and differences in the strength of cognitions that initiate and maintain the offending behaviour. This thesis thus sought to examine whether subtypes of violent offenders could be identified based on these varying patterns of anger and cognition and whether these subtypes obtained differential benefits from a violent offender treatment program, to assist better tailoring of violent offender treatment programs to the needs of specific violent offender types to enhance program efficacy and improve program outcomes.

\textsuperscript{22} Outlined on page 3.
These aims were examined with a sample of adult male violent offenders from a medium-security treatment prison who were assessed using measures of violence risk, anger and criminal thinking prior to and following completion of a violence intervention program. Cluster analysis was used to identify the subtypes of violent offenders which, it was hypothesised, would differ with regard to assessed violent re-offending risk and treatment performance. Previous typologies have often been based on offender behaviour or demographic characteristics, however these distinctions have not proved clinically useful. The typologies in this study were instead based on psychological variables (offender cognitions and affect).

Findings

Examination of anger and criminal thinking styles of the overall sample appeared to mask within-group differences in treatment needs. Levels of anger experience, expression and control in the group were below those at which treatment is recommended (Spielberger, 1999). This group were less likely to perceive a range of situations as annoying and frustration and felt angry less frequently than the general population; when angry, however, they were more likely to express their anger and make less effort to control their anger. The use of criminal thinking to initiate and maintain offending behaviour in the sample was similar to that of offenders generally, with no clear pattern of criminal thinking used by all violent offenders. The spread of anger and criminal thinking scores observed across the group, however, suggested that considerable heterogeneity existed. Cluster analysis revealed the presence of subgroups within the sample with meaningful differences in anger experience, expression and control and patterns of criminal thinking.
Cluster analysis of anger and criminal thinking scores, measured using the STAXI-2 (Spielberger, 1999) and the PICTS (Walters, 2010), revealed that a three-cluster solution provided the most parsimonious solution with the best fit for this dataset. These groups differed significantly on these self-report anger and criminal thinking measures, indicating that these areas should not necessarily be treatment targets for all of the violent offenders in the sample\textsuperscript{23}. The three subtypes identified were labelled the regulated, overregulated and unregulated types. The unregulated type appears somewhat similar to the hypothesised reactive-undercontrolled subtype, while the overregulated type appears to reflect the instrumental or reactive-overcontrolled subtypes hypothesised.

The regulated type had ‘normal’ anger expression, experience and control, at levels not warranting treatment (according to Spielberger’s [1999] recommendation), and held moderately strong beliefs supportive of a criminal lifestyle. These offenders demonstrated a trend toward reactive, impulsive offending and were hostile, impetuous and emotional. Their violent offending appeared to be a situational reaction, rather than involving planning or forethought, and their criminal thinking profile appeared to reflect impulsivity, a tendency to dismiss or eliminate common deterrents to crime (e.g., with substance use), a propensity to lose sight of goals, a tendency to be easily side-tracked by situational events, fragmented, flighty and unpredictable, and a tendency to take short cuts or seek easy solutions to problems, perhaps reflecting laziness, irresponsibility or a lack of motivation. The regulated type group had a significantly greater proportion of moderate risk offenders.

\textsuperscript{23} The groups did not differ significantly on the relevant clinician-rated VRS factors of emotional control and cognitive distortions. This may be because, if present, these factors were not considered to relate directly to violence, and therefore were not rated as treatment targets by clinicians; alternatively, perhaps the factors were not present (or minimised) during the assessment due to impression management.
The overregulated type offenders were less prone to anger experience, suppression or expression than the other two types. The group had low levels of anger experience, at levels warranting further treatment, and a trend toward overcontrolled anger. The overregulated offenders were more likely than the regulated type to monitor or prevent the outward expression of anger, and were more likely to try to calm themselves. Belief systems supportive of a criminal lifestyle were weakest (or absent) in this type, and there was no evidence of a trend toward reactive or proactive criminal thinking. The group showed a trend toward more negligent or reckless acts of violence, and a significantly greater proportion of the group were assessed as being at moderate risk of future violent offending. A significantly greater number of the group were employed prior to incarceration than either the regulated or unregulated type. The overregulated group had a higher percentage of violent and serious violent offences\textsuperscript{24} than may be expected given their lower levels of anger dysregulation and weaker crime-supporting cognitions. While this was somewhat consistent with previous findings of levels of serious violent offending in overcontrolled groups (D'Silva & Duggan, 2010; Verona & Carbonell, 2000), the current group had lower rates of serious violent offending than in these earlier studies.

The unregulated type had the highest levels of anger experience and anger expression of the three types, at levels that interfered with optimal functioning in areas including interpersonal relationships and health problems. This group had frequent and intense anger experiences, were quick-tempered and impulsive and required little provocation to react angrily, but were not necessarily vindictive or vicious in attacking others. The unregulated type expended the lowest levels of

\textsuperscript{24} Classified according to Clauses 1 and 2 of the Sentencing Act 1991 (Vic).
energy to control their anger, although did suppress their anger in some situations. Criminal attitudes that initiated and maintained offending were significantly more entrenched in the unregulated type, with high levels of proactive, planned, devious, calculating, scheming and goal-directed criminal activity and positive outcome expectancies for crime, as well as high levels of reactive criminal thinking. The group were more reactive and impulsive and less restrained than the regulated or overregulated types. While many criminal thinking scales were at levels warranting treatment, the overall criminal thinking profile reflected a tendency to dismiss or eliminate common deterrents to crime (e.g., with substance use), a propensity to lose sight of goals and be easily side-tracked by situational events and a tendency to be fragmented, flighty and unpredictable, as well as a desire for power and control and a sense of ownership, privilege or uniqueness that gives permission to violate the laws and rights of others. This type demonstrated the greatest apprehension regarding the prospect of behavioural change. The unregulated type had served significantly more prior prison sentences, and had a trend toward more robbery offences (‘instrumental offences’) and less homicide offences. Furthermore, a significantly greater proportion of the group were high risk. This may partially explain why a smaller proportion of the overall sample comprised the unregulated type offenders: perhaps given the presentation and behaviour of this type of offender, most may be incarcerated at maximum security facilities rather than the medium security facility from which this data was collected.

Post-program analysis revealed that the overall sample demonstrated significant change on several anger and criminal thinking scales: the group demonstrated a reduction in the frequency of their anger experience and expression, an increase in the frequency of their attempts to control their angry feelings through
actively calming themselves, and a reduction in the strength of their criminal belief systems and each of the eight criminal thinking style scales. There was no significant change in the frequency of their attempts to control outward anger expression. When examined at a subtype level, however, the clusters differed significantly in the extent of change in anger and criminal thinking effected by the program. The regulated type demonstrated significant change on a number of anger and criminal thinking scales: following program completion, the group were significantly lower on most anger experience and anger expression scales, significantly higher on both anger control scales and demonstrated a significant reduction in the strength of most criminal thinking scales. The overregulated type demonstrated significant change on only two of the scales used in the study (the Anger Expression-Out and Power Orientation scales), reflecting significant reductions in the frequency of attempts to control outward anger expression and in the use of power orientation thinking (supportive of controlling people and situations with aggressive displays).

Finally, the unregulated type demonstrated significant change on nearly all scales used in the study, demonstrating the greatest change in anger and criminal thinking across the three types. The unregulated type demonstrated significant reductions on all anger experience and expression scales (with the exception of Anger Expression-In, indicating no significant change in the frequency of anger suppression), significant increases in the level of anger control, and significant reductions in the strength of a criminal belief system and use of all criminal thinking styles (with the exception of Superoptimism, signifying no change in the lack of consequential thinking or overestimating one’s ability to avoid negative consequences). The levels of change were significantly different across each of the three types on all scales (except for Anger Expression-In and Sentimentality scales).
It is difficult to compare the groups found in the current studies with those identified in previous research, as different variables have been used to define groups (for example, traits compared with offending behaviour). Although it cannot be assumed that the same groups are referred to, given the use of different methodologies, there appears to be some overlap between the typologies. The regulated group appears to reflect somewhat the overcontrolled subtypes identified in previous research. In comparison to the overcontrolled subtypes, the regulated type appeared to have a similarly relatively normal personality profile (Blackburn, 1986), and were less impulsive, tense, hostile and apprehensive and expressed less aggression and hostility outward than the unregulated group. However, these characteristics appeared stronger than usually seen in overcontrolled offenders (du Toit & Duckitt, 1990; Henderson, 1982, 1983a, 1983b; Hershorn & Rosenbaum, 1991; Lane & Kling, 1979; Lane & Spruill, 1980; Quinsey et al., 1983; White, 1975; White et al., 1973) and the regulated group appeared to have less avoidance, denial or repression of anger than overcontrolled offenders (Blackburn, 1986). The moderately strong beliefs supportive of a criminal lifestyle in the regulated group, particularly in the lack of thoughtfulness and trend toward more reactive criminal thinking, also seem inconsistent with the more instrumental justifications, wilful criminality, rumination and cognitive rehearsal of violent revenge thought to provide support for violence by the overcontrolled-controlled type (see Chambers et al., 2009; also Sukhodolsky et al., 2001). Thus this regulated group may reflect a ‘normal’ group of violent offenders that some researchers argue has not been captured by the overcontrolled/undercontrolled typology. The regulated group may benefit from violent offender treatment addressing skill development (e.g., patience, tolerance), feedback when being discontinuous, training in goal setting, development
and reinforcement of critical reasoning skills and perhaps emotional regulation strategies to avoid hasty reactions.

The overregulated type appears most similar to the overcontrolled-inhibited type identified in previous research. Weaker criminal thinking and a trend toward high levels of anger control in the overregulated type seem consistent with the inhibition of anger and few antisocial personality traits seen in the overcontrolled-inhibited type (Blackburn, 1971). The overcontrolled-inhibited offenders’ typical history of strong feelings of anger and difficulty expressing this anger (Blackburn, 1971) was not seen in the overregulated type. However, the internalising of hostility and gradual increase in anger over time culminating in inappropriate violence at provocation seen in overcontrolled-inhibited offenders (Chambers, 2010; McGurk, 1978; McGurk & McGurk, 1979) may be akin to the trend by the overregulated type toward more reckless or negligent acts of violence. These acts may reflect reactive violence, an act committed without considering consequences due to heightened emotional arousal built up over time, feeling out of control (Chambers et al., 2009).

The weaker criminal beliefs in the overregulated type may also reflect similarity in the rumination and internalising of blame seen in overcontrolled-inhibited offenders who do not tend to use distortions to justify their offending (Barber et al., 2005; Chambers et al., 2009). The overregulated group have no clear treatment targets relating to anger or criminal thinking, and likely have treatment needs in other areas. Given the trend toward overcontrolled anger, however, they may benefit from increasing self-awareness of anger, improving communication skills and developing strategies to express emotions, as well as treatment addressing internalised hostility, to manage depressive tendencies that may lead to impulsive outbursts (Blackburn, 1986; Davey et al., 2005; Henderson, 1982, 1983a; Hershorn & Rosenbaum, 1991;
Finally, the unregulated group appears to comprise both undercontrolled types. Anger and criminal thinking observed in this type suggest that these offenders may direct anger outward to deal with interpersonal problems, commit instrumental violence and focus on positive outcomes of violence, like primary psychopath-type offenders (Blackburn, 1986; Chambers, 2010; Pardini et al., 2003). The high reactive criminal thinking seen in the unregulated type is suggestive of reactive violence and consistent with that of secondary psychopath-type offenders (Pardini et al., 2003), although offenders of this type are likely to be uncommon in the current sample given they are rarely seen in non-disordered samples (McGurk & McGurk, 1979). Levels of psychopathy and mental disorder are commonly used to differentiate primary and secondary psychopath offenders; in the current studies, evidence of these risk factors is limited to rating of the relevant VRS risk factors of criminal personality and mental disorder (Wong & Gordon, 2000). These ratings are mediated by clinical perception of the relationship between the risk factor and violence and therefore cannot be used to identify which undercontrolled type the unregulated type may be more closely related to.

The strength of criminal thinking styles and higher prevalence of prior episodes of incarceration in the unregulated type may reflect the strong antisocial tendencies seen in undercontrolled type offenders (McGurk, 1978; Robins et al., 1996). The particular dominance of the Entitlement and Power Orientation criminal thinking appears consistent with the instrumental, active justifications seen in primary psychopath-type persistent offenders (Chambers et al., 2009), while the dominance of the Cutoff and Discontinuity thinking styles appears consistent with
the lack of thoughtfulness seen in secondary psychopath-type offenders (Chambers et al., 2009; Egan et al., 2000). This more reactive criminal thinking also correlates with a hostile attribution bias (Walters, 2007a); this may reflect the strength of trait anger in this unregulated type. The unregulated type would likely benefit from treatment assisting with skill development (e.g., patience, tolerance), goal setting, developing personal control and self-discipline, challenging entitlement beliefs and cognitive distortions justifying the use of instrumental offending, as well as treatment addressing low levels of anger control and high levels of anger experience and expression, perhaps through inhibiting the acting out of aggressive impulses and learning non-aggressive ways to respond to frustration and social situations. Reward-oriented programs tapping into positive outcome expectancy, motivational interviewing to develop discrepancies and resolve ambivalence may be beneficial in increasing engagement (Blackburn, 1986; D'Silva & Duggan, 2010; Davey et al., 2005; Henderson, 1982, 1983b; Hershorn & Rosenbaum, 1991; Lane & Spruill, 1980; Megargee, 1966; Miller & Rollnick, 2002; Pardini et al., 2003; Quinsey et al., 1983; Verona & Carbonell, 2000).

The developmental pathways to aggression and violence are likely to differ across the three groups, underpinned by a range of the numerous risk factors that contribute to the initiation and maintenance of violent behaviour. The General Aggression Model (Anderson & Bushman, 2002; DeWall et al., 2011) and Algebra of Aggression (Megargee, 2011) contribute to the identification of possible developmental pathways through consideration of factors including intrinsic and extrinsic instigation (e.g., affect, goal-directed), factors that promote or foster aggressive responses (e.g., aggressive behavioural scripts, role modelling) and those that counteract this response (e.g., normative beliefs), and the strength of the
aggressive habit (e.g., drawing on previous experiences, developed cognitive networks promoting aggression). These factors may then help to identify more appropriate treatment targets for each group.

The regulated group, for example, may have greater intrinsic instigation (‘angry aggression’) fostered by situational factors with a reasonably strong habit strength fostering aggressive responses, although further clarification of the role of other determinants of violence in this group is needed. With regard to the role of anger and criminal thinking, the group bears similarity to Megargee’s (2011) normally socialised individual raised in a culture that condones or promotes violence and the paradoxically over-controlled assaultive individual whose instigation to aggression accumulates over time. Explained with the General Aggression Model, violence and aggression committed by offenders in this group may result from more frequent accumulation of affect (including frustration) that biases appraisal and decision processes toward violent and aggressive responses, or alternatively through competition between normative beliefs and aggressive behavioural scripts. Treatment targets may therefore include reducing intrinsic instigation (e.g., reducing frustration), improving non-violent mechanisms to deal with frustration, promotion of normative beliefs and re-structuring of aggressive behavioural scripts.

Examining characteristics of the overregulated group through the prism of the Algebra of Aggression appears to suggest that aggression may be primarily intrinsically instigated, with low extrinsic instigation, low habit strength and numerous factors that generally inhibit aggressive responses. It seems likely that violence and aggression have low reaction potential in this group, however this increases in certain conditions and interactions. The overregulated group may have stronger normative beliefs regulating aggression, however the level of accumulated
affect (e.g., frustration) may affect the appraisal and decision process, culminating in impulsive action aimed at expressing that affect through violence. This group may represent Megargee’s (2011) paradoxically over-controlled assaultive individual whose instigation to aggression accumulates over time, or the ordinary individual subjected to extreme provocation, frustration, threat or situation. The overregulated type may benefit from treatment aimed at addressing mechanisms to dissipate negative feelings (e.g., frustration) to reduce the summation of intrinsic instigation. Finally, the unregulated group seems likely to have high intrinsic and extrinsic (goal-directed) instigation to aggression, with strong habit strength and fewer factors inhibiting aggressive responses. Violence and aggression are likely to have positive reaction potential, seemingly offering the most satisfaction at the least cost. The unregulated group may have more extensive and developed cognitive networks linked to aggression resulting from a series of experiences that prepare the individual to behave aggressively in different situations. Social learning may be more entrenched in this group, and person inputs and appraisal and decision processes more strongly directed toward violence and aggression. The unregulated group appear similar to Megargee’s (2011) undercontrolled or poorly socialised individual whom lacks normal inhibitions against aggressive behaviour, and to the instrumentally aggressive individual who uses violence to accomplish extrinsic goals or for whom aggression is an occupational requirement. The unregulated group may therefore benefit from treatment promoting internal inhibitions and creating external inhibitions, encouraging response competition for other non-violent or aggressive responses, minimising reinforcement of inappropriate aggressive behaviours to reduce the habit strength of aggression, and encouraging the discovery of non-violent strategies to accomplish goals.
The overarching aims of the thesis were met. Violent offenders were categorised meaningfully into subtypes based on their patterns of anger and criminal thinking, and these subtypes performed differently in a violent offender treatment program. The patterns of criminal thinking and anger of these subtypes are outlined in Table 21.

Table 21

*Key Characteristics Differentiating the Regulated, Overregulated and Unregulated Subtypes of Violent Offenders*

<table>
<thead>
<tr>
<th></th>
<th>Regulated</th>
<th>Overregulated</th>
<th>Unregulated</th>
</tr>
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<tbody>
<tr>
<td>Anger experience,</td>
<td>Moderate anger</td>
<td>Low anger</td>
<td>High anger</td>
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<td>expression and</td>
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<tr>
<td>control</td>
<td>control</td>
<td>high anger control</td>
<td>low anger control</td>
</tr>
<tr>
<td>Dominant criminal</td>
<td>Impulsivity and</td>
<td>Few attitudes</td>
<td>Power, entitlement,</td>
</tr>
<tr>
<td>thinking patterns</td>
<td>distractedness</td>
<td>supportive of</td>
<td>and impulsivity</td>
</tr>
<tr>
<td></td>
<td></td>
<td>criminal lifestyle</td>
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The effects of the changes on violence recidivism could not be measured as recidivism data could not be obtained, however effects on assessment of violence recidivism risk demonstrated that overall, the group demonstrated a significant reduction in the risk of re-offending, with a greater number of low risk offenders and fewer moderate risk offenders following program completion. However, when examined more closely, several of the low and moderate risk offenders were assessed post-program as being at increased risk of offending. Within each of the types, at post-program assessment the regulated and overregulated groups had a
greater proportion of high risk and low risk offenders and a lower proportion of moderate risk offenders, while in the unregulated group, the proportion of moderate and high risk offenders reduced and the proportion of low risk offenders increased.

There are a number of possible explanations for the finding of three distinct subtypes of violent offenders (rather than the four hypothesised) who obtained differential outcomes in self-report measures of anger and criminal thinking and changes in assessed risk of re-offending following completion of a violence intervention program. The finding of three subtypes, rather than the four hypothesised, that do not clearly map onto the previously identified overcontrolled/undercontrolled typology may reflect the nature of the sample as a non-disordered sample of sentenced violent offenders in a medium security location. Much of the previous research identifying subtypes utilised samples from psychiatric hospitals, homicide offenders from maximum security locations or general offenders (e.g., Blackburn, 1971; McGurk, 1978; McGurk & McGurk, 1979; Megargee, 1966). Similarly, the findings may reflect varied study methodology examining alternative offender characteristics: previous studies have tended to examine and categorise offenders utilising more temporally stable characteristics of personality, including overcontrolled hostility (e.g., Henderson, 1982; Megargee, 1979), or behavioural offending characteristics (e.g., whether the offender had committed single or multiple acts of violence; D'Silva & Duggan, 2010). The current study, in contrast, utilised measures of perhaps more changeable, dynamic factors of anger experience, expression and control and criminal thinking. Furthermore, the finding of three subtypes may be due to overlap between the previously hypothesised subtypes on factors relating to anger and criminal thinking. Trait anger may contribute to personality and hostility control, and these personality factors may contribute to the
internalising or externalising of anger expression and control; nonetheless, the constructs differ and therefore it is perhaps unsurprising that the typologies diverge.

The differing degrees of change on self-report measures of anger and criminal thinking following completion of the program may be, as noted earlier, that these factors were not problematic for the overregulated type at pre-program assessment; therefore, limited change would have been effects by a program that attempted to address these issues. Alternatively, the differences may reflect different levels of insight between the three types at pre- and post-program assessment, or varied levels of motivation and engagement in the program. The factors affecting responding on self-report measures may have contributed to findings, as discussed earlier. The finding of greater changes between pre- and post-program assessment in the overregulated group and, to a lesser degree the regulated group, may also reflect regression toward the mean, rather than actual change in these factors (see Morton & Torgerson, 2005). Similarly, the observation of greater change in the unregulated group may have been a reflection of the greater proportion of high risk offenders in this group; high risk offenders had more opportunity to demonstrate changes on a greater number of risk factors and subsequent reductions in recidivism risk level than those who were already assessed as being at low risk.

Program and facilitator factors may have affected the observed differential outcomes between the three subtypes, including tailoring the program to treatment needs (by focusing efforts on targeting other areas of need if anger and criminal thinking are not apparent treatment needs pre-program), or the quality of the therapeutic relationship (problematic behaviours presented by unregulated offenders resulting in greater investment by the facilitator, increased facilitator motivation to work with the challenging presentation with the greater prospect of observing
change, or strengthening the therapeutic alliance through ruptures and repairs (see Kozar & Day, 2012). Other programmatic factors that may explain differences in the extent of change in the overall group and between the subtypes include that the program may not target the treatment needs that it purports to, or may not target these needs at a level sufficient to contribute to offenders making change in these areas.

Non-programmatic factors may also have contributed to the differential change seen between subtypes, including that outcomes may have been affected by inaccuracy in initial and post-program risk assessment (discussed at length previously), variations in the quality of program delivery, staff characteristics (training, orientation and skills in areas including the ability to enter high quality relationships), offender characteristics (e.g., personality, interpersonal style, developmental level), or the interaction of staff and offender characteristics. Changes observed post-program may have been the result of modelling in the therapeutic community, through observation of interactions with prosocial members of the community. The therapeutic environment may have contributed greater benefit for the unregulated, and to a lesser extent the regulated, types (see Day & Doyle, 2010).

**Implications**

This research attempted to identify which offenders benefit from treatment, in line with recommendations from Serin et al. (2013) of the need to identify which offenders benefit from treatment, how they assimilate program content into palpable gains, and to determine when criminogenic needs have declined enough to justify a lower risk classification. The current research goes some way in identifying the types of violent offenders who are likely to gain most benefit from existing treatment.
This study shows that problems with anger dysregulation and strong
cognitive distortions are not common to all violent offenders, and therefore may be
inappropriately targeted for treatment to reduce violent offending. Furthermore, in
examining subgroups of violent offenders, there appears to be differences between at
least three groups. The unregulated violent offender has a greater need for treatment
addressing anger experience, expression and undercontrol and strong beliefs of a
criminal lifestyle that encourage proactive and reactive offending. The overregulated
violent offender, however, did not appear to have treatment targets in the areas of
anger experience and expression, and had weak criminal beliefs; instead, this group
likely have other violence-related treatment targets that need to be addressed.

The identification of subtypes of violent offenders has a number of
implications for psychological practice. By recognising the heterogeneity in
treatment needs related to anger and criminal thinking, programs may be better
tailored to the specific criminogenic needs of subtypes of violent offenders. This
would assist in improving program selection, reducing delivery of content that may
be irrelevant to some offenders, and increase the delivery of content more relevant to
specific offender types; ultimately, improving program effectiveness.

These studies suggest that perhaps a greater range of intensive violent
offender treatment programs may be required. Rather than concentrating on program
intensity (duration) of an overall multimodal program, it may, for example, be more
effective to offer a combination of short, targeted, relevant modules. This could help
to individualise treatment in a way that maximises treatment outcomes.

Offering treatment that is not targeted may, paradoxically, lead to an increase
in risk of recidivism. It could, for example, disrupt the acquisition and maintenance
of prosocial cognitions through exposure and modelling of antisocial cognitions by
other group members; offenders with more prosocial thinking may be manipulated or faced with convincing arguments by offenders with more distorted thoughts, and learn new ways to justify their offending. Similarly, other group members may promote thoughts that current (possibly prosocial) ways of managing anger are inappropriate in groups treating undercontrolled anger: the risk of focusing on teaching techniques to control anger may negatively impact on those who overcontrol or excessively inhibit anger expression. Such observations are reminiscent of those of Andrews and Bonta (2010b) and others who have stressed the importance of keeping low-risk clients away from higher-risk clients. In the context of this thesis, it may be beneficial to keep the overregulated type offenders, with weaker criminal thinking, away from the unregulated type, who have much stronger crime-supporting cognitions and likely have well-developed arguments justifying their use of violence to express anger and obtain gains.

With regard to program evaluation, it is recommended that psychometric measures with good reliability and validity are utilised, including a measure of socially desirable responding. It is obviously important that data are entered accurately, as inaccurate data and missing values have substantial impact on the ability of program evaluators to draw conclusions based on the data.

**Future research**

There are several areas for future development and research that would extend the findings of this thesis. A key area for further research is to determine whether the observed differential change, or absence of change, in the group and three subtypes following treatment completion is reflected in changed violent and general recidivism rates. Secondly, the incorporation of a control or comparison
group is important in identifying the potential impact of other non-programmatic factors in effecting change on these factors. Thirdly, it cannot be assumed that these findings apply to all violent offenders and these studies require validation and replication with other violent offender samples.

Examining further the treatment needs of the three subtypes would enhance understanding of factors that may be better targeted in the violence intervention program. Research aimed at developing a better understanding of the effects of participation in multiple programs would also be beneficial, identifying whether greater benefit is obtained from participating in a single longer, intensive program, or multiple shorter, less intensive programs, to address the heterogeneous treatment needs of violent offenders.

Finally, as noted earlier, a significant limitation of this project was the reliance on measures used for program evaluation, determined by the corrections agency. Future research could incorporate the use of more appropriate measures that better capture changes in dynamic risk and treatment performance.

**Conclusion**

In conclusion, this thesis examines whether clinically meaningful subtypes of violent offenders can be identified on the basis of patterns of anger and criminal thinking, and whether a violence intervention program was similarly effective for all subtypes, or whether the subtypes obtained differential benefit from the program. Results of this study suggested a three-group classification system for violent offenders.

Identifying distinct subgroups of violent offenders is an important step toward recognising the more specific treatment needs of individuals within this at-
risk, heterogeneous population. While many violence intervention programs address anger management and cognitive distortions, these findings have implications for more tailored and accurate assessment and treatment of violent offenders, to reduce their risk of re-offending, more appropriately allocate resources to violent offenders with specific treatment needs, and enhance community safety.
References


Crimes Act 1900 (ACT).

Crimes Act 1900 (NSW).

Crimes Act 1958 (VIC).

Crimes Act 1995 (Commonwealth).

Criminal Code Act 1899 (QLD).

Criminal Code Act 1924 (TAS).


Criminal Law Consolidation Act 1935 (SA).


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Ferguson, T. J., & Rule, B. G. (1983). An attributional perspective on anger and


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T. E. Moffitt & A. Caspi (Eds.), *Causes of conduct disorder and juvenile delinquency* (pp. 49-75). New York: Guilford.


### Appendix A. Comparison of violence definitions provided in Australian federal, state and territory legislation

Table A1

**Violence Definitions Provided in Various Australian Federal, State and Territory Legislation**

<table>
<thead>
<tr>
<th>Legislation</th>
<th>Violence defined</th>
<th>Offence-specific violence definitions provided in the legislation&lt;sup&gt;a&lt;/sup&gt;</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Crimes Act 1995</strong> (Commonwealth)</td>
<td>No</td>
<td>None provided</td>
</tr>
<tr>
<td><strong>Crimes Act 1958</strong> (Vic)</td>
<td>No</td>
<td>None provided.</td>
</tr>
<tr>
<td><strong>Crimes Act 1900</strong> (ACT)</td>
<td>No</td>
<td>None provided.</td>
</tr>
<tr>
<td><strong>Crimes Act 1900</strong> (NSW)</td>
<td>No</td>
<td><em>Public order offences</em> (affray, violent disorder): violence refers to any violent conduct towards persons or property, not restricted to conduct causing or intended to cause injury or damage, and also including any other violent conduct</td>
</tr>
<tr>
<td><strong>Criminal Code Act</strong> (NT)</td>
<td>No</td>
<td><em>Terrorism acts:</em> violence refers to “violence of a kind that causes, or is likely to cause the death of, or serious harm to, a person”</td>
</tr>
</tbody>
</table>
| **Criminal Code Act 1899** (QLD) | No               | *Threatening violence:* threatening violence defined as “… with intent to intimidate or annoy any person, by words or conduct threaten[ing] to enter or damage a dwelling or other premises; or with intent to alarm any person, discharg[ing] loaded firearms or do[ing] any other act that is likely to cause any person in the vicinity to fear bodily harm to any person or damage to property”.

Unlawful stalking: violence is defined as “not includ[ing] any force or impact within the limits of what is acceptable as incidental to social interaction
<table>
<thead>
<tr>
<th>Legislation</th>
<th>Violence defined</th>
<th>Offence-specific violence definitions provided in the legislation</th>
<th>a</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>or to life in the community; and against a person includes an act depriving a person of liberty; and against property includes an act of damaging, destroying, removing, using or interfering with the property”.</td>
<td></td>
</tr>
<tr>
<td><strong>Criminal Law</strong></td>
<td>No</td>
<td>Public order offences (affray and violent disorder): violence refers to any violent conduct towards persons or property, not restricted to conduct causing or intended to cause injury or damage, and also including any other violent conduct</td>
<td></td>
</tr>
<tr>
<td><strong>Consolidation Act 1935 (SA)</strong></td>
<td></td>
<td>None provided.</td>
<td></td>
</tr>
<tr>
<td><strong>Criminal Code Act 1924 (TAS)</strong></td>
<td>No</td>
<td>None provided.</td>
<td></td>
</tr>
<tr>
<td><strong>Criminal Code Act Compilation 1913 (WA)</strong></td>
<td>No</td>
<td>Threatening violence: threatening violence defined as threatening to enter or damage a dwelling with intent to intimidate or annoy any person, or discharging loaded firearms or commission of any other breach of the peace with intent to alarm any person in a dwelling.</td>
<td></td>
</tr>
</tbody>
</table>

*Excludes family violence offences (defined separately in most legislation).*
Appendix B. Offence categorisation systems

ANZSOC

The Australian and New Zealand Standard Offence Classification system (ANZSOC; ABS, 2011a) is a uniform statistical framework for classifying criminal behaviour that aims to overcome differences in legal definitions across states and territories and provide a framework for organising key behavioural characteristics of criminal offences. There are 16 divisions within system, as outlined in Table B2.

Table B1

*Australian and New Zealand Standard Offence Classification System (ABS, 2011a)*

<table>
<thead>
<tr>
<th>Division</th>
</tr>
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<tbody>
<tr>
<td>01 Homicide and related offences</td>
</tr>
<tr>
<td>02 Acts intended to cause injury</td>
</tr>
<tr>
<td>03 Sexual assault and related offences</td>
</tr>
<tr>
<td>04 Dangerous or negligent acts endangering persons</td>
</tr>
<tr>
<td>05 Abduction, harassment and other offences against the person</td>
</tr>
<tr>
<td>06 Robbery, extortion and related offences</td>
</tr>
<tr>
<td>07 Unlawful entry with intent/burglary, break and enter</td>
</tr>
<tr>
<td>08 Theft and related offences</td>
</tr>
<tr>
<td>09 Fraud, deception and related offences</td>
</tr>
<tr>
<td>10 Illicit drug offences</td>
</tr>
<tr>
<td>11 Prohibited and regulated weapons and explosives offences</td>
</tr>
<tr>
<td>12 Property damage and environmental pollution</td>
</tr>
<tr>
<td>13 Public order offences</td>
</tr>
<tr>
<td>14 Traffic and vehicle regulatory offences</td>
</tr>
<tr>
<td>15 Offences against government procedures, government security and government operations</td>
</tr>
<tr>
<td>16 Miscellaneous offences</td>
</tr>
</tbody>
</table>
The first six divisions are particularly relevant as these consider offences against the person: all relate to culpable (intentional, negligent or reckless) acts that result in harm (physical or non-physical) against a specific person (ABS, 2011a). The six divisions are primarily distinguished on the basis of: a) the nature and degree of harm, and b) whether the act was intentional or negligent. Generally, the 16 divisions in the classification system singularly contain only violent or non-violent offences. There are two exceptions: Division 06, which includes non-violent offences such as extortion or blackmail attempts by letter, and Division 13, which includes violent offences such as riot and affray.

**NOI**

The National Offence Index (NOI) was developed by the Australian Bureau of Statistics (ABS, 2009) to enable the generation of nationally comparable offence information within crime and justice research. The National Offence Index provides an ordinal ranking of the offence categories in the Australian Standard Offence Classification (ASOC; superseded by the Australian and New Zealand Standard Offence Classification [ANZSOC], ABS, 2011a) according to perceived seriousness, in order to determine a principal offence. The NOI allows the representation of an offender by a single offence in situations where a single incident results in multiple offences, or where defendants have multiple charges. For example, if an offender has two or more offences within the same incident that may be classified into different offence categories of ASOC classification (e.g., 0211 – *Serious assault resulting in injury* and 0621 – *Blackmail and extortion*), a ‘principal offence’ can be selected to represent that offender through the application of the NOI. The NOI is used in this thesis to code the most serious offence for participants with multiple offences.
Appendix C. Study 1 Sample Demographics

Table C1

Demographic Characteristics as a Percentage of the Final Violent Offender Sample

<table>
<thead>
<tr>
<th>Variable</th>
<th>All offenders</th>
</tr>
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<tbody>
<tr>
<td></td>
<td>(n = 305)</td>
</tr>
<tr>
<td>Level of education attained:</td>
<td></td>
</tr>
<tr>
<td>Year 10 or below</td>
<td>62.0</td>
</tr>
<tr>
<td>Year 11</td>
<td>11.1</td>
</tr>
<tr>
<td>Year 12</td>
<td>5.6</td>
</tr>
<tr>
<td>University degree</td>
<td>1.3</td>
</tr>
<tr>
<td>TAFE certificate</td>
<td>3.6</td>
</tr>
<tr>
<td>Apprenticeship</td>
<td>3.3</td>
</tr>
<tr>
<td>Unknown</td>
<td>13.1</td>
</tr>
<tr>
<td>Employed prior to incarceration</td>
<td></td>
</tr>
<tr>
<td>Employed</td>
<td>40.7</td>
</tr>
<tr>
<td>Unemployed</td>
<td>40.7</td>
</tr>
<tr>
<td>Unknown</td>
<td>18.7</td>
</tr>
<tr>
<td>Marital status:</td>
<td></td>
</tr>
<tr>
<td>Single</td>
<td>52.1</td>
</tr>
<tr>
<td>Married</td>
<td>6.9</td>
</tr>
<tr>
<td>Divorced</td>
<td>4.9</td>
</tr>
<tr>
<td>De facto</td>
<td>24.6</td>
</tr>
<tr>
<td>Unknown</td>
<td>11.5</td>
</tr>
<tr>
<td>Parent</td>
<td></td>
</tr>
<tr>
<td>Children</td>
<td>47.2</td>
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<tr>
<td>No children</td>
<td>30.2</td>
</tr>
<tr>
<td>Unknown</td>
<td>22.6</td>
</tr>
</tbody>
</table>
Appendix D. Scale Correlations

The following table provides correlations between the anger and criminal thinking style scales.
Table D1

Spearman’s rho Correlations for Anger and Criminal Thinking Styles Variables Measured Pre-Program. Unless Otherwise Indicated, All Correlations are Significant at p < .001 (2-tailed)

<table>
<thead>
<tr>
<th>Scale</th>
<th>T-Ang / T-Ang</th>
<th>T-Ang/T</th>
<th>T-Ang/R</th>
<th>AX-O</th>
<th>AX-I</th>
<th>AC-O</th>
<th>AC-I</th>
<th>AX</th>
<th>GCT</th>
<th>PCT</th>
<th>RCT</th>
<th>Mo</th>
<th>Co</th>
<th>En</th>
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<th>Sn</th>
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<th>Ds</th>
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<tbody>
<tr>
<td>T-Ang</td>
<td>-</td>
<td>.85</td>
<td>.55</td>
<td>- .55</td>
<td>- .41</td>
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<td>.43</td>
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<td>.45</td>
<td>.43</td>
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<tr>
<td>T-Ang/T</td>
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<td>.55</td>
<td>.41</td>
<td>- .41</td>
<td>- .36</td>
<td>.60</td>
<td>.51</td>
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<td>.37</td>
<td>.33</td>
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<tr>
<td>T-Ang/R</td>
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<td>.49</td>
<td>.41</td>
<td>- .41</td>
<td>- .32</td>
<td>.51</td>
<td>.51</td>
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<td>- .37</td>
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<tr>
<td>AX-I</td>
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<td>- .11³</td>
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<td>- .44</td>
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<td>Scale</td>
<td>T-Ang / T-Ang/T</td>
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<td>Index</td>
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</tbody>
</table>

Note. T-Ang = Trait Anger; T-Ang/T = Angry Temperament; T-Ang/R = Angry Reaction; AX-O = Anger Expression-Out; AX-I = Anger Expression-In; AC-O = Anger Control-Out; AC-I = Anger Control-In; AX Index = Anger Expression Index; GCT = General Criminal Thinking; PCT = Proactive Criminal Thinking; RCT = Reactive Criminal Thinking; Mo = Mollification; Co = Cutoff; En = Entitlement; Po = Power Orientation; Sn = Sentimentality; So = Superoptimism; Ci = Cognitive Indolence; Ds = Discontinuity.

aCorrelation not significant (p > .05).
Appendix E. Socially Desirable Responding

Self-report measures used with offending populations are often viewed with scepticism, as conventional wisdom suggests that offenders cannot be trusted to tell the truth, particularly through self-report. The validity of self-report has long been questioned within psychology (Cronbach, 1946; Kroner, Mills, & Morgan, 2006), as self-report is considered susceptible to biased responding (e.g., socially desirable responding or impression management), potentially significantly impacting the validity of information obtained through self-report tools. Social desirability is the tendency to give overly positive self-descriptions (Paulhus, 2002), attempting to appear overly moral, honourable and virtuous, denying common, yet undesirable, traits (e.g., anger, shame or jealousy), and/or exaggerating uncommon, yet desirable, traits (e.g., never being late) (Crowne & Marlowe, 1960).

Favourable self-presentation can take many forms, from outright lying to “putting one’s best foot forward”, being ingratiating with the examiner or showing polite manners (Andrews & Meyer, 2003). Impression management, similarly, is a goal-directed conscious or unconscious process in which an individual attempts to influence the perceptions of others (Schlenker, Britt, & Pennington, 1996). Impression management demonstrates temporal stability but is also highly responsive to situational factors, and scores therefore need to be interpreted within the assessment context (Davis, Thake, & Weekes, 2012). Impression management scores tend to be higher in non-anonymous responding situations (Booth-Kewley, Edwards, & Rosenfeld, 1992) and when responders know they are being evaluated (Lönnqvist, Paunonen, Tuulio-Henriksson, Lönnqvist, & Verkasalo, 2007).

Many violent offenders may deny significant elements of their crime, justify or rationalise their behaviour, deflect culpability or minimise the severity of their
actions to avoid or hide the fear, shame and guilt often resulting from their offending, or to present a more virtuous picture of themselves to clinical staff or for future gains with regard to obtaining parole. Arguments are made for situational motives (e.g., trial proceedings, prison placement or parole applications) and dispositional characteristics (e.g., manipulative, or psychopathic) as potential reasons for reduced validity (Hare, 2003). Research indicates, however, that offender self-report may yield significant relationships with outcome (Mills & Kroner, 2006) and has predictive validity (Mills, Loza, & Kroner, 2003). Various methods have been suggested to control for this response bias that may invalidate data, including employing indirect methods of information gathering as a method for controlling socially desirable responding (Alexander & Beggs, 1986; Arnold & Feldman, 1981) or using a statistical method to partial out independent measures of response sets from content scores (Messick, 1962), though the latter method may limit the measurement of certain personality traits (Paulhus, 1984). Others have suggested using scores on measures of socially desirable responding or impression management to screen data and remove cases displaying this response bias.

Recent research, however, has suggested that it may not be prudent to use scores on socially desirable or impression management tools in deciding not to interpret self-report measures of psychopathology or risk in correctional populations, as this may result in an incorrect assumption that those individuals high on Impression Management are underreporting their psychopathology or antisocial behaviour (Mills & Kroner, 2006). These conclusions stemmed in part from findings that the more criminally oriented an offender was, the less likely they were to employ impression management (Mills & Kroner, 2005, 2006). Also, those individuals scoring high on impression management tended to report fewer antisocial
attitudes – these individuals also had lower estimates of their risk of re-offending, perhaps reflecting reality (Mills & Kroner, 2005, 2006). These findings contradicted the long held view of researchers that more criminally oriented individuals had a higher level of impression management, such as Davis et al.’s (2012) finding that ‘good’ individuals were not making themselves look better with impression management; rather, those who had behaved most reprehensibly tried to portray themselves as ‘morally decent’.

The mechanisms underlying the lack of predictive validity of self-report data remain unclear. Research has not yet demonstrated whether this is due to social desirability in the form of conscious efforts to appear good (see, for review, Polaschek, Bell, Calvert, & Takarangi, 2010), though findings suggest that it is unlikely that results are due simply to offenders deliberately lying (Gannon, Keown, & Polaschek, 2007; Mills & Kroner, 2005, 2006). Therefore, a social desirability bias may not undermine the relationship between self-report measures and their predictive criteria (Mathie & Wakeling, 2010); rather, the degree and influence of socially desirable responding requires further understanding. Some suggest that socially desirable responding may be a matter of reduced importance within forensic settings (Kroner et al., 2006). Nevertheless, the measurement of socially desirable responding and impression management continues to be perceived as an important step when utilising self-report tools with an offending population.

Psychometric measures were therefore used to assess the presence of these responses biases in the current sample. Data from the Marlowe-Crowne Social Desirability Scale – Short Form (MC-C; Reynolds, 1982) could not be used as errors in data entry were identified that resulted in unreliable data. Data were initially entered on a (2-1, True-False) scale, before the error was identified and subsequent
data entered on a (1-0, True-False) basis. The date of identification of this error was not available. Data entry appeared inconsistent on a number of data collection dates. Rather than score ranges between 0 to 13 (entered on a 1-0 basis) or 13 to 26 (entered on a 2-1 basis), scores ranged from 8 to 26 on several data collection dates, (exceeding either the minimum or maximum score possible on the 13-item measure; see Figure F1 for the range of scores input for each data collection date). Other researchers suggest that the 33-item Marlowe-Crowne Social Desirability Scale was actually used (A. Day, personal communication, June 13, 2012); if so, however, a greater prevalence of scores over 26 would be expected (over the period of data collection, only one 1 case scored above 26). In summary, due to unreliable entry of data on this instrument, the MC-C measure of socially desirable responding could not be examined and utilised as a screening measure.

Figure E1. Marlowe-Crowne score ranges for each date of pre-program assessment data collection. Data collected with the short form (13-item, True/False) has at times been entered on 1-0 (True-False) basis, and at other times on 2-1 (True-False) basis. Inconsistency is apparent throughout the period of data collection.
Appendix F. Cluster analysis

An Explanation of Cluster Analysis

Cluster analysis seeks to find groups in data by determining which objects in a set are similar. The following summary of cluster analysis is adapted from several sources, including Gan, Ma, and Wu (2007), Garson (2010), Kaufman and Rousseeuw (2005), Romesburg (2004) and Sambandam (2003). Also called segmentation analysis or taxonomy analysis, cluster analysis attempts to identify homogeneous subgroups of cases in a population, through the establishment of groups and the analysis of group membership. Cluster analysis is used when the number of groups in a population is unknown, and is implemented by attempting to identify a set of groups which minimise within-group variation and maximise between-group variation. Three types of cluster analysis are used in this thesis: hierarchical clustering, $k$-means clustering and two-step clustering.

Hierarchical clustering allows researchers to select a definition of distance, a linking method for forming clusters, and then determine how many clusters best suit the data. Hierarchical clustering can be agglomerative, in which every single object is initially considered a single cluster. The two objects with the lowest distance (or highest similarity) are then merged into a cluster, and each subsequent object, considered in order of lowest distance to either of the first two objects, is either added to existing clusters, used to create new clusters, or combines with other clusters to achieve the desired final number of clusters. Alternatively, hierarchical clustering can be divisive, starting with all objects in one cluster, then iteratively dividing the large clusters into smaller clusters that have the greatest distance between them. Hierarchical clustering procedures have several disadvantages: (a)
objects that have been incorrectly groups at an early stage cannot be reallocated; and
(b) different similarity or distance measures may lead to different results.

There are several measures of interobservation distances and intercluster similarities and distances to use as criteria when merging nearest clusters into broader groups or when considering the relation of a point to a cluster, including Euclidean distance, squared Euclidean distance, Pearson correlation or chi-square measure. Distance measures how far apart two observations are, with alike cases sharing a low distance. Similarity measures how alike two cases are. There are also several methods to calculate the distance between two clusters, such as single, complete or average linkage, or Ward’s method. In the hierarchical clustering in this study, the cluster method was average between-groups linkage, and the distance measure was squared Euclidean distance. The between-groups linkage, also called unweighted pair-group method using averages linkage, gives the distance between two clusters as the average distance between all inter-cluster pairs.

$K$-means clustering requires the researcher to specify the number of clusters in advance, and then calculates how to assign case to the $k$ clusters. $K$-means clustering is preferred when datasets are large (e.g., over 1000 cases), and is a type of ‘relocation clustering method’ as cases may shift from one cluster to another during the iterative process of converging on a solution. $K$-means clustering uses Euclidean distance. Initial cluster centres are chosen randomly in a first pass of the data. Each subsequent iteration groups observations based on nearest Euclidean distance to the mean of the cluster, with cluster centres changing at each pass, and the process ceases when cluster means do not shift more than a given cut-off value or the iteration limit is reached. $K$-means clustering depends on the sequence of observations in the dataset, with different data orders tending to yield different
outcomes. As such, randomisation of cases is required, in conjunction with multiple runs, to establish that the clusters are stable across different random orderings.

Finally, two-step clustering creates pre-clusters, and then clusters these pre-clusters using hierarchical methods. Two-step clustering is preferred for large datasets, is able to use categorical data, and is fairly robust to assumptions of normality and independent variable assumptions.

Regardless of the method used to form clusters, the utility of clusters must be assessed by three criteria: size, meaningfulness and criterion validity. All clusters should have enough cases to be meaningful, the meaning of each cluster should be readily intuited from the variables used to make the cluster, and the clusters should have the expected level of association with other variables known from theory or prior research.

There are several assumptions underlying hierarchical and $k$-means cluster analysis. Data must be continuous or true dichotomies, and observations must be independent. Variables must be comparable, generally achieved through standardisation. Outliers need to be screened for, as $k$-means cluster analysis is very sensitive to outliers. $K$-means cluster analysis assumes a large sample (over 200). Finally, variables are assumed to be independent. When variables used in the clustering process are collinear, the common constructs underlying the variables are given a higher weight than others, likely skewing the final solution in the direction of those constructs or concepts that are represented by multiple collinear variables.

The assumption of independence of variables is, needless to say, an issue for conducting cluster analysis in this study, as the variables of anger experience, anger expression and anger control are undoubtedly related. Similarly, the constructs underlying styles of criminal thinking are highly likely to be related. However, the
techniques of cluster analysis are commonly used with variables that are collinear, such as personality traits clustered to form personality profiles, or clusters of symptoms that form the basis for diagnosis of mental illness or developmental disorders. Two-step clustering is fairly robust when the assumption of independent variables is violated, and therefore this technique will be used in this thesis to validate and give consensus to the clustering solutions obtained through hierarchical and \( k \)-means clustering.

Cluster validation is the process of evaluating the results of cluster analysis in a quantitative and objective way, and has four main components: (a) determining whether there is non-random structure in the data; (b) determining the number of clusters; (c) evaluating the fitness and stability of the clustering solution to the given data (internal validation); and (d) evaluating the fit of the clustering solution to partitions obtained from other data sources (external validation) (Jain & Dubes, 1988; Tan, Steinbach, & Kumar, 2005).

**Cluster Analysis Process**

Cluster analysis was used to determine whether subtypes of violent offenders demonstrated significantly different patterns of anger type and criminal thinking styles. Given the exploratory nature of this study, a hierarchical clustering procedure was initially undertaken to identify the number of clusters suggested by the data, followed by \( k \)-means clustering to determine which clustering solution was most meaningful and parsimonious. Finally, two-step clustering was undertaken to validate the clustering solutions.

Hierarchical and \( k \)-means cluster analyses were conducted on several variable sets in an attempt to select the most parsimonious and clinically meaningful method
of clustering violent offenders for the purposes of engagement in rehabilitation programmes. The clustering process began broadly, gradually became more inclusive to capture meaningful differences in the clusters that would allow the identification and classification of particular subtypes of violent offenders using variables relevant for treatment, and then broadened again in an attempt to simplify the variables needed to cluster the offenders. The following variable sets were used:

1. General Criminal Thinking and Anger Expression Index;
2. General Criminal Thinking, Proactive Criminal Thinking, Reactive Criminal Thinking and Anger Expression Index;
3. Proactive Criminal Thinking and Reactive Criminal Thinking;
4. Anger Expression Index;
5. Trait Anger, Angry Temperament, Angry Reaction, Anger Expression-In, Anger Expression-Out, Anger Control-In, Anger Control-Out, Anger Expression Index and the eight criminal thinking styles (Mollification, Entitlement, Cutoff, Power Orientation, Sentimentality, Cognitive Indolence, Superoptimism and Discontinuity);
6. Trait Anger, Anger Expression-In, Anger Expression-Out, Anger Control-In, Anger Control-Out and the eight criminal thinking styles;
7. Trait Anger, Angry Temperament, Angry Reaction, Anger Expression-In, Anger Expression-Out, Anger Control-In, Anger Control-Out and Anger Expression Index;
8. the eight criminal thinking styles;
9. Anger Expression Index and the eight criminal thinking styles;
10. Trait Anger, Angry Temperament, Angry Reaction, Anger Expression-In, Anger Expression-Out, Anger Control-In, Anger Control-Out,
Hierarchical cluster analysis with the General Criminal Thinking scale and Anger Expression Index variables revealed that all cases clustered in one group, with agglomeration (or distance) coefficients indicating that the distance of each case from the existing cluster was small. This result is unsurprising given that these variables provide an average value for anger expression and criminal thinking styles, and therefore would unlikely capture differences in patterns of the scale scores used to generate the overall scores. Similar findings emerged when hierarchical clustering was conducted on the following broad variable sets: (a) General, Proactive and Reactive Criminal Thinking scales and Anger Expression Index; (b) Proactive and Reactive Criminal Thinking scales; and (c) Anger Expression Index. Meaningful differences in subgroup profiles of the patterns of anger expression, experience and control and types of criminal thinking styles were assessed with hierarchical and k-means clustering conducted on the eight STAXI-2 variables and the eight criminal thinking styles.

Hierarchical clustering agglomeration coefficients suggested the possibility of 2, 3, 4 or 5 clusters, so k-means clustering was used to produce 2-, 3-, 4- and 5-cluster solutions. For each variable set, five sets of random initial runs were used for each k, randomising the order of the data in the sample to minimise the impact of dataset order. Of the five solutions for each k, the solution that produced the lowest sum of squared distances between observations and their respective cluster centroids
was taken to be the solution with respect to the specified number of clusters, \( k \). That is, the solution was selected with the smallest squared error, as the centroids in that solution were a better representation of the points in their cluster than centroids in the other 4 solutions for each \( k \) (Tan et al., 2005). Notably, there was minimal variability in the sum of squared distances or cluster membership for each of the five solutions. Cluster stability was further evaluated for each \( k \) by running the cluster procedure for each \( k \) value on a randomly selected half of the sample.

For each \( k \)-solution, once the optimal cluster solution was selected, cluster composition and the significance of variables in distinguishing clusters were then examined. Between-group multivariate analysis of variance (MANOVA) was conducted with the clustering variables treated as criterion variables and cluster membership as the between-group variable. Separate post-hoc one-way analysis of variance (ANOVA) was then conducted the clustering variables. Significance of MANOVA and ANOVA F-tests was expected given that cluster analysis is used to maximise the differences between clusters.

In the 2-cluster solution, the clusters were significantly different on all variables, indicating that each variable used in the clustering process was important in distinguishing between the two clusters. However, the 2-cluster solution did not appear to capture the full range of score variability in each scale observed across the violent offender group. Pictorial indications of the differences in anger and thinking style responses for the clusters are shown in Figures F1 (2-cluster solution), F2 (3-cluster solution) and F3 (4-cluster solution). As the figures demonstrate, the average score range in the 2-cluster solution was restricted in comparison to the spread of scores in the 3- and 4-cluster solutions. Notably, when examining the figures, it is important to remember that follow-up treatment is only recommended on STAXI-2
T-scores greater than 65 (Spielberger, 1999). On the eight thinking scales, T-scores between 60 and 70 are considered indicative of high levels of the presence of that distortion, and scores over 70 are considered very high (Walters, 2010). On the Proactive and Reactive Criminal Thinking scales, T-scores between 55 and 65 are indicative of moderate elevations, and scores over 65 are considered high. Additionally, a difference of at least 10 points between the Proactive and Reactive Criminal Thinking scales indicates an orientation to the higher scoring scale.

Figure F1. Mean T-scores for anger and thinking style clustering variables for each cluster identified in the 2-cluster solution.

All clusters in the 3-cluster solution showed significant between-group differences on all variables, again indicating that each variable was important in differentiating between the three clusters.
Figure F2. Mean T-scores for anger and thinking style clustering variables for each cluster identified in the 3-cluster solution.

The 4-cluster solution indicated that on the anger scales, there were two clusters that appeared quite similar, while another two clusters were significantly different. On the thinking style scales, there were again two clusters that appeared similar, and two that were significantly different; the two similar clusters were, however, a different combination of clusters than the two similar clusters on the anger scales. This is best reflected in Figure F3, which shows that clusters 1 and 4 show similar patterns on the anger scales, while clusters 1 and 3 showed similar patterns on the thinking style patterns. All clusters were significantly different ($p < .01$) on all variables with the exception of: clusters 1 and 4 on the Angry Reaction scale; clusters 3 and 4 on the Anger Control-In scale; clusters 2 and 4 on the
Several clusters that were significantly different ($p < .05$) when analysis was conducted on the full sample were not significantly different when the analysis was conducted on the randomly selected half of the sample. This finding confirmed the emerging trend visible in the larger sample that clusters 1 and 4 were similar on anger scales, and clusters 1 and 3 were similar on thinking style scales.

Finally, the 5-cluster solution was examined. There tended to be at least three clusters that were significantly different for each variable, however there was
variability in which three of the five clusters differed dependent on which variable was being examined, and this solution was considered too complex to be useful or realistic for clinicians to utilise to differentiate violent offenders for the purposes of offender rehabilitation. Furthermore, the 5-cluster solution appeared much more susceptible to effects of data ordering than the 2-, 3- or 4-cluster solutions, suggesting instability in the clustering solution.

Therefore, the clustering solutions that seemed to fit the data best appeared to be the 3-cluster or 4-cluster solutions, using the eight thinking styles and eight STAXI-2 variables. In an attempt to simplify the variables that could be used to differentiate the violent offenders, and to reduce the multicollinearity in the clustering variables, the analysis was done on a simplified dataset: Trait Anger, Anger Expression-In, Anger Expression-Out, Anger Control-In, Anger Control-Out and the eight thinking styles. The two trait anger subscales were removed, given their strong correlations with the overall Trait Anger scale, and the Anger Expression Index was removed, also given its high correlation with the Anger Expression-In and -Out and Anger Control-In and -Out scales. Hierarchical cluster analysis was conducted on the new variable set, and agglomeration coefficients again indicated between two and five possible clustering solutions. \(K\)-means clustering was used to produce 2-, 3-, 4- and 5-cluster solutions, with the clustering procedure conducted on five sets of random initial runs and a randomly selected half of the sample for each \(k\).

Once again, all variables in the 2-cluster and 3-cluster solutions were significantly different for each cluster, suggesting that each variable contributed to differentiating between clusters. As in the cluster analysis with the larger variable set, however, the 2-cluster solution did not appear to be capturing the full spread of
responses on each variable. The average scores on each cluster variable are depicted by cluster for the 3-cluster solution in Figure F4.

Figure F4. Mean T-scores for anger and thinking style clustering variables for each cluster identified in the 3-cluster solution.

Using the new variable set, the similarities between two clusters in patterns of anger and between another two clusters in patterns of criminal thinking became even more pronounced in the 4-cluster solution. Figure F5 depicts the average scores for anger and thinking style clustering variables for the new restricted variable set. All clusters were again significantly different ($p < .01$) with the exception of clusters 1 and 4 on the Trait Anger, Anger Expression-Out, Anger Control-Out and Anger
Control-In scales; and clusters 1 and 3 on the Mollification, Entitlement, Sentimentality, Superoptimism, Cognitive Indolence and Discontinuity scales.

Figure F5. Mean T-scores for anger and thinking style clustering variables for each cluster identified in the 4-cluster solution.

This 4-cluster solution indicated that perhaps a more appropriate solution may be found by conducting two separate cluster analyses: one utilising the anger scales only, and one utilising criminal thinking style scales only. Therefore, this was the next set of cluster analyses undertaken. Notably, agglomeration coefficients from hierarchical analyses indicated that all cases were clustered in one group for both sets of analyses, however $k$-means clustering analyses were undertaken with 2, 3 and 4 clusters requested.
With respect to the eight anger scales, the groups found in the 2- and 3-cluster solutions were significantly different on all variables. The pattern of average scores for the 3-cluster solution can be seen in Figure F6. In the 4-cluster solution, the four groups were significantly different on Trait Anger, Angry Temperament, Angry Reaction, Anger Control-Out and Anger Expression Index \((p < .01)\), however on Anger Control-In, clusters 1 and 2 were not significantly different, and clusters 3 and 4 were significantly different at \(p < .05\). Clusters 2 and 4 were not significantly different on Anger Expression-Out, and clusters 1 and 4 were not significantly different on Anger Expression-In. This suggests that the best representation of the group is with a 3-cluster solution.

Figure F6. Mean T-scores for anger clustering variables for each cluster identified in the 3-cluster solution.
With respect to clustering analyses using the eight criminal thinking style scales, the 2-cluster solution indicated that all the two groups were significantly different on all variables, with one group consistently higher on use of all criminal thinking styles. All variables were significantly different between the three groups in the 3-cluster solution. Figure F7 provides a pictorial representation of the mean thinking style pattern for the three clusters. In the 4-cluster solution, the 4 groups were significantly different on all thinking styles ($p < .01$) with the exception of clusters 3 and 4 on the Cognitive Indolence scale and the Discontinuity scale. However, the extra cluster in this group did not appear to add any additional information to the groups detailed in the 3-cluster solution.

\[ \text{Figure F7. Mean T-scores for thinking style clustering variables for each cluster identified in the 3-cluster solution.} \]
However, clustering with anger scales only, or with thinking styles only, did not capture the full pattern of interaction explained by using anger and thinking style scales to analyse subtypes of violent offenders. For example, clustering with either anger or thinking styles did not capture the pattern of the group that is high on anger experience, anger expression and the use of cognitive distortions, the pattern of the group that is low on anger experience, anger expression and cognitive distortion use, or the group that is average on anger experience and expression but higher on thinking style use. Therefore, further clustering procedures were undertaken in an attempt to capture these patterns while simplifying the clustering variables used.

Cluster analyses were run using the Anger Expression Index and the eight thinking styles, the eight STAXI-2 variables with the Proactive and Reactive Criminal Thinking scales, and five of the STAXI-2 variables with the Proactive and Reactive Criminal Thinking scales. However, these clustering solutions were not considered sufficiently detailed to provide a picture of the groups found in the solutions, as the Anger Expression Index is an overall score that does not take into account differences in patterns of anger inward and outward control and expression. Furthermore, the Proactive and Reactive Criminal Thinking scales are composite scales that have been derived from particular thinking style, factor and content scales. While these scales are generally more stable and reliable than individual scales, they do not capture the full pattern of criminal thinking styles used by the offender. Furthermore, the scales can be used to determine the orientation of an offender’s criminal thinking (proactive or reactive), however this relies on the difference between the Proactive and Reactive Criminal Thinking scales, and within each of the groups identified in the clustering solutions, these differences did not exceed the 10 points required to determine the orientation of an offender’s criminal
thinking. For example, in the 3-cluster solution, the first cluster was low on Proactive and Reactive Criminal Thinking, the second cluster was average on both, and the third cluster was higher on both. Therefore, attempting to cluster the group of violent offenders using these variables was considered appropriate or meaningful.

In light of the results of the multiple clustering analyses undertaken, the optimal clustering solution chosen was that using the five STAXI-2 variables of Trait Anger, Anger Expression-In, Anger Expression-Out, Anger Control-In and Anger Control-Out and the eight criminal thinking styles (pictured in Figures F4 and F5 above). Selection of the optimal cluster solution followed examination of the different cluster solutions looking at internal criteria, including the appropriateness of cluster size and distribution of the scale variables within the clusters. This solution was chosen as it was the simplest solution that provided meaningful information concerning differences between groups, for the purposes of identifying treatment targets. Furthermore, the degree of multicollinearity between variables was lower than when overall scales such as the Anger Expression Index or the General Criminal Thinking scale were used.

In deciding between the 3-cluster and 4-cluster solution for this variable set, two-step clustering analyses was undertaken. As described above, this technique is more robust and stable when assumptions of normality and independence of variables have been violated. As with the \( k \)-means analysis, the analysis was run five times with differing random initial values, to check for stability of the solution. Results from the two-step analysis confirmed that a 3-cluster solution provided the best fit for this group of violent offenders.
## Appendix G. Cluster demographics

Table G1

*Offender-Identified Demographic Characteristics and Offending Characteristics as a Percentage of Each Cluster*

<table>
<thead>
<tr>
<th>Variable</th>
<th>Cluster 1 Regulated (n=129)</th>
<th>Cluster 2 Overregulated (n=100)</th>
<th>Cluster 3 Unregulated (n=58)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Level of education attained:</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Year 10 or below</td>
<td>62.8</td>
<td>57.0</td>
<td>63.7</td>
</tr>
<tr>
<td>Year 11</td>
<td>13.2</td>
<td>10.0</td>
<td>10.3</td>
</tr>
<tr>
<td>Year 12</td>
<td>7.0</td>
<td>6.0</td>
<td>3.4</td>
</tr>
<tr>
<td>University degree</td>
<td>0.0</td>
<td>2.0</td>
<td>1.7</td>
</tr>
<tr>
<td>TAFE certificate</td>
<td>2.3</td>
<td>5.0</td>
<td>5.2</td>
</tr>
<tr>
<td>Apprenticeship</td>
<td>2.3</td>
<td>7.0</td>
<td>0.0</td>
</tr>
<tr>
<td>Unknown</td>
<td>12.4</td>
<td>13.0</td>
<td>15.5</td>
</tr>
<tr>
<td><strong>Employed prior to incarceration</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Employed</td>
<td>37.2</td>
<td>52.0</td>
<td>31.0</td>
</tr>
<tr>
<td>Unemployed</td>
<td>43.4</td>
<td>32.0</td>
<td>43.1</td>
</tr>
<tr>
<td>Unknown</td>
<td>19.4</td>
<td>16.0</td>
<td>25.9</td>
</tr>
<tr>
<td><strong>Marital status:</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Single</td>
<td>61.2</td>
<td>48.0</td>
<td>43.1</td>
</tr>
<tr>
<td>Married</td>
<td>5.4</td>
<td>11.0</td>
<td>3.4</td>
</tr>
<tr>
<td>Divorced</td>
<td>3.1</td>
<td>8.0</td>
<td>5.2</td>
</tr>
<tr>
<td>De facto</td>
<td>19.4</td>
<td>25.0</td>
<td>29.3</td>
</tr>
<tr>
<td>Unknown</td>
<td>10.9</td>
<td>8.0</td>
<td>19.0</td>
</tr>
<tr>
<td><strong>Parent</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Children</td>
<td>46.5</td>
<td>54.0</td>
<td>41.4</td>
</tr>
<tr>
<td>No children</td>
<td>31.8</td>
<td>26.0</td>
<td>29.3</td>
</tr>
<tr>
<td>Unknown</td>
<td>21.7</td>
<td>20.0</td>
<td>29.3</td>
</tr>
<tr>
<td><strong>Ethnicity</strong></td>
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<td></td>
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<tr>
<td>Australian</td>
<td>62.8</td>
<td>65.0</td>
<td>55.2</td>
</tr>
<tr>
<td>Indigenous Australian</td>
<td>10.1</td>
<td>6.0</td>
<td>6.9</td>
</tr>
<tr>
<td>Variable</td>
<td>Cluster 1 Regulated (n = 129)</td>
<td>Cluster 2 Overregulated (n = 100)</td>
<td>Cluster 3 Unregulated (n = 58)</td>
</tr>
<tr>
<td>--------------------------</td>
<td>-------------------------------</td>
<td>-----------------------------------</td>
<td>-------------------------------</td>
</tr>
<tr>
<td>Pacific Islander</td>
<td>2.3</td>
<td>1.0</td>
<td>3.4</td>
</tr>
<tr>
<td>New Zealander / Maori</td>
<td>3.9</td>
<td>3.0</td>
<td>1.7</td>
</tr>
<tr>
<td>European</td>
<td>3.9</td>
<td>9.0</td>
<td>8.6</td>
</tr>
<tr>
<td>Asian</td>
<td>4.7</td>
<td>2.0</td>
<td>3.4</td>
</tr>
<tr>
<td>Middle Eastern</td>
<td>2.3</td>
<td>5.0</td>
<td>0.0</td>
</tr>
<tr>
<td>Other</td>
<td>4.7</td>
<td>3.0</td>
<td>5.1</td>
</tr>
<tr>
<td>Unknown</td>
<td>5.4</td>
<td>6.0</td>
<td>15.5</td>
</tr>
<tr>
<td>Index offence(s)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Violent index offence(s)</td>
<td>72.1</td>
<td>75.0</td>
<td>67.2</td>
</tr>
<tr>
<td>Serious violent index</td>
<td>27.1</td>
<td>29.0</td>
<td>17.2</td>
</tr>
<tr>
<td>offence(s)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Index offending unknown</td>
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<td>3.0</td>
<td>6.9</td>
</tr>
<tr>
<td>Prior offence(s)</td>
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<td></td>
</tr>
<tr>
<td>Violent prior offence(s)</td>
<td>60.5</td>
<td>64.0</td>
<td>65.5</td>
</tr>
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<td>12.0</td>
<td>10.3</td>
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<tr>
<td>offence(s)</td>
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</tr>
<tr>
<td>Prior offending unknown</td>
<td>7.0</td>
<td>4.0</td>
<td>6.9</td>
</tr>
<tr>
<td>Variable</td>
<td>Cluster 1 Regulated (n = 129)</td>
<td>Cluster 2 Overregulated (n = 100)</td>
<td>Cluster 3 Unregulated (n = 58)</td>
</tr>
<tr>
<td>---------------------------------</td>
<td>------------------------------</td>
<td>-----------------------------------</td>
<td>-------------------------------</td>
</tr>
<tr>
<td></td>
<td>n</td>
<td>M</td>
<td>SD</td>
</tr>
<tr>
<td>Age</td>
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<td>31.41</td>
<td>7.56</td>
</tr>
<tr>
<td>Number of prior offences</td>
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<td>2.78</td>
<td>1.40</td>
</tr>
<tr>
<td>Number of prior prison sentences</td>
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</tr>
<tr>
<td>Number of prior community orders</td>
<td>94</td>
<td>1.93</td>
<td>2.67</td>
</tr>
</tbody>
</table>

Table G2

*Means and Standard Deviations for Each Cluster for Age, Number of Prior Offences, Prior Prison Sentences and Prior Community Orders*
Appendix H. Violence Risk Level Comparisons

Re-offending risk is generally the primary contributor in determining whether an offender is recommended for offence-specific treatment, with risk level key in considering the appropriate program intensity for the offender. Best practice principles state that the level of treatment services delivered to an offender should be proportional to their risk of re-offending (Bonta & Andrews, 2007). Empirical evidence indicates that higher risk offenders should receive more intensive treatment and lower risk offenders should receive minimal, routine or no intervention (Bonta & Andrews, 2007; Ogloff & Davis, 2004; Ward et al., 2007).

While risk-level comparisons were not a specific aim of this thesis, it is an important consideration, given that recommendations for treatment would usually be based on their assessed risk of re-offending. Since the rationale for identifying subtypes in the current research is aimed at improving selection of treatment candidates and treatment outcomes, it is paramount to consider whether the clusters identified reflect differences in re-offending risk that may be captured by the risk assessment process and potentially remove the need for identifying subtypes.

The 305 violent offenders was separated into low, moderate and high risk offenders on the basis of VRS score and the three groups’ STAXI-2 and PICTS scores were compared using the Kruskal-Wallis test. Score distributions in the three groups differed significantly on all STAXI-2 scales (except the Angry Reaction and Anger Expression-In scales) and on all PICTS scales (except the Sentimentality and Cognitive Indolence scales) \( (p < .05) \). STAXI-2 and PICTS scores for the three groups are outlined in Table H1. All STAXI-2 T-score scales were under 65, and therefore below levels at which Spielberger (1999) recommends treatment.
Table H1

Mean STAXI-2 and PICTS Pre-program T-Scores for the Low, Moderate and High Risk Violent Offender Groups

<table>
<thead>
<tr>
<th>Scale</th>
<th>Low risk (n = 25)</th>
<th>Moderate risk (n = 155)</th>
<th>High risk (n = 77)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>M</td>
<td>SD</td>
<td>M</td>
</tr>
<tr>
<td><strong>STAXI-2</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Trait Anger*</td>
<td>45.22</td>
<td>9.81</td>
<td>48.33</td>
</tr>
<tr>
<td>Angry Temperament*</td>
<td>44.96</td>
<td>8.50</td>
<td>48.85</td>
</tr>
<tr>
<td>Angry Reaction</td>
<td>42.26</td>
<td>10.08</td>
<td>43.26</td>
</tr>
<tr>
<td>Anger Expression-Out*</td>
<td>43.70</td>
<td>9.77</td>
<td>49.86</td>
</tr>
<tr>
<td>Anger Expression-In</td>
<td>49.17</td>
<td>10.41</td>
<td>50.19</td>
</tr>
<tr>
<td>Anger Control-Out*</td>
<td>51.30</td>
<td>9.62</td>
<td>46.27</td>
</tr>
<tr>
<td>Anger Control-In*</td>
<td>50.52</td>
<td>8.83</td>
<td>48.41</td>
</tr>
<tr>
<td>Anger Expression Index*</td>
<td>49.09</td>
<td>10.42</td>
<td>52.18</td>
</tr>
<tr>
<td><strong>PICTS</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>General Criminal Thinking*</td>
<td>47.04</td>
<td>7.48</td>
<td>52.81</td>
</tr>
<tr>
<td>Proactive Criminal Thinking*</td>
<td>47.68</td>
<td>8.24</td>
<td>51.94</td>
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<td>Reactive Criminal Thinking*</td>
<td>50.48</td>
<td>8.06</td>
<td>56.29</td>
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<tr>
<td>Confusion-Revised*</td>
<td>49.24</td>
<td>6.57</td>
<td>55.06</td>
</tr>
<tr>
<td>Defensiveness-Revised*</td>
<td>48.60</td>
<td>7.79</td>
<td>45.27</td>
</tr>
<tr>
<td>Mollification*</td>
<td>44.80</td>
<td>7.11</td>
<td>49.05</td>
</tr>
<tr>
<td>Cutoff*</td>
<td>51.60</td>
<td>8.87</td>
<td>56.32</td>
</tr>
<tr>
<td>Entitlement*</td>
<td>47.56</td>
<td>7.15</td>
<td>50.82</td>
</tr>
<tr>
<td>Power Orientation*</td>
<td>47.40</td>
<td>8.36</td>
<td>50.52</td>
</tr>
<tr>
<td>Sentimentality</td>
<td>43.88</td>
<td>7.33</td>
<td>47.99</td>
</tr>
<tr>
<td>Superoptimism*</td>
<td>45.96</td>
<td>7.46</td>
<td>49.97</td>
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<td>Cognitive Indolence</td>
<td>50.64</td>
<td>9.52</td>
<td>54.58</td>
</tr>
<tr>
<td>Discontinuity*</td>
<td>48.16</td>
<td>6.99</td>
<td>55.60</td>
</tr>
<tr>
<td>Current Criminal Thinking*</td>
<td>49.12</td>
<td>7.69</td>
<td>55.39</td>
</tr>
<tr>
<td>Fear of Change*</td>
<td>50.44</td>
<td>11.14</td>
<td>53.18</td>
</tr>
</tbody>
</table>

*aScales for which scores differed significantly (p < .05) across the three groups.
The groups’ impression management scores were also compared, and significant differences in impression management scores were found between low and high risk offenders \( (F(2,253) = 5.31, p < .01) \), replicating the findings of Mills and Kroner (Mills et al., 2003; Mills & Kroner, 2005, 2006). Offenders with the lowest impression management scores (measured with the Df-r scale) had the highest violent recidivism risk estimates, and the highest impression management scores were seen in those with the lowest risk estimates. The moderate and high risk groups also differed significantly on impression management. No significant differences were found between the low and moderate risk groups. With regard to ‘fake bad’ responding style (measured using the Cf-r scale), significant differences were found between the three low, moderate and high risk groups in pre-program assessment \( (F(2,252) = 9.84, p < .01) \); low risk offenders had the lowest ‘fake bad’ scores and high risk offenders had the highest ‘fake bad’ scores. Moderate risk offenders’ ‘fake bad’ responding scored between the two.

The VRS scores of each of the three clusters (Unregulated, Regulated and Overregulated) were also compared. There was a significant interaction between cluster membership and VRS risk rating \( (\chi^2 (4, n = 242) = 17.54, p < .01) \). VRS dynamic risk factors were considered treatment targets for a greater proportion of Cluster 3 offenders, while Cluster 2 had the lowest proportions (see Figure H1).

Kruskal-Wallis and Mann-Whitney U tests were conducted to determine whether treatment targets different significantly between clusters. The Chi-square values are provided in Table H2, as are the direction of significant differences. Despite clusters having significantly different STAXI-2 and PICTS scale scores, the emotional control and cognitive distortion dynamic risk factors of the VRS were not assessed as significantly different between clusters. Criminal attitudes were
considered a treatment target for a significantly higher proportion of Cluster 3 violent offenders, $\chi^2(2, n=240) = 6.22, p < .05$.

*Figure H1.* Percentage of violent offenders in each cluster for whom VRS dynamic risk factors were considered treatment targets prior to commencing a VIP.
Table H2

Comparison of the Prevalence of Static and Dynamic Risk Factors Between Clusters. The Kruskal-Wallis (Reported in Column 1) and Mann-Whitney U Tests Were Used to Determine Statistically Significant Differences

<table>
<thead>
<tr>
<th>VRS Risk Rating</th>
<th>3-cluster comparison</th>
<th>Cluster 1 and 2</th>
<th>Cluster 1 and 3</th>
<th>Cluster 2 and 3</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>$\chi^2$ (df, n)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Current age</td>
<td>0.93 (2, 242)</td>
<td>NS</td>
<td>NS</td>
<td>NS</td>
</tr>
<tr>
<td>Age at first violent conviction</td>
<td>1.55 (2, 242)</td>
<td>NS</td>
<td>NS</td>
<td>NS</td>
</tr>
<tr>
<td>Number of young offender convictions</td>
<td>2.53 (2, 241)</td>
<td>NS</td>
<td>NS</td>
<td>NS</td>
</tr>
<tr>
<td>Violence throughout lifespan</td>
<td>11.49 (2, 241)**</td>
<td>NS</td>
<td>Cluster 3 higher**</td>
<td>Cluster 3 higher**</td>
</tr>
<tr>
<td>Prior release failures or escapes</td>
<td>13.03 (2, 241)**</td>
<td>NS</td>
<td>Cluster 3 higher**</td>
<td>Cluster 3 higher**</td>
</tr>
<tr>
<td>Stability of family upbringing</td>
<td>4.34 (2, 241)</td>
<td>NS</td>
<td>NS</td>
<td>NS</td>
</tr>
<tr>
<td>Violent lifestyle</td>
<td>20.87 (2, 242)**</td>
<td>NS</td>
<td>Cluster 3 higher**</td>
<td>Cluster 3 higher**</td>
</tr>
<tr>
<td>Criminal personality</td>
<td>1.16 (2, 239)</td>
<td>NS</td>
<td>NS</td>
<td>NS</td>
</tr>
<tr>
<td>Criminal attitudes</td>
<td>6.22 (2, 240)*</td>
<td>NS</td>
<td>Cluster 3 higher*</td>
<td>Cluster 3 higher*</td>
</tr>
<tr>
<td>Work ethic</td>
<td>16.36 (2, 240)**</td>
<td>NS</td>
<td>Cluster 3 higher**</td>
<td>Cluster 3 higher**</td>
</tr>
<tr>
<td>Criminal peers</td>
<td>14.43 (2, 239)**</td>
<td>NS</td>
<td>Cluster 3 higher**</td>
<td>Cluster 3 higher**</td>
</tr>
<tr>
<td>Interpersonal aggression</td>
<td>7.03 (2, 242)*</td>
<td>NS</td>
<td>Cluster 3 higher**</td>
<td>NS</td>
</tr>
<tr>
<td>Emotional control</td>
<td>2.70 (2, 242)</td>
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<td>NS</td>
<td>NS</td>
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<tr>
<td>VRS Risk Rating</td>
<td>3-cluster comparison</td>
<td>Cluster 1 and 2</td>
<td>Cluster 1 and 3</td>
<td>Cluster 2 and 3</td>
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<td>----------------</td>
</tr>
<tr>
<td></td>
<td>$\chi^2$ (df, n)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Violence during institutionalisation</td>
<td>7.27 (2, 239)*</td>
<td>NS</td>
<td>Cluster 3 higher**</td>
<td>Cluster 3 higher*</td>
</tr>
<tr>
<td>Weapon use</td>
<td>8.47 (2, 240)*</td>
<td>NS</td>
<td>NS</td>
<td>Cluster 3 higher**</td>
</tr>
<tr>
<td>Insight into violence</td>
<td>3.00 (2, 239)</td>
<td>Cluster 2 higher*</td>
<td>NS</td>
<td>NS</td>
</tr>
<tr>
<td>Mental disorder</td>
<td>1.35 (2, 227)</td>
<td>NS</td>
<td>NS</td>
<td>NS</td>
</tr>
<tr>
<td>Substance abuse</td>
<td>3.29 (2, 240)</td>
<td>NS</td>
<td>NS</td>
<td>NS</td>
</tr>
<tr>
<td>Stability of relationships</td>
<td>0.47 (2, 233)</td>
<td>NS</td>
<td>NS</td>
<td>NS</td>
</tr>
<tr>
<td>Community support</td>
<td>10.46 (2, 239)**</td>
<td>NS</td>
<td>Cluster 3 higher**</td>
<td>Cluster 3 higher**</td>
</tr>
<tr>
<td>Released to high risk situations</td>
<td>2.93 (2, 231)</td>
<td>NS</td>
<td>NS</td>
<td>NS</td>
</tr>
<tr>
<td>Violence cycle</td>
<td>5.80 (2, 239)</td>
<td>NS</td>
<td>Cluster 3 higher*</td>
<td>Cluster 3 higher*</td>
</tr>
<tr>
<td>Impulsivity</td>
<td>14.84 (2, 242)**</td>
<td>NS</td>
<td>Cluster 3 higher**</td>
<td>Cluster 3 higher**</td>
</tr>
<tr>
<td>Cognitive distortions</td>
<td>0.51 (2, 239)</td>
<td>NS</td>
<td>NS</td>
<td>NS</td>
</tr>
<tr>
<td>Compliance with supervision</td>
<td>7.88 (2, 237)*</td>
<td>NS</td>
<td>Cluster 3 higher**</td>
<td>Cluster 3 higher*</td>
</tr>
<tr>
<td>Security level of release institution</td>
<td>0.48 (2, 237)</td>
<td>NS</td>
<td>NS</td>
<td>NS</td>
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</tbody>
</table>

*Note. NS = Groups are not significantly different. *p < .05. **p < .01.*
Appendix I. Measures of Violent Offender Cognition

Few measures have been developed to measure cognitions specifically associated with violent behaviour: two exceptions are the Maudsley Violence Questionnaire (MVQ; Walker, 2005) and the Firestone Assessment of Violent Thoughts (FAVT; Doucette-Gates et al., 1999). The FAVT assesses thoughts and feelings from the perspective of an internal ‘voice’, an integrated system of negative thoughts and attitudes directed at the self and others (e.g., ‘you’re stupid’, ‘they don’t give a damn about you’, ‘you’ll show them who’s the boss’) and is thought to measure automatic thoughts. Factor analysis supports the presence of four factors: social mistrust (e.g., ‘get them before they get you’), perceived disrespect or disregard (e.g., ‘they’re just doing this to make you get upset’), negative critical thoughts of self and others (e.g., ‘people act afraid of you’) and thoughts and expression of overt aggression (e.g., ‘I’ll show you what pain’s all about’). The FAVT manual suggests that the tool has excellent internal consistency, acceptable test-retest reliability and convergence with other measures reflecting pro-violent cognitions (Firestone & Firestone, 2008). However, few studies have been published utilising this tool.

The MVQ was designed to evaluate thoughts and beliefs about violence and violent acts, and beliefs about what are acceptable, justifiable and reasonable actions in certain situations (Walker, 2005). The MVQ appears to measure dysfunctional assumptions (e.g., ‘it’s ok to hit someone if they make you look stupid’), core beliefs (e.g., ‘I see myself as a violent person’) and related cognitions. Two key factors thought to contribute to violence-related attitudes, beliefs and rules were suggested in initial research with adolescents: ‘machismo’ and ‘acceptance’ of violence. ‘Machismo’ related to stereotypical expectations of men, particularly toughness and
manliness; violence and aggression in men was expected and desirable as it was associated with strength and assertiveness. ‘Acceptance of violence’ referred to attitudes and beliefs suggesting acceptance or rejection of violence in society in individual behaviour and in the media (Walker, 2005). Walker (2005) suggested that the four FAVT factors were complimentary to the two MVQ factors, with the FAVT factors representing triggers or automatic thoughts for aggression and violence and the MVQ factors representing other cognitions that predict violent behaviour (e.g., core beliefs, dysfunctional assumptions or rules).
Appendix J. Study 2 Sample Demographics

The following tables provide demographic and offence characteristics for the Treatment Completer sample used in the second study, grouped by the intensity of the program completed (i.e., MIVIP or HIVIP) and by cluster membership.
Table II

*Offender-Identified Demographic Characteristics as a Percentage of the Offenders Who Completed a Violence Intervention Program, Grouped by Program Intensity and by Cluster Membership*

<table>
<thead>
<tr>
<th>Variable</th>
<th>All Treatment completers ($n = 131$)</th>
<th>MIVIP Treatment completers ($n = 98$)</th>
<th>HIVIP Treatment completers ($n = 33$)</th>
<th>Cluster 1 Regulated ($n = 59$)</th>
<th>Cluster 2 Overregulated ($n = 41$)</th>
<th>Cluster 3 Unregulated ($n = 24$)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ethnicity:</td>
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<td></td>
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<td></td>
</tr>
<tr>
<td>Australian</td>
<td>62.6</td>
<td>63.3</td>
<td>60.6</td>
<td>62.7</td>
<td>63.4</td>
<td>58.3</td>
</tr>
<tr>
<td>Indigenous Australian</td>
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<td>6.1</td>
<td>15.2</td>
<td>10.2</td>
<td>9.9</td>
<td>4.2</td>
</tr>
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<td>2.3</td>
<td>1.0</td>
<td>6.1</td>
<td>1.7</td>
<td>0.0</td>
<td>4.2</td>
</tr>
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<td>New Zealander / Maori</td>
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<td>3.1</td>
<td>0.0</td>
<td>3.4</td>
<td>2.4</td>
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<td>0.0</td>
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<td>4.2</td>
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<td>3.0</td>
<td>8.5</td>
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<td>8.3</td>
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<td>5.1</td>
<td>2.4</td>
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<td>All Treatment completers (n = 131)</td>
<td>MIVIP Treatment completers (n = 98)</td>
<td>HIVIP Treatment completers (n = 33)</td>
<td>Cluster 1 Regulated (n = 59)</td>
<td>Cluster 2 Overregulated (n = 41)</td>
<td>Cluster 3 Unregulated (n = 24)</td>
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<td>--------------------------------</td>
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<tr>
<td>Level of education attained:</td>
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<tr>
<td>Year 10 or below</td>
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<td>58.1</td>
<td>57.6</td>
<td>62.7</td>
<td>48.9</td>
<td>54.2</td>
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<tr>
<td>Year 11</td>
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<td>13.6</td>
<td>14.6</td>
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<tr>
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<td>University degree</td>
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<td>0.0</td>
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<td>TAFE certificate</td>
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<td>6.1</td>
<td>1.7</td>
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<tr>
<td>Apprenticeship</td>
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<td>1.7</td>
<td>7.3</td>
<td>0.0</td>
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<tr>
<td>Unknown</td>
<td>11.5</td>
<td>13.2</td>
<td>6.1</td>
<td>11.8</td>
<td>9.8</td>
<td>12.5</td>
</tr>
<tr>
<td>Employed prior to incarceration</td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Employed</td>
<td>43.5</td>
<td>43.9</td>
<td>42.4</td>
<td>40.7</td>
<td>51.2</td>
<td>41.7</td>
</tr>
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<td>45.5</td>
<td>45.8</td>
<td>36.6</td>
<td>33.3</td>
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<td>15.3</td>
<td>12.1</td>
<td>13.6</td>
<td>12.2</td>
<td>25.0</td>
</tr>
<tr>
<td>Marital status:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Single</td>
<td>48.1</td>
<td>46.9</td>
<td>51.5</td>
<td>59.3</td>
<td>41.5</td>
<td>33.3</td>
</tr>
<tr>
<td>Married</td>
<td>6.1</td>
<td>6.1</td>
<td>6.1</td>
<td>5.1</td>
<td>9.8</td>
<td>4.2</td>
</tr>
<tr>
<td>Variable</td>
<td>All (n = 131)</td>
<td>MIVIP Treatment completers (n = 98)</td>
<td>HIV/IP Treatment completers (n = 33)</td>
<td>Cluster 1 Regulated (n = 59)</td>
<td>Cluster 2 Overregulated (n = 41)</td>
<td>Cluster 3 Unregulated (n = 24)</td>
</tr>
<tr>
<td>----------</td>
<td>---------------</td>
<td>-------------------------------------</td>
<td>-------------------------------------</td>
<td>--------------------------</td>
<td>--------------------------</td>
<td>--------------------------</td>
</tr>
<tr>
<td>Divorced</td>
<td>6.1</td>
<td>7.1</td>
<td>3.0</td>
<td>3.4</td>
<td>12.2</td>
<td>4.2</td>
</tr>
<tr>
<td>De facto</td>
<td>28.2</td>
<td>26.5</td>
<td>33.0</td>
<td>22.0</td>
<td>4.9</td>
<td>33.0</td>
</tr>
<tr>
<td>Unknown</td>
<td>11.5</td>
<td>13.3</td>
<td>6.1</td>
<td>22.0</td>
<td>4.9</td>
<td>25.0</td>
</tr>
<tr>
<td>Children</td>
<td>51.1</td>
<td>51.0</td>
<td>36.4</td>
<td>35.6</td>
<td>13.6</td>
<td>25.0</td>
</tr>
<tr>
<td>No children</td>
<td>32.8</td>
<td>17.3</td>
<td>16.0</td>
<td>36.4</td>
<td>13.6</td>
<td>25.0</td>
</tr>
<tr>
<td>Unknown</td>
<td>16.0</td>
<td>17.3</td>
<td>16.0</td>
<td>36.4</td>
<td>13.6</td>
<td>25.0</td>
</tr>
</tbody>
</table>
Table 12

*Percentage of Participants with Violent and Serious Violent Index and Prior Offences in the Treatment Completer Group, Grouped By Program Intensity and by Cluster Membership*

<table>
<thead>
<tr>
<th>Variable</th>
<th>All Treatment Completers (n = 131)</th>
<th>MIVIP Treatment Completers (n = 98)</th>
<th>HIVIP Treatment Completers (n = 33)</th>
<th>Cluster 1 Regulated (n = 59)</th>
<th>Cluster 2 Overregulated (n = 41)</th>
<th>Cluster 3 Unregulated (n = 24)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Index offence(s)</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Violent</td>
<td>72.5</td>
<td>68.4</td>
<td>84.8</td>
<td>74.6</td>
<td>78.0</td>
<td>54.2</td>
</tr>
<tr>
<td>Serious violent</td>
<td>26.7</td>
<td>25.5</td>
<td>30.3</td>
<td>32.2</td>
<td>26.8</td>
<td>16.7</td>
</tr>
<tr>
<td>Unknown</td>
<td>6.1</td>
<td>8.2</td>
<td>0.0</td>
<td>5.1</td>
<td>4.9</td>
<td>12.5</td>
</tr>
<tr>
<td><strong>Prior offence(s)</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Violent</td>
<td>64.9</td>
<td>67.3</td>
<td>57.6</td>
<td>62.7</td>
<td>70.7</td>
<td>54.2</td>
</tr>
<tr>
<td>Serious violent</td>
<td>16.0</td>
<td>17.3</td>
<td>12.1</td>
<td>16.9</td>
<td>12.2</td>
<td>16.7</td>
</tr>
<tr>
<td>Unknown</td>
<td>8.4</td>
<td>11.2</td>
<td>0.0</td>
<td>6.8</td>
<td>9.8</td>
<td>12.5</td>
</tr>
</tbody>
</table>

*Classified according to Clauses 1 and 2, Schedule 1, Sentencing Act 1991 (Vic).*
### Table 13

*Prior Offending and Court Order Characteristics as a Percentage of the Treatment Completer Sample, Grouped By Program Intensity*

<table>
<thead>
<tr>
<th>Variable</th>
<th>All Treatment completers (n = 131)</th>
<th>MIVIP Treatment completers (n = 98)</th>
<th>HIVIP Treatment completers (n = 33)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>n</td>
<td>M</td>
<td>SD</td>
</tr>
<tr>
<td>Number of prior offences</td>
<td>120</td>
<td>2.7</td>
<td>1.5</td>
</tr>
<tr>
<td>Number of prior prison sentences</td>
<td>111</td>
<td>4.3</td>
<td>4.0</td>
</tr>
<tr>
<td>Number of prior community orders</td>
<td>98</td>
<td>1.8</td>
<td>2.7</td>
</tr>
<tr>
<td>Number of prior breaches</td>
<td>101</td>
<td>2.0</td>
<td>2.3</td>
</tr>
</tbody>
</table>

*Note.* Demographic information was missing for several cases; the sample size for each characteristic is provided in brackets.
Table I4

*Prior Offending and Court Order Characteristics as a Percentage of the Treatment Completer Sample, Grouped By Cluster Membership*

<table>
<thead>
<tr>
<th>Variable</th>
<th>Cluster 1 Regulated (n = 59)</th>
<th>Cluster 2 Overregulated (n = 41)</th>
<th>Cluster 3 Unregulated (n = 24)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td><em>n</em></td>
<td><em>M</em></td>
<td><em>SD</em></td>
</tr>
<tr>
<td>Number of prior offences</td>
<td>55</td>
<td>2.8</td>
<td>1.3</td>
</tr>
<tr>
<td>Number of prior prison sentences</td>
<td>53</td>
<td>4.9</td>
<td>4.6</td>
</tr>
<tr>
<td>Number of prior community orders</td>
<td>48</td>
<td>2.3</td>
<td>3.4</td>
</tr>
<tr>
<td>Number of prior breaches</td>
<td>45</td>
<td>2.5</td>
<td>2.8</td>
</tr>
</tbody>
</table>

*Note.* Demographic information was missing for several cases; the sample size for each characteristic is provided in brackets.
Table 15

*Most Serious Index and Prior Offences (Categorised Using the NOI and ANZSOC Classification Systems) as a Percentage of the Treatment Completer Sample, Grouped By Program Intensity*

<table>
<thead>
<tr>
<th>Division</th>
<th>All Treatment completers</th>
<th>MIVIP Treatment completers</th>
<th>HIVIP Treatment completers</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>(n = 131)</td>
<td>(n = 98)</td>
<td>(n = 33)</td>
</tr>
<tr>
<td></td>
<td>Index</td>
<td>Prior</td>
<td>Index</td>
</tr>
<tr>
<td>01 Homicide and related offences</td>
<td>11.5</td>
<td>9.2</td>
<td>10.2</td>
</tr>
<tr>
<td>02 Acts intended to cause injury</td>
<td>26.0</td>
<td>37.4</td>
<td>25.5</td>
</tr>
<tr>
<td>03 Sexual assault and related offences</td>
<td>0.0</td>
<td>0.8</td>
<td>0.0</td>
</tr>
<tr>
<td>04 Dangerous or negligent acts endangering persons</td>
<td>12.2</td>
<td>2.3</td>
<td>12.2</td>
</tr>
<tr>
<td>05 Abduction, harassment and other offences against the person</td>
<td>1.5</td>
<td>1.5</td>
<td>1.0</td>
</tr>
<tr>
<td>06 Robbery, extortion and related offences</td>
<td>25.2</td>
<td>16.8</td>
<td>24.5</td>
</tr>
<tr>
<td>07 Unlawful entry with intent/burglary, break and enter</td>
<td>13.0</td>
<td>12.2</td>
<td>13.3</td>
</tr>
<tr>
<td>08 Theft and related offences</td>
<td>1.5</td>
<td>3.1</td>
<td>1.0</td>
</tr>
<tr>
<td>09 Fraud, deception and related offences</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
</tr>
<tr>
<td>10 Illicit drug offences</td>
<td>0.8</td>
<td>1.5</td>
<td>1.0</td>
</tr>
<tr>
<td>11 Prohibited and regulated weapons and explosives offences</td>
<td>0.8</td>
<td>0.0</td>
<td>1.0</td>
</tr>
<tr>
<td>Division</td>
<td>All Treatment completers (n = 131)</td>
<td>MIVIP Treatment completers (n = 98)</td>
<td>HIVIP Treatment completers (n = 33)</td>
</tr>
<tr>
<td>-------------------------------------------------------------------------</td>
<td>-------------------------------------</td>
<td>-------------------------------------</td>
<td>-------------------------------------</td>
</tr>
<tr>
<td></td>
<td>Index</td>
<td>Prior</td>
<td>Index</td>
</tr>
<tr>
<td>12 Property damage and environmental pollution</td>
<td>0.8</td>
<td>0.0</td>
<td>1.0</td>
</tr>
<tr>
<td>13 Public order offences</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
</tr>
<tr>
<td>14 Traffic and vehicle regulatory offences</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
</tr>
<tr>
<td>15 Offences against government procedures, government security and government operations</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
</tr>
<tr>
<td>16 Miscellaneous offences</td>
<td>0.0</td>
<td>0.8</td>
<td>0.0</td>
</tr>
<tr>
<td>No offences</td>
<td>0.0</td>
<td>6.1</td>
<td>0.0</td>
</tr>
<tr>
<td>Unknown</td>
<td>6.9</td>
<td>8.4</td>
<td>9.2</td>
</tr>
<tr>
<td>Total&lt;sup&gt;a&lt;/sup&gt;</td>
<td>100.2&lt;sup&gt;a&lt;/sup&gt;</td>
<td>100.1&lt;sup&gt;a&lt;/sup&gt;</td>
<td>99.9&lt;sup&gt;a&lt;/sup&gt;</td>
</tr>
</tbody>
</table>

<sup>a</sup>Totals do not add to 100% due to rounding.
Table I6

Most Serious Index and Prior Offence (Categorised Using the NOI and ANZSOC Classification Systems) of Participants Who Completed a Violence Intervention Program, Grouped By Cluster Membership

<table>
<thead>
<tr>
<th>Division</th>
<th>Cluster 1 Regulated ($n = 59$)</th>
<th>Cluster 2 Overregulated ($n = 41$)</th>
<th>Cluster 3 Unregulated ($n = 24$)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Index</td>
<td>Prior</td>
<td>Index</td>
</tr>
<tr>
<td>01 Homicide and related offences</td>
<td>15.3</td>
<td>6.8</td>
<td>9.8</td>
</tr>
<tr>
<td>02 Acts intended to cause injury</td>
<td>30.5</td>
<td>37.3</td>
<td>24.4</td>
</tr>
<tr>
<td>03 Sexual assault and related offences</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
</tr>
<tr>
<td>04 Dangerous or negligent acts endangering persons</td>
<td>6.8</td>
<td>1.7</td>
<td>19.5</td>
</tr>
<tr>
<td>05 Abduction, harassment and other offences against the person</td>
<td>1.7</td>
<td>1.7</td>
<td>2.4</td>
</tr>
<tr>
<td>06 Robbery, extortion and related offences</td>
<td>22.0</td>
<td>18.6</td>
<td>26.8</td>
</tr>
<tr>
<td>07 Unlawful entry with intent/burglary, break and enter</td>
<td>11.9</td>
<td>15.3</td>
<td>12.2</td>
</tr>
<tr>
<td>08 Theft and related offences</td>
<td>3.4</td>
<td>5.1</td>
<td>0.0</td>
</tr>
<tr>
<td>09 Fraud, deception and related offences</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
</tr>
<tr>
<td>10 Illicit drug offences</td>
<td>0.0</td>
<td>1.7</td>
<td>0.0</td>
</tr>
<tr>
<td>11 Prohibited and regulated weapons and explosives offences</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
</tr>
<tr>
<td>Division</td>
<td>Cluster 1</td>
<td>Cluster 2</td>
<td>Cluster 3</td>
</tr>
<tr>
<td>----------</td>
<td>-----------</td>
<td>-----------</td>
<td>-----------</td>
</tr>
<tr>
<td></td>
<td>Regulated</td>
<td>Overregulated</td>
<td>Unregulated</td>
</tr>
<tr>
<td></td>
<td>((n = 59))</td>
<td>((n = 41))</td>
<td>((n = 24))</td>
</tr>
<tr>
<td></td>
<td>Index</td>
<td>Prior</td>
<td>Index</td>
</tr>
<tr>
<td>12 Property damage and environmental pollution</td>
<td>1.7</td>
<td>0.0</td>
<td>0.0</td>
</tr>
<tr>
<td>13 Public order offences</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
</tr>
<tr>
<td>14 Traffic and vehicle regulatory offences</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
</tr>
<tr>
<td>15 Offences against government procedures, government security and government operations</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
</tr>
<tr>
<td>16 Miscellaneous offences</td>
<td>0.0</td>
<td>1.7</td>
<td>0.0</td>
</tr>
<tr>
<td>No offences</td>
<td>N/A</td>
<td>3.4</td>
<td>N/A</td>
</tr>
<tr>
<td>Unknown</td>
<td>6.8</td>
<td>6.8</td>
<td>4.9</td>
</tr>
<tr>
<td>Total</td>
<td>100.1&lt;sup&gt;a&lt;/sup&gt;</td>
<td>100.1&lt;sup&gt;a&lt;/sup&gt;</td>
<td>100.0</td>
</tr>
</tbody>
</table>

<sup>a</sup>Total does not add to 100% due to rounding.