

PSYCHOPATHIC TRAITS AND EVERYDAY SOCIAL BEHAVIOUR

A thesis submitted for the degree of Doctor of Philosophy

by

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I, Karishma Vyas, confirm that the work presented in this thesis is my own. Where information has been derived from other sources, I confirm that this has been indicated in the thesis.

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Abstract

Psychopathy is a disorder characterised by emotional dysfunction, difficulties in interpersonal relationships, and antisocial behaviour (e.g. Hare, 1993; Blair, Mitchell & Blair, 2005). People with psychopathy are thought to be callous and selfish, but they may also be charming and likeable. They are therefore considered to be adept at manipulating and deceiving others, with significant negative consequences for them. This thesis aimed to examine how psychopathic personality traits translate into specific aspects of everyday social behaviour. Thus, a range of experimental, scenario-based tasks was developed in order to compare prosocial responding and moral judgment in people high and low in psychopathic traits. These tasks were designed to manipulate contextual factors, such as the costs of behaving prosocially, or the extent to which people deserved a particular outcome. With respect to prosocial behaviour, the findings revealed that the high psychopathic trait participants behaved less prosocially than the low trait participants when they stood to gain or lose. The experimental manipulations in these studies were found to elicit patterns of behaviour in both trait groups that were similar in direction, but not necessarily in magnitude. For instance, the high trait groups demonstrated some sensitivity to others' distress, but at a lower threshold to the low trait group. With respect to moral judgment, the high and low trait groups were found to make comparable choices in moral reasoning, such as making more utilitarian decisions in moral dilemmas involving physical harm than in those involving social harm. Despite these selective group differences, the high trait participants were consistently less emotional than the low trait participants in the experiments involving moral judgment, as well as in those involving prosocial behaviour. The findings of the experimental studies were considered in the context of the prominent cognitive and emotional models of psychopathy. One theoretical framework that was particularly pertinent in relation to the current findings draws a distinction between cognitive and emotional aspects of empathy, and posits that psychopathy is characterised by intact cognitive empathy and impaired emotional empathy. The clinical implications and possible contributions of these findings to psychopathy remediation were considered.

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Part 1: Literature Review

Introduction to literature review

Psychopathy is a disorder characterised by emotional dysfunction, difficulties in interpersonal relationships, and antisocial behaviour (e.g. Hare, 1993; Blair, Mitchell & Blair, 2005). In order to provide a thorough overview of the construct of psychopathy, the literature review will firstly describe the associated clinical features, developmental trajectory, and issues surrounding assessment and diagnosis (Chapter 1). It will then introduce aetiological models of psychopathy and briefly discuss remediation (Chapter 2).

As discussed below, empirical work has typically involved the use of abstract experimental tasks, such as lexical decision-making tasks and neuroeconomic games. This has led to significant contributions towards understanding the concept of psychopathy and the range of associated deficits. However, there is a paucity of work examining the implications for everyday types of social interactions. A valuable direction of research may thus be to focus on the types of commonplace situations and contexts in which psychopathic traits are most likely to manifest. This is particularly important since psychopathy has significant negative consequences, both for directly affected individuals and for society as a whole (Kiehl & Hoffman 2011). Thus, the main focus of the present thesis is the ways in which psychopathic traits translate into subtle aspects of everyday social performance. In order to examine the ways in which this has previously been investigated, Chapter 3 will review the literature pertaining to prosocial behaviour and Chapter 4 will review the literature pertaining to moral reasoning.

In view of the limited work investigating psychopathy and everyday social behaviour, the present thesis involved the development of a range of novel experimental tasks. Following the literature review, a series of experimental studies comparing groups high and low in psychopathic traits using these tasks will be presented.

Chapter 1: Conceptualising psychopathy

1.1 INTRODUCTION

The concept of psychopathy is pervasive in society. Informally, people may use the term ‘psychopath’ to describe people who have had a notably negative influence on the lives of others. These may include notorious fictitious characters such as Hannibal Lecter from ‘The Silence of The Lambs’, serial killers such as Ted Bundy, political figures such as Adolf Hitler, and more commonplace individuals such as ex-partners and employers (Blair, Mitchell & Blair, 2005). Within the research literature, psychopathy is described as a condition characterised by a “distinctive cluster of behaviours and inferred personality traits, most of which society views as pejorative” (Hare, 1993). Psychopathic behaviours include violence and other antisocial acts such as stealing, lying or cheating. Psychopathic personality traits include egocentricity and a lack of empathy, guilt, or remorse. Psychopathy is associated with significant costs, both for those with whom they directly interact and for society (Kiehl & Hoffmann, 2011).

In spite of the costs to society and the deleterious characteristics associated with psychopathy, people with psychopathy have often been conceptualised as likeable, funny and charming company (Cleckley, 1941). This paradoxical presentation indicates that those with psychopathy may take advantage of others and cause catastrophic damage in the name of self-interest, whilst often going undetected and appearing to be fully functional. This paradox led to the coining of the phrase “the mask of sanity” (Cleckley, 1941).

The present chapter will introduce the clinical features of psychopathy and review the issues surrounding assessment and diagnosis. The merits of examining psychopathy in the general population will be discussed, and a continuum approach to conceptualising psychopathy will be presented.

1.2 CLINICAL FEATURES OF PSYCHOPATHY

One of the earliest accounts of psychopathy was written by Harvey Cleckley in the seminal work “The Mask of Sanity” (Cleckley, 1941). He developed a psychopathic profile on the basis of a series of clinical interviews. This profile consisted of 16 core psychopathic characteristics: (1) superficial charm and good intelligence; (2) an absence of delusions and

other signs of irrational thinking; (3) an absence of nervousness or psychoneurotic manifestations; (4) unreliability; (5) untruthfulness and insincerity; (6) a lack of remorse and shame; (7) inadequately motivated antisocial behaviour; (8) poor judgment and a failure to learn by experience; (9) pathological egocentricity and incapacity for love; (10) general poverty in major affective reactions; (11) specific loss of insight; (12) unresponsiveness in general interpersonal relations; (13) fantastic and uninviting behaviour with drink and sometimes without; (14) suicide threats rarely carried out (15) impersonal, trivial and poorly integrated sex life, and (16) failure to follow any life plan.

In view of this broad range of traits and behaviours, psychopathy has been conceptualised as a multifaceted disorder rather than a unitary construct (e.g. Patrick, 2006). Research has been conducted in order to elucidate the core components of psychopathy that encapsulate all of these traits and behaviours. Thus, Cleckley's 16 traits were subsequently classified into three distinct categories (Cleckley 1976). The first category pertains to positive psychological adjustment. This brings together psychopathic characteristics such as the absence of delusions, nervousness or suicidality and the capacity for charm and intelligence. The second category pertains to chronic behavioural deviance. This brings together psychopathic characteristics such as antisocial and uninviting behaviour, unreliability, sexual promiscuity and a failure to plan for the future. The final category pertains to emotional and interpersonal deficits. This brings together psychopathic characteristics such as insincerity, a lack of remorse and shame, limited emotional responsivity, egocentricity, and deficits in interpersonal relationships.

The most prominent contemporary account of psychopathy was developed by Robert Hare (1980). On the basis of Cleckley's work (1976) and his own clinical impressions, Hare devised a checklist of 20 psychopathic characteristics. Subsequent factor analysis of these 20 characteristics revealed two distinct factors, interpersonal/affective and impulsive/antisocial (Harpur, Hare & Hakstian, 1989). The items of the checklist pertaining to the interpersonal/affective factor are: (1) superficial charm; (2) a grandiose sense of self-worth; (3) a propensity for pathological lying; (4) a propensity for manipulation; (5) a lack of remorse or guilt; (6) shallow affect; (7) callousness/lack of empathy, and (8) a failure to accept responsibility for one's own actions. The items of the checklist pertaining to the impulsive/antisocial factor are: (9) a need for stimulation/a proneness to boredom; (10) parasitic lifestyle; (11) poor behavioural control; (12) early behavioural problems; (13) lack of realistic, long-term goals; (14) impulsivity; (15) irresponsibility; (16) juvenile delinquency,

and (17) revocation of conditional release. The final three further items failed to load on either factor: (18) promiscuous sexual behaviour; (19) numerous short-term marital affairs, and (20) criminal versatility.

Although the two factors on the psychopathy checklist are thought to be highly correlated, it has been argued that they measure separable components of psychopathy (Harpur et al., 1989; Blair et al., 2005). A revised version of the original checklist was developed in order to account for both factors. This revised version of the psychopathy checklist (PCL-R; Hare, 1991) is the most widely used tool for clinical assessment and empirical research.

Subsequent research suggested that psychopathy may not have been adequately represented by Hare's two factors. Instead, Cooke and Michie (2001) proposed a three-factor conceptualisation of psychopathy, further subdividing the interpersonal/affective factor in order to account for an 'arrogant and deceitful interpersonal' factor and a 'deficient affective experience' factor. However, this three-factor conceptualisation of psychopathy has been criticised on both statistical and conceptual grounds, and neither the two-factor nor the three-factor approach accounts for all the characteristics associated with psychopathy (Hare & Neumann, 2008). Thus, the most recent conceptualisation of psychopathy posits that the range of characteristics fall within four separable factors (Hare & Neumann, 2008). These four factors represent a subdivision of the interpersonal/affective factor as well as a subdivision of the antisocial/impulsive factor. This latter subdivision describes both antisocial behaviours such as delinquency or criminality, in addition to characteristics relating to lifestyle choices, such as impulsivity, failure to plan ahead, sensation-seeking behaviour and sexual promiscuity. Taken together, although there is some disagreement about the precise number of components and corresponding characteristics in psychopathy, there is broadly a consensus that psychopathy is chiefly typified by emotional, interpersonal and behavioural deficits.

The core components of psychopathy reviewed above were identified on the basis of clinical interview (Cleckley, 1941; Hare, 1980). There is a substantial body of empirical evidence supporting an association between psychopathy and each of these core components. With respect to emotional deficits, a range of studies has found that people with psychopathy have reduced physiological responsivity to aversive or emotionally salient stimuli (e.g. Lykken, 1957; Blair, Jones, Clark & Smith, 1997; Vaidyanathan, Hall, Patrick & Bernat, 2011; Anderson, Stanford, Wan & Young, 2011). With respect to deficits in interpersonal

relationships, a range of studies has linked psychopathy with a propensity for reduced cooperation (Johnson, Hawes & Straiton, 2014; Rilling, Glenn, Jairam et al, 2007; Mokros, Menner, Eisenbarth et al, 2008) and for increased manipulation and deception (e.g. Babiak & Hare, 2006; Seto, Khattar, Lalumiere & Quinsey, 1997; Nathanson, Paulhus & Williams, 2006; Rogers & Cruise, 2014). Finally, with respect to behavioural difficulties, psychopathy has been extensively linked with violence (e.g. Hare, 1999; Raine & Sanmartin, 2001), sexual promiscuity (e.g. Ali & Chamorro-Premuzic, 2010; Knight & Guay, 2006), and substance abuse (Smith & Newman, 1990).

1.3 DEVELOPMENTAL TRAJECTORY

To what extent does psychopathy emerge in childhood? The development of research tools such as a ‘youth version’ of the psychopathy checklist (Forth, Kosson & Hare, 2003) and self-report measures of psychopathic traits in childhood (e.g. Anderson, Hodgins & Tengstrom, 2007) facilitated the examination of psychopathy in children. These tools have been found to tap into the factors identified as core components of psychopathy (Neumann, Kosson, Forth & Hare, 2006). Studies using these measures revealed that high-scoring children demonstrated a greater propensity for violence, had an earlier onset of antisocial behaviour, and had more significant issues with alcohol and substance abuse than low-scoring children (e.g. Kosson, Cyterski, Steuerwald, Neumann & Walker-Matthews, 2001). However, these tools are only appropriate for children aged 12-18, and are most typically used to investigate psychopathy in adolescents who have already been institutionalised for juvenile delinquency. This offers a very limited insight into the emergence of psychopathic traits in childhood.

Psychopathy in children has been more thoroughly investigated by examining the potential relationship between psychopathy and conduct disorder. According to the fifth edition of the Diagnostic and Statistical Manual of Mental Disorders (DSM-V; American Psychiatric Association, 2013), conduct disorder is “a repetitive and persistent pattern of behaviour in which the basic rights of others or major age-appropriate societal norms or rules are violated”. Conduct disorder is typically characterised by aggression towards people and animals, destruction of property, theft, deceitfulness and/or serious violations of rules. Onset may take place in either childhood or adolescence. The distinction between child and adolescent-onset conduct disorder is thought to be particularly significant, since the two types are associated with very different trajectories of antisocial behaviour (Frick & Viding, 2009). For instance, a number of studies have found that conduct problems that begin in

childhood are more likely to persist into adulthood and to increase in severity than those that begin in adolescence (Frick & Loney, 1999; Moffitt, Caspi, Harrington & Milne, 2002). Studies have also found childhood versus adolescence-onset conduct disorder to be associated with impulsivity (McCabe, Hough, Wood & Yeh, 2001; Silverthorn, Frick & Reynolds, 2001) and difficulties with emotional regulation (Moffitt, Caspi, Dickson, Silva & Stanton, 1996), both of which are characteristic of adult psychopathy. Most importantly, early-onset conduct disorder is associated with a callous and unemotional interpersonal style characterised by a lack of guilt and empathy and a proclivity for taking advantage of others (Frick & Viding, 2009). It has thus been proposed that children with conduct disorder should be grouped on the basis of the presence or absence of callous-unemotional traits. The subgroup of children who are classified as conduct disordered with callous-unemotional traits show substantial overlap with psychopathy, since they demonstrate the characteristic emotional impairments and interpersonal difficulties associated with psychopathy in addition to violent and antisocial behaviour (Christian, Frick, Hill, Tyler & Frazer, 1997; Frick, 1998; Frick & White, 2008; Frick & Viding, 2009). Taken together, the evidence suggests that psychopathy may manifest in childhood and persist into adulthood.

1.4 PSYCHOPATHY AND GENDER

A range of studies has found psychopathy to be more prevalent in men than in women (e.g. Verona & Vitale, 2006). For instance, men to meet more of Hare's psychopathy checklist criteria than do women (Warren, Burnette, South et al., 2003; Weiler & Widom, 1996; Forth, Brown Hart & Hare, 1996). They also score higher on self-report measures of psychopathy have (e.g. Cale & Lilienfeld, 2002; Hamburger, Lilienfeld & Hogben, 1996). Thus, psychopathy has been found to manifest more commonly in men than in women, both in incarcerated and non-incarcerated populations (Verona & Vitale, 2006).

In spite of a higher prevalence of psychopathy in men, psychopathy is thought to predict similar patterns of antisocial behaviour in males and female prisoners. For instance, in one study, women with high PCL-R scores were more likely to reoffend and to commit institutionalised infractions than those with low scores (Hare, Clark, Grann & Thornton, 2000). It has thus been considered important to examine psychopathy across both genders. However, there may be some differences in how psychopathy manifests in men versus women. For instance, when striving to achieve a particular goal, men with psychopathy tend to con people and to be physically violent, whereas women with psychopathy are reported

to be flirtatious and manipulative (Nicholls & Petrila, 2005; Forouzan & Cooke, 2005; Strand & Belfrage, 2005). With respect to the propensity for antisocial or criminal behaviour associated with psychopathy, men tend to be imprisoned for assault, murder or sexual violence, whereas women tend to be imprisoned for fraud, theft or arson (Lanctot & Leblanc, 2002; Forouzan & Cooke, 2005). Taken together, both men and women may present with psychopathy, but the prevalence is higher for men and gender may influence the ways in which psychopathic characteristics manifest.

1.5 ASSESSMENT & DIAGNOSIS

1.5.1 Relationship between Psychopathy and Antisocial Personality Disorder

How is psychopathy diagnosed? Disorders are typically diagnosed using a formal classification system such as the Diagnostic and Statistical Manual of Mental Disorders (DSM-V) or the International Classification of Diseases and Related Health Problems (ICD-10). There are currently no diagnostic criteria for psychopathy, although DSM-V does contain diagnostic criteria for antisocial personality disorder, which has some overlap with psychopathy. For instance, antisocial personality disorder is characterised by a propensity for criminal activity, deception, impulsivity, and a tendency to disregard the safety of themselves and others. However, it is thought that only a subset of those diagnosed with antisocial personality disorder would meet the criteria for psychopathy.

Although both syndromes are characterised by aggressive behaviour, an important distinction is made between the aggression displayed by people with antisocial personality disorder without psychopathy, and those with antisocial personality disorder and psychopathy. Aggression is considered to consist of two main subtypes, reactive and instrumental (e.g. Dodge & Coie, 1987). Reactive aggression refers to impulsive, hostile reactions to perceived threats, dangerous situations or provocations (Glenn & Raine, 2007). These are emotional reactions, initiated without consideration for any potential goal or purpose (Blair et al., 2005). By contrast, instrumental aggression refers to non-provoked aversive actions intended to gain resources or intimidate or dominate others (Patrick, 2004; Poulin & Boivin, 2000). Instrumental aggression is considered to be controlled, purposeful, premeditated and goal-oriented (Glenn & Raine, 2009). A substantial body of evidence has linked psychopathy with instrumental rather than reactive aggression (Glenn & Raine, 2009; Cornell, Warren, Hawk, Stafford, Oram et al., 1996; Blair, 2001; Walsh, Swogger & Kosson, 2009). Thus, the non-psychopathic subset of those with antisocial personality disorder are

more likely to display reactive aggression, whereas the psychopathic subset of those with antisocial personality disorder are more likely to display instrumental aggression (Blair et al., 2005). Crucially, only this instrumentally aggressive subset is thought to demonstrate the characteristic emotional impairment associated with psychopathy (Blair et al., 2005). This is supported by evidence suggesting that those with psychopathic antisocial personality disorder have a higher distress tolerance than control participants, whereas those with non-psychopathic antisocial personality disorder have a lower distress tolerance than control participants (Sargeant, Daughters, Curtin, Schuster & Lujuez, 2011).

The literature pertaining to conduct disorder provides further evidence that people with people with psychopathy represent a subset of those with antisocial personality disorder. When the diagnostic criteria for antisocial personality disorder present prior to the age of 18, a diagnosis of conduct disorder is given. The evidence reviewed above suggests that two sub-groups of conduct disorder exist, one with callous-emotional traits, and one without. Thus, the subset of conduct disordered children presenting with callous-unemotional traits is thought to correspond with the subset of antisocial personality disorder adults presenting with psychopathy (Frick & Viding, 2009).

1.5.2 The use of the Psychopathy Checklist in diagnosis of psychopathy

In view of the absence of clinical criteria, a diagnosis of psychopathy is typically made using of the PCL-R (Hare, 1991). For an individual to receive a psychopathy diagnosis, an extensive review of their records and a semi-structured interview is carried out. This determines the extent to which they meet each of the checklist's criteria. They are awarded a score of 0, 1 or 2 per checklist item, with higher scores denoting more severe psychopathy (Hare, 1991). The PCL-R has been extensively validated in a number of cross-cultural samples, and demonstrates strong inter-rater reliability and internal consistency, and strong concurrent, construct and discriminant validity (Hart & Hare, 1989; Harpur et al., 1989; Hare, Harpur, Hakstian, Forth & Hart, 1990). This has led to it being referred to as the 'gold standard' in psychopathy research (Vitacco, Neumann & Jackson., 2005).

However, the PCL-R is not without limitations. One key limitation is that it was designed to assess psychopathy within criminal or forensic psychiatric settings, rather than in community settings. This is problematic for a number of reasons. Firstly, an individual can only score above threshold on the PCL-R and receive a diagnosis of psychopathy if they have engaged in criminal activity. However, it has been argued that criminal or antisocial behaviour is a

symptom, or “downstream correlate” of psychopathy, rather than a diagnostic criterion (Skeem & Cooke, 2010). Thus, these behaviours may represent an aspect of the psychopathic profile, but they are not specific to psychopathy (Cooke & Michie, 2001; Cooke, Michie, Hart & Clark, 2004).

Secondly, the emphasis that the PCL-R places upon behavioural aspects of psychopathy is thought to underplay the emotional and interpersonal contributions (Blackburn, 2007). As a result, people with profound emotional and interpersonal difficulties, who do not have a history of antisocial behaviour, are unlikely to meet the PCL-R threshold for psychopathy. This is particularly problematic since the emotional and interpersonal components of psychopathy are thought to be more diagnostically useful and more specific to the construct of psychopathy (Skeem & Cooke, 2010).

Thirdly, the PCL-R fails to account for the vast proportion of people with psychopathy who are not institutionalised, and who are likely to function successfully outside of prison (Levenson, Kiehl & Fitzpatrick, 1995; Lilienfeld & Andrews, 1996). Research in relation to the ‘successful psychopath’ is increasingly recognised as an important line of inquiry (e.g. Mullins-Sweatt, Glover, Derefinko, Miller & Widiger, 2010; Gao & Raine, 2010; Hall & Benning, 2006). Successful psychopaths may engage in behaviours that are not formally illegal, but that nonetheless breach social norms and violate the rights of others. They may achieve personal or professional successes by using covert and nonviolent means (Gao & Raine, 2010), but typically at the expense of friends, family and colleagues (Hall & Benning, 2006). Thus, the manifestation of psychopathic traits may be either adaptive (successful psychopaths) or maladaptive (incarcerated, unsuccessful psychopaths). This is consistent with the evidence to suggest that psychopathic traits may be advantageous in certain professions. For instance, people with psychopathy have been considered to be shrewd businessmen and women (Babiak & Hare, 2006), and research has shown that psychopathy is more prevalent in corporate samples than in community samples (Babiak, Neumann & Hare, 2010). People with psychopathy also tend to excel in fields such as surgery and law (Dutton, 2012), which is thought to be linked to the capacity to remain calm, unemotional and detached.

Taken together, although the PCL-R has had a significant impact on psychopathy research, the findings may have limited scope for translating into the general population (Hall & Benning, 2006). Conducting research within the general population represents an

important opportunity to broaden the current conceptualisation of psychopathy without the potentially confounding influence of criminality (Kirkman, 2002).

1.5.3 Continuum Approach

Another key limitation of the PCL-R is that the diagnosis of psychopathy is binary; individuals are judged to be either psychopathic or non-psychopathic on the basis of whether or not their scores reach a particular cut-off point. However, there is increasing evidence to suggest that psychopathy is better conceptualised as the extreme end of range of personality traits lying on a continuum (e.g. Hare & Neumann, 2008; Marcus, John & Edens, 2004). Thus, a substantial body of recent research has investigated psychopathy by comparing groups high and low in psychopathic traits (e.g. Long & Titone, 2007; Salnaitis, Baker, Holland & Welsh, 2011; Anderson, Stanford, Wan & Young, 2011; Gordon, Baird & End, 2013).

A number of self-report measures have been developed in order to measure psychopathic personality traits. Two commonly used questionnaires are the Levenson Primary and Secondary Psychopathy Scale (LPSP; Levenson, Kiehl & Fitzpatrick, 1995) and the Self-Report Psychopathy Scale (SRP; Hare, 1985). These tools were designed to reflect the two-factor structure PCL-R. They thus contain questions pertaining firstly to emotional/interpersonal characteristics such as low empathy and narcissism, and secondly to behavioural characteristics relating to violence and lifestyle choices. Whilst the LPSP and SRP do adopt a continuum approach and examine psychopathy in the general population, research as suggested that these measures do not adequately tap into the core emotional and interpersonal components of psychopathy (e.g. Lilienfeld & Fowler, 2006; Williams & Paulhus, 2003; Benning, Patrick, Salekin & Leistico, 2005).

One tool that is thought to address this limitation is the Psychopathic Personality Inventory (PPI; Lilienfeld & Andrews, 1996). This is a self-report questionnaire containing 187 statements on a 4-point, Likert-type scale ranging from 'false' to 'true'. Higher PPI scores indicate a greater level of psychopathy, and the total score is a measure of global psychopathy. This total score may be broken down into 8 subscales, each of which pertains to a different component of psychopathy: (1) Machiavellian egocentricity; (2) social potency; (3) coldheartedness; (4) carefree nonplanfulness; (5) fearlessness; (6) blame externalisation; (7) impulsive nonconformity, and (8) stress immunity.

These subscales broadly cohere with the characteristics that were considered to be important to the construct of psychopathy by Cleckley (1976) and Hare (1991). Factor analysis has revealed that these subscales can be classified into two factors (PPI-1 and PPI-2; Benning, Patrick, Hicks, Blonigen & Krueger, 2003). In contrast with the measures described above, these factors are thought to adequately map onto the emotional/interpersonal and the behavioural components of psychopathy. Some concerns have been raised about the reliability and validity of PPI-2 (Miller & Lynam, 2012). Nonetheless, PPI-1 and the total score have been found to have strong internal consistency, test-retest reliability (Lilienfeld & Andrews, 1996), convergent validity and criterion validity (Miller & Lynam, 2012). The PPI is also significantly correlated with the PCL-R (Poythress, Edens & Lilienfeld, 1998).

One important strength of this measure is that it was validated in a non-institutionalised sample and is considered to be an appropriate measure of psychopathic traits in the general population. Thus, as a tool that measures psychopathic traits along a continuum within the general population, the PPI addresses both of the PCL-R's limitations reviewed above. All studies in the present thesis screened participants for psychopathic traits with a short form of the PPI (PPI-SF; Lilienfeld & Hess, 2001). This 56-item subset of the PPI has been found to have good internal consistency (Cronbach's alpha .85) and correlates well with the full version of the PPI ($r=.90$; Lilienfeld & Hess, 2001).

1.6 SUMMARY

In summary, psychopathy is a multifaceted disorder characterised by deficits in emotional processing, difficulties with interpersonal relationships and a propensity for antisocial behaviour. It is associated with substantial costs, both for individuals and for society. Diagnosis presents significant challenges; whilst people with psychopathy are thought to represent a subset of those diagnosed with antisocial personality disorder, there are no clinical diagnostic criteria specific to the construct of psychopathy. As a result, clinical settings and research studies typically use Hare's Psychopathy Checklist as a diagnostic tool. However, this tool is thought to overemphasise the contribution of antisocial behaviour, and to underplay the emotional and interpersonal aspects of psychopathy. It may not be appropriate for non-institutionalised populations, and may provide limited insights into successful, adaptive manifestations of psychopathy. Thus, alternative measures such as the Psychopathic Personality Inventory have been developed in order to measure psychopathic traits in the general population. This measure is also in keeping with the increasingly

dominant conceptualisation of psychopathy as a collection of normally distributed personality traits lying on a continuum. In view of this conceptualisation, the studies in the present thesis adopted a continuum approach in order to compare groups high and low in psychopathic personality traits in the general population.

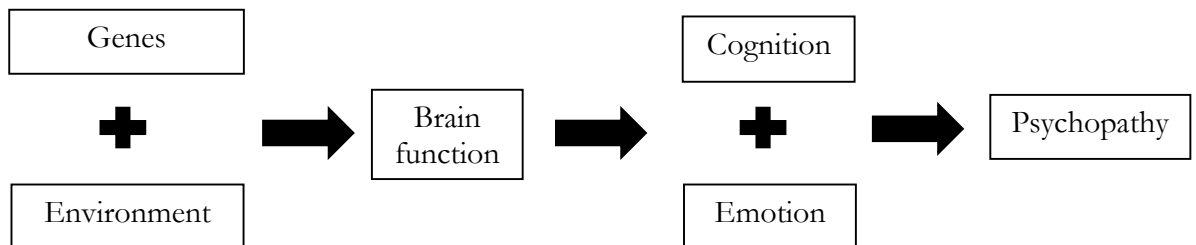
Chapter 2: Aetiological models

2.1 INTRODUCTION

What causes psychopathy? And what are the mechanisms that give rise to the characteristic emotional, interpersonal and behavioural deficits? When considering causation, the contributions of genes and environment, or nature versus nurture, should be taken into account. These causal factors can in turn lead to changes in the structure and function of the brain. These brain changes may result in differences in broad faculties such as cognition and emotion which are thought to underpin psychopathic traits. Thus, there may be a complex pathway from causal factors to psychopathy (see Figure 2.1).

The present chapter will focus on psychopathic aetiology, considering each aspect of this pathway. The postulated genetic and environmental causes will be reviewed. Since psychopathy has been linked to changes in brain function, cognition and emotion, these three aspects will be reviewed in turn. Finally, the evidence in relation to remediation will be briefly discussed.

Figure 2.1: Pathway from causal factors to psychopathy



2.2 GENETIC BASIS OF PSYCHOPATHY

Increasingly, research has been conducted in order to investigate the potential genetic contributions to psychopathy. However, this presents a significant challenge, since the disorder is characterised by a complex range of traits and is unlikely to be entirely underpinned by one gene, or even by a small number of genes (Blair, Mitchell & Blair, 2005). Instead there may be genes associated with specific traits that increase the risk of developing psychopathy; this genetic predisposition may be in turn mediated by environmental factors (Plomin, DeFries McClearn & McGuffin, 2008). Two methods are commonly used in

behavioural genetics in order to disentangle genetic and environmental contributions to complex disorders such as psychopathy: molecular approaches and twin studies.

Molecular approaches involve techniques such as linkage analysis and allelic association (Plomin et al., 2008). These methods are used to screen the human genome and identify candidate genes, variants of which result in diverging patterns of behaviour. A number of fMRI studies have linked genes involved in serotonin transportation with amygdala activity in response to threat-related stimuli such as fearful and angry faces (Hariri, Mattay, Tessitore et al., 2002; Hariri, Drabant, Munoz et al., 2005; Hariri & Holmes, 2006, Brown & Hariri, 2006; Finger, Marsh, Buzas et al., 2006). Other studies have posited that the genes that encode for serotonin metabolism modulate aggressive behaviour (Popova, 2006; Raine, 2008). Further research work has also shown an association between specific genes and impulsive, sensation-seeking behaviour (Benjamin, Li, Patterson et al., 1996; Ebstein, Novick, Umansky et al., 1996) and substance abuse (Lovinger & Crabbe, 2005). This work suggests that psychopathic traits, such as aggression and emotion dysfunction, may be partially underpinned by specific genes.

Turning to twin studies, this approach aims to separate the contributions of genes, shared environment, and non-shared environment. Thus, twin studies compare monozygotic (identical) twins, who share 100% of their genes, with dizygotic (fraternal) same-sex twins, who share 50% of their genes. There may be some subtle differences in shared environment for these two groups, particularly in view of the similarity in physical appearance for monozygotic twins. Nonetheless, by recruiting large samples of twins in which each pair has shared a womb, is the same age and has been raised simultaneously, the shared environmental influences are thought to be comparable (Plomin et al., 2008). This means that if the monozygotic pair of twins are more similar to one another than the dizygotic pair, this is likely to reflect an increased genetic contribution. Twin studies have suggested that antisocial behaviour is largely heritable (e.g. Rhee & Waldman, 2002). Moreover, one study compared groups of antisocial children and found that antisocial behaviour was under considerable genetic influence, but only in the subset of children presenting with callous-unemotional traits (Viding, Blair, Moffitt & Plomin, 2005). Similar results have emerged with adolescent samples (Larsson, Andershed & Lichtenstein, 2006). Other work has found that monozygotic twin pairs have PPI scores that are more highly correlated than dizygotic twin pairs (Blonigen, Carlson & Patrick, 2004). Twin studies have also suggested that genes may

influence people's empathic emotional responses to others (Zahn-Waxler, Robinson & Emde, 1992; Davis, Luce & Fraus, 1994; Rushton, 2004; Knafo & Plomin, 2006).

Taken together, the research evidence suggests that the characteristics associated with psychopathy may be largely driven by genetic factors (Larsson et al., 2006; Blair et al., 2005). Nonetheless, psychopathology is typically thought to arise from an interplay between genes and environment (e.g. Tsuang, Bar, Stone & Faraone, 2004). Thus, the potential role of environmental factors in the development of psychopathy will now be considered.

2.3 ENVIRONMENTAL FACTORS

To what extent is psychopathy caused by the environment in which people develop? There is a substantial body of literature linking various early environmental stressors with antisocial behaviour later in life. This evidence has focused on three key factors: birth complications, early relationships, and early adversity.

With respect to birth complications, studies have shown that babies who experience anoxia, forceps delivery or pre-eclampsia, all of which can in some cases cause brain damage, are more likely to behave violently as adults (e.g. Raine, 2002). However, it is unclear whether birth complications are associated with psychopathy, or only with the antisocial aspects of the disorder. Moreover, Blair et al. (2005) claim that birth complications may give rise to hostile, emotional reactions to triggering events (reactive aggression) but not necessarily to controlled, premeditated, goal-oriented antisocial actions (instrumental aggression). By contrast, the evidence suggests that psychopathy is associated with instrumental rather than reactive aggression (e.g. Glenn & Raine, 2009). There is thus a lack of evidence implicating birth complications as causally involved in the range of deficits associated with psychopathy.

With respect to early relationships, attachment theory posits that children need to develop a secure bond with their primary caregiver in order to form meaningful relationships later in life (Bowlby, 1982). Psychopathy has been linked with difficulty in forming these attachments (e.g. Hare, 1991) and difficulties in interpersonal relationships are considered to be a core component. Moreover, it has been argued that insecure attachments lead to an incapacity to respond empathically to others, which in turn leads to antisocial behaviour (Blair et al., 2005). Thus, studies have found a relationship between unhealthy, insecure attachments in infancy and aggressive behaviours and violent offending (Saltaris, 2002; Lyons-Ruth, 1996).

However, it is thought that the emotional dysfunction characteristic of psychopathy may be more likely to give rise to attachment difficulties than to result from them (Blair et al., 2005). Thus, whilst there is most likely an association between psychopathy and early attachments, the extent to which insecure attachments are causal is unclear.

Turning to early adversity, this includes factors such as parental antisocial behaviour, neglect, maltreatment and inconsistent discipline (e.g. Blair et al., 2005). To what extent is early adversity a psychosocial risk factor for the development of psychopathy? The literature is somewhat inconsistent. Some studies have found that early adversity predicts higher PCL-R scores (e.g. Koivisto & Haapsala, 1996; Marshall & Cooke, 1999; Graham, Kimonis, Wasserman & Kline, 2012). One study found that childhood maltreatment was more common in psychopathic offenders than in non-psychopathic offenders or in non-offenders (Kolla, Malcolm, Attard et al., 2013). However, this study also found that high PCL-R scores were associated with instrumental aggression, whereas childhood maltreatment was associated with reactive aggression. This led the authors to conclude that instrumental aggression was specific to psychopathy, but that psychopathic individuals could also display reactive aggression when they had experienced childhood maltreatment. This is further supported by a study of antisocial behaviour in children which found that early adversity was linked to aggressive acts for those without callous-unemotional traits, but not for those with callous-unemotional traits (Hawes, Brennan & Dadds, 2009). Finally, one study drew a distinction between 'successful' and 'unsuccessful' psychopathy. 'Unsuccessful psychopaths', who were classified according to whether they had a prior criminal conviction, had a higher incidence of childhood maltreatment than 'successful psychopaths', who did not have a prior conviction (Gao, Raine & Schug, 2011).

The postulated relationship between childhood maltreatment and unsuccessful psychopathy is also consistent with a body of literature that differentiates between primary and secondary subtypes of psychopathy (e.g. Karpman, 1941). Whilst both subtypes present as phenotypically similar, primary psychopathy is thought to be underpinned predominantly by genetic factors, whereas secondary psychopathy is thought to arise following traumatic environmental experiences such as childhood abuse or neglect. There is also research evidence suggesting that as a result of early experiences of maltreatment, people with secondary psychopathy present with greater trait anxiety, social withdrawal, and emotional disturbance than those with primary psychopathy (Skeem, Johansson, Andershed, Kerr & Loudon, 2007). Finally, it has been posited that people with primary psychopathy tend to

demonstrate narcissistic personality traits such as dominance, grandiosity, egocentricity and entitlement (Skeem, Poythress, Edens, Lilienfeld & Cale, 2003). By contrast, borderline personality traits such as hostility and emotional difficulties are considered to be hallmarks of secondary psychopathy (Blackburn, 1996). Thus, although there is considerable overlap between primary and secondary psychopathic traits (e.g. Porter, 1996), there are some distinctions between their personality profiles. This is further evidenced by studies suggesting that ‘Successful psychopaths’ are more likely to present with primary psychopathy (e.g. Ross & Rausch, 2001). For these individuals, psychopathic traits are adaptive and enable them to manipulate, deceive or coerce others in order to achieve their own ends. By contrast, institutionalised or ‘unsuccessful psychopaths’ are more likely to present with secondary psychopathy. People with primary versus secondary psychopathy are also thought to differ with respect to their remediation. As compared to ‘primary psychopaths’, ‘secondary psychopaths’ are thought to be more receptive to treatment, since their antisocial behaviour is interpreted as an adaptive response to environmental distress (Skeem et al., 2007).

Taken together, the evidence suggests that an interplay of both genes and environment may predispose people to develop psychopathy. To paraphrase, “genes load the gun, and environment pulls the trigger”. However, research investigating environmental factors has predominantly focused on the development of antisocial behaviour. A sufficiently extreme environment is likely to lead to a range of difficulties later in life, including psychopathic traits. Nonetheless, further research should be conducted in order to elucidate what specific environmental factors might cause the emotional dysfunction that is central to the construct of psychopathy.

Thus far, a range of factors thought to cause psychopathy has been considered. These factors may manifest at the level of brain function, cognition, and emotion. These are not competing theories, but rather different perspectives from which the deficits associated with psychopathy could be explained. These perspectives will now be considered in turn.

2.4 BRAIN FUNCTION AND PSYCHOPATHY

The combination of genetic and environmental influences that cause psychopathy may lead to observable differences in brain function. A substantial body of evidence has implicated specific brain regions and brain neurochemistry (see Blair, 2001; Blair et al., 2005; Michael, Minzenberg & Siever, 2006; Raine & Yang, 2006; Blair, 2006 for a more extensive review). The evidence has consistently pointed to two regions in particular, the prefrontal cortex and the amygdala. Turning firstly to the prefrontal cortex, this region is located in the most anterior portion of the brain and has extensive connections with other brain regions. It is considered to be the most evolved brain region, and has been associated with high-level cognitive control over thoughts, actions and emotions (Arnsten, 2009). The prefrontal cortex has been conceptually divided into a number of subregions, each of which is thought to be involved with particular cognitive processes (Siddiqui, Chatterjee, Kumar, Siddiqui & Goyal, 2008). For instance, some studies have linked the lateral prefrontal cortex with working memory (Duncan & Owen, 2000), with adapting behaviour in response to task demands (Macdonald, Cohen, Stenger & Carter, 2000) and with representing past events, current goals and future predictions (Miller, 2000). Other studies have linked the medial prefrontal cortex with the capacity to attend to demanding cognitive tasks, to spatial memory and to conflict resolution (Spinella, Yang & Lester, 2004).

The prefrontal subregion of particular interest in relation to psychopathy is the orbitofrontal cortex (e.g. Damasio, 2000). This region is thought to play a role in representing and anticipating rewards and punishments in relation to actions (Schoenbaum, Takahashi, Liu & McDannald, 2011). Studies have shown that lesions to the orbitofrontal cortex can impair the capacity to respond appropriately to aversive conditioning (e.g. Rolls, 2004). This has in turn been linked to poor impulse control, to risky decision-making, to irresponsibility, and to diminished emotional responding (Winstanley, Theobald, Cardinal & Robbins, 2004; Hornak, Bramham, Rolls et al., 2003).

Many of the impairments seen following orbitofrontal damage are consistent with those seen in psychopathy (e.g. Peschardt, Morton & Blair, 2003; Hare, 1993; Blair et al., 2005). Thus, a range of studies has been conducted in order to investigate orbitofrontal cortex function in psychopathic individuals more directly. For instance, some studies have used a gambling task that has been associated with orbitofrontal function and found that psychopathic participants consistently made disadvantageous choices (Mitchell, Colledge, Leonard and Blair, 2002; Blair, Colledge & Mitchell, 2001). This was linked to a specific deficit in adapting

behaviour in response to negative feedback (i.e. losing money), rather than to a general inability to adapt behaviour and apply rules flexibly. Studies that provide evidence in support of this selective deficit have used tasks such as the Wisconsin Card Sorting Test and demonstrated that psychopathic individuals are able to learn new rules and adapt their responses accordingly (Hare, 1984; LaPierre, Braun & Hodgins, 1995). Research evidence has also found that both people with psychopathy and those with orbitofrontal lesions show impaired empathic responding to others compared to control participants or those with non-frontal lesions (Shamay-Tsoory, Hariri, Aharon-Peretz & Levkovitz, 2010). Finally, neuroimaging work has found that people high in psychopathic traits show decreased orbitofrontal cortex activity in response to emotionally provocative stimuli (Blair, 2010).

Turning to the amygdala, this is a limbic structure located deep within the temporal lobes that is thought to play an important role in emotional processing (Amunts, Kedo, Kindler et al., 2005). It is thought to be particularly involved in the acquisition and expression of fear (e.g. Davis, 1992; Phillips & LeDoux, 1992). The amygdala is also thought to play a role in the recognition of fearful facial expressions and increased activity has been found in response to threatening faces and situations (e.g. Blair, 2007). Moreover, one study found that the severity of social phobia symptoms was positively correlated with amygdala activity (Phan, Fitzgerald, Nathan & Tancer, 2006). A number of studies have posited that the emotional deficits in psychopathy may be associated with abnormalities in the amygdala (e.g. Blair, 2007). For instance, studies have shown that psychopathic individuals demonstrate reduced amygdala activity in response to emotional stimuli (Kiehl, Smith, Hare et al., 2001) and to aversive conditioning (Birbaumer, Veit, Lotze et al., 2005). Other studies have found that participants with high PPI scores showed reduced amygdala activity in response to emotional facial expressions (Gordon, Baird & End, 2004). In addition to functional changes in amygdala activity, research studies have also found that psychopathic individuals had structural abnormalities in the amygdala in comparison with control participants (Yang, Raine, Narr, Colletti & Toga, 2009; Boccardi, Frisoni, Hare et al., 2011). These structural abnormalities may even be exacerbated for 'unsuccessful psychopaths' as compared to 'successful psychopaths' (Yang, Raine, Colletti, Toga & Narr, 2010).

This research evidence suggests that abnormalities in the amygdala and the resulting deficits in fear processing and reduced aversion to punishment may contribute towards impaired decision-making and behavioural control for those with psychopathy. Reduced aversion to punishment may mean that they are less deterred by the prospect of imprisonment, which

may in turn make them more prone to criminal convictions (Yang et al., 2010). Finally, there is a substantial literature demonstrating interconnections between the amygdala and the orbitofrontal cortex (e.g. Amaral, Price, Pitkanen & Carmichael, 1992; Carmichael & Price, 1995). On the basis of this, Blair et al (2005) suggested that in psychopathy, orbitofrontal cortex development may be disrupted as a result of a lack of afferent input from the amygdala.

Taken together, there is significant body of evidence to suggest that there may be differences in brain function in people with psychopathy individuals, and that the amygdala and the orbitofrontal cortex may be particularly implicated. It is nonetheless important to note three caveats. Firstly, the literature reviewed here represents the most consistent research findings, but brain structure, activity and connectivity is highly complex. Psychopathic deficits are thus unlikely to be confined to abnormality in two circumscribed regions. Secondly, psychopathy is a multifaceted disorder and people with psychopathy may therefore present with different manifestations that vary in severity. They are thus unlikely to share identical patterns of brain activity and structural abnormalities (e.g. Yang et al., 2010). Finally, any putative differences in brain function are not necessarily causal; they may instead result from lifestyle choices. For instance, substance-abuse is common in psychopathy (e.g. Smith & Newman, 1990), and has been linked to impaired performance on tasks assessing orbitofrontal cortex functioning (Bechara, Dolan, Denburg et al., 2001; Rogers & Robbins, 2001). Despite these caveats, the weight of the evidence does suggest that the deficits in psychopathy may be interpreted from the perspective of abnormal brain function. These deficits may also be interpreted from the perspective of cognitive dysfunction, which will now be considered.

2.5 COGNITION IN PSYCHOPATHY

A number of cognitive theories may have been postulated to account for psychopathy. Two particularly prominent theoretical frameworks have focused on the role of cognitive biases and of executive dysfunction. Turning to cognitive biases, according to a theory proposed by Lazarus (1991), the experience of emotion is determined by cognitive appraisal. This appraisal involves evaluating a situation in terms of its relationship to 'schemata'. These are personal beliefs, values, relationships, goals and expectations that are based around personal experience. The outcome of this appraisal determines the nature of the emotion. For instance, consider the following example. A woman in her early twenties boarded a bus late at night. A man boarded the bus at the next stop and sat on the seat directly beside the young

woman, despite the fact that the bus was almost completely empty. He stared at her for extended periods of time, and she thought she could feel his hand against her leg. The woman may have rapidly appraised the situation in terms of her knowledge and beliefs about the world and herself. She may have come to the following conclusions: (a) late-night travel can be unsafe; (b) there was nobody else on the bus; (c) the man was behaving suspiciously and may have posed a threat, and (d) she was likely to be physically weaker than him and did not have any sort of weapon; she would thus most likely be easily overpowered in a fight. Following this appraisal, the woman was likely to have experienced fear.

Since schemata are based upon personal experience, they may be subject to cognitive biases or distortions (Blackburn, 2005). These distortions include overgeneralising on the basis of one experience or only focusing on the negative aspects of a situation. Cognitive distortions have been posited as a mechanism by which emotional dysfunction arises. Thus, Blackburn (2006) proposes that psychopathy results from specific maladaptive beliefs about the self and the world, such as “I am stronger than others and deserve to succeed more”, “people are weak and stupid and should be exploited” or “cheating will help me to get ahead”. These can give rise to distorted self-evaluations and attributions about causality, and reduced empathy for others (Fernandez & Marshall, 2003). Some studies have found that in comparison with control participants, psychopathic individuals reported different beliefs and made different causal attributions about others, and concluded that this may relate to cognitive distortions (e.g. Widom, 1976; Klass, 1980; Serin, 1991). However, there is a paucity of evidence to suggest that deviant schemas predict deviant behaviour (Blackburn, 2007), and few studies have examined psychopathic schemata directly. Moreover, the key assumption of this framework is that cognitive appraisals lead to emotional responses (Lazarus, 1991). However, there is conflicting evidence suggesting that emotion occurs as an automatic response to a triggering event, and that cognitive reasoning is constructed post-hoc if necessary (Haidt, 2001). Taken together, there is some evidence suggesting that psychopathic traits, such as reduced empathy and a propensity for antisocial behaviour, could be explained by cognitive distortions, but further empirical work is needed.

Turning to executive function, this refers to the regulation and control of cognitive processes (e.g. Elliott, 2003). This is thought to be involved in active behavioural control as opposed to automatic or habitual responses. Thus, situations that involve planning, decision-making, error-correction, troubleshooting, novel sequences of actions, or those that require strong, habitual responses to be overcome are thought to require executive rather than automatic

processes (Norman & Shallice, 1986). For instance, a familiar route to work may be relatively automatic and require little attention or advance planning. By contrast, taking a new route to work, updating a familiar route in light of unexpected roadworks, or taking public transport on a day that the car needs repairs may all involve executive function. There is some debate in the literature with respect to the precise number of executive functions (e.g. Baddeley, 1986; Shallice & Burgess, 1996; Petrides, 2000). However, the evidence broadly indicates the involvement of some key skills, such as the capacity to shift attention between tasks (cognitive flexibility), monitoring and updating information (working memory) and behavioural control (inhibition; Miyake, Friedman, Emerson et al., 2000).

Whilst theories have not explicitly linked psychopathy to executive dysfunction, it is noteworthy that psychopathic tendencies include features such as impulsivity, poor behavioural control and failure to plan ahead (e.g. Hare, 1991). All of these features could be accounted for by executive dysfunction. Moreover, as described above, the prefrontal cortex has been extensively linked to executive function (e.g. Stuss & Knight, 2002), and the orbital portion of the prefrontal cortex is thought to function abnormally in psychopathic people (Mitchell et al., 2002; Blair et al., 2001; Shamay-Tsoory et al., 2010; Blair, 2010). It is thus important to consider potential executive deficits in relation to psychopathy.

Neuropsychological paradigms have been developed in order to tap into the aspects of executive function referred to above. Cognitive flexibility has been examined using tasks such as the Wisconsin Card Sorting Test and the Trail-Making test. These tasks require participants to detect, understand and adapt to new rules. Studies have found those with psychopathy to be unimpaired on these tasks (Hare, 1984; LaPierre, Braun & Hodgins, 1995; Pham, Vanderstukken, Philippot & Vanderlinen, 2003). Some studies have recruited executive tasks and found that people with psychopathy fail to adapt their behavioural strategy in response to negative feedback (e.g. losing money in a gambling task). However, this is thought to relate to insensitivity to punishment rather than cognitive inflexibility (Mitchell et al., 2002; Blair et al., 2001).

With respect to working memory, this has been examined using tasks that require participants to manipulate information that they are temporarily holding in mind. For instance, one measure of working memory often used in the research literature is the 'digits backward' subtest from the Wechsler Adult Intelligence Scale-III (WAIS-III; Wechsler, 1997). This task involves participants listening to sequences of numbers and repeating them

in reverse order. Very limited work has examined working memory capacity in psychopathy. However, one study found that high PPI scores were not associated with impaired performance on the 'digits backward' test (Sellbom & Verona, 2007).

Finally, inhibition has been examined using tasks such as the Stroop colour-word interference test, in which participants read colour-words (e.g. red, blue, green) printed in incongruently coloured ink (e.g. the word 'red' written in blue ink). This incongruity is thought to interfere with the capacity to state the colour of the ink and to ignore the colour word. This interference results in slower response times, whereas failures of inhibition result in higher error rates. Despite the fact that psychopathy is associated with impaired behavioural inhibition (e.g. Hare, 1991), the evidence in relation to inhibition as measured by executive tasks is mixed. One study reported that those with psychopathy make more errors on the Stroop test than control participants (Pham et al., 2003). By contrast, other studies have found psychopathic performance comparable to control participants in terms of both the number of errors and the level of interference (Dvorak-Bertsch, Sadeh, Glass, Thornton & Newman, 2007; Hiatt, Schmitt & Newman, 2004; Smith, Arnett & Newman, 1992).

Taken together, the evidence in relation to executive deficits in psychopathy is somewhat mixed and no comprehensive executive theory has been formalised. Moreover, it is unclear whether deficits in inhibition truly represent executive dysfunction. For instance, inhibition may occur as a way of avoiding negative experiences. A range of studies has found that aversive conditioning and sensitivity to punishment is impaired in psychopathy (Peschardt et al., 2003; Blair et al., 2004). Thus, psychopathic individuals may primarily lack the motivation rather than the capacity to inhibit their behaviour. The evidence reviewed therefore suggests that psychopathy is unlikely to be adequately explained from a cognitive perspective; emotional accounts of psychopathy will therefore now be considered.

2.6 EMOTIONAL THEORIES OF PSYCHOPATHY

In view of the emotional dysfunction associated with psychopathy, a wide range of emotional theories have been put forward. However, three theoretical frameworks may be particularly pertinent. Thus, the fear dysfunction, violence inhibition mechanism and lack of emotional empathy hypotheses will be reviewed in turn.

Proponents of the fear dysfunction hypothesis (e.g. Patrick, 1994; Lykken, 1995; Cleckley, 1976) posit that psychopathic tendencies arise as a result of a deficiency in the processing and modulation of fear. This model assumes that moral socialisation and the development of prosocial behaviour occur as a result of punishment (e.g. Eysenck & Gudjonsson, 1989). Thus, people are punished in response to particular actions, experience fear, and no longer engage in the actions that led to the punishment. By contrast, people with psychopathy are thought not to experience fear in response to punishment and may thus continue to engage in actions that lead to it. This is supported by the empirical studies of psychopathic responses to punishment reviewed above (Peschardt et al., 2003; Blair et al, 2004). The fear dysfunction hypothesis is also supported by the evidence suggesting that in psychopathy, brain regions associated with fear processing, such as the amygdala, are thought to function abnormally (e.g. Blair, 2010; Kiehl et al., 2003; Birbaumer et al., 2005; Boccardi et al., 2011). Moreover, fearful stimuli have been shown to elicit diminished physiological responses in comparison to control participants (e.g. Lykken, 1957; Blair, Jones, Clark & Smith, 1997; Vaidyanathan, Hall, Patrick & Bernat, 2011; Anderson, Stanford, Wan & Young, 2011).

An account of psychopathy in terms of fear dysfunction is also consistent with a broad biopsychological theory of personality. Gray (1970) proposed that for most people, behaviour is inhibited in response to negative stimuli such as anticipated punishment or boredom. Conversely, behaviour is activated in response to positive stimuli such as prospective rewards. By contrast, psychopathic individuals are thought to seek reward without fear of punishment (Gray, 1970).

The fear dysfunction hypothesis may therefore account for the emotional dysfunction and associated behavioural problems that characterise psychopathy. However, the core assumption of this hypothesis is that moral behaviour and socialisation develop as a result of punishment and conditioned fear responses. This assumption has been called into question (Blackburn, 1988; Blair & Morton, 1995), since the developmental literature has suggested that moral socialisation is instead achieved by fostering empathy (Hoffman, 1984).

Thus, parenting that draws a child's attention to the impact of their actions on others is thought to be more effective than harsh, punitive or authoritarian parenting methods that rely on punishment (e.g. Baumrind, 1983; Blair et al., 2005). This latter parental style may in fact have an adverse influence on moral socialisation (Brody & Shaffer, 1982), which contradicts the fear dysfunction hypothesis. In view of this contradiction, psychopathy may

not be adequately accounted for by the fear dysfunction hypothesis. Theoretical frameworks that focus on the role of empathy may be more appropriate.

The violence inhibition mechanism (VIM) is one such theoretical framework. It was developed in acknowledgement of the evidence reviewed above suggesting that empathy is important for the development of moral socialisation. Blair (1995) noted that many non-human social animals are thought to have a mechanism that regulates aggression. This mechanism is thought to mediate responsiveness to distress cues in other animals. For instance, Lorenz (1966) observed that when dogs are attacked, they often bare their throats as a sign of submission; this results in the opponent ceasing their attack. Blair (1995) proposed VIM as a functionally similar mechanism in humans. Thus, when people perceive non-verbal distress cues (such as facial expression or the sound of tears), this triggers an empathic, emotional response. This may in turn contribute to behavioural change (such as withdrawal of aggression or intervening to help).

This empathic mechanism was posited to be involved in the development of morality. In particular, VIM was thought to be a prerequisite for the development of a) moral emotions such as sympathy, guilt and remorse, b) the inhibition of violent action, and c) the capacity to distinguish between moral and conventional transgressions (see Chapter 4 for further review of moral reasoning). Impairments in these domains have been extensively demonstrated by psychopathic individuals; an impairment in VIM has thus been posited to contribute to the development of psychopathy (Blair, 1995; Blair et al., 2005). Moreover, VIM is consistent with the literature reviewed above pertaining to a lack of physiological responsivity, and the emergence of instrumental aggression (Blair et al., 2005). Finally, VIM is consistent with other theoretical frameworks that highlight the importance of emotional processes for guiding behaviour (e.g. Damasio, 1994).

However, there are some limitations. VIM describes empathic responding to non-verbal cues denoting distress, such as vocal tone or facial expression. This corresponds to one aspect of social behaviour but may not account for richer, more complex social cues. These might include social information pertaining to awkwardness, discomfort, an understanding of others needs and preferences and the subtle implications of what people say or do. Moreover, one of the most intriguing aspects of psychopathy is the capacity to appear charming, likeable and funny (Cleckley, 1976) whilst behaving antisocially and being motivated primarily by self-interest. This paradoxical presentation is thought to underpin the capacity for manipulation

and trickery in addition to intimidation and aggression. Whilst VIM accounts for the proclivity for antisocial behaviour associated with psychopathy, it does not necessarily account for this paradox. Nonetheless, VIM offers an important theoretical contribution which construes psychopathy as a lack of empathy. In order to account fully for the broad range of psychopathic traits, this empathic deficit should be examined more closely.

Lack of empathy is considered to be a hallmark of psychopathy (e.g. Cleckley, 1976; Hare, 1993). However empathy is thought to comprise two distinct components, cognitive and emotional. Cognitive empathy refers to the ability to represent the internal states of others (e.g. Frith & Happe, 1994; Rogers, Dziobek, Hassenstab, Wolf & Convit, 2007). The term is synonymous with concepts such as theory of mind and mentalising. Put simply, cognitive empathy relates to the capacity to understand what others might be thinking or feeling. By contrast, emotional empathy refers to the tendency to respond emotionally to the internal states of others, to 'feel what they feel' (e.g. Rolls, 1999). For instance, if a person is crying, understanding that this signifies that they are upset or in distress is thought to be underpinned by cognitive empathy. Resonating with their distress or feeling a corresponding experience of sadness is thought to be underpinned by emotional empathy.

A range of tasks have been developed in order to assess cognitive empathy. For instance, false belief paradigms require participants to recognise that others' mental representations about the world may be different from their own (e.g. Wimmer & Perner, 1983). One set of tasks involve participants accurately identifying facial expressions or inferring emotional state from pictures of the eye region alone (e.g. Baron-Cohen, Wheelwright, Raste, Hill & Plumb, 2001). Other tasks involve reading short stories and interpreting people's actions, intentions, and aspects of everyday social behaviour such as faux pas or sarcastic remarks (e.g. Channon, Drury, Gafson, Stern & Robinson, 2012; Channon, Pellijeff & Rule, 2005). Extensive work has found psychopathic individuals to be unimpaired on tasks measuring cognitive empathy (e.g. Widom, 1978; Blair, 1996; Dolan & Fullam, 2004; Richell, Mitchell, Newman et al., 2003). This suggests that the capacity to understand others is intact in psychopathy. This has been contrasted with empathy deficits in Autism Spectrum Disorder (ASD). Whilst both disorders have been linked with impaired social functioning (Blair, 2008), extensive evidence has demonstrated that cognitive empathy is impaired in ASD (e.g. Hill & Frith, 2003).

Emotional empathy is most effectively assessed using tasks that directly measure autonomic responses to others' distress (e.g. House & Milligan, 1976, Blair, 1999; Blair et al., 2005). A

range of studies has found that psychopathic individuals demonstrate reduced responsivity to the distress of others using measures including electrodermal responses, heart rate and facial muscle responses (e.g. Lykken, 1957; Blair, Jones, Clark & Smith, 1997; Blair, 1999). The evidence relating to emotional empathy in ASD is somewhat mixed. Research has suggested that individuals with ASD may be able to emotionally empathise with others, but only if others' internal states are made explicit (e.g. Jameel, Vyas, Bellesi, Roberts & Channon, 2014). For instance, in relation to the crying example above, people with ASD may feel upset in response to the person crying if their distress is clearly pointed out. By contrast, people with psychopathy may understand that the person crying is upset, but fail to respond emotionally. There is some experimental evidence in support of this. For instance, one study found that boys with psychopathic tendencies performed as well as control participants on measures of cognitive empathy, but reported experiencing less fear and empathy for victims of aggression; boys diagnosed with ASD demonstrated the opposite pattern (Jones, Happe, Gilbert, Burnett & Viding, 2010).

Thus, psychopathy is thought to be characterised by intact cognitive empathy with impaired emotional empathy (e.g. Blair, 2008). In the words of Johns & Quay (1962), "they know the words but not the music". This posited dissociation is thought to facilitate the associated capacity for manipulation (Soderstrom, 2003). This is also consistent with the evidence suggesting that the suppression of antisocial behaviour, the development of moral socialisation and the tendency to behave altruistically may all be linked to the experience of emotional empathy (Blair, 1995; Hoffman, 1984; Eisenberg, 2000; Batson & Powell, 2003).

Taken together, a dissociation in empathy may be the most appropriate theoretical framework for understanding the range of deficits associated with psychopathy. Empathy has been postulated to drive moral socialisation (Hoffman, 2000) and prosocial behaviour (Batson & Powell, 2003). A lack of emotional empathy could account for the callousness and lack of remorse, guilt or shame that characterises people with psychopathy. By contrast, an intact capacity to understand the internal states of others may facilitate a propensity for manipulation.

2.7 REMEDIATION

How is psychopathy treated? Treatment approaches have typically taken place in institutional settings and included a range of psychological therapies, including cognitive behavioural and

psychodynamic approaches (Salekin, 2002; Wong & Hare, 2005). Their success is measured by any reduction in psychopathic offenders' recidivism rates. However, offenders with psychopathy are often assumed to be untreatable and thus met with 'therapeutic pessimism' (Salekin, 2002). This is because they are thought to be able to understand the consequences of their actions, but to lack the capacity to emotionally resonate with the victims of their crimes, or to experience guilt or remorse in the aftermath (e.g. Hare, 1993). Moreover, they are thought to be largely insensitive to punishment, and therefore may not respond to the threat of future incarceration or other reprisals. Thus, studies have found that treatment was not only largely ineffective for people with psychopathy, it may also have promoted increased recidivism (Harris & Rice, 2006). These offenders were also found to be less compliant and more disruptive during the treatment than those without psychopathy (Ogloff, Wong & Greenwood, 1990).

In order for treatment to be successful, it is thought that the participants must freely choose to engage in treatment, accept personal responsibility for their role in perceived problems and form a good relationship with the therapist. However, psychopathic offenders engage in treatment because they are mandated to do so; they typically externalise blame and do not acknowledge their responsibility for negative outcomes, and their interpersonal difficulties may preclude the formation of a successful therapeutic relationship (Hemphill & Hart, 2003). Fundamentally, it is thought that people with psychopathy lack the motivation to change their behaviour. They may view lying, cheating, manipulation and intimidation as adaptive strategies (Harris & Rice, 2006). Arguably, treatment approaches that focus on the consequences for the victim may enable those with psychopathy to adopt these strategies more adeptly.

However, there are methodological limitations associated with many of the early studies investigating psychopathy treatment. For instance, the use of control groups was inconsistent, when control participants were included they were not properly matched with the treatment group, and many conclusions about the efficacy of treatment were drawn on the basis of single case-studies (Salekin, 2002). The findings of more recent, systematic research into psychopathy remediation has been moderately more promising (e.g. Olver & Wong, 2009). This research work has involved developing treatment approaches that target the needs of offenders with psychopathy more directly. For instance, in view of the literature highlighting the importance of forming successful therapeutic relationships (Hemphill & Hart, 2003), it has been suggested that making a deliberate effort to strengthen this

therapeutic alliance at the early stages of treatment may lead to improved outcomes for offenders with psychopathy (Polaschek & Cross, 2010). Moreover, Skeem, Monahan & Mulvey (2002) suggested that increasing the frequency and intensity of treatment leads to improvements for those with psychopathy that were comparable to those without psychopathy. Finally, a range of pharmacological treatments have been postulated to decrease aggression and impulsivity in people with psychopathy (Vien & Breech, 2006).

Psychopathy remediation has also been examined in relation to conduct-disordered children with callous-unemotional traits (e.g. Dadds & Rhodes, 2008). These traits are often seen as precursors to adult psychopathy (e.g. Frick & Viding, 2009). It is thought that children with callous-unemotional traits respond best to interventions that use positive reinforcement or reward-oriented strategies (i.e. as a treat for good behaviour), as opposed to negative reinforcements or punishment-oriented strategies (i.e. disciplinary action for bad behaviour; Viding, Fontaine & McRory, 2012). This is consistent with the literature suggesting that people with psychopathy are sensitive to reward, but not to punishment (e.g. Peschardt et al., 2003). There is also some research investigating the treatment of institutionalised adolescents presenting with psychopathic traits, as measured by a youth version of the PCL-R. One study found that an intensive treatment programme focusing on the benefits of developing positive interpersonal relationships to replace delinquent associations and activities led to some behavioural improvements (Caldwell, McCormick, Umstead & Van Rybroek, 2007). Taken together, the research on remediation of childhood psychopathy suggests that the best method of treatment may be early intervention, or 'nipping it in the bud'.

In summary, the remediation of psychopathy is thought to present with a number of challenges, and people with psychopathy have therefore traditionally been met with therapeutic pessimism. Nonetheless, recent research evidence provides some promising treatment approaches that are targeted specifically at the deficits associated with psychopathy. These approaches suggest that increasing the intensity of treatment, and in particular focusing on developing therapeutic relationships may improve outcomes for people with psychopathy. The evidence also highlights the importance of developing early intervention programmes for children presenting with psychopathic traits.

2.8 SUMMARY

The present chapter reviewed causal factors and aetiological mechanisms that are associated with the development of psychopathy. The research suggests that there is a substantial genetic contribution to psychopathy, and that environmental factors such as early adversity may exacerbate psychopathic symptomatology, particularly the propensity for violence. Extensive work has implicated the orbitofrontal cortex and the amygdala, brain regions thought to be involved in the processing of punishment and emotion. Whilst a range of cognitive models of psychopathy have been proposed, emotional models may account for the characteristic deficits more fully. In particular, the posited dissociation between cognitive and emotional empathy may provide a useful theoretical framework with which to interpret differences in social performance in individuals high versus low in psychopathic traits. Some work has been conducted to examine the potential remediation of psychopathy. These studies have traditionally found people with psychopathy to be largely resistant to treatment. However, more recent work has emphasised the potential for intensive treatment programmes, pharmacological intervention and early intervention. This has led to more promising findings.

Chapter 3: Prosocial behaviour and psychopathy

3.1 INTRODUCTION TO PROSOCIAL BEHAVIOUR

Prosocial behaviour describes a range of actions that are intended to benefit other people (Fiske, 2004). Some of these actions, such as complying with a request or sharing (Schroeder, Penner, Dovidio & Piliavin, 1995), may involve one helper and one recipient; other behaviours such as volunteer-work or charitable giving may be intended to benefit large groups within society (Penner, Dovidio, Piliavin & Schroeder, 2004). Both the individuals or groups in receipt of help and those who provide help or behave prosocially are thought to derive significant benefits (Weinstein & Ryan, 2010). For instance, prosocial behaviour has been associated with increases in happiness (Ellison, 1991; Trew, 2013), with life satisfaction (Wheeler, Gorey & Greenblatt, 1998), with self-esteem (Gecas & Burke, 1995) and with improved mental health (Schwartz, Bell, Meisenhelder, Ma & Reed, 2003). The present chapter will review the literature pertaining to the origins of prosocial behaviour, how it manifests, and factors that influence it. The potential influence of psychopathic traits will be considered in relation to each of these aspects of prosocial behaviour.

3.2 ORIGINS OF PROSOCIAL BEHAVIOUR

The origins of prosocial behaviour have been considered from two key perspectives, evolutionary and social learning theories. Evolutionary theories describe how human beings as a species developed prosocial behaviour, whereas social learning theories describe how children gradually develop to be prosocial in adulthood. Turning firstly to evolutionary theories, there is evidence to suggest that the environment in which human beings developed provided ideal conditions for prosocial tendencies to emerge (Simpson & Beckes, 2010). Early humans tended to live in small groups or tribes where instabilities in the surroundings such as competing tribes, unpredictable climate and limited food supply required tribe members to collaborate in order to secure food and rear children (Richardson & Boyd, 2005). Active participation in cooperative groups has thus been considered to be an essential survival strategy for early humans (Brewer & Caporeal, 1990).

By contrast, it has been posited that psychopathic traits may have developed as an alternative evolutionary strategy (Glenn & Raine, 2009; Glenn, Kurzban & Raine, 2011). Rather than cooperating with others and behaving prosocially in order to survive, people with

psychopathy are thought to have achieved evolutionary success in a variety of other ways. For instance, they may have been able to attract potential mates or gain resources via coercion or deception. The capacity to appear superficially charming may have enabled people with psychopathy to escape detection or reprimand from other tribe members. Impulsivity, fearlessness and a lack of empathy may have allowed them to explore their environment without restraint, take full advantage of presenting opportunities without worrying about the consequences for others and develop resilience to stress, anxiety and depression (Glenn, Kurzban & Raine, 2011). Taken together, the evidence suggests that most people may behave prosocially as a result of a collaborative evolutionary strategy; this is less likely to be the case for those high in psychopathic traits. Nonetheless, people with psychopathy may be capable of demonstrating prosocial actions that benefit others but only when doing so results in clear benefits for the self.

Turning to the social learning theory account of prosocial behaviour, this states that behaviours are primarily learned through observation, and may sometimes be reinforced by reward or punishment (Bandura, 1977). For instance, a young boy might observe his parents sharing toys out between him and his siblings. The boy might subsequently share his toys with his sibling of his own accord; if his parents were to consequently reward him for his sharing behaviour, the prosocial behaviour would be positively reinforced. Alternatively, if the boy were to snatch the toys away from the sibling, his parents might punish him; the antisocial behaviour of failing to share would thus be negatively reinforced. Different types of rewards and punishments may be effective ways of motivating prosocial behaviour at different stages of development. For instance, Cialdini, Baumann & Kendrick (1981) proposed a three-step developmental sequence whereby prosocial behaviour is motivated by material rewards and punishments in young children, by both material and social rewards and punishments (e.g. praise or reprimand) in preadolescents, and by material, social, and internalised rewards and punishments (e.g. self-praise or self-criticism) in adolescents and adults.

Social learning theory has been posited to account for the development of both prosocial and antisocial behaviour. For instance, a range of studies has found that antisocial behaviour in children is associated with harsh and inconsistent discipline, a lack of parental involvement and minimal supervision of the child's activities (e.g. Loeber & Dishion, 1983). Antisocial behaviour may thus result from a) the absence of positive role-models and a lack of punishment in response to transgressions, and/or b) the presence of negative role-models

and a lack of reward in response to prosocial actions (Patterson, DeBaryshe & Ramsay, 1989). For instance, if a child witnesses a parent being physically aggressive, they may be more likely to behave aggressively themselves. Their own aggressive behaviour may be more likely to go unpunished, and any demonstrations of prosocial behaviour may be more likely to go unrewarded.

How might social learning theory account for social behaviour in psychopathy? Firstly, developmental factors such as parental rejection, antisocial parents, erratic discipline and limited parental supervision are thought to contribute not only to antisocial behaviour in childhood, but also to the development of psychopathy later on in life (McCord & McCord; 1964; Farrington, 2006; Gao, Raine, Chan, Venables & Mednick, 2010). Secondly, social learning theory posits that both observation and reinforcement by reward and punishment are involved in the development of prosocial behaviour. This has implications for psychopathy, which is thought to be associated with intact reward processing and impaired punishment processing. A range of studies has found that people with psychopathy modify their behaviour in similar ways to control participants in response to reward but not in response to punishment (Peschardt, Morton & Blair, 2003; Blair, Mitchell, Leonard, Budhani, Peschardt & Newman, 2004). This lack of sensitivity to punishment is consistent with the literature suggesting that psychopathy is associated with a limited experience of fear, anxiety and other aversive emotions (e.g. Birbaumer, Veit, Lotze, Erb, Hermann et al., 2005; Blair, 2001). This in turn is likely to be linked to reduced prosocial behaviour in psychopathy.

3.3 MANIFESTATIONS OF PROSOCIAL BEHAVIOUR

3.3.1 Altruism

Prosocial actions that are motivated primarily by concern for others, and involve self-sacrifice without obvious external reward, are described as altruistic (Batson & Powell, 2003). These actions may be extreme, for instance sacrificing one's own life to save somebody else, or more commonplace, for instance, helping an elderly man who has fallen in the street and consequently missing an important meeting (Jameel, Vyas, Bellesi, Robers & Channon, 2014). What motivates people to promote others' wellbeing at the expense of their own? A substantial body of literature suggests that altruism is motivated by the experience of empathy. For instance, in one classic study (Batson, Duncan, Ackerman, Buckley & Birch, 1981), participants viewed a confederate receiving electric shocks and were given the opportunity to receive the electric shocks instead. The ease of escape was manipulated such

that for half the participants, they could leave the room after making their decision (easy escape) and half could not (difficult escape). Half of each escape group were in a high-empathy condition; the remaining half were in a low-empathy condition. The findings revealed that the participants in the low empathy condition were more willing to intervene when they were unable to escape from the situation. By contrast, the high empathy group was equally willing to intervene regardless of the ease of escape.

The postulated relationship between empathy and altruism focuses on emotional aspects of empathy: the capacity to “feel what others feel”. Research evidence suggests that when an individual is in distress, people experience a corresponding distress response. This in turn drives them to alleviate the individual’s distress as a means of alleviating their own distress response (Batson, Dyck, Brandt, Batson, Powell et al., 1988; Bierhoff & Rohmann, 2004; Dovidio, Allen & Schroeder, 1990). In addition to promoting prosocial behaviour, a similar empathic mechanism has been posited to inhibit antisocial or antagonistic behaviours (Blair, 1995). According to the ‘Violence Inhibition Mechanism’, aggression is suppressed in response to distress cues. Psychopathy has been extensively linked with reduced physiological responses to others’ distress (Blair, 1997; Crowe & Blair, 2008; Blair, 2010; Anderson, Stanford, Wan & Young, 2011) and an impaired ‘Violence Inhibition Mechanism’ (Blair, 1995). Taken together, this evidence supports a conceptualisation of psychopathy as a disorder of emotional empathy (e.g. Blair, 2008; Soderstrom, 2003). Thus, in view of these characteristic impairments, psychopathy is thought to be associated with both reduced altruistic behaviour and reduced suppression of aggressive behaviour.

3.3.2 Reciprocity and social exchange

The prosocial actions described above typically pertain to relatively rare occurrences: a person can only sacrifice their own life once, and they are unlikely to encounter the same person falling and requiring assistance on a frequent basis. Prosocial behaviour has also been examined in the context of ongoing social relationships; social interactions in which people take turns, return favours and cooperate are described as reciprocal. For instance, two friends who regularly go out for dinner may take turns to pay for each other. Reciprocal social interactions may also involve irregular ‘turns’; for instance, one friend who spends their weekend helping another move house may not be moving house themselves in the immediate future, but nonetheless might expect that the favour will be returned in kind. Thus, these “two-sided, mutually contingent and mutually rewarding processes” have been conceptualised as social transactions or exchanges (Emerson, 1972).

Social exchanges serve to develop, maintain and reinforce social relationships (Homans, 1961; Cook & Rice, 2006). One proposed mechanism by which this occurs is positive emotion. According to relational cohesion theory (Lawler & Yoon, 1996), early exchanges between two people lead to positive emotional responses, such as satisfaction, admiration or approval. These emotional responses serve to increase the ‘cohesiveness’ or closeness of the relationship, which in turn increases commitment to ongoing exchanges. Thus, the prospective experience of positive emotion is a contributory factor in the decision to reciprocate in a social exchange.

This coheres with evidence suggesting that decisions to behave prosocially are based on a cost-reward analysis (Piliavin, 1981), whereby people select whichever course of action minimises costs and maximises benefits. This analysis is thought to take place despite the fact that the value or type of the potential costs is unlikely to be directly equivalent to the potential benefits. For instance, consider the above example of the friend moving house. In this situation, the material costs of helping, such as the amount of time donated or the physical exertion are weighed up against intangible benefits, such as gratitude, praise, or potential future favours. A range of factors has been found to decrease the perception of cost and thereby increase incentives to behave prosocially. These include presenting the prosocial behaviour as an opportunity for personal development (Perlow & Weeks, 2002) and inducing guilt in relation to inaction (Dovidio, Piliavin, Gaertner, Schroeder & Clark).

Difficulties with interpersonal relationships are considered a core feature of psychopathy (e.g. Hare, 1993), and individuals high in psychopathic traits are thought to derive less pleasure from social rewards than those low in psychopathic traits (Foulkes, McCrory, Neumann & Viding, 2014). Thus, when considering the costs and benefits of reciprocating, those high in psychopathic traits may feel that intangible social rewards are less appealing and do not outweigh the practical inconvenience incurred. Those high in psychopathic traits may also be less concerned by any potential damage to the social relationship resulting from their failure to reciprocate. Moreover, those high in psychopathic traits may be less susceptible to the factors thought to incentivise prosocial behaviour: psychopathic traits have been linked with a reduced tendency to be motivated by personal development (Ross & Rausch, 2001) and with a profound lack of guilt (e.g. Cleckley, 1976; Hare, 1993; Patrick, 2005).

3.3.3 Cooperation and competition

As described above, reciprocity involves a social exchange whereby people help each other and incur costs to do so. Another type of social exchange occurs when people are in competition over a resource or positive outcome. In this context, “letting them win” may be considered the most prosocial course of action. For instance, consider a situation in which there is one slice of cake remaining at a party, and two hungry guests. One guest might decide to eat the piece of cake before the other has the opportunity. They may instead choose to offer the other guest the cake. Another option would be to share the slice of cake between them. This is an illustrative example of competition over a relatively small resource, but from an evolutionary perspective, competing over resources in short supply such as food or a suitable mate may have been necessary for survival (Tooby & Cosmides, 2005). From a contemporary Western perspective, people may often be concerned with social success or financial stability rather than survival, and may compete over social resources such as job promotions or successful relationships.

These types of social exchanges, in which people are required to decide whether they wish to compete or cooperate, have been extensively studied using paradigms emerging from economic game theory. Game theory in its broadest sense describes strategic decision-making, and in particular the strategies involved in conflict resolution (e.g. Bierman & Fernandez, 1993). For instance, conducting the types of cost-benefit analyses described above may be considered one aspect of strategic decision-making. One well-known paradigm with its roots in game theory is the Prisoner’s Dilemma. The original scenario described two prisoners (A and B) who are in police custody and have to decide whether or not to betray each other in order to avoid a prison sentence. If A betrays B and B remains silent, A will be set free and B will serve three years in prison. If A and B betray each other, they will both serve two years in prison. If A and B cooperate by both remaining silent, they will each serve one year in prison (see Figure 3.1).

Figure 3.1: Decisions and outcomes in Prisoner's Dilemma

	Prisoner A Cooperate (Remain silent)	Prisoner A Defect (Betray B)
Prisoner B Cooperate (Remain silent)	Prisoner A: 1 year in prison Prisoner B: 1 year in prison	Prisoner A: 0 years in prison Prisoner B: 3 years in prison
Prisoner B Defect (Betray A)	Prisoner A: 3 years in prison Prisoner B: 0 years in prison	Prisoner A: 2 years in prison Prisoner B: 2 years in prison

The dilemma is structured such that betrayal is the most rational choice. From A's perspective, if B betrays A, 2 years in prison is preferable to 3 years in prison and betrayal is thus the superior course of action. If B cooperates, being set free is preferable to 1 year in prison, and thus betrayal is still the superior course of action. Nonetheless, the evidence suggests that people show a bias towards cooperation, despite betrayal being more economically beneficial (Hayashi, Ostrom, Walker & Yamagishi, 1999; Kiyonari, Tanida & Yamagishi, 2000). This suggests that people tend to favour prosocial behaviour and compromise at the expense of rational choice and self-interest. In the classic Prisoner's Dilemma, participants' decisions allow them only to either lose or draw. Similar findings also emerge in relation to alternative ultimatum games, whereby participants' decisions allow them to draw or win, for instance by deciding whether to share money equally or to try and obtain the larger share (Nowak, Page & Sigmund, 2000).

In order to examine cooperation versus competition in the context of ongoing social exchanges, research has been conducted using iterated versions of the prisoner's dilemma and other ultimatum games, in which the game is played repeatedly between the same opponents. The evidence suggests that in the iterated version, players penalise their

opponents for betrayals and reward them when they cooperate (Fehr & Fischbacher, 2003; Fowler, 2005). This is thought to cultivate mutual cooperation, since both participants are motivated by a desire to protect their reputation and thus prospective benefits in future interactions (Adreoni & Miller, 2002).

A substantial body of literature suggests that psychopathy is associated with reduced cooperation and greater exploitation of opponents in neuroeconomic games such as the Prisoner's Dilemma (Mokros, Menner, Eisenbarth, Alpers, Lange & Osterheider, 2008; Curry, Chesters & Viding, 2011). This is consistent with the view that psychopathy is a disorder of emotional empathy (Soderstrom, 2003). Cooperation in neuroeconomic games may occur when people empathise with their opponent and wish to reduce any potential distress caused by defection. By contrast, those high in psychopathic traits may be less likely to demonstrate consideration for others and more likely to prioritise self-interest. This is supported by research evidence suggesting that when an opponent provides affective feedback, such as reporting sadness after being betrayed, those low in psychopathic traits increase their rate of cooperation. Those high in psychopathic traits persist with non-cooperation despite this affective feedback (Johnson, Hawes & Straiton, 2014).

Despite a propensity for reduced cooperation, those high in psychopathic traits are thought to be able to adapt their strategy such that they are more cooperative in response to iterated versions of the Prisoner's Dilemma than in response to one-off games (Curry, Chesters & Viding, 2011). This suggests that those high in psychopathic traits are not unwaveringly uncooperative, but instead can appreciate that occasional cooperation in the context of ongoing exchanges may be ultimately in their best interests. Thus, the extent to which those high in psychopathic traits are cooperative or competitive may be contingent upon the potential long-term costs and benefits of their actions.

Although the Prisoner's Dilemma provides a useful way of investigating reciprocity, cooperation and competition in psychopathy, the interactions between participants in these games are restricted to economic decision-making and do not necessarily reflect the rich and varied social interactions found in everyday life (Johnson, Stopka & Bell, 2002). In order to address this limitation, Chapters 6 and 9 of the present thesis investigated these aspects of prosocial behaviour by using novel tasks that describe more representative social interactions with a range of characters, involving a variety of costs and benefits.

3.4 SITUATIONAL FACTORS

The evidence reviewed thus far suggests that the decision to behave prosocially partially relies on an analysis of the associated costs and benefits, which relate to the internal state of those providing help and the ways in which they feel they will be personally affected by their prosocial actions. External factors relating to the situation may also influence the decision to behave prosocially.

The bystander intervention model of prosocial behaviour, initially proposed by Latane and Darley (1970), sets out a number of processes that must occur in order for an individual to provide help. The individual must firstly notice that a situation is occurring and that help is required. They must then assume responsibility for helping, decide on an appropriate course of action, and implement their decision. Factors such as the salience and severity of the victim's need are thought to influence whether people accurately judge that help is required (Batson & Powell, 2003). One notable factor that is thought to influence whether or not the individual assumes responsibility for helping is the presence of other people. A substantial literature suggests that the greater the number of people present in a situation, the smaller the chance that anyone will intervene and provide help, since people tend to assume that somebody else will help instead (Darley & Latane, 1968; Latane & Darley, 1970; Schroeder et al., 1995; Penner et al., 2004).

Characteristics of the person requiring help may also influence the decision to behave prosocially. For instance, the appearance of the victim, the relationship between the victim and the prospective helper and the extent to which the victim is judged to be similar to the helper are all thought to be relevant factors (e.g. Batson & Powell, 2003; Park & Schaller, 2008; DeBruine, 2002). One other key factor likely to influence prosocial behaviour might be the extent to which the victim is judged to be deserving.

When a person experiences a negative outcome that is not directly related to their own actions, this outcome might be considered to be undeserved, and people may be motivated to help (Feather, 2006). For instance, if an individual needed to borrow money because they were recently mugged, this outcome might be judged to be undeserved, and consequently a friend might choose to help and lend them money. However, if they needed to borrow money because they had been irresponsible and spent too much, the friend might judge their predicament to be deserved and feel less inclined to help. Positive outcomes may also be

judged to be undeserved when they do not directly result from people's efforts or merits (Feather, 2006). For instance, if an individual received a prestigious award on the basis of nepotistic connections, without working hard, a friend might judge them to be undeserving and be disinclined to behave prosocially towards them. On the other hand, if they received the award after working hard and producing high quality work, a friend may feel pleased for them or willing to support them in the future.

To what extent might the characteristics of a situation differentially influence prosocial behaviour in those high and low in psychopathic traits? With respect to the salience and severity of others' needs, those high in psychopathic traits may be less influenced by this than those low in psychopathic traits. This is consistent with the extensive evidence to suggest that psychopathy is associated with a lack of responsivity to distress (e.g. Blair, Jones, Clark & Smith, 1997; Anderson & Phelps, 2001), and thus with limited motivation to alleviate this distress (Blair, 1995). With respect to bystander effects, these have not been systematically investigated in psychopathy. On the one hand, it is possible that those high in psychopathic traits may be more influenced by bystander effects than those low in psychopathic traits. For most people, bystander effects reduce prosocial behaviour by increasing the ambiguity of the situation, which causes a lack of clarity about whose responsibility it is to help (Batson & Powell, 2003). Any reduction in prosocial behaviour resulting from bystander effects may be exacerbated for those high in psychopathic traits. These people tend to help less than those low in psychopathic traits even in unambiguous situations; the presence of bystanders may thus offer an opportunity to avoid any prosocial behaviour without fear of reprimand or criticism. On the other hand, bystander effects might selectively only influence people low in psychopathic traits, since people high in psychopathic traits may be equally disinclined to help irrespective of the presence of others.

How might deservingness, i.e. the extent to which people deserve a particular outcome, differentially influence prosocial behaviour in those high and low in psychopathic traits? With respect to undeserved negative outcomes, such as the example above in which somebody needed money because they had been mugged, it is unlikely that those high psychopathic traits would experience sympathy for the characters' predicament to the same extent as those low in psychopathic traits. Moreover, there is some evidence that psychopathy is associated with a propensity to feel actively pleased in response to others' misfortune (Porter, Bhanwer, Woodworth & Black, 2014; James, Kavanagh, Jonason, Chonody & Scrutton, 2014). With respect to undeserved positive outcomes, psychopathy is associated with an increased

proclivity for transgressing and taking advantage of others (e.g. Hare, 1993). It is thus possible that people high in psychopathic traits would feel less negatively as compared to those low in psychopathic traits in relation to the actions of the undeserving prize-winner. Those high in psychopathic traits might in fact experience admiration for the undeserving prize-winner, since they themselves might behave similarly.

There is very little empirical work examining deservingness in relation to psychopathy. Whilst some experimental tasks focusing on deservingness have been developed (e.g. Lupfer & Gingrich, 1999), these have a number of limitations. For instance, they describe extreme and highly improbable situations involving outcomes such as cancer diagnoses or winning lottery tickets. Moreover, they describe scenarios in which the outcomes do not result directly from the main character's actions (e.g. a character's good behaviour is unrelated to their lottery win). In order to address some of the limitations of previous experimental paradigms, Chapters 7 and 8 of the present thesis describe newly developed tasks that investigate deservingness in psychopathy more systematically.

3.5 SUMMARY

In summary, prosocial behaviour describes actions that benefit both those in receipt of help and those providing help. Prosocial behaviours may occur as a one-off, altruistic interaction or in the context of an ongoing social exchange. The propensity to behave prosocially may be influenced by a variety of factors, such as the associated costs and benefits, the extent to which the situation makes it clear that help is expected, and the extent to which the victim is perceived to be deserving of help. Psychopathy is associated with a reduced propensity to behave prosocially. This most likely reflects impairments in emotional empathy, and thus a lack of capacity to care about the suffering of others and a lack of inclination to alleviate their distress.

The experimental chapters presented in this thesis will focus closely on specific aspects of prosocial behaviour in everyday social interactions and how performance is influenced by psychopathic personality traits. Chapter 5 will focus on prosocial responding and different types of cost. Chapter 6 will focus on reciprocal social exchanges involving different levels of cost. Chapters 7 and 8 will focus on how deservingness influences prosocial responding and reasoning about different types of outcomes. Finally, Chapter 9 will focus on competitiveness and cooperation.

Chapter 4: Moral Judgment and psychopathy

4.1 INTRODUCTION

Is it morally wrong to board a train without buying a ticket first? To steal a pen from a co-worker? To stab someone you do not like? Most people would generally agree that these actions are all morally wrong, although they vary in severity (e.g. Bucciarelli, Khemlani & Johnson-Laird, 2008). Moral judgment pertains to the processes that occur in order for people to differentiate between right and wrong (Fiske, 2004). Definitions of right and wrong usually vary somewhat on the basis of factors such as local customs and laws, social and cultural norms, and parental upbringing practices. Nonetheless, the actions that are considered morally right are generally those that minimise harm caused to others. Thus, there is a relationship between moral judgment and prosocial behaviour, such that prosocial actions are generally judged to be morally right (Krebs & Denton, 2005). The present chapter will review both cognitive and emotional factors in moral judgment. The ways in which blame attributions are formed in the aftermath of moral judgment will also be reviewed. The potential influence of psychopathic traits will be considered in relation to each of these aspects of moral judgment.

4.2 COGNITIVE FACTORS IN MORAL JUDGMENT

4.2.1 Moral development

Classic theories of moral development focus on the capacity to differentiate between right and wrong on the basis of learning and cognitive processes. One of the earliest theories of moral development was proposed by Jean Piaget (1932). Piaget's theory described two stages of moral development, heteronomous and autonomous. In the heteronomous stage, children are thought to view morality as a set of absolute rules, ordained by authority figures such as parents, teachers or God, that cannot be changed or adjusted. Children in the heteronomous stage are also thought to judge the moral permissibility of actions on the basis of consequences rather than intentions. For instance, in one study, children read two stories about a girl cutting a hole in her mother's dress (Piaget, 1932). In the first story, the girl wished to surprise her mother with some sewing and accidentally cut a large hole in the dress. In the second story, the girl was behaving naughtily and deliberately cut a small hole in her mother's dress. Children in the heteronomous stage tended to judge the first girl's actions to be less morally permissible than the second girl's actions, despite the intentions being more

honourable. In the autonomous stage of moral development, children tend to make more relative moral judgments. At this stage they consider contextual factors and intentions in addition to outcomes, and are thus able to make moral judgments without depending on absolute rules.

Another prominent theory of moral development was proposed by Lawrence Kohlberg (Kohlberg, 1969). Kohlberg expanded Piaget's model to encompass three developmental levels, each consisting of two stages. The first level pertains to 'pre-conventional reasoning'. At this level, pre-school-aged children are primarily focused upon themselves and upon their own needs. This level involves gaining an understanding that whichever actions lead to punishment are morally wrong and that whichever actions lead to reward are morally right. After the pre-conventional level, children move into the second level, which is characterised by 'conventional reasoning'. At this level, school-aged children gradually grow an awareness of community norms and expectations. They learn to make an effort to secure approval and avoid blame and they develop an understanding of absolute rules, of the concept of duty and of the importance of obeying authority figures. The final level of moral development is characterised by 'post-conventional reasoning'. At this level, people understand the concept of reciprocity, they develop a relativistic view of morality and they develop an understanding of abstract moral principles such as justice. There is thus some consensus between Piaget's and Kohlberg's classic cognitive theories of moral development. Broadly speaking, reasoning about morality is thought to become increasingly complex and nuanced throughout development, and absolute, black and white moral rules are thought to gradually evolve into relative, context-dependent moral rules.

4.2.2 Moral/conventional distinction

Two different types of rules are thought to govern behaviour: moral rules and conventional rules (Kelly, Stich, Haley, Eng & Fessler, 2007; Turiel, 1979). Moral rules tend to prohibit actions that cause others physical harm, such as murder, injuring people, or stealing their belongings. Moral rules also prohibit actions that cause others emotional harm or distress, such as mocking people, committing adultery, or breaking promises. By contrast, conventional rules tend to prohibit actions that are socially inappropriate or defy cultural norms, such as wearing gender-inappropriate clothing or licking one's plate clean at a dinner party. The capacity to distinguish between moral and conventional transgressions is thought to be a hallmark of moral development (e.g. Turiel, 1983).

Early work investigating the moral/conventional distinction involved presenting participants with a series of moral and conventional transgressions and asking them various questions pertaining to each transgression (Nucci & Turiel, 1978; Smetana, 1981; Nucci & Nucci, 1982). The findings from these studies revealed that people judged moral transgressions to be more serious than conventional transgressions. Moral transgressions were also judged to be independent of socially sanctioned rules or the assertions of authority figures, and to apply to all people, everywhere. For instance, murder might be considered to be universally wrong, irrespective of legal status, geographical location or cultural norms. By contrast, conventional transgressions were judged to be dependent on socially sanctioned rules, subject to the assertions of authority figures, and to apply to certain people in a restricted set of circumstances. For instance, wearing gender-inappropriate clothing might be considered to be more acceptable if a parent or teacher approved of doing so, and in cultures where the norms relating to gender-appropriate clothing differed. Finally, only justifications for moral rules referred to the potential for harm, to people's rights, and to concepts such as justice. By contrast, justifications for conventional rules referred to maintaining social order and preserving local customs.

4.2.3 Psychopathy and moral reasoning

Psychopathy has been extensively linked to moral transgressions (e.g. Hare, 1993); one plausible explanation for this might be that the development of moral reasoning is impaired in psychopathy, and thus that people with psychopathy are not able to differentiate between right and wrong. However, the evidence relating to this claim is somewhat mixed. As reviewed above, during the early stages of moral development, children differentiate between right and wrong by learning that morally right actions are those that result in reward and morally wrong actions are those that result in punishment. This learning may be impaired in psychopathy. A range of studies has found that people with psychopathy lack emotional responsivity to punishment and do not modify their behaviour in response to punishment (Peschardt, Morton & Blair, 2003; Blair, Mitchell, Leonard, Budhani, Peschardt & Newman, 2004). Nonetheless, this impairment seems to selectively relate to punishment; reward learning was found to be intact in psychopathy. This suggests that learning about the moral permissibility of actions on the basis of reward remains effective in psychopathy.

How might the evidence relating to the moral/conventional distinction elucidate moral reasoning capacity in psychopathy? Early research work suggested that people with psychopathy did not distinguish between these two types of rules to the same extent as

control participants (e.g. Blair, 1995), which implies impaired moral reasoning. However, this research work was criticised on the grounds that it did not adequately differentiate between a) participants' subjective opinions about the permissibility of various actions (i.e. what they would personally do) and b) participants' judgments about what is objectively seen as permissible by most people in society. Previous findings (Blair, 1995) may thus represent a conflation of these two types of judgments (Aharoni, Sinnott-Armstrong & Kiehl, 2012). Subsequent studies have found that as compared to control participants, people with psychopathy make comparable judgments about the moral permissibility of various actions and differentiate appropriately between transgressions that involve direct physical harm and those that do not (Aharoni et al., 2012; Cima, Tonnaer & Hauser, 2010; Maibom, 2008).

In relation to the claim that moral reasoning is impaired in psychopathy, a final consideration relates to absolute versus relative moral rules. Absolute moral rules are unchanging and black and white, whereas relative moral rules are more flexible and tend to take contextual factors into account. Prominent theories about the development of moral reasoning suggest that adherence to relative rather than absolute moral rules represents an advanced stage of moral development (Piaget, 1932; Kohlberg, 1969; Perry, 1999). In one study, people high in psychopathic traits rated that they agreed with statements pertaining to relative moral values to a greater extent than did those low in psychopathic traits (Glenn, Iyer, Koleva, Graham & Haidt, 2009).

Taken together, there appears to be a lack of consensus in the literature pertaining to moral reasoning in psychopathy, and there is insufficient evidence to assert that an impairment exists. The relationship between moral judgment and psychopathy may be elucidated further by examining the contribution of emotional factors.

4.3 EMOTIONAL FACTORS IN MORAL JUDGMENT

The classic theories of moral development reviewed above (Piaget, 1932; Kohlberg, 1969) emphasise the role of cognition, whereby moral judgments are reached by a process of reasoning. However, these theories have been criticised for failing to account for emotional factors in moral judgment (Villeneuve-Cremer & Eckensberger, 1985). More recent work has conceptualised emotional factors as an important aspect of moral judgment and moral behaviour. For instance, moral transgressions are thought to illicit moral emotions such as guilt, shame and empathy (Eisenberg, 2000). Empathy in particular has been referred to as

the primary moral emotion (Hoffman, 2000), since the capacity to emotionally resonate with other people may serve to discourage any moral transgressions that cause them suffering.

Haidt, Bjorklund & Murphy (2000) offered an illustrative example that supported the assertion that moral reasoning alone could not account for moral judgment. Consider a story about a brother and sister who decided, as a one-off, to have sexual intercourse. They used two forms of contraception and they both enjoyed their night together, but decided not to repeat the experience. People tended to view the siblings' decision as morally wrong. They initially pointed out the dangers of inbreeding, only to be reminded that two forms of contraception were used. They then argued that the experience might be emotionally damaging for the siblings, although the story made it clear that both siblings enjoyed the experience and did not feel distressed afterwards. Eventually, people tended to say that they could not explain why, but that "it just feels wrong" for siblings to have sex. Haidt et al. (2000) argued that current theories of moral judgment could not account for people knowing that an action was morally wrong without knowing why. In order to address this issue, Haidt (2001) proposed a social-intuitionist model of moral judgment. According to this model, people have an intuitive emotional response that leads to a moral judgment. When needed, reasoning is constructed post-hoc in order to add legitimacy to the emotion-led moral judgment. Thus, in the face of a moral transgression such as murder, people may initially experience distress or disgust which leads them to condemn the murderer's actions. They may then in the aftermath of their judgment consider reasons such as the illegality of murder or the sanctity of life.

In order to reconcile the cognitive and emotional aspects of moral judgment, Greene, Nystrom, Engell, Darley and Cohen (2004) propose a dual-process theory which posits that both factors can lead to moral judgments. When faced with a moral dilemma, intuition and emotion are fast, automatic, instinctive responses that lead to moral judgments on the basis of factors such as the potential distress for the victims of moral transgressions. By contrast, cognition involves slower, controlled, deliberative reasoning processes that lead to moral judgments on the basis of factors such as the costs and benefits associated with a particular course of action.

Studies in support of the dual-process theory of moral judgment have typically used utilitarian dilemmas. Utilitarianism is a philosophical tenet stating that the most ethical course of action is that which results in the greatest good for the greatest number of people (Mill,

1863). For instance, one classic utilitarian dilemma described a situation in which five people are tied to a railway track, with a trolley fast approaching. There is a lever near the track which, if pulled, will divert the trolley onto a second track, where one person is tied. Pulling the lever would result in five people living and one person dying, whereas not pulling the lever would result in five people dying and one person living. Increased activation in brain regions associated with cognition and reasoning has been linked with the decision to pull the lever (utilitarian), whereas increased activation in brain regions associated with emotion has been linked with the decision not to pull the lever (non-utilitarian). This latter, 'emotional' pattern of activation increases when faced with a variant of the dilemma in which the decision involves whether or not to physically push somebody to their death rather than whether or not to pull a lever (Greene et al., 2004). The costs and benefits are the same in both versions of the dilemma; both versions involve allowing five people to die so that one can live or vice versa. However, the increased personal involvement in the second version of the dilemma is thought to elicit a stronger emotional response.

The findings from other research work investigating utilitarian decision-making lend further support to the dual-process theory of moral judgment. For instance, one study found that increasing cognitive load selectively interfered with utilitarian decisions (pull the lever/push the person) but not with non-utilitarian decisions (Greene, Morelli, Lowenberg, Nystrom & Cohen, 2008). Another study found that participants who reported their thinking style to be deliberate tended to make more utilitarian decisions and those who reported their thinking style to be intuitive tended to make non-utilitarian decisions (Bartels, 2008). Thus, both cognitive and emotional factors are thought to contribute to moral judgment and to the resolution of moral dilemmas.

4.3.1 Psychopathy and emotional factors in moral judgment

In view of the evidence relating to the contribution of emotional factors, how might psychopathy influence moral judgment? The literature reviewed above suggests that moral emotions such as guilt, shame and empathy guide moral behaviour and prevent moral transgressions (Eisenberg, 2000; Hoffman, 2000). Psychopathy has been extensively linked with impaired emotional empathy (e.g. Blair, 2008) and a profound lack of guilt. This may underpin the increased propensity for moral transgressions in psychopathy, since the prospect of causing others harm is unlikely to elicit a negative emotional response. Differences in emotional responding in psychopathy may help to resolve the inconsistency in the moral reasoning literature, whereby some evidence suggests impaired moral reasoning

in psychopathy and other evidence suggests intact moral reasoning (e.g. Blair, 1995; Aharoni et al., 2012). According to the social-intuitionist model, moral judgments are made on the basis of emotional responses, and reasoning in support of the judgment is constructed post-hoc. Thus, differences in moral reasoning capacity in psychopathy may be a direct consequence of reduced emotional responsivity (Blair, 1995).

The dual-process theory of moral judgment (Greene et al., 2004) was proposed as a way to account for both the cognitive and emotional aspects of moral judgment, and a range of studies investigating utilitarian decision-making has provided evidence in support of this model (e.g. Greene et al., 2008; Bartels, 2008). According to this model, utilitarian decisions that prioritise maximising benefit and minimising cost (pulling the lever) are associated with controlled cognitive processes. Non-utilitarian decisions that minimise personal involvement (not pulling the lever) are associated with automatic emotional processes. There is some experimental evidence to suggest that people with psychopathy endorse utilitarian courses of action to a greater extent than control participants (Bartels & Pizarro, 2011; Koenigs, Kruepke, Zeier & Newman, 2011). This is consistent with the evidence linking psychopathy with intact cognitive processing and impaired emotional processing (Blair, 2008). Taken together, the weight of the evidence may indicate that the cognitive aspects of moral judgment are preserved in psychopathy, but that the emotional aspects of moral judgment are impaired. To paraphrase, ‘psychopaths know right from wrong but don’t care (Cima et al., 2010).

Although the literature on utilitarian decision-making offers some important insights into moral reasoning in psychopathy, it is important to acknowledge the limitations of this research. The scenarios in Greene et al. (2001)’s battery describe highly extreme dilemmas, such as whether or not to kill one man so that a starving group of people could eat him, or whether a father should sell his daughter into child pornography in order to provide for the rest of his family. These scenarios are unlikely to be representative of the types of everyday moral dilemmas that people typically need to resolve. Moreover, the design of the scenarios in Greene et al. (2001)’s battery was somewhat unbalanced. For instance, the participant’s life was endangered in some scenarios and not in others, and the number of people involved in each dilemma was not systematically varied. In order to address these limitations, Chapter 11 of the present thesis compared groups high and low in psychopathic traits on a novel, systematically developed utilitarian paradigm, examining situations involving both physical and social harms.

4.4 BLAME ATTRIBUTIONS FOLLOWING MORAL JUDGMENT

The literature reviewed thus far suggests that moral judgment allows people to decide on the right course of action for themselves and to evaluate whether others' actions are morally permissible. Once another individual's actions are judged to be morally impermissible, people may then determine the extent to which the individual is morally responsible for their actions and thus to blame for the outcome, and decide what sanctions should be imposed as punishment. A number of factors are thought to influence blame attributions. Shaver (1985) proposed a model of moral responsibility, whereby people should consider five dimensions of responsibility before attributing blame to an individual. These dimensions describe potentially mitigating factors that may reduce the extent to which an individual is morally responsible for their actions. The first factor is the extent to which the individual's actions are causally linked to the outcome. For instance, consider an example in which an individual shoots and kills a person. If they shoot a target at a firing range and the bullet ricochets and kills a person, they may be judged to be less causally involved and thus less blameworthy than if they point the gun at the person and fire. The second factor is the individual's awareness of the consequences of their actions. For instance, in the shooting example, if the individual thinks the gun is unloaded, they may be judged to be less blameworthy than if they know the gun is loaded. The third factor is the intentionality of the individual's actions. If they drop the gun and it fires, accidentally resulting in a person's death, they may be judged to be less blameworthy than if they intend to kill the person. The fourth factor pertains to whether or not the individual was coerced into action. For instance, if they shoot and kill a person because they themselves are being threatened with a gun, this may reduce the extent to which they are considered to be morally responsible. The final factor pertains to the extent to which the individual appreciates the moral wrongfulness of their actions. For instance, if the individual shoots and kills a person while sleepwalking, or during a psychotic episode, they may be considered to be less blameworthy than if they shoot somebody whilst *compos mentis*.

Another prominent model of blame attribution, the culpable control model, was proposed by Alicke (2000) to expand upon Shaver's theory of blame. This model posits that both controlled, cognitive processes and spontaneous, emotional processes contribute towards blame attribution. With respect to cognitive processes, blame attribution is thought to involve deliberating over the extent to which the individual had personal control over their actions. As with Shaver's theory, mitigating circumstances relating to causality, foreseeability

and intentionality are all thought to contribute to personal control considerations. With respect to emotional processes, blame attribution is thought to involve an automatic, affective reaction to any negative consequences of an individual's actions. This spontaneous reaction is thought to result in greater blame attributions and in any potentially mitigating factors being overlooked (Lagnado & Channon, 2008). The culpable control model has some features in common with the dual-process theory of moral judgment (Greene et al., 2004), since both theories account for cognitive and emotional contributions to moral judgment and blame attribution.

Once blame has been established, sanctions may be imposed on transgressors in order to achieve just deserts or to deter others from transgressing (Carlsmith, Daley & Robinson, 2007). Legal sanctions may include fines or imprisonment, whereas social sanctions may include disapproval, criticism or exclusion (e.g. Homans, 1961; Noussair & Tucker, 2005). More blame-worthy actions may be met with more severe sanctions. For instance, in relation to the shooting example above, deliberately killing a person may be more likely to be met with murder charges. Unintentionally killing a person may be more likely to be met with manslaughter charges. Killing a person under duress may be more likely to be met with acquittal.

How might psychopathy influence blame attributions and the imposition of sanctions? Psychopathy has been extensively linked with social, moral and legal transgressions (e.g. Hare, 1993). This propensity for moral transgressions may mean that people with psychopathy attribute less blame and impose less severe sanctions as compared with control participants. A range of studies supports this assertion. For instance, studies have found that psychopathy is linked with greater endorsement of relative moral values (Glenn et al., 2009); people with psychopathy may thus consider a broader range of potentially mitigating factors when ascribing blame as compared to control participants. This is consistent with the culpable control model outlined above (Alicke, 2000); people with psychopathy may be likely to engage with the cognitive aspects of blame attribution but not the emotional aspects. They may thus be capable of deliberating potential mitigating factors and be less likely to make a spontaneous blame attribution. This is also consistent with the evidence relating to psychopathy and utilitarian decision-making, whereby those with psychopathy are thought to rely predominantly on controlled, deliberative cognitive processes at the expense of automatic emotional processes (Bartels & Pizarro, 2011; Koenigs et al., 2011). Finally, psychopathy is linked with a reduced sensitivity to punishment (Peschardt, Morton & Blair,

2003; Blair, Mitchell, Leonard, Budhani, Peschardt & Newman, 2004). Thus, people with psychopathy may be unlikely to impose sanctions for moral transgressions since they view punishment as an ineffective deterrent.

Despite the above evidence suggesting that attributions of blame may be limited in psychopathy, there is other work suggesting that people with psychopathy may make more severe blame attributions, and sanction transgressors more heavily. For instance, psychopathy has been linked with a tendency to be vengeful and unforgiving (Giammarco & Vernon, 2014). Psychopathy has also been linked with a tendency to externalise blame and to blame victims for their own misfortune (Lilienfeld & Andrews, 1996; Batson, Gudjonsson & Gray, 2010; DeLisi, Angton, Vaughn, Trulson, Caudill & Beaver, 2014). However, the studies that have examined blame externalisation in psychopathy have typically carried out in contexts where the individual with psychopathy themselves has transgressed, and blame externalisation has therefore served to deflect the focus of the blame (DeLisi, Angton, Vaughn, Trulson, Caudill & Beaver, 2014). Taken together, the evidence in relation to blame attribution in psychopathy is somewhat mixed, with limited work examining how people with psychopathy judge the moral transgressions of others. In order to address this, blame attributions in psychopathy will be examined more closely in Chapter 10 of the present thesis.

4.5 SUMMARY

In summary, moral judgment allows people to differentiate between right and wrong. Both cognitive and emotional factors contribute to moral judgment. When people's actions are judged to be morally impermissible, mitigating factors such as intentionality are considered in order to determine the extent to which they are personally responsible and thus blameworthy. Psychopathy is associated with a proclivity for moral transgression. Although moral reasoning appears to be relatively intact in psychopathy, the emotional aspects of moral judgment may be impaired. Limited work has been conducted directly examining blame attribution in psychopathy and the relevant evidence is somewhat mixed, with some evidence pointing to less severe attributions and other evidence pointing to more severe attributions.

The experimental chapters presented in this thesis will focus on two specific aspects of moral judgment in everyday social interactions and examine the potential influence of psychopathic personality traits. Chapter 10 will focus on blame attributions and counterfactual sanctions.

Chapter 11 will focus on utilitarian decision-making in situations with different levels of personal involvement, and with both social and physical harms.

Part 2: Experimental Studies

Chapter 5: Social strategies usage in awkward situations

5.1 INTRODUCTION

Psychopathy is a personality disorder characterised principally by emotional deficits such as a reduced capacity for remorse, poor behavioural control and a propensity for callous or antisocial behaviour (e.g. Cleckley, 1967; Hare, 1993), often accompanied by an aptitude for skilful manipulation and a superficially charming façade (e.g. Hare, 1993). Given this constellation of personality traits, it is unsurprising that psychopathy has considerable negative consequences, both for the individual and for society (Hare, 1993). Hare's (1991) criteria for psychopathy are most commonly adopted for research, based on the Psychopathy Checklist: Revised (PCL-R; Hare, 1991). Whilst a substantial body of work has studied incarcerated individuals who meet these criteria, criminal behaviour is thought to correlate with psychopathy without necessarily being a central component (Skeeme & Cooke, 2010). Psychopathy may be conceptualised as the extreme end of a collection of normally-distributed traits lying on a continuum (Hare & Neumann, 2008; Marcus et al., 2004). Recent attention has focused on the impact of psychopathic traits in the general (non-incarcerated) population (Anderson et al., 2011; Curry et al., 2011; Blonigen et al., 2003; Babiak et al., 2010) using measures such as the Psychopathic Personality Inventory: Revised (PPI-R; Scott & Lilienfeld, 2005). This is a self-report questionnaire with good reliability and validity that has been commonly used to assess psychopathic traits. (e.g. Vaughn et al., 2008; Long & Titone, 2007; Han et al. 2011) and correlates well ($r=.54$) with the PCL-R (e.g. Copestake et al., 2011; Poythress et al., 1998). Studying those with psychopathic traits in the general population without the potentially confounding influence of criminality (Kirkman, 2002) permits examination of the interpersonal and emotional aspects of psychopathy. This in turn may illuminate the ways in which features of psychopathy such as manipulation and exploitation, which violate social norms, can hinder prosocial interactions with others.

Prosocial behaviour plays a vital role in maintaining reciprocal and harmonious social relationships. In addition to the benefits experienced by those receiving help, those giving help by behaving prosocially have also been found to derive significant benefits (Weinstein & Ryan, 2010) including a greater experience of personal happiness (Ellison, 1991), life satisfaction (Wheeler et al., 1998), and increased self-esteem (Gecas & Burke, 1995). Both situational, external characteristics, such as the salience of someone's need,

perceived ambiguity of personal responsibility, location, appearance of the victim and cost of helping, and dispositional, internal characteristics, such as intelligence, authoritarianism, submissiveness, propensity to feel empathy for others and sensitivity to social pressure (e.g. Oliner & Oliner, 1988) may mediate the likelihood of people behaving prosocially towards one another (Batson & Powell, 2003). One key factor thought to drive selfless social behaviour is the degree to which perceiving another individual's distress causes a corresponding, empathic experience of personal distress (e.g. Batson et al, 1988; Bierhoff & Rohmann, 2004). It is posited that this empathic response drives people to alleviate distress in others (Batson et al., 1981; Dovidio et al., 1990; Eisenberg et al., 1996; Feshbach, 1987; Perry & Perry, 1974).

This process may be impaired in psychopathy, which has been conceptualised as predominantly a disorder of empathy (Soderstrom, 2003). Two key components of empathy have been defined: cognitive and emotional aspects. Cognitive empathy (also referred to as mentalising or Theory of Mind) describes the ability to represent the internal state of another individual, to take their perspective and infer what they are thinking and feeling (e.g. Frith & Frith, 2006; Singer, 2006). Emotional empathy refers to the ability to resonate with another's feelings (Blair, 2008; Shamay-Tsoory et al., 2000). Impairments in either of these components might reduce the capacity for prosocial behaviour - individuals may not perceive someone to be in distress, or they may understand but not directly resonate with this distress, and therefore not be motivated to help.

Psychopathy is thought to be characterised by intact cognitive but impaired emotional empathy (Blair, 2008). With respect to cognitive empathy, intact performance has been documented on a range of tasks including ability to answer questions accurately about the mental states of story characters, faux pas tasks, and false belief tasks (e.g. Dolan & Fullam, 2004; Jones et al., 2010). Yet despite possessing the capacity to appreciate others' perspectives, it seems that those with psychopathic traits are not motivated to behave prosocially; this has been linked to deficits in emotional empathy. A number of studies have demonstrated errors in identifying other people's emotions from facial expressions, especially fear (Blair et al., 2001b; Blair & Coles, 2000; Stevens et al., 2001; Kosson et al., 2002b) and recognition of vocal affect (Blair et al., 2002; Stevens et al., 2001). Reduced physiological responsiveness to distress in others has also been demonstrated, both in those meeting criteria for psychopathy and in those with high trait scores, using a range of physiological measures including electrodermal responses (Blair et al., 1997) and startle reflexes (Vaidyanathan et al., 2011;

Anderson et al., 2011). There is also fMRI evidence showing reduced activity in the amygdala and orbito-frontal cortex (Crowe & Blair, 2008; Blair, 2010), brain regions typically associated with fear and the regulation of threat responses (Anderson & Phelps, 2001). These differences in physiological responsivity are often accompanied by self-reported distress ratings comparable to those of control participants, which may suggest that those with psychopathic traits are able to comprehend the emotions felt in a range of contexts without having the emotional experience themselves.

The postulated dissociation between intact cognitive empathy and impaired emotional empathy may account for the apparent discrepancy between ability to manipulate others successfully and lack of emotionality and remorse in the commonly described profile of psychopathy. With respect to moral reasoning, those with psychopathic traits have been found to differentiate appropriately in relation to the moral permissibility of a range of actions (Cima et al., 2010) and to judge moral transgressions to be more serious than conventional transgressions (e.g. Blair 2005), suggesting an understanding of moral behaviour and the potential impact of moral transgressions on others. However, they are significantly less likely to make reference to the victims of moral transgressions (Arsenio & Fleiss, 1996; Blair, 1995; Blair et al., 2001c; Dunn & Hughes, 2001). Moreover, those with psychopathic traits appeared to suspend their judgment of wrongdoing when told to imagine that a behaviour such as hitting someone was no longer prohibited, whereas control participants maintained their view that this constituted wrongdoing (Blair, 1995; Blair et al., 2001c; Nucci & Herman, 1982). Numerous case studies have linked psychopathy with manipulative social behaviour (e.g. Hare, 1993; Babiak & Hare, 2006). More experimental evidence suggests psychopathic traits are associated with factors such as corporate ruthlessness (Babiak et al., 2010), scholastic cheating (Nathanson et al., 2006), and reduced cooperation when engaged in a task that requires negotiation with another character, for example the Prisoner's Dilemma Game (e.g. Curry et al., 2011; Rilling et al., 2007).

Taken together, this body of work suggests that those with high psychopathic traits are less bound than others by social norms and moral codes, and may thus be capable of socially harmful behaviours. Whilst behaviour that is in breach of the law has attracted considerable attention, there is a paucity of work elucidating the potentially negative effects of psychopathy on social performance at a more subtle, everyday level. It seems probable that individuals with high psychopathic trait scores will behave less prosocially on a day-to-day basis than those with lower trait scores, prioritising their own interests over those of

others. The present study was designed to investigate how the postulated empathic deficits associated with psychopathy translate into everyday social behaviour.

One measure that has been used to study everyday prosocial behaviour is the Social Strategy Task (Channon et al., 2012). This consists of scenarios describing a range of everyday awkward situations that require weighing one's own interests against those of another person. The task has been shown to differentiate between individuals high and low in social skill; more skilled people were found to show greater consideration for others than less skilled people.

5.1.1 Hypotheses

In Experiment 1, people who were high versus low in self-reported psychopathic traits were compared on the Social Strategy Task, to assess their responses to awkward social requests for favours or favourable opinions. It was expected that those high in psychopathic traits would employ fewer positive, compliance-based social strategies when responding to awkward requests, as compared to those low in psychopathic traits. It was also expected that the high trait group would rate these awkward social situations to be less awkward than the low trait group. Experiment 2 systematically manipulated the characteristics of the social situation to compare performance in situations involving a request for a favour against a request for an opinion. With respect to this manipulation, it was expected that any group differences in awkwardness ratings and strategy usage would be exacerbated in situations involving a request for a favour, since compliance in these situations was thought to incur a higher personal cost to participants.

5.2 EXPERIMENT 1A: SOCIAL STRATEGY USAGE IN AWKWARD SITUATIONS

5.2.1 Methods

5.2.1.1 Screening phase

Ethical approval for all studies in the present thesis was obtained from the UCL Research Ethics Committee. An opportunistic sample of 502 full-time university students (217m, 285f), who were fluent in English and aged 18 or over, was recruited for the screening phase of the study. All participants provided informed consent before completing the PPI-SF (Lilienfeld and Hess, 2001). As an incentive, participants were entered into a prize draw and informed that they might be invited to a second stage of the study, for which they would receive payment.

The PPI-SF (Lilienfeld and Hess, 2001) is a self-report questionnaire designed to measure personality traits central to the construct of psychopathy, for example egocentricity, impulsivity, cold-heartedness, capacity to manipulate and fearlessness. The PPI-SF consists of 56 statements on a 4-point, Likert-type scale with 'False', 'Mostly False', 'Mostly True' and 'True' as possible responses; higher scores indicate higher degrees of psychopathy. In order to ensure consistent responding, questionnaire items are counterbalanced such that psychopathic traits are associated with agreeing with half the statements and disagreeing with the remaining half. The PPI-SF total score has been found to have good internal consistency (Cronbach's alpha .85) and correlates well with the full version of the PPI ($r = .90$).

Total PPI-SF scores were calculated for the whole sample. In order to select the high and low psychopathic trait groups for the testing phase, participants scoring at the highest and lowest ends of the sample distribution were systematically contacted (i.e. starting with the highest scorer and moving lower for the high trait group, and starting with the lowest scorer and moving higher for the low trait group). Thus, 98 participants whose scores fell within the upper and lower tenth percentiles of the sample distribution were contacted and invited to take part in the second stage of the study. This consisted of 47 individuals (26m, 21f) in the upper range and 51 individuals (11m, 40f) in the lower range.

5.2.1.2 Testing phase

5.2.1.2.1 Design

A between-groups design was used to compare high-PPI and low-PPI participants.

5.2.1.2.2 Participants

Of those contacted from the screening phase, 20 high-scoring (10m, 10f) and 19 low-scoring (4m, 15f) individuals agreed to take part in the testing phase of the study. As anticipated, the groups differed significantly on PPI-SF scores, $t(38)=22.64, p < 0.0001$; the mean scores were 154.1 (SD 8.14) and 98.10 (SD 7.26) for the high and low groups respectively. The groups did not differ significantly in age, $t(38)=1.52, p = 0.137$; the mean ages were 19.85 years (SD 1.60) and 21.00 years (SD 2.96) for the high and low groups respectively.

5.2.1.2.3 Procedure

All participants provided written informed consent before completing the Social Strategy Task and a brief health screen to ensure that nobody with a history of significant psychiatric or neurological illness was included; no participants were excluded on this basis. Participants were paid for taking part.

5.2.1.2.4 Materials

5.2.1.2.4.1 Social Strategies Task

The Social Strategies Task (Channon et al., 2012) consists of 10 vignettes, each describing everyday social situations in which a character known to the participant (i.e. friend, relative, colleague or neighbour) poses an awkward question involving asking the participant for a favour or a favourable opinion. The gender of the main characters, the type of relationship and the social context varied across scenarios. Presentation of the materials was randomly counterbalanced such that half of each group (high versus low) were shown a different order of items to control for order effects.

The social strategy scenarios were designed to pit self-interest against consideration for others, giving the opportunity to study participants' priorities in situations with no right or wrong answers. Each scenario description made it clear that it was in the main characters' interest to get participants to comply with their requests, and in the participants' interest not to comply, since compliance would necessitate incurring a personal cost of some kind. The task required participants to decide the extent to which they would comply with requests and

how they would communicate these to the main characters. See Figure 5.1 for example scenario.

Figure 5.1: Example scenario from Social Strategies Task

Story stem

“Your cousin likes to come and stay with you. She is good company but when she visits she expects you to pay to take her out to expensive places.”

During a phone call she asks: “Can I come and visit you next weekend?”

Questions for each scenario

1. What would you say in this situation?
 2. On a scale of 0 to 100, where 0 represents ‘not at all awkward’ and 100 ‘extremely awkward’, how awkward would you say this situation is?”
-

5.2.1.2.4.2 Administration

After reading the instructions, participants were given an instruction sheet, shown an example item, and allowed to ask questions. All scenarios and corresponding questions were then presented one at a time, in a paper booklet. Participants responded verbally to all questions. The scenario remained on display until participants had completed the relevant questions in order to reduce the confounding effects of memory load.

5.2.1.2.4.3 Scoring

Strategy Usage. For each scenario, verbal responses were described as positive (i.e. prosocial) if they complied at least partially with the main characters’ requests, and negative if they did not comply. There were three categories each for positive and negative strategies; these were counted for each participant, and calculated as percentage scores.

Positive responses were classified into one of three categories, according to the degree of prosocial behaviour: simple acquiescence, qualified acquiescence with an excuse, and qualified acquiescence with negative feedback. Simple acquiescence referred to responses in which participants agreed to the characters’ requests without qualification (e.g. ‘yes you can stay with me). Qualified acquiescence with an excuse referred to responses in which they partially or conditionally agreed to the character’s request, with an excuse based either on altering the interpretation of the behaviour of the main character to a more favourable one or an excuse based on the participant’s difficulty in complying fully (e.g. ‘Yes, come along

but this time I'd like to stay home and have dinner because its cosier than a restaurant'). Qualified acquiescence with negative feedback implied criticism by making direct reference to some undesirable aspect of the main character's behaviour as a justification for lack of full compliance (e.g. Yes, but I expect you to pay your share of whatever we have to pay for).

Negative strategies were classified into one of three categories, depending upon the degree of prosocial behaviour: justified refusal with an excuse that protected the main character's feelings (e.g. Sorry but I've got other plans that weekend, maybe some other time), justified refusal with negative feedback that implied criticism of the main character (e.g. No, I can't afford to keep taking you out), and outright refusal. Outright refusal strategies consisted of simple refusals to comply with the character's request (e.g. No you can't visit next weekend).

Perceived awkwardness. Awkwardness ratings were averaged across the ten scenarios.

5.2.2 RESULTS

5.2.2.1. Statistical analyses

Where possible, parametric tests were conducted throughout the present thesis, since they have greater power to reject a false null hypothesis than non-parametric equivalents (e.g. Howell, 1997), and provide greater flexibility with respect to multivariate analyses. However, parametric tests require the underlying distribution of the data to approximate to the normal distribution. It is therefore important to ensure that assumptions of normality have been met by the data. In all experimental studies presented in this thesis, the data were initially assessed for outliers and for skewness, following the methods recommended by Tabachnick and Fidell (1983), who state that the standard error for skewness is calculated as follows:

$$S_s = \sqrt{6/N}$$

(N=number of cases)

This value can then be put into the equation below, using the z distribution:

$$Z = \frac{S - 0}{S_s}$$

(S = computed value for skewness).

If the data are from a normal distribution, a z-value in excess of ± 2.58 would lead to the rejection of the assumptions of normality of the distribution at $p \leq .01$. In the present study, the data were considered to be skewed beyond the parameters of the normal distribution if $S > 2.58\sqrt{6/N}$ or $S < -2.58\sqrt{6/N}$. For the high trait group in the current study, $n=20$ and therefore $S = 1.413$; for the low trait group, $n=19$ and therefore $S = 1.450$.

One method of adjusting data to reduce skewness and the potential impact of outliers is to perform a transformation. Throughout this thesis, when data transformation was required, the most appropriate transformation was decided upon using Tukey's 'ladder of transformations' (Erickson & Nosenchuk, 1977).

Examination of the present data showed that all but one of the variables was normally distributed; outright refusals for the high trait group was skewed. This variable could not be transformed to normality. However, a non-parametric test showed a similar result to a parametric test, and parametric analyses were therefore reported throughout. The data were also checked for outliers, specifically to ensure that the data fell within three standard deviations of the mean. Each variable was converted into a standard score (z-score); no data point was found to exceed ± 3 using this method. A significance level of .05 was adopted throughout this thesis. Where post-hoc t-tests were conducted, a stricter significance level of .05/number of tests was adopted. Means and standard deviations (SD) for each of the measures described below are presented in Table 5.1.

Table 5.1 Mean scores and standard deviations for the two groups for the Social Strategy Task.

	High PPI Group		Low PPI Group	
	Mean (SD)		Mean (SD)	
	(N=20)		(N=19)	
Positive Strategy Usage (%)				
Acquiescence	10.50	(12.34)	23.68	(12.57)
Qualification with excuse	20.00	(11.23)	24.21	(9.61)
Qualification with feedback	16.00	(12.31)	9.47	(10.26)
Negative Strategy Usage (%)				
Justification with excuse	26.50	(11.82)	28.95	(14.49)
Justification with feedback	18.50	(10.40)	12.63	(10.98)
Outright refusal	8.50	(10.89)	1.05	(3.15)
Awkwardness (%)	42.76	(13.36)	56.07	(12.05)

5.2.2.2 Positive strategy usage

The high and low PPI groups were compared on their usage of simple acquiescence, qualified acceptance with excuses and qualified acceptance with negative feedback. A t-test showed that the high PPI group used significantly fewer acquiescent social strategies than the low PPI group, $t(38)=3.31, p=.002$. The groups did not differ significantly in their use of acceptances qualified by excuses, $t(38)=1.25, p=.218$, or acceptances qualified by negative feedback, $t(38)=1.79, p=.081$.

5.2.2.3 Negative strategy usage

The groups did not differ significantly in their usage of justifications for refusal qualified by excuses, $t(38)=0.58, p=.566$, nor justifications for refusal qualified by negative feedback, $t(38)=1.72, p=.095$. The high PPI group used significantly more outright refusal strategies than the low PPI group, $t(38)=2.87, p=.007$.

5.2.2.4 Perceived awkwardness

With respect to awkwardness, the high PPI group rated the scenarios to be significantly less awkward than did the low PPI group; $t(38)=3.26, p=.002$.

5.2.2.5 Gender

Since the gender distribution was uneven in the low PPI group, these analyses were repeated using ANCOVAs with gender as a covariate. The effect of gender did not reach significance for any of these analyses ($p>.05$) and did not change the overall pattern of results.

5.2.3 Discussion of Experiment 1A

The main findings of Experiment 1A were that, as expected, the high psychopathic trait group was less prosocial in approaching the awkward requests than the low psychopathic trait group. With respect to strategy usage, the high trait participants were less likely to acquiesce with requests and more likely to give outright refusals than the low trait group. They also perceived the situations to be less awkward than did the low trait participants.

The awkward situations presented in Experiment 1A varied in their nature, consisting of both requests for opinions and favours. The nature of the request might in itself influence prosocial behaviour, making different demands on participants. For example, requests for both undesirable favours and opinions are likely to carry an emotional cost, since both types of request potentially set up internal conflict between what the individual wants to say or do and what the main character wants them to say or do. Since requests for favours involve actions, they may also carry a practical cost in terms of money, time or physical effort, whereas this is not the case when asked for a favourable opinion. Experiment 1B was designed to investigate the influence of relative cost by systematically comparing both opinions and favours. Each of the scenarios was presented twice, once ending with a request for a favour and once ending with a request for an opinion.

5.3 EXPERIMENT 1B: STRATEGY USAGE AND TYPES OF AWKWARD REQUESTS

5.3.1 Methods

5.3.1.1 Screening phase

A new sample of 401 full-time university students (177m, 224f) who were fluent in English and aged 18 and above was opportunistically recruited. All participants gave informed consent and completed the PPI-SF; they were entered into a prize draw and told that they might be invited to the next phase of the study, which would be paid. Total PPI-SF scores were calculated for the whole sample. Forty 'high PPI' participants, whose scores fell within the upper tenth percentile (18m, 22f) and forty 'low PPI' participants, whose scores fell within the lower tenth percentile (9m, 31f) were invited to take part in the second stage of the study.

5.3.1.2 Testing phase

5.3.1.2.1 Design

There was one between-participants factor of PPI group (high vs. low scorers) and one within-participants factor of type of cost (option vs. favour).

5.3.1.2.2 Participants

A between-groups design was again used to compare high- and low-PPI participants. Of those contacted from the screening phase, 19 high-scoring (9m, 10f) and 19 low-scoring (4m, 15f) individuals agreed to participate in the testing phase. As anticipated, the groups differed significantly on PPI-SF scores, $t(36)=14.81, p<0.0001$. The mean PPI-SF scores were 155.95 (SD 9.35) and 108.37 (SD 10.43) for the high and low groups respectively. The groups did not differ significantly in age, $t(36)=0.24, p=0.816$; the mean ages were 19.42 years (SD 1.17) and 19.31 years (SD 1.56) for the high and low groups respectively. After giving written informed consent, participants completed the Revised Social Strategy Task with two types of personal cost, and a brief health screen. The experiment lasted approximately 30-50 minutes and participants were paid for taking part.

5.3.1.2.3 Procedure

All participants in the testing phase provided written informed consent and completed a brief health screen to ensure that nobody with a history of significant psychiatric or neurological

illness was included; no participants were excluded on this basis. Participants were paid for taking part.

5.3.1.2.4 Materials

5.3.1.2.4.1 The Social Strategies Task: Revised

This was an extension of the Social Strategy Task described in Experiment 1A. In this version of the task, the 10 vignettes describing a character posing an awkward question each had two variants, one involving a request for a favour and the other for a favourable opinion, representing different types of personal cost; order of presentation of the two variants was counterbalanced across scenarios. See Figure 5.2 for an example scenario:

Figure 5.2: Example scenario from Social Strategies Task: Revised

Story Stem

“Your cousin likes to come and stay with you. She is good company but when she visits she expects you to pay to take her out to expensive places.”

OPINION ENDING: During a phone call she asks: “Do you like having me to stay?”

FAVOUR ENDING: During a phone call she asks: “Can I come and visit you next weekend?”

5.3.1.2.4.2 Scoring

The questions and corresponding scoring system for the revised task was identical to that used for Experiment 1A. Two blind, independent raters conducted all scoring in accordance with this system, and had an agreement rate of 96%.

5.3.2 Results

The protocol for statistical analysis was identical to that specified in Experiment 1A. Means and standard deviations (SD) for each of the measures described below are presented in Table 5.2. Parametric analyses were again reported, since although there was skewness in several variables (simple acquiescence, qualified acquiescence with negative feedback, and qualified refusal with negative feedback), non-parametric tests showed a similar pattern of findings.

Table 5.2: Mean scores and standard deviations for the two groups for the Social Strategies Task with two personal cost variants.

	High PPI Group		Low PPI Group	
	Mean	(SD)	Mean	(SD)
	(N=19)		(N=19)	
Positive Strategy Usage (%)				
Acquiescence				
Opinions	1.58	(5.01)	2.11	(4.19)
Favours	1.05	(3.15)	0.53	(2.29)
Qualification with excuse				
Opinions	22.11	(13.16)	30.00	(13.74)
Favours	22.11	(15.12)	40.00	(17.00)
Qualification with negative feedback				
Opinions	10.00	(12.91)	9.47	(9.70)
Favours	4.74	(8.41)	4.21	(6.07)
Negative Strategy Usage (%)				
Justification with excuse				
Opinions	19.47	(12.24)	22.63	(15.22)
Favours	24.21	(15.02)	28.95	(12.86)
Justification with negative feedback				
Opinions	12.11	(17.51)	11.05	(11.97)
Favours	3.16	(7.49)	1.05	(3.15)
Outright refusal				
Opinions	34.74	(20.65)	24.74	(20.10)
Favours	44.74	(15.77)	25.26	(19.26)
Awkwardness (%)				
Opinions	49.16	(16.85)	57.89	(9.73)
Favours	47.68	(15.81)	56.16	(11.73)

5.3.2.1 Positive strategy usage

The high and low PPI groups were compared on their usage of acquiescence, qualification with excuses and qualification with negative feedback strategies for the two request type variants. For acquiescent strategies, a 2 x 2 Anova (group by type of request) showed no significant main effect of group, $F(1, 36)=0.00, p= 1.00$; the effect of request type was not significant, $F(1, 36)=2.77, p=.105$, nor the group by request interaction, $F(1, 36)=0.692, p=.411$. The high PPI group used significantly fewer acceptance strategies qualified by excuses, $F(1, 36)=11.88, p=.002$; the effect of personal cost was not significant, $F(1, 36)=2.76, p=.105$, nor the group by cost interaction, $F(1, 36)=2.76, p=.105$. The effect of group was not significant for acceptance strategies qualified by negative feedback, $F(1, 36)=0.04, p=.834$; the effect of personal cost was significant, $F(1, 36)=7.98, p=.008$, and there was no significant group by cost interaction, $F(1, 36)=0.01, p=.999$.

5.3.2.2 Negative strategy usage

The high and low PPI groups were compared on their usage of refusal justified by excuses, refusal justified by negative feedback and outright refusal strategies for the two personal cost variants. For refusal justified by excuses, there was no significant main effect of group, $F(1, 36)=1.17, p=.288$; there was a significant effect of personal cost, $F(1, 36)=4.39, p=.043$, and the group by cost interaction was not significant, $F(1, 36)=0.09, p=.766$. When refusals justified by negative feedback were examined, the main effect of group was not significant, $F(1, 36)=0.36, p=.550$; there was a significant effect of personal cost, $F(1, 36)=13.38, p=.001$, and the group by cost interaction was not significant, $F(1, 36)=0.41, p=.840$. For outright refusal strategies, there was a significant main effect of group, $F(1, 36)=8.71, p=.006$; the effect of personal cost was not significant, $F(1, 36)=2.09, p=.157$, nor the group by cost interaction, $F(1, 36)=1.70, p=.201$.

5.3.2.3 Perceived awkwardness

With respect to awkwardness, the high PPI group rated the scenarios to be significantly less awkward than did the low PPI group, $F(1, 36)=4.16, p=.049$; the effect of personal cost was not significant, $F(1, 36)=1.10, p=.302$, nor the group by cost interaction, $F(1, 36)=0.01, p=.932$.

5.3.2.4 Gender

Since the gender distribution was uneven in the low PPI group, these analyses were repeated using ANCOVAs with gender as a covariate. The effect of gender did not reach significance for any of these analyses ($p > .05$) and did not change the overall pattern of results.

5. 4 Discussion

The present study was designed to examine how psychopathic personality traits translate into everyday social behaviour. Two experiments compared participants who were high and low in self-reported psychopathic traits on variants of a social strategy task. Experiment 1 examined the types of strategies used in awkward social situations that ended with the main character asking participants for either a favour or an opinion. Experiment 2 extended this by manipulating the nature of the main characters' requests to compare different types of demand so that all task items had two variants, one involving a favour and one an opinion. Participants' strategy usage was assessed by classifying their verbal responses into one of six categories describing the extent of prosocial behaviour, in descending order: simple acquiescence with the main characters' requests, qualified acquiescence with an excuse, and qualified acquiescence with negative feedback (positive strategies); justified refusal with an excuse, justified refusal with negative feedback, and outright refusal of the main characters' requests (negative strategies). In line with predictions, the main findings for both experiments were that the high trait group was less prosocial in strategy usage, and also rated the situations to be less awkward than did the low trait group.

With respect to the effects of the manipulation in Experiment 2, participants across groups refused requests more tactfully in the favour condition than in the opinion condition, since they used more justified refusals with excuses in response to requests for favours and more justified refusals with negative feedback in response to requests for favourable opinions. This may reflect differences in the emotional and/or practical costs associated with the two types of request. Both opinions and favours may incur emotional costs linked on the one hand to discomfort or resentment if they lied or avoided direct discussion of the main character's behaviour (such as giving a positive opinion when asked if they enjoyed the visits of the cousin in the example who likes to be taken to expensive places, or complying with her request for a favour by allowing her to stay without raising this); or on the other hand to the anxiety or guilt caused or the longer-term consequences for the relationship if they did express their dissatisfaction with the request (such as making direct reference to being

expected to spend money on the cousin in responding to requests for both opinions and favours). By contrast, the favours were more likely to incur practical costs such as financial expenditure or loss of time. The overall difference in type of negative strategy employed between conditions may have arisen since it was easier for participants to find an excuse to avoid compliance with a request for a practical favour (e.g. telling the cousin they were busy) than to find an excuse to avoid offering a favourable opinion. Contrary to predictions, group membership did not interact with request type. This lack of interaction may have occurred since both groups were predominantly influenced by the emotional costs common to both favour and opinion conditions, thus focusing on these and disregarding the practical costs associated with only the favour condition.

Examining strategy usage in people high in psychopathic traits illuminates the nuances of how they approach their social world, and how they navigate solutions when faced with awkward social encounters. A significant body of research into psychopathy has focused on the relationship to criminal behaviour and extreme acts. For instance, a range of studies investigating cognitive and emotional difficulties in psychopathy has compared psychopathic and non-psychopathic prisoners. There is also work evaluating psychopathy with respect to moral behaviour. One salient example of this is The Trolley Dilemma (e.g. Bartels & Pizarro, 2011), in which participants are required to make moral decisions that result in the death of either one person or five people. Psychopathic traits are typically linked to more utilitarian judgments where the most logical decision prevails, in contrast with control groups who may save one individual rather than five when the level of emotional involvement is high. Studies such as these often use extreme cases involving substantial physical harm or emotional distress. By contrast, the present study focused on social functioning at a commonplace level. The evidence of reduced prosocial behaviour in social interactions highlights the potentially pervasive influence of psychopathic traits in everyday life.

A range of factors might have accounted for the differences in behaviour between the high and low psychopathic trait groups. It is noted that the upper and lower deciles of the screening samples in both experiments differed in their gender balance, with roughly even males and females scoring high and mostly females scoring low in psychopathic traits; this was also reflected in the samples tested. It is thus difficult to differentiate between the influence of psychopathic traits and gender. However, the literature reveals that psychopathy is more commonly diagnosed in males than in females (Patrick, 2006; Hartung & Widiger, 1998), and thus gender differences are likely to be intrinsically linked to trait groups. What

other factors potentially account for the group differences in performance? These are unlikely to be attributable to memory, since the social scenarios and related questions remained on display throughout the task to reduce memory load. It is also unlikely that the groups differed in ability to understand the concrete, literal meanings of the scenarios and what the story characters were requesting, since the items were presented in short, simple form, and all participants were both university students and fluent English speakers. For example, if asked in relation to the cousin's visit scenario, 'Can I come and visit you next weekend?', it is probable that all participants were able to infer that the scenario character wanted to know whether they could come and stay.

Despite understanding the literal meaning of the requests, it may be that the high psychopathic trait group did not comprehend the non-literal subtext behind them. For instance, in the example of the cousin's visit, there was an implication that the cousin specifically wanted a favourable response (i.e. that she could come and stay). Participants whose interpretations of the questions are limited to a literal understanding without grasping the subtext may be less tactful and less compliant with the requests than those who do appreciate the subtext. Since the high trait group gave responses that were less favourable than those of the low trait group, one possible explanation is therefore that they failed to infer the non-literal meanings behind the characters' requests, and did not fully appreciate what was in fact being asked of them. Failure to understand the subtext of the requests might also be linked to difficulties in anticipating the consequences of the participants' responses for the main characters. The immediate consequences of not complying with requests might be distress or inconvenience for the characters. In the longer-term, failure to comply could also damage the relationship with the characters. Thus, in the cousin's visit scenario, telling the cousin that she could not visit at the weekend might cause immediate upset, and also lead to longer-term strain on the relationship with her. This explanation could also potentially account for the finding that high trait participants perceived the situations to be less awkward than did the low trait participants. They may have lacked awareness of the discrepancy between the favourable responses desired by the main characters and their own, less favourable perspective.

Accounting for the present findings in terms of a failure to appreciate the non-literal subtexts and the potential consequences of not complying with characters' requests could be linked to difficulties in cognitive empathy. However, there is relatively little evidence to support this. People with psychopathy demonstrate intact performance on a range of traditional

cognitive empathy tasks, for example those that measure faux pas and false belief (e.g. Jones et al., 2010), and can accurately answer questions about the mental states of story characters (Dolan & Fullam, 2004). Alternatively, deficits in emotional empathy have been more consistently acknowledged, with a substantial literature demonstrating errors in identifying emotions in others (Blair et al., 2001b; Blair & Coles, 2000; Stevens et al., 2001; Kosson et al., 2002b; Blair et al., 2001) and diminished physiological responsivity when witnessing others in distress (e.g. Blair et al., 1997; Vaidyanathan et al., 2011; Anderson et al., 2011; Crowe & Blair, 2008; Blair, 2010). This is often accompanied by self-reported distress ratings comparable to those of control participants, suggesting that those with psychopathy understand the emotion that is felt in a variety of situations without necessarily experiencing it.

Although deficits in either cognitive or emotional empathy could potentially explain the present pattern of results, impaired emotional empathy is more consistent with the construct of psychopathy and is thus more likely to account for the differences in performance between the high and low psychopathic trait groups. Emotional rather than cognitive factors may have primarily driven performance when complying with requests in the social strategy task. If participants identify emotionally with the main characters, this may increase the extent to which they prioritise the need to spare their feelings in order to avoid negative consequences for them. For instance, in the example of the cousin's visit, participants may have initially wished to express their own dissatisfaction with the situation and tell the cousin that they did not like having to pay for everything when she came to visit. However, by resonating emotionally with the potential distress that this would cause her, they may have felt unable to give their honest opinion and substituted a more favourable one. Since the high trait participants were generally less compliant than the low trait participants, it is possible that they lacked emotional investment in the social interactions and failed to experience empathic distress at the prospect of non-compliance. They may thus have been concerned exclusively with their own interests and thus were not motivated to address the needs of the main characters. A lack of consideration for the main characters may also account for the finding that the high trait group rated the scenarios to be significantly less awkward than did the low trait group. Greater experience of awkwardness in the low trait group may have reflected an internal struggle to reach a suitable compromise between their own preferences (for example, wishing to tell the cousin that she could not come to stay) and those of the main characters (the cousin wanting to visit). High awkwardness ratings may have thus arisen either from the prospect of fulfilling an undesirable request, or from the prospect of disappointing or

upsetting the main character. If high trait participants did not care about the characters, and were happy to prioritise their own needs, they may have not experienced the same degree of awkwardness.

In summary, the present study employed an experimental task to compare the use of social strategies and self-reported awkwardness in awkward, everyday social situations in those high and low in psychopathic personality traits. With respect to the extent of compliance, the high trait group were less prosocial in their strategy usage and perceived the situations to be less awkward than the low trait group. The findings help to illuminate some of the ways in which psychopathic traits translate into everyday social behaviour. Specifically, when interacting with people in their social world, those who feel less awkward in complex social situations and are unconcerned with another individual's prospective distress may be less prone to do favours for their friends, family and colleagues, or to moderate their honest, potentially hurtful opinions. The most likely explanation for the differences in performance between groups is impaired emotional empathy, a prominent feature of psychopathy. Further research is needed to illuminate what characteristics of social situations might differentially influence those high and low in psychopathic traits, and how these might be ameliorated to increase prosocial behaviour.

5. 5 THE NEXT STUDY: EXPLORING COST FURTHER

Experiment 1B serves as the first study in this line of research, and was designed to investigate how the external value of a request might affect prosocial behaviour. Requests for favours and requests for favourable opinions were systematically compared, since it was thought that these two types of request might carry different external values, in terms of emotional and practical costs. For instance, requests for favourable opinions may incur an emotional cost due to the experience of internal conflict; requests for favours may incur an emotional cost in addition to practical costs such as a loss of time or money. Another valuable direction in this line of research might be to compare *relative value*, or different levels of the same cost. Different types of emotional/practical cost elicited differences in both groups, but without an interaction suggesting that whether the costs were emotional or practical was not relevant. However, not only the type of cost, but also the extent of the effort or sacrifice involved in responding might also influence responding. As the cost to the individual increases, those high in psychopathic traits might become differentially less inclined to respond favourably. The next experiment will examine how higher or lower costs of the same type might differentially influence the groups.

Chapter 6: Reciprocity and the relative value of social exchanges

6.1 INTRODUCTION

The present study investigated reciprocity in everyday social exchanges to evaluate the effects of higher or lower costs for prosocial behaviour. Reciprocity in social interactions plays an important role in developing and maintaining harmonious, cooperative social relationships, for instance by building up a positive reputation (Wedekind & Braithwaite, 2002) and enhancing feelings of group identity (Kerr & Kauffman-Gilliland, 1994). It has also been posited that reciprocity has served an evolutionary advantage; when people help others who have helped them, the survival of both is more likely (Trivers, 1971, Fiske 2004). In addition to securing beneficial outcomes in the future, one possible factor driving prosocial behaviour is the extent to which people find reciprocity gratifying. Rilling, Gutman, Zeh, Pagnoni, Sterns and Kilts (2002) demonstrated that reciprocity is associated with greater activation in brain areas that have commonly been linked with reward processing, such as the nucleus accumbens, the caudate nucleus, the ventromedial frontal/orbitofrontal cortex and the rostral anterior cingulate cortex. Thus, the authors argue that people experience positive reinforcement when behaving prosocially.

Reciprocity in social exchanges has been studied predominantly using paradigms emerging from economic game theory. One well-known paradigm is the Prisoner's Dilemma, in which participants have to decide whether or not to cooperate with an opponent. In the classic version of the game, two prisoners (A and B) have to decide whether or not to betray the other in order to avoid a prison sentence. If A betrays B but B remains silent, then A will be set free and B will serve three years in prison. If A and B betray each other, they will each serve two years in prison. If A and B both remain silent, they will each serve one year in prison. This dilemma involves making a decision to minimise losses or reduce punishment; alternative versions of the Prisoner's Dilemma have since been developed to investigate decision-making to maximise gains or increase reward, for example deciding whether to cooperate and share money equally versus betray and potentially obtain a greater share. Participants in the Prisoner's Dilemma and other similar tasks are consistently biased towards cooperation (Fehr & Fischbacher, 2003; Tversky & Shafir, 2004; Toh-Kyeong, Ostrom & Walker, 2002).

One drawback of the classic Prisoner's Dilemma is that it involves a one-off interaction; the participant's decision is thus not motivated by a desire to protect their reputation for future interactions. To address this, iterated versions of the Prisoner's Dilemma have been developed, in which the classic game is played repeatedly between the same players. This offers the opportunity to penalise opponents for betrayals, and evidence shows that people are more cooperative when future interactions are likely (Andreoni & Miller, 2002).

A number of studies have investigated reciprocity in psychopathy using the Prisoner's Dilemma. Findings suggest that psychopathic participants are less cooperative than control participants, showing a greater propensity to accumulate gains and exploit opponents (Mokros, Menner, Eisenbarth, Alpers, Lange & Osterheider, 2008; Curry, Chesters & Viding, 2011). In addition, those high in psychopathic traits are able to distinguish between one-shot and iterated versions of the Prisoner's Dilemma and adapt their strategy accordingly; their reduced rate of cooperation is exacerbated in one-shot games in which uncooperative decisions incur no future penalty (Curry et al., 2011).

Experimental evidence has linked the lack of emotional responsivity commonly associated with psychopathy with their reduced reciprocity in the Prisoner's Dilemma. Firstly, people high in psychopathic traits may not be motivated to reciprocate in order to reduce potential emotional distress in others. For instance, in one study, participants low versus high in psychopathic traits completed an iterated version of the Prisoner's Dilemma in which they were provided with affective feedback from the opponent; the opponent was rated to be 'very happy' at the start of the game and became progressively more 'sad' each time participants chose not to reciprocate (Johnson, Hawes & Straiton, 2014). The findings showed that the low trait group increased their rate of cooperation in response to this affective feedback whereas the high trait group did not. Secondly, those high in psychopathic traits may not personally experience emotional distress in response to others' failures to reciprocate. Thus, in one study, non-cooperation from opponents was associated with lower amygdala activity in those high versus low in psychopathic traits (Rilling, Glenn, Jairam, Pagnoni, Goldsmith et al., 2007), suggesting a lack of aversive conditioning in response to non-cooperation and therefore a lack of motivation to avoid non-reciprocal outcomes in the future.

This simultaneous propensity to behave non-cooperatively and lack of emotional response to others' non-cooperation may indicate that people with psychopathy are less concerned

with fairness and equity in social exchanges, and are not motivated to develop or maintain a reciprocal relationship with their opponents. This is further supported by evidence demonstrating that those with psychopathy are less likely to intervene in order to reverse or punish decisions that involve an unfair outcome (e.g. monetary penalty) for a third party in an economic game, even when they do not personally stand to lose (Masui, Iriguchi & Ura, 2014). However, when given an incentive (e.g. monetary reward) for intervening, they did act against unfair decisions.

Whilst the Prisoner's Dilemma and other neuroeconomic games have provided valuable insights into reciprocity, the highly structured types of payoffs and decisions made in such games do not reflect cooperative decision-making as found in everyday contexts (Johnson, Stopka & Bell, 2002). Firstly, everyday social exchanges typically take place in a variety of settings, such as the workplace, educational settings, in the home or in public. Secondly, these exchanges incur varying levels of cost, and studies show that people are sensitive to this value, with prosocial behaviour decreasing as the cost of helping increases (e.g. Dovidio, 1984). Thirdly, the characters in traditional neuroeconomic paradigms are established as opponents or competitors, and are generally anonymous (e.g. Johnson et al., 2014) or strangers (e.g. Rilling et al., 2007), whereas many everyday reciprocal interactions involve family, friends and acquaintances. There is a paucity of work investigating how the posited lack of reciprocity in psychopathy manifests in everyday social exchanges. The present study focused on this through exchanges incurring varying levels of cost in which the characters were known to the participants in the context of an ongoing relationship.

6.1.1 Hypotheses

The present study involved the development of a novel research tool, the Social Exchange Task. This was designed to expand on the findings from the studies presented in Chapter 5.1 and 5.2 in two key ways. Firstly, in the social strategies task described in 5.1, the interactions involved the characters making a request of the participant. By contrast, the Social Exchange Task involved characters who had previously done a favour for the participant and then offered a second favour. Secondly, the revised Social Strategy Task experimentally manipulated the type of cost incurred by behaving prosocially, and did not find high versus low trait groups to be differentially influenced. In the present study, the relative value of the cost rather than the type of cost was manipulated, in order to compare prosocial responding in situations in which returning a favour involves a lesser versus greater cost.

It was expected that those high in psychopathic traits would be less reciprocal, both when asked to verbally respond to a character's offer and when asked to choose from a set of options. This is consistent with evidence from a range of neuroeconomic paradigms investigating reciprocity (e.g. Mokros et al., 2008; Curry et al., 2011), in addition to the findings from Chapter 5.

In line with evidence suggesting reduced emotional empathy in psychopathy (e.g. Blair et al., 1997; Blair, 2010), it was expected that the high trait group would report less satisfaction with reciprocal responding and greater satisfaction with non-reciprocal responding, as compared to those low in psychopathic traits. It was also expected that when asked to justify their choices, the high trait group would use less 'social' reasoning (involving kind or empathic comments or explicit references to social mechanisms such as turn-taking) and more 'practical reasoning (involving unelaborated comments, or references to purely practical information), than the low trait group.

Although it was expected that the high trait group were likely to be less prosocial overall, this may have been somewhat moderated in situations where the cost of reciprocating is low, and thus the sacrifice or inconvenience to the participant is minimal, particularly if reciprocating is likely to increase potential future benefits. By contrast, in situations where the cost of reciprocating is high, the high trait group may have been less likely to be influenced by factors such as sympathy for the character or a desire to behave fairly than the low trait group. Therefore, with respect to the manipulation of relative cost, it was expected that any group differences in prosocial responding would be exacerbated in the more costly variant of scenarios.

6.2 METHODS

6.2.1 Screening Phase

A sample of 646 full-time university students (264m, 380f) who were fluent in English and aged 18 and above was opportunistically recruited. All participants gave informed consent and completed the PPI-SF (Lilienfeld and Hess, 2001); they were entered into a prize draw and told that they might be invited to the next phase of the study, which would be paid. Total PPI-SF scores were calculated for the whole sample.

In the studies reported in Chapter 5, the high and low psychopathic trait groups were recruited by contacting the participants scoring at the highest and lowest ends of the screening sample distribution, without adjusting for gender. This resulted in an uneven number of male and female participants in the high and low psychopathic trait groups. This was unsurprising, since psychopathic traits are more commonly associated with males than females, and the inclusion of gender as a covariate did not influence the findings in these studies. However, women also present with psychopathic traits, and these may manifest in different ways to men (e.g. Forouzan & Cooke, 2005). It was therefore important to examine how psychopathic traits in men and in women translate into social behaviour, and to control for any potentially confounding influence of gender. Thus, in order to select the high and low psychopathic trait groups for the testing phase whilst maintaining even gender distribution in both groups, the strategy for contacting participants was revised from Chapter 5 for the remaining studies in the present thesis. Male participants scoring at the highest and lowest ends of the distribution and female participants scoring at the highest and lowest ends of the distribution were systematically contacted (i.e. starting with the highest scoring males and females separately and moving lower for the high trait group, and starting with the lowest scoring males and females separately and moving higher for the low trait group, until group sizes were reached). On this basis, 33 high-scoring participants from the upper tenth percentile (16 males, 17 females) and 33 low-scoring participants from the lower twentieth percentile (20 males, 13 females) of the screening sample distribution were contacted by email or telephone and invited to take part in the second stage of the study.

6.2.2 Testing Phase

6.2.2.1 Design

The study had one between-participants factor of PPI group (high vs. low scorers) and one within-participants factor of relative cost (lower-cost vs higher-cost).

6.2.2.2 Participants

Twenty high-scoring (10m, 10f) and 20 low-scoring (10m, 10f) individuals took part in the experimental stage of the study, which involved completing the Social Exchange Task and the Favours Task (reported in Chapter 7). As anticipated, the groups differed significantly on PPI-SF scores, ($t(39)=22.48$; $p<.001$). The mean PPI score was 161.52 (SD 9.61) and 96.80 (SD 8.79) for the high and low groups respectively. The groups did not differ significantly in age ($t(38)=.13$; $p=.897$); the mean age was 20.30 (SD 1.98) and 20.20 (2.82) for the high and low groups respectively.

6.2.2.3 Procedure

All participants provided written informed consent before completing the experimental tasks and a brief health screen to ensure that nobody with a history of significant psychiatric or neurological illness was included; no participants were excluded on this basis. Participants were paid for taking part.

6.2.2.4 Materials

6.2.2.4.1 Social Exchange Task

The Social Exchange Task was designed to examine reciprocity in unequal social exchanges. This task consisted of 10 short scenarios (see Figure 6.1 for example), describing an interaction with a character known to the participant (such as a friend, sibling, colleague or flatmate). Each scenario describes a previous instance in which the character has done a favour for the participant, incurring a loss of time, effort or money (for example paying for a sandwich). The same character then offers to do a second, related favour for the participant. The participant is then asked a) to respond verbally to this offer, b) to make a choice between reciprocating, compromising, or allowing the character to do the second favour, and c) to rate satisfaction with each of these options. Each scenario had two variants; in the first, lower-cost variant, the character offers to do another favour of lesser value than the original favour involving less effort, time or money (for example paying for coffee). If the participant chose to reciprocate, this would result in an advantageous social exchange, since their contribution would be smaller than the character's. In the second, higher-cost variant, the character offers to do a favour of greater value than the original favour, involving more effort, time or money (for example paying for an evening meal). If the participant chose to reciprocate, this would result in a disadvantageous social exchange, since their contribution would be larger than the character's original favour. Characters were counterbalanced across the scenarios for gender and proximity of relationship. Relationships with a clear hierarchy (for example boss, parent) were not included.

Figure 6.1: Example scenario from Social Exchange Task

Story Stem

“Last week when you and a friend went out for lunch, she paid for her own sandwich and yours.”

LOWER-COST CONDITION: Today, you go out for coffee. When the bill comes, she says she will pay for your coffee.

HIGER-COST CONDITION: Today, you go out for an evening meal in your local pub. When the bill comes, she says she will pay for your meal.

Questions for each scenario

1. What would you say in response?
2. If you had to choose from the following three options, how would you respond in this situation?
 - a. Thank her and let her pay for your coffee/meal
 - b. Thank her but say you’ll pay for your own coffee/meal
 - c. Thank her but pay for her coffee/meal and yours instead
3. How satisfied would you be if you chose to let her pay for your coffee/meal?
4. How satisfied would you be if you chose to pay for your own coffee/meal?
5. How satisfied would you be if you chose to pay for her coffee/meal and yours instead?

1= _____ 10 =
Not at all satisfied Completely satisfied

6.2.2.4.2 Administration

After reading the instructions, participants were shown an example item and allowed to ask questions. All scenarios and corresponding questions were then presented one at a time, in a paper booklet. Participants responded verbally to all questions. The scenario remained on display until participants had completed the relevant questions in order to reduce the confounding effects of memory load.

6.2.2.4.3 Scoring

6.2.2.4.3.1 Verbal responses

Participants’ verbal responses to the question “what would you say in response” were coded according to a) course of action and b) justification of action, by one independent

rater and one rater who was not blind to group membership. The raters had an agreement rate of 93%. All disagreements were resolved by discussion.

Course of action. For each scenario, verbal responses were classified according to the extent to which they reciprocated the character's original favour. There were three possible categories for course of action, which mapped onto the forced-choice ratings subsequently provided by participants: non-reciprocal, compromise and reciprocal responses. Non-reciprocal responses (for example, allowing the friend to pay for the coffee/meal) were awarded a score of 1. Compromise responses (for example, paying for one's own coffee, splitting the bill, or promising to take the friend out for coffee or a meal in the future) were awarded a score of two. Finally, reciprocal responses (for example, offering to pay for the coffee/meal instead of the character) were awarded a score of three. A composite verbal response reciprocity score was derived by summing course of action scores across all ten scenarios for each participant.

Justification of action. This dimension relates to the extent and nature of the reasoning participants gave relating to their chosen course of action. Responses were classified with respect to whether they contained practical or social reasoning. Practical reasoning involved unelaborated responses that simply specified the course of action without explanation or provided practical explanations such as saving time or money. Social reasoning involved included references to the reciprocal, turn-taking nature of the exchange, references to the character's positive attributes, or empathic comments. Responses that contained practical reasoning were awarded a score of 0 and those that contained social reasoning were awarded a score of 1. These scores were then summed across all 10 scenarios for each participant, with higher scores denoting a higher proportion of social reasoning. Example responses are presented in Figure 6.2:

Figure 6.2: Example responses and corresponding scoring

1. NON-RECIPROCAL

Practical:

“Yes, you can pay”

“Thanks, I haven’t got any cash on me”

Social:

“I know it’s my turn, but it’d be great if you paid”

“Thanks, that’s very generous of you”

2. COMPROMISE

Practical:

“Let’s split the bill”

“I’ve got enough money to pay for mine”

Social:

“You paid last time, let’s split it this time”

“That’s very generous of you but we should split it”

3. RECIPROCAL

Practical:

“No I’ll pay for both of us

“I’ve got enough money to pay for both of us”

Social:

“No, it’s my turn to pay”

“That’s not fair on you, I’ll pay”

6.2.2.4.3.2 Quantitative responses

Reciprocity in forced choice alternatives. For each scenario, participants chose between a ‘nonreciprocal’ course of action (for example allow the character to pay for coffee/meal), a ‘compromise’ course of action (for example split the cost of the coffee/meal) and a ‘reciprocal’ course of action (for example pay for the coffee/meal instead). ‘Non-reciprocal’ choices were awarded a score of 1, ‘compromise’ choices a score of 2 and ‘reciprocal’ choices a score of 3. A composite forced-choice reciprocity score was derived by summing the scores across all ten scenarios for each participant.

Satisfaction. Satisfaction scores for the ‘non-reciprocal’, ‘compromise’ and ‘reciprocal’ options were also summed across all ten scenarios.

6.3 RESULTS

The protocol for statistical analysis was identical to that specified in Chapter 5. The means and standard deviations (SD) for each of the measures described below are presented in Table 6.1. Examination of the data showed that all variables were normally distributed.

Table 6.1: Mean scores and standard deviations for the two groups for the Social Exchange Task with both cost variants.

	High PPI Group	Low PPI Group
	Mean (SD)	Mean (SD)
	(N=20)	(N=20)
VERBAL RESPONSES		
Reciprocity composite (%)		
Lower-cost	22.80 (3.82)	26.60 (3.62)
Higher-cost	20.80 (2.97)	24.35 (2.60)
Social reasoning (%)		
Lower-cost	25.50 (20.89)	51.00 (31.77)
Higher-cost	22.00 (18.24)	45.50 (30.86)
QUANTITATIVE RESPONSES		
Reciprocity composite (%)		
Lower-cost	22.65 (4.09)	26.50 (3.49)
Higher-cost	21.15 (2.50)	24.90 (2.47)
Non-reciprocal satisfaction (%)		
Lower-cost	59.90 (20.98)	30.95 (16.08)
Higher-cost	45.00 (21.07)	26.30 (11.83)
Compromise satisfaction (%)		
Lower-cost	61.95 (13.34)	53.65 (11.26)
Higher-cost	68.15 (12.63)	62.90 (13.76)
Reciprocal satisfaction (%)		
Lower-cost	68.45 (16.89)	79.75 (10.71)
Higher-cost	58.35 (15.64)	70.05 (14.70)

6.3.1 Qualitative responses

6.3.1.1 Verbal response reciprocity score

The high and low PPI groups were compared with respect to how reciprocal their verbal responses were. There was no significant interaction between group and the relative cost of the exchange ($F(1,39) = .04$; $p = .836$). There was a main effect of group ($F(1,39) = 18.77$; $p < .001$), such that the high trait group was less reciprocal than the low trait group. There was also a main effect of the relative cost of the exchange ($F(1,39) = 12.49$; $p = .001$), such that both groups were more reciprocal in the lower-cost condition than in the higher-cost condition.

When the reciprocity score was broken down by chosen course of action, adopting a strict significance level of $p = .017$ ($.05/3$), it was found that the high trait group was significantly more likely to use non-reciprocal language ($F(1,39) = 9.27$; $p = .004$), and significantly less likely to use reciprocal language ($F(1,39) = 21.65$; $p < .001$), as compared to the low trait group. The high trait group also tended to refer to compromises to a greater extent than the low trait group, but this difference only approached significance ($F(1,39) = 4.65$; $p = .037$).

6.3.1.2 Social reasoning

The high and low PPI groups were compared with respect to extent to which their responses involved social reasoning. There was no significant interaction between group and the relative cost of the exchange ($F(1,39) = .14$; $p = .734$). There was a main effect of group whereby the high PPIs used less social reasoning than the low PPI group ($F(1,39) = 10.05$; $p = .003$). There was no main effect of cost ($F(1,39) = 2.38$; $p = .131$).

6.3.2 Quantitative responses

6.3.2.1 Forced choice reciprocity score

The high and low PPI groups were compared with respect to how reciprocal their chosen courses of action were. There was no significant interaction between group and the relative cost of the exchange ($F(1,39) = .01$; $p = .929$). There was a main effect of group ($F(1,39) = 19.99$; $p < .001$), such that the high trait group was less reciprocal than the low trait group. There was also a main effect of the relative cost of the exchange ($F(1,39) = 7.77$; $p = .008$), such that both groups were more reciprocal in the lower-cost condition than in the higher-cost condition.

When the reciprocity score was broken down by chosen course of action, adopting a strict significance level of $p=.017$ ($.05/3$), it was found that the high trait group was significantly more likely to choose the non-reciprocate option ($F(1,39)= 9.13$; $p=.004$), and significantly less likely to choose the reciprocate option ($F(1,39)= 21.01$; $p<.001$), as compared to the low trait group. The groups did not differ with respect to the compromise option ($F(1,39)= 3.71$; $p=.062$).

6.3.2.2 Satisfaction scores

The high and low PPI groups were compared with respect to how satisfied they reported being with the ‘non-reciprocate’, ‘compromise’ and ‘reciprocate’ options respectively. For the ‘non-reciprocate’ option, there was no significant interaction between group and cost ($F(1,39)= 1.57$; $p=.218$). There was a main effect of group ($F(1,39)= 13.59$; $p=.001$), such that the high trait group reported greater satisfaction with the non-reciprocal course of action than the low trait group. There was also a main effect of cost ($F(1,39)= 23.41$; $p<.001$), such that both groups were more satisfied with this option in the lower-cost versus higher-cost condition.

With respect to the ‘compromise option’, there was no significant interaction between group and cost ($F(1,39)= 1.01$; $p=.321$), nor was there a main effect of group ($F(1,39)= 3.27$; $p=.078$). However, there was a main effect of cost ($F(1,39)= 25.89$; $p<.001$) such that both groups were more satisfied with the ‘compromise’ option in the higher-cost condition than in the lower-cost condition.

With respect to the ‘reciprocate’ option, there was no significant interaction between group and cost ($F(1,39)= .02$; $p=.904$). There was a main effect of group ($F(1,39)= 7.03$; $p=.012$), such that the high trait group was less satisfied with the ‘reciprocate’ option than the low trait group. There was also a main effect of cost ($F(1,39)= 36.07$; $p<.001$), such that both groups were more satisfied with the ‘reciprocate’ option in the lower-cost condition than in the higher-cost condition.

6.3.3 Gender

In order to ensure that any group differences were due to PPI group membership rather than gender, these analyses were repeated using ANCOVAs with gender as a covariate. The effect

of gender did not reach significance for any of these analyses ($p > .05$) and did not change the overall pattern of results.

6.4 DISCUSSION

The present study was designed to investigate reciprocal social behaviour in people high and low in psychopathic traits. The Social Exchange Task described situations in which a character had previously done a favour for the participant, and then offered to do a second, follow-up favour. This favour involved either greater or lesser effort or sacrifice than the original favour. Thus, if participants chose to reciprocate, the exchange would be advantageous when the second favour was less effortful than the first and disadvantageous when the second favour was more effortful than the first. The high trait group was less reciprocal overall, both when freely responding to the character's offer and when choosing between various courses of action. The high trait group also made fewer references to the characters' positive attributes or to the turn-taking nature of the exchange when responding to the characters' offers as compared to the low trait group. Finally, the high trait group was more satisfied in relation to the non-reciprocal course of action and less satisfied in relation to the reciprocal course of action as compared to the low trait group.

The findings indicated that the experimental manipulation of type of social exchange (lower or higher-cost) was effective; both groups were more reciprocal in the lower-cost variant. This is likely to reflect the fact that reciprocating in these exchanges was considerably less effort than reciprocating in the higher-cost variant. Participants across both groups were also more satisfied with both non-reciprocate and reciprocate options in the lower-cost variant and more satisfied with the compromise option in the higher-cost variant. This is likely to reflect the fact that the minimal effort required to carry out the second, lower-cost favour meant that the participants did not particularly mind whether the character or they themselves did so. By contrast, in the higher-cost condition, the participants may have felt that the effort required to carry out the second favour was excessive for one person; sharing the burden may thus have been the most satisfying course of action. Despite significant influence of the type of social exchange, there was no interaction between this and group membership; the high trait group may have been influenced by the relative cost of reciprocating in similar ways to the low trait group. Taken together with the findings reported in Chapter 5, neither the type nor the relative value of the cost differentially influences the high and low psychopathic trait groups' prosocial responding.

The high and low psychopathic trait groups differed in their performance on the Social Exchange Task in a number of ways. Firstly, the high trait group was less reciprocal than the low trait group, which was in line with predictions. What factors could account for this group difference? One possible explanation is that the high trait group was not sensitive to the fact that reciprocity is socially encouraged and there is an expectation that people take turns. However, turn-taking ability is traditionally associated with cognitive empathy (e.g. Baron-Cohen, 2002) which is thought to be intact in psychopathy (e.g. Blair, 2008). It is thus unlikely that the high trait group did not understand the principle of turn-taking, particularly since the pattern of results between the two groups is similar: the high trait group reciprocated the majority of the time, they simply did so at a lower threshold than the low trait group.

A more probable explanation of the group differences in reciprocity may be the extent to which the groups cared about the character's original favour. The high trait group may have felt less gratitude for the original favour than the low trait group. They may have felt as though they didn't ask for the favour in the first instance, and were thus absolved of the expectation to reciprocate. This explanation is consistent with deficits in emotional empathy, which have been commonly linked to psychopathy (e.g. Soderstrom, 2003). This explanation is also consistent with the findings relating to the reasoning participants used when generating a response to the characters. The high trait group was less likely to refer to the characters' positive attributes, to praise the character or to actively express gratitude for their offer. By contrast, the low trait group was more likely to use socially sensitive justifications including references to turn-taking, flattering language or empathic comments, which typically reflected how unfair it would be if the character did a second, unreciprocated favour.

Another possible explanation for group differences in reciprocity was the extent to which the participants found reciprocation rewarding. Reciprocal social behaviour may carry potential future benefits, such as ongoing favours from the character. The high trait group may have found this potential future reward enticing, and thus reciprocated to some extent. This coheres with the research evidence involving neuroeconomic games such as the Prisoner's Dilemma, which suggests that although those high in psychopathic traits are less prosocial than those low in psychopathic traits, they reciprocate more in repeated versus one-off interactions. In addition to possible future benefits, reciprocal social interactions involve more intangible benefits such as recognition, praise or gratitude. The high trait group may have found these prospective benefits less attractive the low trait group. This may have been

reflected by the finding that in line with predictions, the high trait group reported that they would be less satisfied if they were to reciprocate and more satisfied if they chose not to reciprocate, as compared to the low trait group. This is also consistent with experimental work suggesting that those high in psychopathic traits are less receptive to social reward (Faulkes, McCrory, Neumann & Viding, 2014).

In summary, the present study employed an experimental task to compare reciprocity in unequal social exchanges in those high and low in psychopathic personality traits. As compared to the low trait group, the high trait group was less reciprocal, less satisfied with the reciprocal course of action and more satisfied with the non-reciprocal course of action. The high trait group also made fewer empathic comments, references to the scenario character's positive attributes or references to the concept of turn-taking when generating a direct reply to the character.

6.5 THE NEXT STUDY: DESERVINGNESS AND PROSOCIAL BEHAVIOUR

The experiments presented in chapters 5 and 6 suggest that whilst both groups are sensitive to cost manipulations, neither the type nor the relative value of cost differentially influence prosocial responding in those high versus low in psychopathic traits. The high trait group was thus thought to be less motivated to behave prosocially irrespective of how effortful the prosocial action might be. The next study will investigate prosocial behaviour from a different perspective. Rather than manipulating the effort required to do a favour, the next study will focus on the extent to which the character deserves the favour.

Chapter 7: Deservingness in prosocial behaviour

7.1 INTRODUCTION

Chapters 5 and 6 investigated how different types and relative values of cost influence prosocial behaviour in groups high and low in psychopathic traits. By contrast, the present chapter will move away from the influence of costs incurred by the person behaving prosocially, and instead focus on the extent to which the recipient of prosocial behaviour deserves help.

What factors influence people to decide whether prosocial action is appropriate and deserved? Characteristics of the person requiring help may influence prosocial responding. Some studies have shown that people are more prosocial when they judge those in need of help to be similar to them, both in terms of physical appearance (DeBruine, 2002) and attitudes (Park & Schaller, 2008). Research into the role of mimicry provides further evidence for the relationship between similarity and prosocial behaviour. For example, in a series of experiments by van Baaren, Holland, Kawakami and van Knippenberg (2004), participants were more likely to help a confederate who had mimicked their mannerisms than one who had not. In psychopathy, reduced prosocial behaviour has been extensively linked to lack of empathic responsivity to others' distress (e.g. Blair et al., 1997; Kosson et al., 2002b), which suggests those high in psychopathic traits may be less likely to make judgements of deservingness on the basis of whether they experience emotional resonance with others.

Prosocial behaviour may also be driven by clarity of social rules: norms or standards that guide behaviour without the force of law (Cialdini & Trost, 1998). People have been found to be more prosocial when another's need for help or distress is highly salient (e.g. Bickman, 1972), which has been attributed to the experience of a corresponding, empathic experience of distress (e.g. Batson et al, 1988; Bierhoff & Rohmann, 2004). There is also a significant body of literature suggesting that individuals are less prosocial when there are multiple people who could potentially provide help in the situation, since the responsibility for responding to someone in need is unclear (e.g. Darley & Latane, 1968). This is found both in emergency situations and in everyday contexts, such as responding to group email requests (Barron & Yechiam, 2012). Furthermore, a recent study reported that participants were more prosocial and more sympathetic when the expectation to behave prosocially was clear-cut (for example,

giving up a seat for an elderly woman) versus ambiguous (for example, giving up your seat for a young adult carrying a large parcel; Jameel, Vyas, Bellesi, Cassell & Channon, 2015).

Another factor that may influence prosocial behaviour is the extent to which others conform to social rules and are thus judged as deserving of help. Studies have shown that people impose sanctions when others violate social rules (Fehr & Fischbacher, 2004; Posner & Rasmusen, 1999). By contrast, the evidence suggests those high in psychopathic traits are less bound by social rules. Despite demonstrating accurate understanding of social conventions (e.g. Cima & Tonnaer, 2010), those high in psychopathic traits have been shown to judge misdemeanours that violate social conventions to be more permissible and less serious than those low in psychopathic traits (Dolan, & Fullam, 2010).

Taken together, the above evidence suggests that people are more prosocial and likely to comply with requests for help on the basis of emotional empathy, unambiguous situations, and the belief that others are not in violation of social rules. Those high in psychopathic traits are less influenced by these factors and less likely to behave prosocially. However, it is unclear how those high and low in psychopathic traits respond when a request for help in itself violates social rules. People high in psychopathic traits, who are less empathic and less rule bound, may be less likely to judge reasonable requests for help as acceptable as compared to those low in psychopathic traits. How do group differences translate into responding to less reasonable requests for help? The high trait group may be more likely to judge unreasonable requests for help as acceptable, since those low in psychopathic traits may be more sensitive to the violation of social rules and may thus be harsher in their judgments.

7.1.1 Hypotheses

The present study was designed to investigate how prosocial behaviour in those high and low in psychopathic traits varied as a function of perceived deservingness. Deservingness was directly manipulated, in order to compare compliance with requests for favours when there was a strong versus weak justification provided.

Participants rated requests for favours in two ways. Firstly, they rated how likely they would be to comply with the request. Secondly, they rated how acceptable they would find the request. With respect to likelihood of complying, it was expected that those high in psychopathic traits would be less compliant with requests overall, which is consistent with the findings from Chapters 5 and 6. It was also expected that this would be moderated by

type of request, such that group differences were exacerbated in response to reasonable requests. Whilst the low trait group might view requests with weak justifications as less permissible than requests with strong justifications, the high trait group might fail to discriminate between request types and thus be equally willing to comply in both variants.

With respect to acceptability, it was expected that the high trait group would rate requests with strong justifications as less acceptable and requests with weak justifications as more acceptable than the low trait group.

7.2 METHODS

7.2.1 Design

There was one between-participants factor of PPI group (high vs. low scorers) and one within-participants factor of deservingness (strong vs. weak justifications for requests).

7.2.2 Participants

The Favours Task was administered alongside the Social Exchange Task; the screening and testing samples in the present study were therefore identical to those described in Chapter 6. 10 high-scoring males, 10 high-scoring females, 10 low-scoring males and 10 low-scoring females therefore took part in the test stage of the study.

7.2.3 Procedure

All participants provided written informed consent before completing the experimental tasks and a brief health screen to ensure that nobody with a history of significant psychiatric or neurological illness was included; no participants were excluded on this basis. Participants were paid for taking part.

7.2.4 Materials

7.2.4.1 Favours Task

This task was designed to examine compliance with requests for favours with strong versus weak justifications. The task consisted of 10 short scenarios (see Figure 7.1 for example), describing an interaction with a character known to the participant (such as a friend, relative, colleague or flatmate). Each scenario describes a situation in which the character makes a request of the participant, compliance with which would incur a loss of time, effort or money (for example carrying a large parcel upstairs). The participant is then asked to a) rate how

likely they would be to comply with this request and b) rate the extent to which the request is acceptable.

Each scenario had two variant endings; in one ending, the character provided a strong justification for making the request (for example, having an injury that would make carrying the parcel difficult). In the alternative ending, the character provided a weak justification for making the request (for example, not wishing to ruin their shirt). Characters were counterbalanced across the scenarios for gender and proximity of relationship. Relationships with a clear hierarchy (for example boss, parent) were not included.

Figure 7.1: Example scenario from Favours Task

Story Stem

“You run into your neighbour one day, and he has just had a large parcel delivered.”

REASONABLE REQUEST: He asks: “I’ve strained my back. Would you carry it upstairs for me?”

UNREASONABLE REQUEST: He asks: “I’m going out and don’t want to get my shirt dirty. Would you carry it upstairs for me?”

Questions for each scenario

6. How likely are you to agree to your neighbour’s request?

1= _____ 10 =
Not at all likely Very Likely

7. How acceptable is it of your neighbour to make this request?

1= _____ 10 =
Not at all acceptable Very acceptable

7.2.4.2 Administration

After reading the instructions, participants were shown an example item and allowed to ask questions. All scenarios and corresponding questions were then presented one at a time, in a paper booklet. Participants responded verbally to all questions. The scenario remained on display until participants had completed the relevant questions in order to reduce the confounding effects of memory load.

7.2.4.3 Scoring

Likelihood and acceptability ratings were summed across all scenarios for each participant.

7.3 RESULTS

7.3.1 Statistical Analyses

The means and standard deviations (SD) for each of the measures described below are presented in Table 7.1. Examination of the data revealed that the likelihood ratings in the strong justification variants were slightly negatively skewed for the low trait group only. Non-parametric analyses did not alter the pattern of results; parametric analyses are thus reported throughout. One participant was an outlier in the acceptability ratings in the weak justification variants variable. Since, they were within range on the remaining variables, and neither their exclusion, transforming the variable, nor performing non-parametric tests changed the pattern of results, they were included in the analyses and parametric analyses reported throughout.

Table 7.1: Mean scores and standard deviations for the two groups for the Favours Task with two deservingness variants.

	High PPI Group	Low PPI Group
	Mean (SD) (N=20)	Mean (SD) (N=20)
Likelihood (%)		
Reasonable request	77.85 (14.22)	84.00 (11.55)
Unreasonable request	54.80 (16.28)	57.20 (12.53)
Acceptability (%)		
Reasonable request	79.45 (12.58)	80.90 (11.16)
Unreasonable request	50.90 (13.87)	44.45 (9.84)

7.3.2 Likelihood

The high and low PPI groups were compared with respect to how likely they would be to comply with the characters' requests for favours. There was no significant main effect of group: ($F(1,38)=1.03$; $p=.316$). There was a significant main effect of deservingness ($F(1,38)=490.28$; $p<.001$), whereby participants across both trait groups were more likely to comply with reasonable versus unreasonable requests for favours. There was no group by deservingness interaction ($F(1,38)=2.77$; $p=.104$).

7.3.3 Acceptability

The high and low PPI groups were also compared with respect to how acceptable they found the characters' requests to be. There was no significant main effect of group: ($F(1,38)=0.49$; $p=.488$). There was a significant main effect of deservingness ($F(1,38)=674.04$; $p<.001$), whereby participants across both trait groups viewed reasonable requests for favours as more acceptable than unreasonable requests for favours. There was also a significant group by deservingness interaction ($F(1,38)=9.96$; $p=.003$); there was no group difference in acceptability ratings in the reasonable request variant, but the high trait group rated unreasonable requests for favours as more acceptable than did the low trait group.

7.3.4 Gender

In order to ensure that the group interaction was due to PPI group membership rather than gender, these analyses were repeated using ANCOVAs with gender as a covariate. The effect of gender did not reach significance for any of these analyses ($p > .05$) and did not change the overall pattern of results.

G.4 DISCUSSION

The present study was designed to investigate how psychopathic personality traits influence prosocial responding in situations where characters make requests for favours. High-PPI and Low-PPI participants were compared with respect to their responses to these requests based on strong or weak justifications. Contrary to predictions, the groups did not differ significantly in their likelihood to comply with favours, regardless of whether the justification was reasonable or not. There was also no significant group difference with respect to their ratings of how acceptable the characters' requests were. However, as predicted, there was a significant interaction between group and deservingness; the groups rated reasonable requests for favours as equally acceptable but the high trait group rated unreasonable requests as more acceptable than the low trait group.

With respect to the experimental manipulation, the findings showed that this was successful, since there was a main effect of deservingness such that participants across both groups were more likely to comply with requests with strong versus weak justifications, and rated the former to be more acceptable. However, unlike the previous findings described in Chapters 5 and 6, where the high trait groups behaved less prosocially than the low trait groups, differences between the groups in the extent to which they were willing to comply with the requests with strong and weak justifications did not reach significance.

Were there any fundamental conceptual differences between the Favours Task and paradigms employed in Chapters 5 and 6 that may have driven a lack of significant group differences in prosocial behaviour? One possible explanation was the nature of the favours requested in terms of the effort required to carry them out. For instance, one scenario involved carrying a parcel upstairs. This might be said to be a relatively minor task incurring little effort, and hence people might have been willing to do this even if the justification behind was weak. However, a comparison of the scenarios in the present task with those in the previous two tasks suggests that there was little obvious difference in the effort required,

and hence that this is unlikely to have been a major factor. Moreover, the key finding from Chapters 5.2 and 6 was that the costs in terms of the effort required to behave prosocially did not differentially influence the trait groups.

Could the nature of the relationship between the participant and the characters described in the Favours Task account for the lack of a significant main effect of group? In the present task, the characters were known to the participants, which may have served as an additional motivation for the high trait group to behave prosocially, since compliance in the context of an ongoing relationship may have assured future benefits (for instance, the neighbour owes the participant a favour in future). Comparing familiar and unfamiliar relationships within the same task could clarify this in a future experiment. However, the familiarity of the relationship is unlikely to have influenced participants in the present study alone, since the previous tasks also described interactions with characters with whom the participant had an established relationship. Moreover, the ongoing relationship with the character was most explicitly referred to in the Social Exchange Task described in Chapter 6, where characters had previously done a favour for the participant; the high trait group was still found to be less prosocial.

One unique aspect of the design of the current study is the inclusion of justifications in the Favours Task; none of the previous studies provided a reason as to why participants should behave prosocially. The justifications provided in the current study may therefore have motivated the high trait group to comply with requests for favours. One possible explanation for this is that without justifications, participants may have relied on resonating emotionally with the characters when deciding on the extent to which they would behave prosocially. Previous literature has suggested those with psychopathic traits are less emotionally empathic and thus less motivated to reduce another person's distress (e.g. Blair, 1995; Blair, 2008). Hence, for the low trait group, responding to someone who requested a favour might be triggered by resonating with their perceived distress. The high trait group, who are likely to have lacked the capacity to engage in this way, may thus have been less prosocial. By contrast, in the present study, the inclusion of justifications may have meant that the high trait group were able to comply more readily via an alternative, cognitive route when given a practical reason to do so. This is consistent with the findings from Chapter 6 that suggested that the high trait group used more practical rather than social or emotional reasoning when justifying the extent to which they would reciprocate social favours.

Although the strength of the justifications did not influence the high and low trait groups differentially in the extent to which they complied with requests with favours, it did differentially affect the extent to which the groups rated the requests to be acceptable. Whilst the groups rated requests for favours with strong justifications to be equally acceptable, the high trait group rated requests for favours with weak justifications to be more acceptable than did the low trait group. Thus, the high trait group discriminated less between the two request types. What factors may have driven this interaction? An explanation in terms of emotional versus cognitive routes is unlikely to account for this, since any compensatory advantage of providing a justification should have facilitated comparable acceptability ratings in the high trait group as well as comparable prosocial behaviour.

One possible factor that may have led the high trait group to discriminate less between strong and weak justifications is the extent to which the groups valued adherence to social rules. When the characters provided a weak justification for making a request, the low trait group may have viewed this as a violation of social rules. For instance, the neighbour in the example asking the participant to carry a heavy parcel to avoid getting his shirt dirty may have been viewed as taking unnecessary advantage of the participant and requesting help without truly being in need. By contrast, the high trait group may have been less harsh in their ratings of unreasonable requests since they did not hold an expectation that others should follow social conventions. This is consistent with research showing that those high in psychopathic traits rate transgressions as less serious and more permissible than those low in psychopathic traits.

Another possible factor that may explain the interaction between trait group and deservingness may have been the extent to which participants felt that they themselves would have behaved similarly to the characters in the scenarios. This is supported by evidence showing people make more positive evaluations of those who are physically and attitudinally similar to them (DeBruine, 2002; Park & Schaller, 2008). In the present study, when characters had good reasons for making requests, participants in the low trait group may have felt that they too would request a favour if they were in similar circumstances. However, they may have felt that they would not request a favour with a weak justification. Conversely, psychopathy is linked to moral transgressions and a greater likelihood to take advantage and to act out of self-interest (e.g. Hare, 1991). The high trait group may have thus felt they would make a request for reasons comparable to those provided by the characters in both the deserving and undeserving variants.

In order for any of these explanations for the significant group by deservingness interaction to be adequate, it is necessary to explain how these factors could have selectively played a role in acceptability ratings but not in prosocial behaviour. A different type of explanation may be that, given the relatively small sample sizes, the power of the study was not sufficient to detect a significant difference in prosocial behaviour, which may have been a weaker effect than acceptability ratings. Examination of the mean scores provides some support for this.

In summary, the present study employed a novel experimental task to compare compliance with reasonable and unreasonable requests for favours in those high and low in psychopathic traits. There were no significant differences with respect to how likely the trait groups were to comply with either request type, which may have reflected the high trait group's increased motivation to behave prosocially when the characters provided a practical explanation of their request. Whilst the groups did not significantly differ with respect to their ratings of how acceptable reasonable requests for favours were, the high trait group was found to rate unreasonable requests for favours as more acceptable than the low trait group. This may suggest the high trait group was less able to discriminate between types of request than the low trait group. Unreasonable requests for favours could be considered to be in violation of social rules; this may reflect that when evaluating the characters' requests, the high trait group was less likely to condemn social rule violations than the low trait group.

7.5 THE NEXT STUDY: EXPLORING DESERVINGNESS FURTHER

The present study was designed to investigate how deservingness might influence prosocial behaviour. Requests for favours with strong and weak justifications were systematically compared, since requests with weak justifications might be considered socially unacceptable, and the characters who make these requests may have been taking advantage without being in genuine need or distress. In Chapter 8, deservingness will be examined from a new angle. Rather than focusing on compliance with favours, which results in exclusively positive outcomes for the characters, the experiment presented in Chapter 8 will investigate how judgments of deservingness differ between high and low psychopathic trait groups when responding in situations with both positive and negative outcomes for the characters.

Chapter 8: Judgments of deservingness in evaluating positive and negative outcomes

8.1 INTRODUCTION

Chapter 7 examined how prosocial behaviour in groups high and low in psychopathic traits was influenced by the extent to which people deserve help. In the Favours Task, when the scenario characters' requests for favours were complied with, this resulted in a positive outcome for the characters. In order to investigate deservingness further, the present chapter will focus on how deservingness influences social decision-making in situations that have either positive or negative outcomes for the characters involved.

An outcome, such as a reward, punishment or specified treatment, may be considered to be deserved if it results directly from a person's actions or qualities (Feather, 2006). Deservingness may influence social decision-making in a number of ways. Firstly, it has been posited that people need to believe in a 'just world', a stable environment in which the consequences of their actions are morally fair; good deeds are rewarded and bad deeds are punished (Lerner and Simmons, 1966; Furnham, 2003). People who believe in a just world may thus be less likely to endorse or facilitate good outcomes for those who did nothing to deserve it (which is consistent with the findings of the study presented in Chapter 7). Conversely, when others suffer negative outcomes and have done nothing to deserve it, people may be motivated to help the victims and to alleviate their distress. Where this is not possible, it has been suggested that they may denigrate the victims in order to make the negative outcomes appear to be more fair (Lerner and Simmons, 1966). These strategies are adopted in order to maintain belief in a just world, and to avoid the experience of cognitive dissonance, whereby tension arises as a result of contradictory or inconsistent beliefs (Hafer & Begue, 2005).

People's emotional reactions to positive and negative outcomes may vary according to deservingness; this may in turn influence social decision-making. Feather (2006) proposed a model that outlines possible emotional reactions to positive and negative outcomes that are either deserved or undeserved. According to this model, people experience pleasure when they witness others' deserved positive outcomes, such as achieving a high grade on an exam after putting in a lot of effort. People experience resentment when they witness others' undeserved positive outcomes, such as achieving a high grade on an exam after putting in

little effort. People experience *schadenfreude* (feelings of pleasure in response to another person's misfortune) when they witness others' deserved negative outcomes, such as failing an exam after going to a party the night before. Finally, people experience sympathy when they witness others' undeserved negative outcomes, such as failing an exam because the questions were particularly difficult.

In one experiment that provides empirical support for this model (Feather & Sherman, 2002), participants were presented with scenarios describing deserved and undeserved positive and negative outcomes, including the examples relating to exam grade outcomes specified above. Participants' ratings of their emotional reactions were consistent with the model, such that the highest pleasure ratings were given in response to deserved positive outcomes, the highest resentment ratings were given in response to undeserved positive outcomes, the highest *schadenfreude* ratings were given in response to deserved negative outcomes and the highest sympathy ratings were given in response to undeserved negative outcomes.

How might deservingness influence social decision-making in psychopathy? It has been argued that people high in psychopathic traits may be less likely to believe in a just world (Hafer, Begue, Choma & Dempsey, 2005) and exhibit fewer cognitive dissonance effects as compared to those low in psychopathic traits (Murray, Wood & Lilienfeld, 2012). A lack of belief in a just world is consistent with the ways in which psychopathy has been broadly conceptualised; research suggests that people with psychopathy are less sensitive to violations of social rules (Dolan & Fullam, 2010), are primarily motivated by self-interest, are more likely to engage in moral transgressions and take advantage of others (e.g. Blair, 1995; Blair & Blair, 2005; Hare, 1993; Cleckley, 1967). Taken together, this suggests that people with psychopathy may not only reject the notion of a just world, but they may also stand to gain from an unjust world. Those high in psychopathic traits may differentiate between outcomes on the basis of deservingness to a lesser extent as compared with those low in psychopathic traits.

In light of the prominent characteristics associated with psychopathy, including the well-documented lack of emotional empathy, it appears unlikely that individuals high in psychopathic traits would experience pleasure in response to others' achievements. Similarly, it appears unlikely that these people would feel sympathetic when others suffer unfairly. No studies to date have systematically examined resentment in psychopathy, and it is thus unclear whether those high in psychopathic traits would differ in feelings of resentment from those

low in psychopathic traits. It is possible that these people are primarily motivated by whether or not they would be personally affected by others' outcomes rather than the deservingness of those outcomes. There is some evidence to suggest that those high in psychopathic traits are more likely to experience schadenfreude than those low in psychopathic traits (Porter, Bhanwer, Woodworth & Black, 2014; James, Kavanagh, Jonason, Chonody & Scrutton, 2014). Taken together, it is likely that potential differences in emotional processing between high and low psychopathic trait groups may be associated with group differences when reasoning about deserved and undeserved positive and negative outcomes.

There is some research investigating judgments of deservingness in both positive and negative outcomes. Lupfer and Gingrich (1999) developed a paradigm to investigate how judgments of deservingness are made when people of good and bad character experience positive and negative outcomes. In one study (Lupfer and Gingrich, 1999), participants read scenarios describing these characters and outcomes, such as the following: a) a hardworking man with a history of illness moves to a new location, after which his illness subsides (good character, positive outcome), b) a man having an affair maintains a tan in order to please his mistress and subsequently develops skin cancer (bad character, negative outcome), c) a well-respected doctor who is committed to her patients makes a minor error that results in a child's death (good character, negative outcome) or d) a selfish and unpleasant manager buys a cheap present for a colleague and in return receives an expensive present that includes a winning lottery ticket (bad character, positive outcome). As expected, participants gave higher deservingness ratings for scenarios where the relationship between character and outcome was congruent, particularly when the outcome was positive.

Whilst the paradigm developed in the above study was relevant to the question of the relationship between deservingness and outcome, there were some limitations. Firstly, the scenarios often described extreme or highly improbable outcomes, such as a diagnosis of cancer or winning the lottery. These are not representative of more everyday types of positive and negative outcome. Secondly, the original paradigm involved some outcomes in which the primary implications were for others, rather than the story's main character, which may have confounded the ratings of deservingness. For instance, in the doctor scenario, the outcome is more negative for the patient who dies as a result of the doctor's action than for the doctor herself, although she is likely to suffer as well. Thirdly, in the congruent scenarios, the characters' actions were not directly linked to the outcome. For instance, the fact that the man described in a) was hardworking did not contribute to the alleviation of his illness.

In b), it was the man's adultery rather than his tanning that was relevant to his character; the link to the skin cancer outcome was thus somewhat tenuous. This may reflect the fact that the key factor manipulated by Lupfer and Gingrich (1998) was the type of character (good vs. bad) rather than the level of deservingness (deserving vs. undeserving).

In order to investigate more systematically the link between deservingness and outcome and to address some of the limitations of the task designed by Lupfer and Gingrich (1998), two related sets of materials were developed for the present study. Each involved a series of scenarios designed to reflect the more commonplace types of outcomes prevalent in social interactions, rather than the more extreme types of events used in the Lupfer and Gingrich study. Secondly, the outcomes in the present study also primarily had consequences for the character in question, rather than for a different character. Thirdly, the congruent scenarios in both of the present sets of materials were designed such that the outcomes were directly linked to the characters' actions.

8.1.1 Task development

In Deservingness: Positive Outcomes, the scenarios were designed to describe a good outcome for the main character, such as passing a driving test first time around. Each scenario was presented twice; in the first variant, the outcome was congruent with the character's actions and it was evident that they had earned the outcome through their own efforts. In the second variant, the outcome was incongruent with the character's actions and it was evident that they had achieved a positive outcome without earning it. For instance, in the example of passing a driving test, the congruent variant involved the character driving well and making few errors, and the incongruent variant involved the character making a number of errors but flirting with the instructor.

In Deservingness: Negative Outcomes, scenarios were designed to describe a bad outcome for the main character, for example someone being reprimanded in front of their evening class. In the first variant, the outcome was congruent with the character's actions since they had warranted a negative outcome through their own transgressions, for example being reprimanded for failing to complete the homework. In the second variant, the outcome was incongruent with the character's actions since they had not transgressed and the outcome was simply unfortunate, for example being reprimanded because the course instructor was in a bad mood.

The two sets of materials were analysed separately, since studying positive and negative outcomes raises different issues with respect to both the chain of events leading to the negative outcome and the desirability of the outcomes. The first consideration, the chain of events, refers to the fact that for positive outcomes, both congruent and incongruent outcomes can readily be related directly to the good or bad actions of the characters. For instance, passing the driving test resulted from either good driving (congruent outcome) or flirtation with the examiner (incongruent outcome). Whilst the congruent outcomes in the negative set were also based on the character's bad actions, for instance reprimand resulting from failure to complete the homework, there was no equivalent for incongruent outcomes, since good actions are not expected to lead to negative outcomes. For instance, completing the homework would not reasonably be expected to lead to reprimand; thus, the incongruent items for the negative set were situations in which negative outcomes arose from bad fortune rather than from the character's behaviour. The second consideration that differentiated the positive and negative sets of materials in the present study was the desirability of the outcomes from the viewpoint of the observer. Whilst the positive outcomes for both congruent and incongruent variants were presumably desirable to the main character, only the congruent ones were likely to be desirable to the outside observer who subscribes to a just view of the world; the incongruent positive outcomes (which were not based on good actions) may well be undesirable to the observer. By contrast, in the negative set, both congruent and incongruent outcomes may have been considered undesirable by the outside observer, since even when 'just desserts' were served in the congruent variant, these outcomes by definition involved suffering for the main character. The differences between the positive and negative Deservingness are outlined in Figure 8.1 below.

Figure 8.1: Structure of Deservingness: Positive and Deservingness: Negative

	Deservingness: Positive Outcome	Deservingness: Negative Outcome
Congruent Outcome	Example: Passing driving test; making few errors and driving well Desirability: High Basis: Good action	Example: Reprimanded in front of class, failed to do homework Desirability: Low Basis: Bad action
Incongruent Outcome	Example: Passing driving test; making many errors and flirting with instructor Desirability: Low Basis: Bad action	Example: Reprimanded in front of class, instructor in a bad mood Desirability: Low Basis: Bad fortune

In Chapter 7, the high and low psychopathic trait groups differed with respect to how acceptable they rated requests for favours with strong and justifications to be. However, acceptability might relate to either a cognitive judgment based on reasoning about the scenario, and/or a judgment based on emotional responses to the scenario, and this is particularly pertinent in light of the literature relating to preserved cognitive empathy with impaired emotional empathy in psychopathy. In the present study, these aspects were separated by asking participants to make two separate ratings after each scenario. In order to examine the cognitive component of acceptability, participants rated the extent to which the characters deserved the outcome. Secondly, in order to examine the emotional component of acceptability, participants rated how pleased they would feel in response to each outcome.

8.1.2 Hypotheses

The literature on deservingness, described above, suggests that people high in psychopathic traits discriminate less on the basis of deservingness than those low in psychopathic traits. This is consistent with findings from Chapter 7, which found group differences in ratings of acceptability. Reduced discrimination has also been found in a study examining the influence of deservingness on blame ratings in more extreme situations; Hafer et al. (2005) found that when asked to judge the extent to which a character is to blame for contracting HIV, people high in psychopathic traits moderated their ratings in accordance with deservingness to a lesser extent than those low in psychopathic traits. However, it is unclear to what extent cognitive versus emotional mechanisms are involved when making judgments about factors such as deservingness, acceptability, or blameworthiness. Given the posited dissociation

between cognitive and emotional empathy in psychopathy, the high and low psychopathic trait groups would be expected to differ on emotional, but not cognitive, aspects of deservingness.

Thus, in the positive set, it was expected that the high trait group would not differ from the low trait group with respect to their ratings of how much the characters deserved the outcomes. However, it was expected that the high trait group would rate themselves as less pleased with congruent outcomes and more pleased with incongruent outcomes than the low trait group.

A similar lack of group differences was expected in the negative set with respect to deservingness ratings. However, with respect to ratings of how pleased they would feel, the predictions were less clear. On the one hand, the high trait group might be expected to discriminate less between congruent and incongruent outcomes on the basis of a lack of belief in a just world. On the other hand, the low trait group might be expected to discriminate less between congruent and incongruent outcomes, since despite belief in a just world, they were unlikely to feel particularly pleased with either outcome, since both involved suffering for the main characters.

8.2 METHODS

8.2.1 Screening Phase

A sample of 562 full-time university students (241m, 321f) who were fluent in English and aged 18 and above was opportunistically recruited. All participants gave informed consent and completed the PPI-SF (Lilienfeld and Hess, 2001); they were entered into a prize draw and told that they might be invited to the next phase of the study, which would be paid. Total PPI-SF scores were calculated for the whole sample.

The strategy for selecting the testing sample and contacting participants was identical to the method specified in Chapter 6. Thus, male participants at the highest and lowest ends of the screening sample distribution and female participants at the highest and lowest ends of the screening sample distribution were contacted. On this basis, 27 high-scoring participants (14 m, 13f) and 20 low-scoring participants (19m, 11f) from the upper and lower twentieth percentiles of the sample distribution were invited to take part in the second stage of the study.

8.2.2 Testing Phase

8.2.2.1 Design

There was one between-participants factor of PPI group (high vs. low scorers) and one within-participants factor of deservingness (congruent vs. incongruent) for two sets of materials (positive and negative outcomes).

8.2.2.2 Participants

Twenty high-scoring (10m, 10f) and 20 low-scoring (9m, 11f) individuals took part in the experimental stage of the study, which involved completing the Deservingness and a second task (the Competitiveness Task, reported in Chapter 9 below). As anticipated, the groups differed significantly on PPI-SF scores, ($t(38)=22.44$; $p<.001$). The mean PPI score was 154.60 (SD 7.94) and 92.9 (SD 9.39) for the high and low groups respectively. The groups did not differ significantly in age ($t(34)=.557$; $p=.581$); the mean age was 19.26 (SD 1.28) and 19.59 (2.15) for the high and low groups respectively.

8.2.2.3 Procedure

All participants provided written informed consent before completing the experimental tasks and a brief health screen to ensure that nobody with a history of significant psychiatric or neurological illness was included; no participants were excluded on this basis. Participants were paid for taking part.

8.2.2.4 Materials

8.2.2.4.1 Deservingness: Positive Outcomes

Deservingness: Positive Outcomes was designed to examine how people evaluate positive outcomes on the basis of deservingness. This set of materials consisted of five short scenarios describing a positive outcome for a character known to the participant, for example, passing a driving test. Each scenario had two variant endings. In the first variant, the outcome was congruent (making few errors and driving well) and in the second variant, the outcome was incongruent (making many errors but flirting with the instructor; see Figure 8.2).

8.2.2.4.2 Deservingness: Negative Outcomes

Deservingness: Negative Outcomes was designed to examine how people evaluate negative outcomes on the basis of deservingness. As in the positive set above, the set consisted of five short scenarios; each scenario described a negative outcome for a character known to the participant, for example being reprimanded in front of a class, and had two variant endings. In the first variant, the outcome was congruent (failing to complete the class homework) and in the second variant, the outcome was incongruent (the instructor being in a bad mood; see Figure 8.3).

In both positive and negative sets, participants were asked to rate the extent to which the character deserved the outcome and how pleased they would feel with the outcome for the character. The character known to the participant was referred to as “One of your friends” across all items in both sets, and gender was not specified.

Figure 8.2: Example scenario from Deservingness Set A: Positive Outcomes

STORY STEM: “One of your friends passes their driving test first time around.”

CONGRUENT VARIANT: They made very few errors and drove very well.

INCONGRUENT VARIANT: They made lots of errors but flirted with their driving instructor.

Questions

1. How much does your friend deserve to pass their driving test first time around?

1 = _____ 10 = _____

Not at all

Very much

2. How would you feel about the fact that your friend passed their driving test first time around?

1 = _____ 10 = _____

Extremely displeased

Extremely pleased

Figure 8.3: Example scenario from Deservingness Set B: Negative Outcome

STORY STEM: “One of your friends from an evening class is told off in front of the class.”

CONGRUENT VARIANT: They did not do the required homework.

INCONGRUENT VARIANT: The instructor is in a bad mood

Questions

1. How much does your friend deserve to be told off in front of the class?

1 = _____ 10 = _____

Not at all

Very much

2. How would you feel about the fact that your friend was told off in front of the class?

1 = _____ 10 = _____

Extremely displeased

Extremely pleased

8.2.2.4.3 Administration

After reading the instructions, participants were given an instruction sheet, shown an example item, and allowed to ask questions. All scenarios and corresponding questions were then presented one at a time, in a paper booklet. Participants responded verbally to all questions. The scenario remained on display until participants had completed the relevant questions in order to reduce the confounding effects of memory load.

8.2.2.4.4 Scoring

The ratings pertaining to how deserved the outcomes were and how pleased the participants would feel were summed across all scenarios in both sets for each participant.

8.3 RESULTS

The means and standard deviations (SD) for each of the measures in Deservingness: Positive Outcomes are presented in Table 8.1. The means and standard deviations (SD) for each of the measures in Deservingness: Negative Outcomes are presented in Table 8.2. Examination of the data showed that all variables in both sets were normally distributed and there were no outliers.

Table 8.1: Mean scores and standard deviations for the two groups for Set A: Deservingness: Positive Outcomes

	High PPI Group	Low PPI Group
	Mean (SD) (N=20)	Mean (SD) (N=20)
Deservingness rating (%)		
Congruent	88.30 (7.54)	93.40 (8.76)
Incongruent	38.90 (9.50)	29.90 (10.76)
Pleased rating (%)		
Congruent	86.10 (9.96)	90.70 (9.94)
Incongruent	43.70 (14.24)	35.40 (14.18)

Table 8.2: Mean scores and standard deviations for the two groups for Set B: Deservingness: Negative Outcomes

	High PPI Group	Low PPI Group
	Mean (SD)	Mean (SD)
	(N=20)	(N=19)
Deservingness rating (%)		
Congruent	59.30 (14.62)	62.70 (14.42)
Incongruent	23.70 (8.44)	15.00 (5.86)
Pleased rating (%)		
Congruent	35.20 (14.68)	30.50 (8.20)
Incongruent	20.10 (10.10)	14.70 (5.52)

8.3.1: Set A: Deservingness: Positive Outcomes deservingness ratings

With respect to how much the scenario characters deserved positive outcomes, there was no significant main effect of psychopathic trait group ($F(1,38)=0.97$; $p=.330$). There was a significant main effect of deservingness ($F(1,38)=695.95$; $p<0.001$) such that both groups rated positive outcomes as more deserved when they were congruent versus when they were incongruent. There was also a group by deservingness interaction ($F(1,38)=10.86$; $p=.002$). Post-hoc analysis revealed that although the high trait group had lower deservingness ratings for congruent outcomes, this difference was only marginally significant ($t(38)=1.97$; $p=.056$). The high trait group did rate incongruent positive outcomes to be significantly more deserved than did the low trait group ($t(38)=2.81$; $p=.008$).

8.3.2: Set A: Deservingness: Positive Outcomes Pleased Ratings

The groups were compared with respect to how pleased they rated themselves to feel in relation to congruent and incongruent positive outcomes for the scenario characters. There was no significant main effect of group ($F(1,38)=0.50$; $p=.483$). There was a main effect of deservingness ($F(1,38)=290.86$; $p<0.001$) such that both groups reported that they would feel more pleased with positive outcomes in the congruent versus incongruent scenario variants. There was also a group by deservingness interaction ($F(1,38)=5.07$; $p=.03$). Post-hoc analysis showed a similar pattern to the deservingness ratings, such that the high trait group were less pleased with congruent outcomes and more pleased with incongruent

outcomes. However, neither comparison reached significance (congruent outcomes: $t(38)=1.52$; $p=.146$; incongruent outcomes: $t(38)=1.50$; $p=.072$).

8.3.3 Set B: Negative Outcome Deservingness Ratings

With respect to how much the scenario characters deserved negative outcomes, there was no significant main effect of psychopathic trait group ($F(1,38)=0.92$; $p=.345$). There was a significant main effect of deservingness variant ($F(1,38)=300.76$; $p<0.001$) such that both groups rated negative outcomes as more deserved in the congruent versus incongruent variant. There was also a group by deservingness interaction ($F(1,38)=6.35$; $p=.016$). Post-hoc analysis revealed that the groups did not differ in their deservingness ratings for congruent negative outcomes ($t(38)=0.73$; $p=.469$). However, the high trait group did judge incongruent negative outcomes to be significantly more deserved than did the low trait group ($t(38)=3.79$; $p=.001$).

8.3.4 Set B: Negative Outcome Pleased Ratings

The groups were compared with respect to how pleased they rated themselves to feel in relation to congruent and incongruent negative outcomes for the scenario characters in Set B. The main effect of group did not reach significance ($F(1,38)=3.08$; $p=.087$), nor was there a group by deservingness interaction ($F(1,38)=0.06$; $p=.813$). There was a main effect of deservingness, such that both groups rated that they would feel more pleased with negative outcomes in the congruent versus incongruent variant ($F(1,37)=110.52$; $p<0.001$).

8.3.5 Gender

Psychopathic traits are more commonly linked to males than females; in order to ensure that gender was not a confounding variable in the present study, these analyses were repeated using ANCOVAs with gender as a covariate.

In Deservingness: Positive Outcomes, there was no significant main effect of gender for either deservingness or pleased ratings ($p>.05$). However, the ANCOVA did reveal an interaction between gender and deservingness variant. With respect to deservingness ratings, female participants were more extreme in their ratings, since they rated congruent positive outcomes as more deserved than male participants, and rated incongruent positive outcomes as less deserved than male participants ($F(1,38)=8.31$; $p=.006$). Similarly, female participants were more pleased with congruent positive outcomes, and less pleased with incongruent positive outcomes, as compared with male participants ($F(1,38)=9.82$; $p=.003$). Despite the

significant interaction between gender and deservingness, the inclusion of gender as a covariate did not change the overall pattern of results with respect to the comparison of the psychopathic trait groups.

In Deservingness: Negative Outcomes, there was no significant main effect of gender for either deservingness or pleased ratings ($p > .05$). There were also no significant interactions between gender and deservingness, for either type of rating in the negative scenarios. The inclusion of gender as a covariate also did not change the pattern of result with respect to the comparison of the psychopathic trait groups.

8.4 DISCUSSION

The present study was designed to investigate how psychopathic personality traits influenced reasoning about deservingness using two related sets of materials. The positive set compared scenarios in which a main character's good actions (congruent) or bad actions (incongruent) led to a positive outcome. The negative set compared scenarios in which a main character's bad actions (congruent) or bad fortune (incongruent) led to a negative outcome. High and low psychopathic trait groups were compared with respect to the extent to which they judged scenario characters to deserve each outcome. Participants also rated how pleased they would feel in response to each outcome.

8.4.1 Summary of findings

The findings indicated that the experimental manipulation of deservingness was successful in both the positive and the negative sets; participants across both groups rated congruent outcomes as significantly more deserved than incongruent outcomes, and rated that they would be significantly more pleased with these outcomes.

In the positive set, it was expected that the groups would not differ in their deservingness ratings but would differ in pleased ratings. As expected, the high trait group rated themselves to be more pleased with these outcomes than the low trait group. However, contrary to predictions, the high trait group judged incongruent positive outcomes to be significantly more deserved than the low trait group. Thus, in relation to the example above, the high trait group judged the friend who flirted with their examiner in order to pass their driving test to be more deserving and was more pleased with this outcome than the low trait group.

In the negative set, it was also expected that the groups would not differ in their deservingness ratings and that they would differ in their pleased ratings. However, results revealed that the high trait group judged incongruent negative outcomes to be significantly more deserved than the low trait group. For instance, the high trait group judged the friend who had been reprimanded in front of their class because their instructor was in a bad mood to be more deserving than did the low trait group. However, there were no differences between the groups with respect to their pleased ratings; this was not in line with the study's hypotheses.

8.4.2 Interpretations relating to positive outcomes

In Chapter 7, which examined how deservingness influenced compliance with requests for favours, the psychopathic trait groups differed in their ratings of how acceptable these requests were. In view of the research evidence suggesting that psychopathy is associated with intact cognitive empathy and impaired emotional empathy (e.g. Blair, 2008), the ratings of acceptability might have been made on the basis of cognitive and/or emotional responses to the scenarios, but this was not explored in the study. Hence, in the present study, two distinct ratings were obtained in order to separate these aspects. Ratings of how much the scenario characters deserved each outcome were intended to tap into the cognitive component of acceptability, whereas ratings of how pleased participants would be with each outcome were intended to tap into the emotional component of acceptability. Thus, it was expected that the groups would differ in their pleased ratings, since these related to emotional responding, but not deservingness ratings, since these related to cognitive judgments.

Deservingness ratings were intended to measure cognitive reasoning about the scenarios. What factors could have accounted for the unexpected group differences in deservingness ratings in the positive set? One possible explanation is that the high trait group was impaired in cognitive empathy. However, it is unlikely in view of the evidence of intact cognitive empathy in psychopathy (Blair, 2008). Moreover, the groups did not differ in their deservingness ratings across the board; the two groups made comparable judgments in response to congruent outcomes, but the high trait group was more lenient when the scenario characters succeeded as a result of their bad actions. One potential explanation is that the deservingness and pleased ratings were not adequately separating cognitive and emotional aspects of acceptability. Whilst these two ratings were intended to tap different types of judgments, the extent to which they in fact measured different phenomena is somewhat unclear. For instance, participants may have judged that they would only feel pleased for a

character when the character deserved that particular outcome. An examination of the correlations between deservingness and pleased ratings, for both congruent and incongruent outcomes, provides some support for this. The two ratings were significantly correlated for both the positive items ($p < .01$) and for the negative items ($p < .05$). Both cognitive and emotional processes are generally believed to contribute to judgment formation (e.g. Haidt, 2001; Schwarz, 2000), and it may thus be difficult for people to separate these adequately using rating scales, or indeed to be aware of these as distinct influences. A number of studies in support of a dissociation between cognitive and emotional empathy have recruited physiological and brain imaging techniques; for instance a range of studies have demonstrated that psychopathy is associated with reduced galvanic skin conductance (Blair, Jones, Clark & Smith, 1997), reduced activity in the amygdala, which is associated with emotional processing (Adolphs, Tranel, Damasio & Damasio, 1994; Phelps & LeDoux, 2005) and differences in EEG activity (Brazil, Mars, Bulten, Buitelaar, Verkes & De Bruijn, 2011). Therefore, separating cognitive and emotional aspects of empathy without the use of the physiological and/or brain imaging techniques may present significant challenges.

Another possible explanation for group differences in deservingness ratings may be the extent to which the groups valued social rules, an explanation that was also helpful when interpreting the findings relating to deservingness presented in Chapter 7. Social rules are norms or standards that guide behaviour without the force of law (Cialdini & Trost, 1998). One type of social rule which has been discussed in relation to deservingness (Feather, 2006) is the belief in a just world. This belief suggests that people's good deeds, for instance working hard and performing well, will directly lead to positive outcomes (such as passing a driving test). By contrast, incongruent relationships between people's actions and outcomes, such as passing a driving test as a result of flirting with the instructor rather than driving well, are inconsistent with belief in a just world. Research suggests that those high in psychopathic traits are less likely to believe in a just world (Hafer et al., 2005) than those low in psychopathic traits. Thus, in the present study, the low trait group may have been perturbed by incongruent outcomes that defied the existence of a just world and reflected this by discriminating more than the high trait group between positive outcomes that were congruent versus incongruent.

With respect to the pleased ratings in the positive set, it was expected that the high trait group would discriminate between the congruent versus incongruent outcomes to a lesser extent than the low trait group, and the findings supported this hypothesis. One prominent model

of deservingness suggests people have distinct reactions to different kinds of outcomes (Feather, 2006). According to this model, people experience pleasure in response to positive outcomes that are deserved and resentment in response to positive outcomes that are undeserved. Whilst the present study was not designed explicitly to test this particular model, it may aid in the interpretation of the current findings. In the congruent, positive outcomes, it may have been relatively simple to acknowledge that the friend who made few errors and drove well deserved to pass their driving test. Both groups may have been equally pleased with this outcome, since they were not in competition for the same resource and therefore did not have to incur any sort of personal sacrifice in order for the character to succeed. For instance in the scenario in which the friend passes their driving test, the participant is not taking a test themselves.

Feather's (2006) model can also potentially account for incongruent, positive outcomes, such as that in which the friend flirted with the driving instructor in order to pass. In these situations, the low trait group may have felt resentful and been critical of the friend for acting in violation of social rules; cheating is considered to be one such violation (Fehr & Fischbacher, 2002; Jordan, 2001). By contrast, the high trait group, who are likely to have been less concerned with social rule violation and more likely to take advantage of others (e.g. Hare, 1993) may have admired the friend, and recognised that if they were in a similar position, they may have been likely to cheat themselves (Coyne & Thomas, 2008; Nathanson, Paulhus & Williams, 2006).

8.4.3 Interpretations relating to negative outcomes

With respect to the deservingness ratings, no group differences were predicted for the negative set. However, as for the positive set, the high trait group discriminated between congruent and incongruent negative outcomes to a lesser extent than the low trait group. What could have accounted for this unexpected group difference? As discussed above, this difference was unlikely to reflect a lack of awareness or capacity to make a cognitive judgment in the high trait group, especially since the groups did not differ in response to the congruent outcomes. The high trait group was simply harsher in their ratings when the scenario characters experienced unfortunate suffering that was unrelated to their actions. Both cognitive and emotional factors may have contributed to the participants' deservingness ratings.

The model of deservingness proposed by Feather (2006) may provide an aid interpretation of this finding. This model suggests that people experience *schadenfreude*, or pleasure at others' misfortune, in response to others' deserved negative outcomes. Thus, in the congruent negative outcomes, both trait groups are likely to have understood the causal link between the failure to complete the homework and the subsequent reprimand, and deemed the character to be responsible. The higher deservingness ratings in congruent versus incongruent negative outcomes may indicate that both groups experienced *schadenfreude*.

An alternative reaction may have accounted for the high trait group's ratings. As discussed above, the high trait group may have identified with the experience of successfully transgressing in order to achieve a goal and admired characters that behaved in that fashion. By contrast, in the congruent negative outcomes the characters' transgressions were unsuccessful; in the present example they did not escape reprimand when they decided not to complete their homework. The high trait group may therefore have been less likely to admire their transgressions, and accordingly made similar judgments of deservingness to the low trait group.

In the incongruent, negative outcomes, the high trait group was likely to have felt less sympathetic than the low trait group. Given that psychopathic traits are associated with callousness, a lack of regard for others and a lack of emotional empathy (e.g. Hare, 1993, Blair, 2008), the high trait group may have experienced less vicarious distress when presented with the friend's hardship as compared to the low trait group. This may have been reflected in higher deservingness ratings. Another possible explanation for group differences in response to incongruent negative outcomes may have been the extent to which the high trait group actively blamed the victim, despite the fact that the outcome was unrelated to their behaviour. A number of studies examining blame attributions have found that people with psychopathy tend to target the victim (Batson & Gray, 2010). This often serves the function of deflecting blame in the aftermath of their own transgressions (DeLisi, Angton, Vaught, Trulson Caudill & Beaver, 2014), but further research is needed to investigate how those high in psychopathic traits judge blame in situations where they have not transgressed.

With respect to how pleased the participants would feel, the predictions for the negative set were less clear than those for the positive set. One possibility was that the high trait group would discriminate more between the congruent and incongruent outcomes as compared to the low trait group, since despite believing in a just world, the low trait group would not wish

to endorse suffering for the main character. An alternative prediction was that the high trait group would discriminate less between congruent and incongruent outcomes, since this discrimination may have been made on the basis of belief in a just world which the high trait group was thought to lack; this was the pattern expected (and found) in the positive set.

In reality, the results did not support either of these predictions; no group differences emerged in response to either congruent or incongruent negative outcomes. It is possible that the high trait group did not feel more pleased with either type of negative outcome because they were not personally affected by the characters' actions. Psychopathy is associated with instrumental aggression, or the tendency to behave aggressively in order to achieve a goal, (Glenn & Raine, 2009) and an increased propensity for vengeance (Giammarco & Vernon, 2014); neither motivation was necessarily applicable in the present study. An interesting future direction might be to examine responding in situations in which the character's actions have negative implications for the participants.

8.4.4 Difference between positive and negative sets of materials

One explanation as to why the groups differed in pleased ratings for the positive set but not for the negative set may relate to fundamental differences between how people view positive and negative outcomes. Firstly, the desirability of congruent and incongruent outcomes (from the perspective of the observer) is likely to have differed between sets. In the situation in which the friend passed their driving test after performing well, this was an example of a positive outcome directly arising from good actions, and the low trait group may have thus viewed this as desirable. When the friend passed after flirting with the instructor, this was an example of a positive outcome directly arising from bad actions, and the low trait group may have viewed this as undesirable. There was a different balance in the desirability of outcomes in the negative set, since neither congruent nor incongruent outcomes were likely to have been perceived as desirable. Thus, the lack of group differences may have been driven by the low trait group providing similar ratings in response to both types of outcome, since they were unlikely to revel in the characters' suffering, even if they judged it to be deserved. The high trait group may have lacked investment in the implications of any outcomes for the characters and therefore given less extreme ratings across the board. Inspection of the mean scores provides some support for this, and suggests that the groups may have differed with respect to how they reasoned about positive and negative types of situations.

Another difference between the positive and negative sets relates to the chain of events leading to each outcome. In the positive set, both congruent and incongruent outcomes arose from the characters' actions. By contrast, in the negative set, the congruent outcome arose from the characters' bad actions (failing to complete the homework), whereas the incongruent outcomes arose from misfortune (the instructor's bad mood). The positive set could have included an additional set of incongruent outcomes resulting from good fortune; for example, the character could pass their driving test because the instructor was in a good mood. Alternatively, the negative set could have included an additional set of incongruent outcomes resulting from bad actions; for example, the character could be reprimanded because they accidentally lost or damaged the homework. However, both these extra sets are potentially problematic. In the case of good fortune leading to positive outcomes, people are unlikely to feel as strongly about the lack of deservingness as they would about undeserved negative outcomes. In the case of negative outcomes resulting from bad actions, these would have to be unintentional, accidental actions and again would be a weaker manipulation with respect to the link to deservingness. Nonetheless, a future study could include all these potential sets of outcomes.

8.4.5 Conclusions

In summary, the present study employed a novel experimental task to compare reasoning about deservingness in people high and low in psychopathic traits. One set of materials described positive outcomes and the second described negative outcomes. In the first set, the groups gave similar ratings when positive outcomes arose from the characters' good actions. However, the high trait group judged positive outcomes that arose from the characters' bad actions to be more deserved than the low trait group. The high trait group also rated that they would feel more pleased with these outcomes. In the negative set, a similar pattern was revealed in terms of judgments of deservingness; the groups did not differ in response to outcomes that arose from the characters' bad actions and the high trait group rated outcomes that arose from the characters' misfortune to be more deserved than the low trait group. However, the groups did not differ with respect to how pleased they would feel. Broadly speaking, the high trait group therefore discriminated less on the basis of deservingness than the low trait group. This may reflect the high trait group's reduced sensitivity to social rule violations and in particular a lack of belief in a just world. The groups may also have differed in their emotional reactions to different types of outcomes. Ultimately, when compared to the low trait group, the high trait group may have been more likely to endorse transgressions that led to positive outcomes, since these potentially matched their own inclinations; they may also have been less likely to sympathise with unwarranted adversity, and more likely to blame victims for their own misfortune.

8.5 THE NEXT STUDIES: EXPLORING POSITIVE AND NEGATIVE OUTCOMES FURTHER

The present study was designed to investigate how people high and low in psychopathic traits might reason about different types of outcomes on the basis of deservingness. Deservingness was found to influence responding to positive versus negative outcomes in different ways. The study presented here and much of the relevant literature describes how people make attributions about deservingness, cause, and blame in situations in which the consequences of characters' actions are primarily for the character themselves. The next two chapters will examine positive and negative outcomes further.

Chapter 9 will focus on positive and negative outcomes that potentially affect both the participants and the task characters using the Competitiveness Task. This will examine competitiveness, and the extent to which participants prefer positive outcomes for others,

following their own success or failure. In this task, the outcome for the participant is independent of the outcome for the character. Chapter 10 will focus only on negative outcomes which primarily affect only the participant using the Counterfactual Thinking Task. This will examine participants' judgments of blame and preferences for potential solutions that might have prevented negative outcomes (counterfactuals) in situations where a character's negligence has resulted in a negative outcome for the participant.

Chapter 9: Competitive preferences following failure versus success

9.1 INTRODUCTION

Chapter 8 used the Deservingness task to examine how groups high and low in psychopathic traits reason about positive and negative outcomes for others in situations where the outcome is either deserved or undeserved. In this task, the outcomes were only for the scenario characters and the participants themselves did not stand to gain or lose from these outcomes. By contrast, the present chapter will focus on participants' preferences for positive and negative outcomes for others when they as well as the characters gain or lose from the outcomes.

From an evolutionary perspective, competition traditionally refers to a contest over resources necessary for survival and reproduction, such as food or a suitable mate, in contexts where the demand for these resources outweighs the supply (e.g. Tooby & Cosmides, 2005). In a contemporary context, people may compete for a range of social resources, including achievements relating to skills or ambitions, jobs, promotions and other career milestones, and successful relationships. Success in these contexts may signify that goals such as social and financial stability have been reached.

Competitiveness, or the drive to succeed in competition, may thus be an adaptive mechanism when there are limited resources available, such as a competition prize, job or promotion; in order for someone to obtain these resources, others must fail to do so. However, people often behave competitively even in situations where they are not in direct competition with others over a limited resource and their success is independent of others' success or failure. For instance, students may behave competitively towards each other when undertaking exams, even if the likelihood of achieving a good grade is independent of other students' grades.

What drives competitiveness? Evidence suggests that it may be influenced by dispositional, internal characteristics such as narcissism (Luchner, Houston, Walker & Houston, 2011) and the extent to which people view themselves as high achievers (Harackiewicz & Sansone, 1991). The extent to which people tend to compare themselves with others is also thought to be relevant (Garcia, Tor & Schiff, 2013; Festinger, 1954). For instance, it has been posited that drawing social comparisons may enable people to make more accurate evaluations about

their opinions and abilities (Fiske, 2004), may enhance self-esteem (Wills, 1981), or may enable people to emulate those with significant achievements in order to motivate hard work and better performance (Collins, 1996).

Competitiveness may also be influenced by situational, external characteristics such as the presence, salience and value of a reward and the extent to which others are explicitly referred to as competitors (Tauer & Harackiewicz, 1999). For example, factors such as the existence of rivals or rewards can increase the pressure to win and reduce intrinsic motivation to take part in an activity for its own sake (Deci, Betley, Kahle, Abrams & Porac, 1981; Reeves & Deci, 1996). This negative effect may be ameliorated by providing positive or encouraging feedback that highlights the competence of the individual (Tauer & Harackiewicz, 1999). Other studies have shown that people are most competitive when they perceive themselves to be in competition with one other person, as opposed to a group (Buckingham & Alicke, 2002; Garcia & Tor, 2009). For instance, studies have demonstrated that online auction bidders reported greater desire to win, even when bidding was more costly than beneficial, in situations where they were pitted against a bidding rival (Cox, Smith & Walker, 1992; Malhotra, 2010). Enhanced competitiveness in one-on-one interactions could be due to the ease with which people can draw personalised comparisons with specific individuals versus generalised comparisons with large groups (Garcia et al., 2013; Locke, 2007).

Taken together, the evidence suggests that there may be both benefits and drawbacks to competitiveness. Competitiveness may aid adaptation to new situations, motivate people to put in greater levels of effort and improve performance (Franken & Brown, 1995). However, competitiveness can also decrease people's intrinsic motivation and may in some cases may impede the maintenance of harmonious social relationships (Thornton, Ryckman & Gold, 2011). The extent to which competitiveness helps or hinders may be linked to people's individual competitive styles. For example, at one extreme, the desire to succeed in competitive contexts, with the aim of self-improvement and personal growth has been termed personal development competitiveness (Ryckman, Libby, van den Borne, Gold & Lindner, 1997). These competitors do not view people as obstacles to be removed nor do they wish to win at the expense of others. Personal development competition is associated with greater achievement and self-sufficiency (Ryckman, Libby, van den Borne, Gold & Lindner, 1997; Franken & Brown, 1995). At the other extreme, the indiscriminate need to win at any cost, as a means of maintaining or enhancing self-worth has been termed 'Hypercompetitiveness' (Horney, 1936). Unlike personal development competitiveness,

hypercompetitiveness has been associated with narcissism (Ryckman, Thornton & Butler, 1994), a propensity to exercise power and control over others (Ryckman et al., 1997), the use of duplicitous tactics (Houston, Queen, Cruz, Vlahov & Gosnell, 2015) and greater conflict in personal relationships (Thornton et al., 2011).

How might psychopathic traits influence competitiveness? One study linked psychopathic traits with decreased personal development competitiveness and increased hypercompetitiveness (Ross & Rausch, 2001), and a range of studies recruiting neuroeconomic game paradigms such as the Prisoner's Dilemma have found that people high in psychopathic traits are more competitive and less cooperative than those low in psychopathic traits (e.g. Mokros et al., 2008). These differences in competitiveness are consistent with several aspects of the psychopathic profile. Firstly, competitiveness in an evolutionary context is adaptive, and psychopathy has been conceptualised as a successful evolutionary strategy (Glenn & Raine, 2009), which may increase chances of success in competitive contexts in a number of ways. For example: the use of deception and/or coercion may have enabled those with psychopathy to gain additional resources; the capacity to appear superficially charming may have won support and gained useful allies; impulsivity and fearlessness may have enabled people with psychopathy to take advantage of presenting opportunities and explore their environment without hesitation; sexual promiscuity may have enhanced chances of reproductive success, and a lack of emotional empathy may have increased resilience against stress and facilitated an unrestrained ability to take advantage of others (Glenn, Kurzban & Raine, 2011).

Another aspect of psychopathy that may increase competitiveness is the propensity for aggression. Aggression has been conceptualised as comprising two main subtypes: instrumental (or proactive) aggression and reactive aggression (Dodge & Coie, 1987). Reactive aggression has been defined as an impulsive, hostile reaction to a perceived threat, dangerous situation or provocation, whereas instrumental aggression has been defined as a non-provoked aversive action intended to influence others, either in order to gain a resource or to intimidate or dominate others (Patrick, 2004; Poulin & Boivin, 2000). Unlike reactive aggression, which is typically preceded by a strong emotional reaction, instrumental aggression is controlled, purposeful, premeditated and goal-oriented (Glenn & Raine, 2009). A significant body of literature has linked psychopathy with instrumental rather than reactive aggression (Glenn & Raine, 2009; Cornell, Warren, Hawk, Stafford, Oram et al., 1996; Blair, 2001; Walsh, Swogger & Kosson, 2009). Therefore, if success in a competitive context is the

goal, those high in psychopathic traits may be more likely than those low in psychopathic traits to use instrumental aggression as a means to achieve their aims.

In what other ways might psychopathic traits influence behaviour in competitive contexts? Psychopathic traits such as superficial charm, impulsiveness, lack of empathy and a propensity for instrumental aggression have been associated with not only criminal acts but also with considerable career success (Dutton, 2012; Babiak, 1995). However, this success is also more likely to have been achieved by cheating (e.g. Nathanson, Paulhus & Williams, 2006), conning and other duplicitous tactics (Babiak & Hare, 2006; LeBreton, Binning & Adorno, 2006). In a corporate context, this self-serving psychopathic success is often a threat to business performance and longevity (Boddy, 2005).

In addition to being more self-serving in competitive contexts, those high in psychopathic traits may also behave more antagonistically towards losing competitors, despite the fact that they no longer pose a threat. In one study (Geniole, Busseri & McCormick, 2013), participants took part in an online game with a fictitious competitor and the game was rigged such that all participants won the competition. They then had to decide how much money should be given to their losing competitor; this money was independent of their own winnings. Participants high in psychopathic traits awarded significantly less money to competitors than those low in psychopathic traits. This suggests that those high in psychopathic traits are harsher and more punitive towards competitors, even in competitive contexts in which they succeed.

Despite the evidence suggesting links between psychopathic traits and competitiveness, this relationship has yet to be systematically investigated. This is the focus of the present study. One possibility would be to investigate competitive behaviour in situations in which participants are in direct competition over a limited resource, such as a single prize. However, it would be unsurprising to find that individuals high versus low in psychopathic traits are more competitive in these situations. Instead, the present study was designed to investigate how psychopathic traits influence competitive behaviour in situations involving indirect competition, where the outcomes for competitors are independent and the resources in question are not short in supply, for example exam grades. The present study involved the development of a novel paradigm: the Competitiveness Task. This task described scenarios in which participants themselves achieved a positive or negative outcome, and they had to decide a) whether they would prefer another character to experience a positive, neutral or

negative outcome, and b) how pleased they would feel with each of these outcomes for the other character. For instance, in one scenario, both the participant and the character were taking an important exam, and the possible outcomes for the other character were that they could have failed, passed with an average grade or passed with a top grade. Participants responded both to scenarios where they themselves failed the exam, to scenarios where they themselves passed with a top grade, since participants' own success or failure may have influenced competitiveness differently in the two trait groups.

In the Deservingness Task, the two rating scales, deservingness and pleased, were intended to tap into cognitive and emotional aspects of acceptability respectively. However, the findings revealed significant correlations between the measures, suggesting that these ratings did not adequately differentiate between cognitive and emotional empathy. Therefore, in the present study, no attempt was made to differentiate these. Instead, participants were asked to give both their preferences for the outcomes, and to rate how pleased they would be with each type of possible outcome.

9.1.1 Hypotheses

Psychopathic personality traits such as reduced empathy, a capacity for superficial charm, increased impulsivity and a propensity for instrumental aggression (e.g. Glenn & Raine, 2009), have been associated with increased competitiveness and a desire to win at all costs. Thus, in the present study, it was expected that there would be a group difference in both preferences and pleased ratings, such that the high trait group would prefer less positive outcomes for competitors, would be more pleased with negative outcomes and less pleased with positive outcomes, as compared to the low trait group.

In the Competitiveness Task, participants read two variants of each scenario: one in which they succeeded and one in which they failed. Failure and success in competitive contexts might have influenced the ways in which participants felt about outcomes for other competitors. It was thus possible that the groups might have been differentially influenced by this manipulation.

9.2 METHODS

9.2.1 Design

There was one between-participants factor of PPI group (high vs. low scorers) and one within-participants factor of level of success (succeed vs. fail).

9.2.2 Participants

The Competitiveness Task was administered alongside the Deservingness Task; the screening and testing samples in the present study were therefore identical to those described in Chapter 8. On this basis, 20 high-scoring (10m, 10f) and 20 low-scoring (9m, 11f) individuals took part in the test stage of the present study.

9.2.3 Procedure

As described in Chapter 8.2.2.3, participants provided written informed consent before completing the experimental tasks and a brief health screen to ensure that nobody with a history of significant psychiatric or neurological illness was included; no participants were excluded on this basis. Participants were paid for taking part.

9.2.4 Materials

9.2.4.1 Competitiveness Task

The Competitiveness Task was designed to examine how preferences relating to positive outcomes for others varied as a function of one's own success or failure. The task consisted of 8 short scenarios (see Figure 9.1 for example), describing a situation in which both the participant and a character they knew were awaiting an outcome, for example having recently taken an important exam. The participant had to state whether they would prefer the character to experience a negative outcome (failing the exam), a neutral outcome (passing the exam with an average grade) or a positive outcome (getting a top grade in the exam). Participants also rated how pleased they would be with each of these outcomes.

Each scenario had two variant levels of success for the participant: 'succeed' and 'fail'. In the 'succeed' variant, the outcome for the participants was positive, for instance they passed the exam with a top grade. In the 'fail' variant, the outcome for the participants was negative, for instance they failed the exam (see Figure 9.1 for example scenario). Characters were counterbalanced across the scenarios for gender, and the proximity of the relationship to the participant was counterbalanced such that half the characters were described as friends and the remaining half were described as colleagues.

Figure 9.1: Example scenario from Competitiveness Task

STORY STEM: “You and a friend have been studying for a final exam that is worth 50% of your degree.”

SUCCEED VARIANT: When the results come out, you have passed with a top grade.

FAIL VARIANT: When the results come out, you have failed.

Questions

1. From your personal perspective, which of the following options would you prefer?
 - a. Your friend has failed
 - b. Your friend has passed with an average grade
 - c. Your friend has passed with a top grade
2. How pleased would you be if your friend failed?
3. How pleased would you be if your friend passed with an average grade?
4. How pleased would you be if your friend passed with a top grade?

1= _____ 10 = _____
Not at all pleased Extremely pleased

9.2.4.2 Administration

After reading the instructions, participants were shown an example item and allowed to ask questions. All scenarios and corresponding questions were then presented one at a time, in a paper booklet. Participants responded verbally to all questions. The scenario remained on display until participants had completed the relevant questions in order to reduce the confounding effects of memory load.

9.2.4.3 Scoring

9.2.4.3.1 Choice of outcome

For each scenario, participants indicated whether they would prefer a negative outcome (for example, fail exam), a neutral outcome (for example, pass exam) or a positive outcome (for example, pass exam with top grade). Negative preferences were awarded a score of 1, neutral preferences were awarded a score of 2 and positive preferences were awarded a score of 3. A composite preference score was derived by summing these scores across all scenarios for each participant; higher scores denoted preferences for more positive outcomes.

9.2.4.3.2 Pleased ratings

The participants also rated how pleased they would be with each type of outcome (negative, neutral and positive). These ratings were summed across all scenarios.

9.3 RESULTS

Means and standard deviations (SD) for each of the measures described below are presented in Table 9.1. Examination of the data revealed that all variables were normally distributed and there were no outliers.

Table 9.1: Mean scores and standard deviations for the two groups for Competitiveness Task

	High PPI Group	Low PPI Group
	Mean (SD)	Mean (SD)
	(N=20)	(N=20)
Preference scores for outcomes for character (%)		
If participant succeeds	91.67 (5.41)	93.54 (7.58)
If participant fails	66.04 (7.91)	71.67 (16.08)
How pleased were participants with the fail grade for the friend?		
(Negative outcome) (%)		
If participant succeeds	26.05 (9.65)	17.65 (6.85)
If participant fails	35.10 (8.55)	26.85 (9.44)
How pleased were participants with the average mark for the friend?		
(Neutral outcome) (%)		
If participant succeeds	43.40 (5.23)	43.95 (7.54)
If participant fails	46.00 (4.42)	43.40 (6.98)
How pleased were participants with the top mark for the friend?		
(Positive outcome) (%)		
If participant succeeds	58.65 (8.61)	67.50 (8.39)
If participant fails	41.90 (5.33)	46.25 (16.70)

9.3.1 Composite preference score

The high and low PPI groups were compared on their preference scores in the Competitiveness Task. Thus, a 2 x 2 (group [high/low PPI] by level of success [succeed/fail]) ANOVA was conducted. There was a significant main effect of level of success, such that participants across both groups preferred more positive outcomes for the characters in situations in which they themselves had succeeded versus situations in which they themselves had failed ($F(1, 38) = 203.82; p < .001$). There was no significant main effect of group ($F(1, 38) = 1.89; p = .177$); nor was there a significant interaction between group and level of success ($F(1, 38) = 1.27; p = .267$).

9.3.2 Pleased ratings

The high and low PPI groups were compared with respect to how pleased they felt with each outcome for the character. Since a separate rating was taken for each outcome, a 2 x 2 x 3 (group [high/low PPI] by level of success [succeed/fail] by outcome [negative/neutral/positive]) ANOVA was conducted.

There was a significant main effect of level of success, such that participants across both groups, in response to all three types of outcome, were more pleased in situations where they themselves had succeeded versus situations in which they themselves had failed ($F(1, 38) = 11.36; p = .002$). There was also a significant main effect of outcome for the character, such that participants across both groups, and across both levels of success, were more pleased in situations in which there was a positive outcome for the character versus situations in which there was a negative outcome for the character ($F(1, 38) = 96.94; p < .001$). There was a significant interaction between level of success for the participant and outcome for the character ($F(1, 38) = 72.41; p < .001$), such that both groups were more pleased the more positive the outcome for the character, but only in situations in which they themselves had succeeded.

There was no significant main effect of group ($F(1, 38) = 0.63; p = .433$). There was also no significant interaction between level of success and group ($F(1, 38) = 2.05; p = .161$), nor was there a significant three-way interaction between group, level of success and outcome for the character ($F(1, 38) = 2.05; p = .161$). However, there was a significant interaction between group and outcome for the character, such that the high trait group was less pleased with positive outcomes and more pleased with negative outcomes, as compared to the low trait group ($F(1, 38) = 5.41; p = .009$).

In order to examine the interaction between group and outcome for the character, three separate post-hoc t-tests were conducted. This allowed for the high and low trait groups to be compared on their pleased ratings for negative, neutral and positive outcomes respectively. With respect to negative outcomes, the high trait group was significantly more pleased than the low trait group ($t(38) = 3.32; p = .002$). There were no significant group differences with respect to pleased ratings for neutral outcomes ($t(38) = 0.6; p = .509$). The high trait group was less pleased with positive outcomes than the low trait group, but with a strict p value of 0.017 (.05/3), this difference only approached significance ($t(38) = 2.29; p = .028$).

9.3.3 Gender

Psychopathic traits are more commonly linked to males than females; in order to ensure that gender was not a confounding variable in the present study, these analyses were repeated using ANCOVAs with gender as a covariate.

In the Competitiveness Task, there was no significant main effect of gender for either preference score or pleased ratings ($p > .05$). However, the ANCOVA did reveal a significant interaction between gender and outcome for the character such that the females were less pleased with negative outcomes and more pleased with positive outcomes than males ($F(1, 38) = 3.80; p = .032$). There were no other significant interactions with gender ($p > .05$). Despite the significant interaction between gender and outcome for character described above, the inclusion of gender as a covariate did not change the pattern of results with respect to the comparison of the psychopathic trait groups.

9.4 DISCUSSION

The present study was designed to investigate how psychopathic personality traits influence competitiveness, using a novel task. The Competitiveness Task described situations in which the participant and another character, such as a friend or colleague, were both involved in a particular competitive context, such as an important exam, and were both hoping to achieve a positive outcome, such as a good grade. The participant and character were not in direct competition over one positive outcome; both could have achieved a good grade. Participants had to decide whether they would prefer for the character to experience a negative outcome (failing the exam), a neutral outcome (an average grade) or a positive outcome (a high grade). Participants also had to rate how pleased they would feel with each of these outcomes for the character. Since people's own success or failure may influence the extent to which they behave competitively, both levels of success were included in the present study. Thus, in one variant, participants responded as though they had achieved a high grade, and in the second variant responded as though they had failed the exam.

The findings indicated that the experimental manipulation of level of success (own success or failure) was effective; participants across both groups preferred positive outcomes and were more pleased with these outcomes in situations in which they themselves had succeeded versus in situations where they themselves had failed. This may be accounted for by evidence suggesting that people are susceptible to a self-serving bias when making attributions about

their own successes and failures; successes are typically attributed to internal, dispositional characteristics and failures are typically attributed to external, situational factors (Campbell & Sedikides, 1999; Mezulis, Abramson, Hyde & Hankin, 2004). Thus, in the scenario in the present study in which the participants failed the exam, they may have wished to attribute this to a particularly difficult exam, rather than a lack of competence. This was more plausible when the other character also failed the exam than when the other character passed with a top grade.

Despite the significant differences in responding to success versus failure across all participants, it was unclear whether the psychopathic trait groups would be differentially influenced by the experimental manipulation. The findings revealed that there was no group by level of success interaction; the high trait group may have been influenced by both failure and success variants of the task in similar ways to the low trait group.

Contrary to predictions with respect to participants' preferences for positive, neutral or negative outcomes for the characters, there were no significant differences between the high and low trait groups. This prediction was made on the basis of previous studies examining competitiveness in psychopathy. This literature suggests that psychopathy is linked to greater competitiveness when in direct competition with others, to the use of deception or coercion to gain resources when the supply is limited, and to a competitive style characterised by a desire to win rather than by a desire for personal development (Ross & Rausch, 2001; Glenn & Raine, 2009). However, the findings of the present study revealed no differences between the high and low trait groups. The simplest explanation for this is that they did not differ because the participants were not in direct competition with the scenario characters. For instance, if there was only one top grade available, the high trait group may have been more likely than the low trait group to prefer negative outcomes for competitors, but this was not the case in the present study. The lack of group differences in outcome preferences is consistent with evidence suggesting that people with psychopathy are not indiscriminately aggressive, but rather that they are instrumentally aggressive. Instrumental aggression refers to controlled, deliberate and goal-directed aggression (Glenn & Raine, 2009). In the present task, the goal of getting a high grade in the exam was not incompatible with the character performing well. It is possible that the high trait group would only have been driven to be 'hypercompetitive', or to wish to win at any cost, when there was a clear motivation to behave in this way, such as in situations where resources were limited or only one person could win. By contrast, the low trait group may have been more likely to be competitive with the aim

of personal development rather than simply a desire to win, and were therefore less likely to wish to succeed at the expense of others or to view others as obstacles to their success, regardless of whether the competition was direct or indirect.

Although the groups did not actively select different types of outcomes for the other characters in the scenarios, with respect to pleased ratings, the high trait group was more pleased with negative outcomes for the character and less pleased with positive outcomes for the character as compared to the low trait group, which was in line with predictions. These group differences may have been driven by a lack of emotional empathy in the high trait group, which influenced the way in which participants felt about the outcomes for the characters. For positive outcomes, such as in the scenario where participants were faced with the prospect of the character achieving a top grade, the high trait group may have felt actively resentful of the character's success, either because it diminished the value of their own achievement in the 'succeed' variant of the task, or because it enhanced their sense of disappointment in the 'fail' variant of the task. By contrast, the low trait group may have experienced a vicarious sense of success and thus felt pleased for the character. However, if the high trait group was actively resentful, it is surprising that they did not differ from the low trait group in their preference scores. It may be more likely that the high trait group was simply unaffected by the prospect of the character's success, and thus that only the low trait group was actively pleased for the character.

Similarly empathic differences between the trait groups can also account for the pattern of results relating to pleased ratings for negative outcomes. In the scenario where the participants were faced with the prospect of the character failing the exam, the high trait group may not have personally resonated with the character's predicament and therefore may have been unsympathetic to their distress. This may have led to the high trait group making comparatively higher pleased ratings than the low trait group, who may have vicariously experienced the character's distress or their disappointment associated with failure (e.g. Shepherd, 2003) and felt sympathy for them. Thus, it is likely that the group differences in pleased ratings arose from the high trait group differentiating between negative and positive outcomes for characters to a lesser extent than the low trait group, and inspection of the mean scores provides some support for this. This lack of differentiation echoes previous findings in the present thesis. In Chapter 7, the high trait group's acceptability ratings differentiated less between reasonable and unreasonable requests for favours than did the low trait group, and in Chapter 8, the high trait group differentiated less

between deserved and undeserved outcomes than did the low trait group. This may be linked to the flattened affect, reduced emotional empathy and impaired emotional processing associated with psychopathy (Blair, 2008; Blair, 1995). The high trait groups may have had a more limited range of emotional responding than the low trait groups which translated into less extreme ratings.

In summary, the present study employed a novel experimental task to compare competitiveness in those high and low in psychopathic traits. The task described competitive contexts in which the participant and another scenario character were both aiming for a positive outcome, such as a high exam grade. The participant and character were not in direct competition, since both could have potentially succeeded. There were two variants of each task scenario, one in which the participant had failed and one in which they had succeeded. Regardless of the level of success, the high trait group did not actively select more negative outcomes than the low trait group when expressing a preference for what would happen to the scenario characters. Thus, although the literature implies that psychopathy is associated with increased competitiveness and choices that have negative consequences for competitors, the present findings suggest this may only be true when direct competition over limited resources is involved. Nonetheless, in comparison with the low trait group, the high trait group did take greater pleasure in negative outcomes for the scenario characters, and less pleasure in positive outcomes, when told to imagine that these outcomes had already occurred. This differentiation between active preferences and pleased ratings suggests that the time point at which participants respond, i.e. whether they are making choices about future events or reflecting on past events may be pertinent for detecting group differences. This was explored further in Chapter 10 (reported below) by examining counterfactual reasoning in relation to situations with negative outcomes for the participant.

9.5 THE NEXT STUDY: NEGATIVE OUTCOMES AND COUNTERFACTUAL THINKING

The present study was designed to investigate competitiveness in people high and low in psychopathic traits. This study described positive and negative outcomes that had consequences for both the participants and for the scenario characters. However, the outcomes for the participant were independent of the outcome for characters (both could succeed, one could succeed and one could fail, or both could fail) and the outcome for the participants did not result from the character's actions. This may have had some inhibitory

effect on the extent to which the high trait group responded antagonistically towards the characters. This may have been reflected in the high trait group's preferences for outcomes for the characters, which were similar to the low trait group. The next study will investigate this further, by comparing the trait groups' reasoning about negative outcomes that primarily affect the participants themselves, and that result from the characters' negligence.

Chapter 10: Judgments of blame and counterfactual thinking

10.1 INTRODUCTION

Evidence suggests that when people experience negative outcomes, they automatically reflect on “what might have been”: alternative decisions or events that would have avoided the negative outcome (Roese, 1997; Epstude & Roese, 2008). For instance, if a person were to miss a train and subsequently an important job interview, they may generate counterfactual alternatives such as ‘if only I packed my bag the night before’, ‘if only I left the house earlier’, ‘if only I had driven’, ‘if only the train had been delayed’ etc. This capacity to generate possible alternatives to past events is referred to as counterfactual thinking (Roese, 1997).

Experimental evidence suggests that counterfactual thinking influences the ways in which people respond to and reason about negative outcomes. When the negative outcomes happen to other people and result not from their own actions but from those of others, counterfactual thinking has been linked to increases in both sympathy for these victims and the amount of compensation awarded to them (Miller & McFarland, 1986; Macrae & Milne, 1992). With respect to the perpetrators, counterfactual thinking has been associated with increased anger, a tendency to judge their transgressions as more negligent and more severe (Macrae, 1992), and a tendency to impose harsher penalties directed towards transgressors, even when these actions are accidental (Price, 1996; Macrae, Milne & Griffiths, 1993). When we ourselves experience a bad outcome as a result of our own actions, counterfactual thinking is thought to increase the experience of regret (Boninger, Gleicher & Strathman, 1994) and to help us avoid negative outcomes in the future (Epstude & Roese, 2008). Relatively little work has examined the influence of counterfactual thinking in situations where negative outcomes for the self result from other people’s actions.

In situations in which people experience negative outcomes as a result of others’ actions, one common response is to assign blame (Alicke, 2000). Assigning blame has been conceptualised as a social mechanism that identifies moral, social, and/or legal transgressions, with the aim of discouraging harmful behaviours and holding the perpetrators accountable for their actions (Alicke, 2000). This aim is typically achieved by imposing sanctions on transgressors, since people view the primary purpose of punishment to be deterrence and just deserts (Carlsmith, Darley & Robinson, 2002). Legal transgressions are likely to be met with sanctions such as fines or imprisonment, whereas moral or social

transgressions are likely to be met with socially mediated sanctions such as disapproval, criticism or social exclusion (e.g. Homans, 1961; Noussair & Tucker, 2005). A range of factors may influence blame attributions, including the severity of harm caused by people's actions, (Bornstein, 1998), the extent to which people are personally culpable (Alter, Kernochan & Darley, 2007), intentionality (Shaver, 1985) and the degree of negligence involved (Channon, Fitzpatrick, Drury, Taylor & Lagnado, 2010).

How might psychopathic traits influence counterfactual reasoning and blame attributions in response to negative outcomes? Turning first to counterfactual thinking, there is a paucity of experimental work examining this directly in psychopathy. On the one hand, the capacity to generate counterfactual alternatives has been associated with the experience of negative emotions, in particular regret (Roese, 1997; Zeelenberg, 1998), which is believed to be diminished in psychopathy (Hare, 1993). People with psychopathy have also been posited to lack the capacity to critically reflect upon, take responsibility for, or feel guilty about their own transgressions, which may make generating counterfactual alternatives to their actions particularly challenging (Glannon, 2008). On the other hand, there is evidence to suggest counterfactual thinking may be preserved in psychopathy. For instance, counterfactual thinking has been developmentally linked to false-belief, or the capacity to understand that others' beliefs may be divergent from one's own (e.g. Wimmer & Perner, 1983), since both processes require people to simulate an alternative reality (Riggs, Peterson, Robinson & Mitchell, 1998). False-belief attribution has been extensively conceptualised as an aspect of cognitive empathy (e.g. Singer, 2006), which is thought to be intact in psychopathy (Blair, 2008).

How might psychopathic traits influence blame attributions in situations where they experience negative outcomes as a result of others' actions? Psychopathy is associated with an increased tendency to make legal and social transgressions (e.g. Hare, 1992). It is thus unsurprising that limited work has examined how psychopathy is linked to blame attributions when others have transgressed, since people with psychopathy are arguably by definition more likely to be the transgressor than the victim. Nonetheless, psychopathy has been associated with a propensity to externalise blame and to blame victims for their own misfortune (Lilienfeld & Andrews, 1996; Batson, Gudjonsson & Gray, 2010; DeLisi, Angton, Vaughn, Trulson, Caudill & Beaver, 2014), which may lead to more severe blame attributions in those high versus low in psychopathic traits. However, this has typically been studied in contexts where the individual with psychopathy themselves has transgressed, and blame

externalisation has therefore served to deflect blame away from their own transgressions (DeLisi, Angton, Vaughn, Trulson, Caudill & Beaver, 2014); the extent to which those high in psychopathic traits blame others when they themselves are the victims of transgressions thus remains unclear.

The present study was designed to investigate the relationship between psychopathic traits and responding to negative outcomes. In the Counterfactual Thinking Task, participants read scenarios describing negative outcomes that affected them personally, and resulted from another character's actions. Participants were required to make judgments relating to regret, blame and guilt. Participants also had to evaluate a series of counterfactual alternatives to the events leading up to the negative outcome that could have prevented it from occurring.

Psychopathy has been extensively linked to intact cognitive empathy and impaired emotional empathy (e.g. Blair, 2008), and many of the findings in the present thesis have been interpreted in view of this literature. Therefore, in the present study, an additional measure of empathy was administered to elucidate further the relationship between cognitive and emotional aspects of empathy. The Interpersonal Reactivity Index (IRI; Davis, 1980) is a self-report questionnaire designed to tap into both the cognitive components of empathy, such as perspective-taking and imagination, and the emotional components of empathy, such as the experience of personal distress and concern when others suffer.

10.1.1 Hypotheses

In view of the literature suggesting that psychopathic traits are associated with limited experience of regret, it was predicted that the high trait group would judge the scenario characters to experience less regret. Psychopathic traits are also associated with blame externalisation; it was thus expected that the high trait group would provide higher blame ratings when judging the characters' actions.

It was also predicted that the trait groups would express different preferences for the counterfactual alternatives, with the high trait group making more extreme choices. Since psychopathic traits have been linked to a reduced experience of guilt, it was predicted that the high trait group would report that they would feel less guilty in relation to the counterfactual alternatives than the low trait group.

With respect to the additional empathy measure administered in the present study, it was expected that the groups would not differ on the IRI subscales relating to perspective-taking or imagination, since these were intended to tap into cognitive empathy. It was expected that the high trait group would have lower scores than the low trait group on the IRI subscales relating to personal distress and empathic concern, since these were intended to tap into emotional empathy.

10.2 METHODS

10.2.1 Screening Phase

A sample of 813 full-time university students (343m, 470f) who were fluent in English and aged 18 and above was opportunistically recruited. All participants gave informed consent and completed the PPI-SF (Lilienfeld and Hess, 2001); they were entered into a prize draw and told that they might be invited to the next phase of the study, which would be paid. Total PPI-SF scores were calculated for the whole sample.

The strategy for selecting the testing sample and contacting participants was identical to the method specified in Chapter 6. On this basis, 30 high-scoring participants (20m, 10f) and 37 low-scoring participants (19m, 18f) from the upper and lower fifteenth percentiles of the sample distribution were contacted by email or telephone and invited to take part in the second stage of the study.

10.2.2 Testing Phase

10.2.2.1 Design

A between-groups design was used to compare high-PPI and low-PPI participants.

10.2.2.2 Participants

Twenty-one high-scoring (11m, 10f) and 20 low-scoring (10m, 10f) individuals took part in the experimental stage of the study, which involved completing the Counterfactual Thinking Task and the Interpersonal Reactivity Index. Participants also completed a set of measures reported in Chapter 11 below. As anticipated, the groups differed significantly on PPI-SF scores, $t(39)=22.71, p< 0.001$). The mean PPI score was 163.43 (SD 10.16) and 95.26 (SD 8.67) for the high and low groups respectively. The groups did not differ significantly in age ($t(37)=0.34, p= 0.737$); the mean ages were 21.15 (SD 2.92) and 21.53 (SD 3.96) for the high and low groups respectively.

10.2.2.3 Procedure

All participants provided written informed consent before completing the experimental tasks and a brief health screen to ensure that nobody with a history of significant psychiatric or neurological illness was included. On this basis, one male participant from the low PPI group was excluded from the testing sample. The final sample therefore consisted of 21 high trait participants (11m, 10f) and 19 low trait participants (9m, 10f). Participants were paid for taking part.

10.2.2.4 Materials

10.2.2.4.1 Counterfactual Thinking Task

The Counterfactual Thinking Task¹ was designed to examine how people reason about situations in which they have experienced a negative outcome resulting from other people's actions. The task consisted of 9 short scenarios describing a situation in which a character known to the participant, such as a friend, sibling, housemate or colleague accidentally does something that leads to the participants being inconvenienced, having their property damaged or losing time, effort or money (see Figure 10.1). For instance, in one scenario, the participant's sibling accidentally filled the family car with the wrong fuel, which resulted in the participant missing their graduation. Participants were asked to rate the extent to which they thought the other character would regret their actions, and the extent to which they were to blame for the outcome. Participants then rank-ordered a list of six counterfactual options, i.e. potential alternatives that would have prevented the outcome. The counterfactual options manipulated both the type of alternative (practical, emotional or extreme) and the perspective (character or participant). There were thus six counterfactual alternatives consisting of one practical alternative from each perspective (character and participant), one emotional alternative from each perspective, and one extreme alternative from each perspective. The order in which these counterfactuals were presented was counterbalanced across items. The relationship of the main character to the participant was counterbalanced across items, and the gender of the character was not specified.

¹ Please note that this task was developed jointly with Ms Leila Jameel. Ms Jameel used this task to explore counterfactual judgments in people scoring high versus low on a self-report measure of autistic traits. This study is included in her doctoral thesis.

Figure 10.1: Example scenario from Counterfactual Thinking Task

STORY STEM: “Your sibling drives you to your graduation ceremony. They accidentally fill the car up with the wrong type of fuel, which damages the engine. You break down and miss your graduation ceremony.”

Questions

1. How much do you think your sibling would **regret** filling the car up with the wrong fuel? (Please circle one number **ONLY**)

1-----2-----3-----4-----5-----6-----7-----8-----9-----10

Not regret at all

Regret very much

2. How much do you think your sibling is to **blame** for you breaking down and missing your graduation ceremony? (Please circle one number **ONLY**)

1-----2-----3-----4-----5-----6-----7-----8-----9-----10

Not at all to blame

Very much to blame

3. Here is a list of options that would have prevented your sibling from filling the car up with the wrong type of fuel and you missing your graduation ceremony. Please rank order the options according to your preference, whereby 1 = most preferred and 6 = least preferred (Please use **ONE** option per ranking).

- a) If your sibling hadn't been well enough to drive you to your graduation ceremony
(Character perspective, extreme)
- b) If you hadn't invited your sibling to your graduation ceremony
(Participant perspective, extreme)
- c) If your sibling hadn't overlooked how important your graduation ceremony was
(Character perspective, emotional)
- d) If you hadn't accepted your sibling's offer to drive you to your graduation ceremony
(Participant perspective, practical)
- e) If your sibling hadn't filled up the car with the wrong type of fuel
(Character perspective, practical)
- f) If you hadn't trusted your sibling with something so important
(Participant perspective, emotional)

4. How **guilty** would you feel if you wished [options a) to f)]? (Please circle one number **ONLY**)

1-----2-----3-----4-----5-----6-----7-----8-----9-----10

Not at all guilty

Very guilty

10.2.2.4.2 Administration

Participants were given a paper booklet containing instructions, all 9 scenarios, and corresponding questions. After reading the instructions, they completed the first item by filling in the booklet. After completing the first item, the experimenter checked that they had filled it in correctly and gave the participant the opportunity to ask questions. The participant then filled in the rest of the booklet alone. The relevant scenario was presented on each page of corresponding questions in order to reduce the confounding effects of memory load.

10.2.2.4.3 Scoring

10.2.2.4.3.1 Regret and blame

The rating scales relating to regret and blame were summed for each participant across all items.

10.2.2.4.3.2 Counterfactual alternative preferences

For each item, participants ranked the six counterfactual alternatives (character practical, character emotional, character extreme, participant practical, participant emotional and participant extreme) in accordance with their preference. The alternative ranked as the first choice received a score of 1 and the alternative ranked as their last choice received a score of 6. These individual counterfactual alternative scores were summed across all items for each participant to arrive at six total preference scores, one per counterfactual alternative, with lower scores denoting greater preference.

10.2.2.4.3.3 Guilt

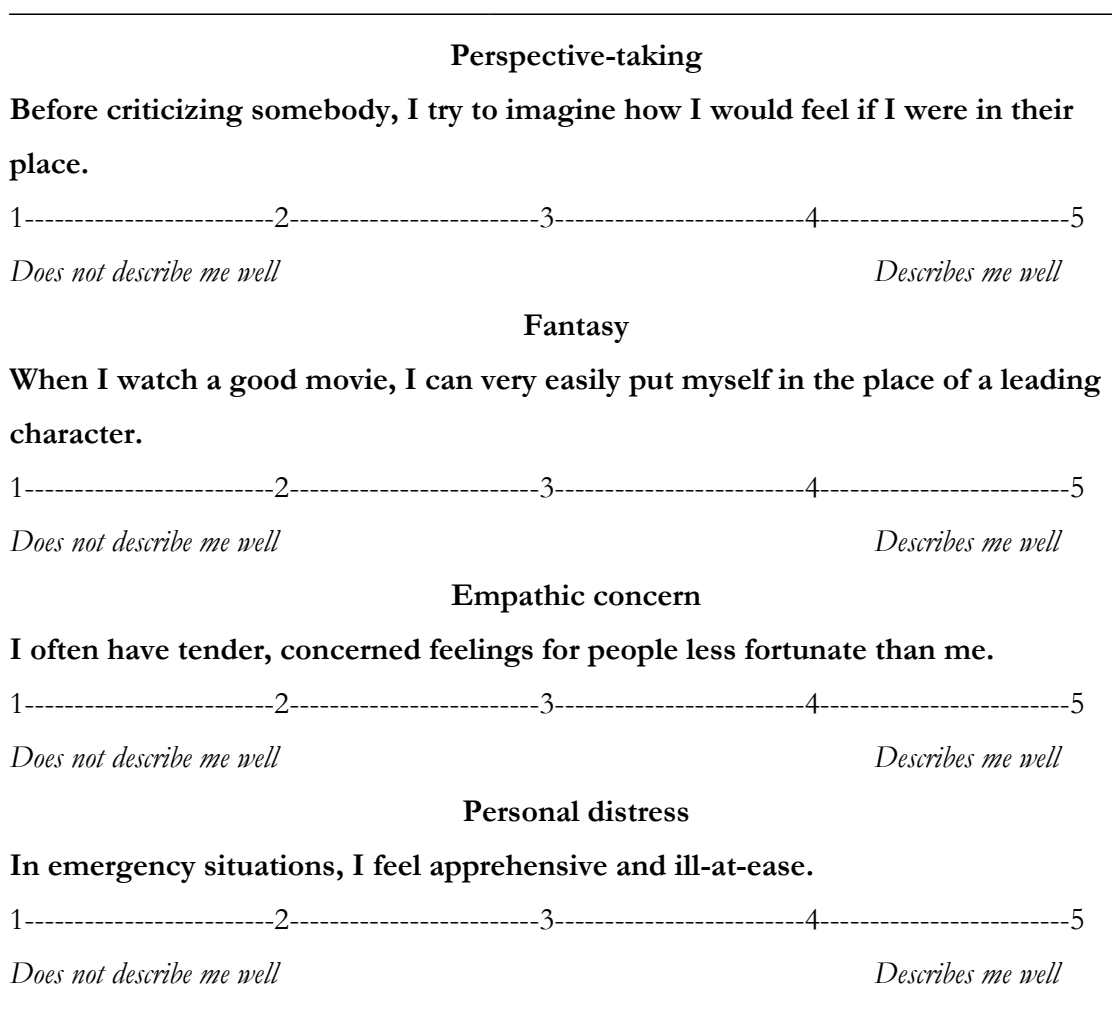
The rating scales relating to guilt for each separate counterfactual alternative were summed for each participant across all items.

10.2.2.4.4 Interpersonal Reactivity Index

The Interpersonal Reactivity Index (IRI; Davis, 1980) is a self-report questionnaire designed to measure four subscales that tap into the global concept of empathy. The first subscale is 'perspective-taking', and was designed to assess spontaneous attempts to adopt the perspectives of others. The second subscale is 'fantasy', and was designed to assess the tendency to identify with characters in movies, plays and other fictional situations. The final two subscales were designed to assess people's emotional reactions; 'Empathic concern' refers to respondents' feelings of warmth, compassion and concern for others and 'personal distress' refers to personal feelings of anxiety and discomfort resulting from observing others' negative experiences. See Figure 10.2 for example questions for each subscale. The

IRI consists of 28 statements (8 for perspective taking subscale, 7 for fantasy subscale, 7 for empathic concern subscale and 6 for personal distress subscale) on a 5-point scale with a score of 1 representing ‘does not describe me well’ and a score of 5 representing ‘describes me well’; higher scores indicate greater empathy. All four subscales of the IRI have been found to have good test-retest reliability (.61-.81) and good internal consistency (Cronbach’s alpha .70-.78). In order to ensure consistent responding, the questions were counterbalanced such that for some, higher scores corresponded to higher empathy and for others, the item was reversed and higher scores corresponded to lower empathy.

Figure 10.2: Example items from Interpersonal Reactivity Index



10.3 RESULTS

10.3.1 Statistical Analyses

The means and standard deviations (SD) for the Counterfactual Thinking Task are presented in Table 10.1. Examination of the data showed that all variables were normally distributed and there were no outliers for the low trait group. However, blame ratings and counterfactual guilt ratings for 'extreme' counterfactuals describing the character's perspective were negatively skewed for the high trait group; there was also one outlier in the high trait group for this guilt rating. Both skewness and the outlier were brought within acceptable limits by conducting a square transformation, in accordance with Tukey's ladder of transformations (Tukey, 1977).

For the blame ratings parametric analysis using the transformed data are reported. For the guilt ratings it was not possible to transform them to normality. Since both parametric and non-parametric tests were showed the same pattern of findings, parametric tests for these data are reported.

Table 10.1: Mean scores and standard deviations for the two groups for the Counterfactual Thinking Task

	High PPI Group	Low PPI Group
(N=21)	Mean (SD) (N=19)	Mean (SD)
Regret rating (%)	73.67 (6.87)	78.53 (6.71)
Blame rating (%)	62.86 (14.94)	56.89 (9.56)
Counterfactual Preferences		
(/54; low scores = greater preference)		
Practical Alternatives		
Character perspective	16.52 (4.03)	14.84 (2.36)
Participant perspective	19.76 (3.53)	20.79 (3.19)
Emotional Alternatives		
Character perspective	26.86 (4.13)	25.58 (4.35)
Participant perspective	35.85 (3.26)	36.79 (2.07)
Extreme Alternatives		
Character perspective	46.48 (4.92)	46.36 (3.18)
Participant perspective	43.86 (2.87)	44.94 (1.57)
Counterfactual guilt ratings (%)		
Practical Alternatives		
Character perspective	18.67 (10.15)	20.00 (7.66)
Participant perspective	24.48 (13.06)	27.84 (10.98)
Emotional Alternatives		
Character perspective	29.62 (14.43)	39.05 (13.17)
Participant perspective	47.24 (17.27)	59.16 (12.26)
Extreme Alternatives		
Character perspective	68.52 (19.20)	79.05 (7.89)
Participant perspective	59.24 (18.75)	73.05 (8.78)

10.3.2: Regret ratings

The high and low psychopathic trait groups were compared with respect to how much they judged that the scenario characters would regret their actions. The high trait group's regret ratings were significantly lower than low trait group ($t(38)=2.26; p=.03$).

10.3.3: Blame ratings

The high and low psychopathic trait groups were compared with respect to how much they blamed the scenario characters for the negative outcomes. The groups did not significantly differ in their blame ratings ($t(38)=1.49; p=.146$).

10.3.4: Preferences for counterfactual alternatives

The high and low PPI groups were compared with respect to their preference scores for each type of counterfactual alternative. Since the six options included practical, emotional and extreme alternatives that focused on the actions of both the character and the participant, a 2 x 3 x 2 ANOVA was conducted (group [high/low PPI] by type of alternative [practical/emotional/extreme] by perspective [character/participant]).

There was no significant three-way interaction between group, alternative type and perspective ($F(2,37)=.23; p=.796$). There were also no interactions between group and alternative type ($F(2,37)=.25; p=.782$) or group and perspective ($F(1,38)=2.85; p=.100$). There was no main effect of group ($F(1,38)=.299; p=.588$).

There was a significant interaction between alternative type and perspective ($F(1,38)=55.85; p<.001$), such that both groups preferred practical alternatives the most and extreme alternatives the least, particularly when the alternative focused on the character's perspective. There was a significant main effect of alternative type ($F(1,38)=2084.71; p<.001$), such that both groups preferred practical alternatives to emotional alternatives and emotional alternatives to extreme alternatives. There was also a significant main effect of perspective ($F(1,38)=48.91; p<.001$) such that both groups preferred counterfactual options that focused on the character's perspective to those that focused on their own perspective.

10.3.5: Guilt ratings in relation to counterfactual alternatives

The high and low PPI groups were also compared with respect to the guilt they would experience in relation to each of the counterfactual alternatives. Since the counterfactual alternatives varied both with respect to type and perspective, a 2 x 3 x 2 (group [high/low PPI] by type of alternative [practical/emotional/extreme] by perspective [character/participant]) ANOVA was conducted.

There was no significant three-way interaction between group, alternative type and perspective ($F(2,37)=.04$; $p=.957$). There was no significant interaction between group and perspective ($F(1,38)=1.62$; $p=.211$). However, there was a significant interaction between group and alternative type ($F(2,37)=4.73$; $p=.015$). Post-hoc t-tests were conducted to examine this interaction further. Adopting a strict significance level of .017 (.05/3), there was no significant group difference in guilt in response to practical counterfactuals ($F(1,38)=.081$; $p=.423$). However, the high trait group reported experiencing less guilt than the low trait group in response to both emotional counterfactuals ($F(1,38)=2.56$; $p=.015$) and to extreme counterfactuals ($F(1,38)=264.19$; $p<.001$). Finally, there was a main effect of group ($F(1,38)=5.89$; $p=.020$) such that the high trait group experienced less guilt overall than the low trait group.

There was also a significant interaction between alternative type and perspective ($F(2,37)=60.85$; $p<.001$). Both groups felt least guilty in relation to practical alternatives and most guilty in relation to extreme alternatives. For practical and emotional alternatives, both groups felt guiltier in relation to alternatives that focused on their own perspectives than those that focused on the character's perspective. For extreme alternatives, participants felt guiltier when these focused on the character's perspective than their own perspective.

There was a significant main effect of alternative type ($F(2,37)=264.19$; $p<.001$), such that both groups experienced least guilt in response to practical alternatives and most guilt in response to extreme alternatives. There was also a significant main effect of perspective ($F(1,38)=34.61$; $p<.001$) such that both groups experienced less guilt in response to counterfactual alternatives that focused on the character's perspective as compared with their own perspective.

10.3.6 Empathy

With respect to the empathy measure administered, the IRI, t-tests were conducted on each of the empathy subscales and the total IRI score. There were no significant group differences on either the perspective-taking subscale ($t(38)=1.46$; $p=.153$) or the fantasy subscale ($t(38)=0.45$; $p=.658$). The high trait group had significantly lower scores on the empathic concern subscale as compared to the low trait group ($t(38)=3.99$; $p<.001$). The high trait group also had lower scores on the personal distress subscale than the low trait group, but using a strict significance level of $p=.01$ (.05/5), this difference only approached significance ($t(38)=2.37$; $p=.024$). Finally, the high trait group had a significantly lower total IRI score than the low trait group ($t(38)=4.46$; $p=.001$).

10.3.7 Gender

In order to ensure that any group differences were due to PPI group membership rather than gender, these analyses were repeated using ANCOVAs with gender as a covariate. The effect of gender did not reach significance for any of these analyses ($p>.05$) and did not change the overall pattern of results.

10.4 DISCUSSION

The present study was designed to investigate how people high and low in psychopathic traits reflected on past events that had led to negative outcomes. The Counterfactual Thinking Task described situations in which the participants experienced negative outcomes as a result of another character's actions. When asked how much they thought the character would regret their actions and the extent to which they were to blame for the outcome, the high trait group gave significantly lower regret ratings than the low trait group. However, the groups did not differ in their blame ratings. They then rank-ordered practical, emotional and extreme alternatives from the character's or participant's perspective and reported how guilty they would feel in relation to each of the alternatives. The groups did not differ in their rankings of the counterfactual alternatives. The high trait group reported less guilt than the low trait group in response to emotional and extreme but not practical counterfactual alternatives. No gender differences emerged.

10.4.1 Regret and blame

As expected, the high trait group judged that the scenario characters would regret their actions significantly less than did the low trait group. This is consistent with the evidence suggesting that when people's own actions result in negative outcomes for others, those high

in psychopathic traits experience limited regret (Hare, 1993). Thus, when the situation was reversed and the actions of others resulted in negative outcomes for the participants themselves, the high trait group may have assumed that the characters would also experience limited regret for their actions.

It was expected that the high trait group would blame the characters for their actions to a greater extent than the low trait group. Although inspection of the means suggests that the data were in this general direction, the findings did not support this prediction. This contradicts the evidence suggesting that psychopathic traits are associated with blame externalization (DeLisi et al., 2014). However, it has been posited that this blame externalization serves to deflect blame away from those with psychopathy when they themselves have transgressed (DeLisi et al., 2014). This motivation was unlikely to have applied in the present study, since the high psychopathic trait participants were the victims of transgressors rather than the perpetrators.

The findings relating to blame are in line with work suggesting that psychopathy is linked to greater lenience when negative outcomes result from unintentional acts. For instance, one study describes a scenario in which a character accidentally poisoned a friend to death while making them coffee, because a toxic substance was mislabelled 'sugar'. People with psychopathy judged the character's actions to be more morally permissible than did control participants (Young, Koenigs, Kruepke & Newman, 2012). However, the lack of group differences in blame attributions was still somewhat surprising, considering how negligent the characters' unintentional actions were in the present scenarios. Previous research has found that people impose higher sanctions when the actions leading to negative outcomes are more negligent (Channon et al., 2010). In the study by Young et al. (2012), the character could not have reasonably known that the sugar was in fact toxic and their mistake was therefore not particularly negligent. By contrast, for all the scenarios in the present study, the characters' actions were unintentional, but their mistakes were relatively negligent and could have been easily avoided. For instance, although the sibling in the graduation example did not intend to use the wrong fuel, they could have reasonably checked more carefully. In order to elucidate further whether negligence differentially influences the psychopathic trait groups' blame attributions, future research could include a manipulation that compares negligent and non-negligent actions. The extent to which the characters' actions were intentional could also be manipulated in future, since this is a factor that has been previously shown to influence blame attribution (Shaver, 1985; Alter et al., 2007).

10.4.2 Counterfactual preferences

In the present study, the psychopathic trait groups were also compared on their preferences for different counterfactual alternatives. Had these counterfactual alternatives occurred, the negative outcomes described in the scenarios would have been avoided. The findings indicated that regardless of psychopathic trait group membership, participants preferred practical alternatives most and expressed the lowest preferences for extreme alternatives. For instance, in relation to the graduation example, both groups ranked highest the alternatives where they had not accepted the sibling's offer of a lift, or where the sibling had used the correct fuel, and least preferred the alternatives where they had not invited the sibling or where the sibling was ill. With respect to perspective, both groups tended to choose counterfactual alternatives that focused on the actions of the character rather than those of the participant. Since the negative outcome resulted from the character's actions, they may have felt that the best counterfactual alternatives were those that required the character to change their actions themselves rather than alternatives that required the participants to intervene. Thus, these alternatives placed the least burden on the participants.

A substantial body of evidence has linked psychopathy with difficulties in interpersonal relationships (Hare, 1993) and a limited capacity for emotional empathy (Blair, 2008). It was therefore predicted that in the present study, the high trait group would be less likely than the low trait group to favour alternatives that focused on the emotional aspects of the participant's relationship with the character, such as trust. It was also predicted that the high trait group would be more likely than the low trait group to favour extreme alternatives that may have resulted in the character experiencing harm. However, there were no significant differences in counterfactual preferences between the psychopathic trait groups. This may have been because in practice, both groups overwhelmingly perceived practical alternatives to be the most satisfactory; these were simple, direct alternatives that did not involve the character experiencing unnecessary harm. In addition, the Counterfactual Thinking Task stated that all of the counterfactual alternatives would have prevented the negative outcomes. Thus, the high trait group may have felt no need to choose more extreme alternatives when the practical alternatives would clearly suffice. In order to further investigate group differences in counterfactual preferences, a future study could manipulate the extent to which the different types of alternatives would have successfully prevented the negative outcome.

Another factor that could account for the lack of group differences in preferences is the extent to which counterfactual thinking involves cognitive empathy. The evidence has linked counterfactual thinking to aspects of cognitive empathy such as false belief, since both require people to simulate an alternative reality (Riggs, Peterson, Robinson & Mitchell, 1998). A substantial literature suggests that cognitive empathy is intact in psychopathy (e.g. Blair, 2008). This was supported by the findings from the empathy measure administered in the present study, which suggest that the trait groups were equally able to take others' perspectives and fantasise about alternative realities. However, in the present study, the capacity to simulate alternative realities was not directly investigated, since the Counterfactual Task spelt out the alternatives and required participants to rank-order them. In order to investigate more systematically how psychopathic traits might influence counterfactual thinking, a future study could compare the groups' capacity to generate their own counterfactual alternatives. The speed with which these alternatives were generated, the number of alternatives generated, whether these alternatives were practical, emotional or extreme, and how vividly the alternatives were described could all be examined in future.

10.4.3 Counterfactual guilt

After rank-ordering the counterfactual alternatives, participants in the present study rated how guilty they would feel for wishing that they had adopted each of these. The findings indicated that both groups expressed least guilt in relation to practical alternatives and most guilt in relation to extreme alternatives. Both groups also rated that they would feel guiltier in response to practical and emotional alternatives that focused on their own perspective than those that focused on the character's perspective, which most likely reflects a preference not to intervene personally in order to change the outcome. With regard to perspective, both groups rated that they would feel guiltier in response to extreme alternatives that focused on the character's perspective than those that focused on their own perspective. Whilst this appears to contradict the idea that they prefer not to intervene personally, an inspection of the extreme counterfactual alternatives in the present study suggests that they were not equally balanced, since those focusing on the character's perspective involved the character experiencing greater harm than those focusing on the participant's perspective. For instance, in the graduation example, wishing that the sibling was ill may have been judged to be more extreme than wishing that they had not invited their sibling. Matching the severity of the extreme alternatives would thus be necessary to assess this effect of perspective further.

With respect to counterfactual guilt in the psychopathic trait groups, the findings revealed that the high trait group expressed less guilt overall than the low trait group, which was in line with predictions. This is consistent with the extensive research linking psychopathy with a lack of guilt and remorse and with deficits in emotional empathy. It is likely that as compared to the low trait group, the high trait group did not care about the negative consequences that the character would experience if the counterfactual alternatives occurred. This is supported by the fact that the group differences were greatest for the extreme alternatives, which had the most negative implications for the characters. Conversely, the group differences were smallest for the practical alternatives, which had few negative implications for the characters. An account of the group differences based on limited emotional empathy is also consistent with the findings from the empathy measure administered in the present study. Although the groups did not differ on the aspects of the measure relating to cognitive empathy, the high trait group scored significantly lower than the low trait group on the aspects of the measure relating to emotional empathy (empathic concern and personal distress).

With respect to the discrepancy in group differences between active preferences and ratings, the findings in the present study are similar to those found in the Competitiveness Task, reported in Chapter 9. In Competitiveness Task, both the participant and another character were aiming for a positive outcome in a competitive context, such as a high exam grade. Participants had to choose whether they would prefer the character to fail, to experience an average outcome (i.e. neither succeeding nor failing), or to succeed (for instance, by getting a top grade). Participants also rated how pleased they would feel in response to each outcome. There were no group differences with respect to preferences when the participants actively chose the outcomes: the high trait group did not choose more negative outcomes for characters than the low trait group. However, there were group differences when the outcomes were presented as though they had already occurred: the high trait group was more pleased with negative outcomes and less pleased with positive outcomes than the low trait group. It was thought that this apparent discrepancy might relate to the time point at which participants were responding: active preferences were proactive, and referred to the outcome the participants would prefer to occur in the future. By contrast, pleased ratings were retroactive, and referred to how pleased participants would feel in response to the outcomes had they already occurred. To examine this, the present study held this time point constant, so that both active preferences and guilt ratings referred to imagined events that might have taken place. Nevertheless, the pattern of results still matched those found in the

Competitiveness Task, suggesting that the time perspective was not the crucial factor. This adds further weight to the suggestion made in Chapter 9: that those high in psychopathic traits may not actively choose for others to suffer unless they themselves have something to gain from their suffering. Nonetheless, they appear not to experience displeasure or guilt in response to others' suffering which may be linked to a reduced capacity to resonate emotionally with the characters.

10.4.4 Summary

In summary, the present study employed a novel experimental task to compare how those high versus low psychopathic traits reason about negative outcomes that affect them personally and result from another character's actions. The findings suggest that the high trait group rated that the character regretted their actions less than did the low trait group, but that the groups did not differ with respect to the extent to which they blamed the character for the negative outcome. When asked to consider various counterfactual alternatives that would have prevented the negative outcome, the groups did not differ in their active preferences but did differ in counterfactual guilt; the high trait group felt less guilty in relation to the counterfactual alternatives, particularly those that would have had negative consequences for the scenario character.

10.5 THE NEXT STUDY: UTILITARIAN JUDGMENTS IN MORAL REASONING

Chapters 9 and 10 examined how groups high and low in psychopathic traits reason about negative outcomes. In both studies, the groups did not differ when actively choosing an outcome or counterfactual alternative, but did differ when rating their emotional response to these outcomes or alternatives. The next study will also examine both active preferences and emotional responses in relation to negative scenarios but will focus more directly on the influence of psychopathic traits on moral reasoning.

Chapter 11: Utilitarian decision-making

11.1 INTRODUCTION

Utilitarianism is a philosophical theory stating that the most ethical course of action is that which maximises benefit and minimises cost across any individuals who might be affected (Mill, 1863). This is in contrast with deontology, whereby the most ethical course of action is that which adheres to absolute moral rules, regardless of utility or maximal benefit (e.g. Kant 1785). For instance, consider a situation in which killing one person would save the lives of five other people. Killing one person would be the ethical course of action according to utilitarianism, since it benefits the most people. By contrast, killing one person would be the unethical course of action according to deontology, since the act of taking a life is generally considered to be in breach of moral rules.

Philosophers have proposed various hypothetical utilitarian dilemmas. One well-known utilitarian dilemma is the ‘Trolley Problem’ (Foot, 1967). In this dilemma, five people are tied to a railway track, and a trolley is heading towards them. If the trolley reaches them, all five people will die. There is a lever by the track, which if pulled will cause the trolley to divert onto a second track, where it will kill one person instead. Pulling the lever would constitute the most ethical course of action according to utilitarianism, since the majority would survive. Conversely, not pulling the lever would be the most ethical course of action according to deontology, since it avoids performing an action that results in the death of a human being.

An alternative version of the ‘Trolley Problem’ is the ‘Footbridge Problem’ (Thomson, 1976). In this variant, there is no lever or second track. Instead, there is a footbridge over the track, and a very large man is stood upon the footbridge. Pushing the large man to his death would stop the course of the trolley and save the five people tied to the track. Both dilemmas require a utilitarian judgment to be made, and the outcome of the decision is identical in both situations; pulling the lever and pushing the large man both result in one person dying and the lives of five people being saved. However, the act of physically pushing a man to his death may be considered more emotionally salient and requires greater personal involvement as compared to simply pulling a lever (Greene, Somerville, Nystrom, Darley & Cohen, 2001).

There has been some recent experimental work examining utilitarian dilemmas, including adaptations of the trolley and footbridge dilemmas (e.g. Greene et al., 2001; Moore, Clark

&Kane, 2008). This body of literature suggests that both cognitive and emotional factors may play a role when resolving utilitarian dilemmas (e.g. Haidt, 2001). Greene, Morelli, Lowenberg, Nystrom & Cohen (2008) proposed a dual-process theory of moral judgment, whereby the utilitarian decision to sacrifice one in order to save five is pragmatic, logical, and results from controlled cognitive processes. By contrast, non-utilitarian decisions are linked to a desire to avoid the experience of negative emotional consequences, and result from automatic, affective processes. A range of studies support this dual-process theory. For instance, Greene et al. (2008) found that increasing cognitive load selectively interferes with utilitarian decisions but not non-utilitarian decisions. In another study, participants who reported their thinking style to be deliberate tended to make utilitarian decisions, whereas those reported that their thinking style was intuitive tended to make non-utilitarian decisions (Bartels, 2008).

Finally, the evidence suggests that people are less utilitarian in 'personal' dilemmas, such as the footbridge problem, than in 'impersonal' dilemmas, such as the trolley problem (Greene et al., 2008; Valdesolo & DeSteno, 2006). This is thought to relate to the fact that situations with higher personal involvement tend to engage people's emotions to a greater extent than those with lower personal involvement (Greene et al., 2001). Evidence in support of this has found that inducing positive emotion selectively increases utilitarian responding to the footbridge dilemma but not the trolley dilemma (Valdesolo & DeSteno, 2006).

How might psychopathic traits influence utilitarian decision-making? There is a substantial body of research linking psychopathy with intact cognitive processing and impaired emotional processing (e.g. Blair, 2008). In view of the evidence outlined above linking utilitarian decisions with cognitive processes and non-utilitarian decisions with emotional processes, psychopathy may be associated with an increased tendency to make utilitarian decisions. There is some experimental evidence suggesting that people with psychopathy are more likely to endorse utilitarian actions (Bartels & Pizarro, 2011), including in response to personal dilemmas (Koenigs, Kruepke, Zeier & Newman, 2011) than control participants. Thus, these studies suggest that people with psychopathy may be more likely both to pull the lever and to push the fat man. However, the relationship between psychopathy and utilitarian decision-making has only been examined within the prison population. Although criminality is associated with psychopathy, it has been posited that it is not a central component (Skeeme & Cook, 2007). In addition, the evidence relating to moral reasoning within incarcerated samples is mixed, with some studies suggesting impairment (e.g. Jurkovic & Prentice, 1977)

and others suggesting none (Trevethan & Walker, 1989; Blair, Mitchell & Blair, 2005). Given this lack of clarity, studying moral reasoning within a population that by definition is likely to have engaged in moral transgressions may impede the extent to which conclusions can be drawn about psychopathy and utilitarianism. Thus, in the present study, people high and low in psychopathic personality traits within the general population were compared on a measure of utilitarian decision-making.

The above studies investigating the relationship between psychopathy and utilitarian decision-making were conducted using the battery of utilitarian dilemmas developed by Greene et al. (2001). Whilst this battery was a novel adaptation of a traditional philosophical conundrum, and has provided a valuable contribution to the study of utilitarian decision-making, there are some limitations. Firstly, the scenarios were not balanced with respect to whether or not the participant's life was in danger. Secondly, the extent to which the scenarios consistently tapped into utilitarianism was not balanced: some dilemmas required participants to choose between one person and a group, some required participants to choose between two groups, and some required participants to choose between an outcome where one person dies and an outcome in which everyone (including the one person) dies. Thirdly, their personal dilemmas tended to involve injury or death and impersonal dilemmas tended to involve lying or stealing (Moore, Clarke & Kane, 2008). Finally, the scenarios described very extreme dilemmas, for instance, whether to kill one man so that a starving group of people could eat him, or whether a father should sell his daughter into child pornography to feed the rest of his family. Whilst the original trolley and footbridge problems are also relatively extreme, these scenarios are unlikely to be representative of the types of moral dilemmas people typically face, and evidence suggests there may be differences when reasoning about real life versus hypothetical moral dilemmas (Trevethan & Walker, 1989).

In order to investigate more systematically the influence of psychopathic traits on utilitarian decision-making, and to address the limitations of the battery designed by Greene et al. (2001), a novel task (the Utilitarian Judgments Task²), which included an adapted version of the trolley/footbridge problem, was developed for the present study. Participants read about situations in which a main character, or 'agent', needed to decide between a utilitarian and non-utilitarian outcome. The scenarios made it clear that the agent was not at risk themselves,

² Please note that this task was developed jointly with Ms Leila Jameel. Ms Jameel used this task to explore utilitarian judgments in people scoring high versus low on a self-report measure of autistic traits. This study is included in her doctoral thesis.

and did not have anything to gain or lose from their decision. Secondly, all the scenarios required participants to weigh up the interests of an individual against those of a group. Thirdly, there was one personal variant and one impersonal variant of each scenario; the outcome for the two variants was identical and only the degree of personal involvement for the agent varied.

Finally, in order to investigate utilitarian decision-making in both everyday and extreme dilemmas, the items in the Utilitarian Judgments Task were balanced with respect to the type of harm. One set involved dilemmas that involved physical harm, and the second set involved social harm, and there may have been different considerations when responding to the two types of harm. Moral reasoning in relation to physical harm may have been more black and white, with prescriptive rules such as ‘murder is wrong. By contrast, reasoning about social harm may have been more subtle and nuanced.

In the Utilitarian Judgments Task, participants had to decide between a utilitarian and non-utilitarian course of action and to rate how uncomfortable each option made them feel. Participants were also asked to explain firstly why the utilitarian course of action might be the right thing to do, and secondly why the non-utilitarian course of action might be the right thing to do. These responses were scored to classify them with respect to their reasoning about both the characters affected by the outcome and the agent making the decision.

In order to elucidate further the relationship between psychopathy and moral reasoning, two additional measures were administered. The Ethics Position Questionnaire (Forsyth, 1980) is a self-report questionnaire designed to investigate the extent to which people judge ethical standpoints to be absolutely right or wrong and not dependent on contextual factors. The Moral Behaviour Inventory (Mendez, Anderson & Shapira, 2005) describes a list of actions; respondents rate the extent to which each action is right or wrong.

11.1.1 Hypotheses

In view of the literature suggesting that psychopathy is associated with reduced emotional responding and utilitarian decision-making. It was predicted that as compared to the low trait group, the high psychopathic trait group would choose the utilitarian option more frequently and would experience less discomfort with both utilitarian and non-utilitarian options.

The extent to which the groups would differ in their verbal rationales was somewhat unclear. On the one hand, a reduced capacity for emotional empathy may have meant that the high trait group did not resonate with the agent or with the characters affected by their decision. They may thus have given less sophisticated explanations and referred less to the agent than the low trait group. On the other hand, a number of studies have suggested that both moral reasoning and cognitive empathy are unimpaired in psychopathy. The high trait group may thus have been able to provide an equally sophisticated response to the low trait group since their cognitive processes may have been sufficient for them to do so, without emotionally empathising with any of the characters.

There were two experimental manipulations in the present study: the proximity of the agent to the situation (personal versus impersonal) and the type of harm involved (social versus physical). With respect to proximity, personal dilemmas are considered to be more emotionally salient than impersonal dilemmas; any group differences may thus have been exacerbated in response to the variants in which the agent was closer to the action.

The predictions relating to the type of harm were less clear-cut. On the one hand, physical harm may have carried more damaging consequences and thus inspired more sympathetic responses than social harm; any group differences may thus have been more pronounced in the physical dilemmas. On the other hand, the physical dilemmas were created in the same vein as the original trolley dilemma; they may have thus been so extreme that they did not reflect the types of moral dilemmas participants could have personally identified with. By contrast, the social dilemmas were deliberately designed to tap into the more everyday types of dilemma; any group differences may thus have been more pronounced for these dilemmas.

11.2 METHODS

11.2.1 Design

There was one between-participants factor of PPI group (high vs. low scorers) and two within-participants factors: a) the proximity of the agent to the situation (personal vs. impersonal) and b) the type of harm (social vs. physical).

11.2.2 Participants

The Utilitarian Judgments Task was administered alongside the Ethics Position Questionnaire and the Moral Behavioral Inventory. Participants also completed a set of unrelated measures, described in Chapter 10 above. The screening and testing samples in the present study were therefore identical to those described in Chapter 10. On this basis, 21 high-scoring (11m, 10f) and 19 low-scoring (9m, 10f) individuals took part in the testing phase of the present study.

11.2.3 Procedure

As described in Chapter 10.2.2.3, participants provided written informed consent before completing the experimental tasks and a brief health screen to ensure that nobody with a history of significant psychiatric or neurological illness was included. On this basis, one male participant from the low PPI group was excluded from the testing sample. The final sample therefore consisted of 21 high trait participants (11m, 10f) and 19 low trait participants (9m, 10f). Participants were paid for taking part.

11.2.4 Materials

11.2.4.1 Utilitarian Judgments Task

The Utilitarian Judgments Task was designed to investigate moral decision-making in situations where the needs of an individual were weighed up against the needs of a group. The task consisted of 8 scenarios, in which an ‘agent’ is required to make a decision that will either favour the best interests of one character at the expense of a group of characters, or vice versa. For 4 of the scenarios, the agent’s dilemma related to social harm, for instance social exclusion, emotional distress or inconvenience either for one character or for a group of characters (Figure 11.1). For the other 4 scenarios, the agent’s dilemma related to physical harm, for instance injury or death either for one character or for a group of characters. One of the four physical harm scenarios was an adapted version of the trolley problem (Figure 11.2).

Each of the 8 scenarios (4 social, 4 physical) had two versions that varied with respect to the proximity of the agent to the situation. One version involved an impersonal dilemma (i.e. pulling the lever in the trolley problem). The second version involved a personal dilemma (i.e. pushing the fat man in the footbridge problem).

For both social and physical scenarios, participants had to a) decide whether they would choose the non-utilitarian or the utilitarian option, b) rate how uncomfortable they would feel with each option and c) provide a verbal response as to why each option might be the right thing for the agent to do. The task instructions made it clear that the agent in the scenarios would not be punished for their decision, even if such decisions would normally lead to legal consequences (for instance, pushing a man to his death would typically lead to punitive consequences). Moreover, there was no incentive for the participant to choose one option over the other since the agent had nothing to gain or lose by making a decision. It was also made clear that the outcomes were absolute; either the individual or the group would experience harm and there was no option that could prevent harm for both parties. The gender and type of social relationship of the scenario characters was counterbalanced across items. To control for any potential order effects, the physical scenarios were presented first within half of each group of participants, and the social scenarios presented first for the remaining half.

Figure 11.1: Example social scenario from Utilitarian Judgments Task

STORY STEM: “Ellie has invited a group of friends to stay for the weekend. Amir is not coping very well after breaking up with his girlfriend. The last few times he has socialised with the group, he has become tearful and talked about nothing but his break-up. Although the group were initially sympathetic, they are now fed up with Amir, since he and his girlfriend broke up a long time ago.”

IMPERSONAL VARIANT:

Over coffee, Amir mentions that he’s feeling very lonely and would like to do something with the group to take his mind off things. Ellie feels sorry for him and wonders whether she should invite him to stay for the weekend. If Ellie invites Amir, he will be happy. However, the rest of the group will be annoyed and won’t enjoy the weekend. If Ellie doesn’t invite Amir, he will be left out lonely. However, the rest of the group will enjoy the weekend.

PERSONAL VARIANT:

Amir finds out through Facebook that the group are staying with Ellie for the weekend and asks her if he can come. He says he has been feeling very lonely and would like to do something with the group to take his mind off things. If Ellie lets Amir come, he will be happy. However, the rest of the group will be annoyed and won’t enjoy the weekend. If Ellie doesn’t let Amir come, he will be left out and lonely. However, the rest of the group will enjoy the weekend.

Questions

1. If you were the agent, which of the following options would you choose?
 - a. Invite Amir/Let Amir come (Non-utilitarian decision)
 - b. Do not invite Amir/Do not let Amir come (Utilitarian decision)

2. If you were Ellie, how uncomfortable would you feel if you invited Amir /if you let Amir come?

1 = _____ 10 = _____

Not at all uncomfortable

Very uncomfortable

3. If you were Ellie, how uncomfortable would you feel if you did not invite Amir/if you did not let Amir come?

1 = _____ 10 = _____

Not at all uncomfortable

Very uncomfortable

4. Why would inviting Amir/letting Amir come be the right thing for Ellie to do?
5. Why would NOT inviting Amir/NOT letting Amir come be the right thing for Ellie to do?

Figure 11.2: Example physical scenario from Utilitarian Judgments Task

STORY STEM: “Rachel is standing on a railway bridge and an empty train is quickly approaching. As the result of a vicious attack, five of her friends are tied to the tracks and are unable to move.”

IMPERSONAL VARIANT:

On the bridge beside Rachel, there is a lever. Pulling this lever will cause the train to switch onto a different track. Another friend, Darren, is trapped on this track. If Rachel doesn’t pull the lever, Darren will remain alive. However, the five friends on the other track will die. If Rachel pulls the lever, Darren will die. However, the five friends on the other track will be saved.

PERSONAL VARIANT:

On the bridge beside Rachel, there is another of Rachel’s friends, Darren, who is very large. Pushing Darren would cause the train to stop. If Rachel doesn’t push Darren, he won’t be harmed. However, the five friends on the track will die. If Rachel pushes Darren, he will die. However, the five friends on the track will be saved.

Questions

1. If you were Rachel, which of the following options would you choose?
 - a. Do not pull the lever/Do not push Darren (Non-utilitarian decision)
 - b. Pull the lever/Push Darren (Utilitarian decision)
2. If you were Rachel, how uncomfortable would you feel if you did not pull the lever/if you did not push Darren?

1 = _____ 10 = _____

Not at all uncomfortable

Very uncomfortable

3. If you were Rachel, how uncomfortable would you feel if you pulled the lever/if you pushed Darren?

1 = _____ 10 = _____

Not at all uncomfortable

Very uncomfortable

4. Why would pulling the lever/pushing Darren NOT be the right thing for Rachel to do?
 5. Why would pulling the lever/pushing Darren be the right thing for Rachel to do?
-

11.2.4.2 Administration

Participants read the task instructions, were shown an example item, and allowed to ask questions. All scenarios and corresponding questions were then presented one at a time, in a paper booklet. Participants responded verbally to all questions. The scenario remained on display until participants had completed the relevant questions in order to reduce the confounding effects of memory load.

11.2.4.3 Scoring

11.2.4.3.1 Scoring of choice and rating responses

With respect to choice, participants were awarded a score of 0 if they chose the non-utilitarian option and were awarded a score of 1 if they chose the utilitarian option. These scores were then summed across all 8 scenarios, with higher scores denoting more utilitarian choices. Participants' ratings with respect to how uncomfortable they would be with the non-utilitarian and utilitarian options respectively were also summed across all 8 scenarios, with higher scores denoting greater discomfort.

11.2.4.3.2 Scoring of verbal responses

11.2.4.3.2.1 Reasoning about characters

Participants' verbal responses were firstly classified according to whether they were simple or sophisticated in their reasoning about characters affected by the decision. Simple responses reiterated the consequences for the characters stated in the scenario stem without elaboration. By contrast, sophisticated responses were judged to show sympathy for the characters, to consider their perspective or to refer to guiding ethical principles (see Figure 11.3 for examples). All responses were given a score of 0 if they were simple and score of 1 if they were sophisticated; these scores were summed across all 8 scenarios to give a total sophisticated score.

11.2.4.3.2.2 Reasoning about agent

Participants' verbal responses were also classified according to whether or not they made reference to the agent making the decision (Rachel or Ellie in the above examples). Responses that made reference to the agent were scored if the answer was judged to show sympathy for the agent, to consider their perspective or to refer to their responsibility (see Figure 11.3 for examples) All qualifying responses were awarded an agent score of 1; these scores were summed across all 8 scenarios to give a total agent score.

In order to ensure consistency of scoring, participants' verbal responses were coded according to perspective by one rater who was not blind to group membership and by a second blind, independent rater. There was an inter-rater agreement rate of 96% and all disagreements were resolved by discussion.

Figure 11.3: Example responses from Utilitarian Judgments Task

REASONING ABOUT CHARACTERS:

Simple: Non-utilitarian option

“Darren will die” (Physical harm)

“Amir wants to spend time with the group” (Social harm)

Simple: Utilitarian option

“Five people will die” (Physical harm)

“The group won't enjoy their weekend” (Social harm)

Sophisticated: Non-utilitarian option

“Darren must be feeling very afraid/Darren has a right to life” (Physical harm)

“Amir would feel betrayed”/“friendship is more important than a fun weekend”
(Social harm)

Sophisticated: Utilitarian option

“The friends are not to blame/it is right to prioritise the majority” (Physical harm)

“The friends would feel frustrated and disappointed if Amir came along” (utilitarian) were considered

REASONING ABOUT AGENT:

“Rachel must be in a difficult position” (Physical harm)

“Ellie should be a supportive friend” (Social harm)

11.2.4.4 Ethics Position Questionnaire

The Ethics Position Questionnaire (EQP; Forsyth, 1980) is a self-report questionnaire designed to measure the extent to which people adhere to two divergent ethical perspectives: relativism and idealism. Relativism represents the pragmatic view that ethical standpoints are not absolutely right or wrong, and depend on contextual factors. Statements such as “whether a lie is judged to be moral or immoral depends on the circumstances surrounding the action” were considered relativistic perspectives. Conversely, idealism represents the view that there are unconditional ethical principles that give rise to an absolute right or wrong.

Statements such as “people should make certain that their actions never intentionally harm another even to a small degree” were considered idealistic perspectives. The EQP comprises 20 Likert-type ethical statements rated on a nine point scale (1 = completely disagree; 9 = completely agree) Total EPQ scores for the respective relativism and idealism subscales ranged from 9-90 and the measure has been shown to have good internal consistency (Cronbach’s alpha .073-.080) and test-retest reliability (.66-.67); Forsyth, 1980; Forsyth, Nye & Kelley, 1988).

11.2.4.5: Moral Behavior Inventory

The Moral Behavior Inventory (MBI; Mendez, Anderson & Shapira, 2005) is a self-report questionnaire describing 24 actions, for example “refuse to help people who don’t deserve it”, “take the last seat on a crowded bus” or “drive out the homeless from your community”. These actions are rated on a scale of 1 to 4, where 1 represents ‘Not Wrong’, 2 represents ‘Mildly Wrong’, 3 represents ‘Moderately Wrong’ and 4 represents ‘Severely Wrong’. Total MBI scores thus ranged from 24-96 and the measure has been shown to have good split-half reliability (Cronbach’s alpha .072-.076).

11.3 RESULTS

11.3.1 Statistical Analyses

The means and standard deviations (SD) for the Utilitarian Judgments Task are presented in Table 11.1. Examination of the data showed that for the low trait group, the ‘uncomfortable’ ratings in relation to the utilitarian option in situations involving physical harm were negatively skewed, for both personal and impersonal dilemmas. There was also one outlier in the low trait group for the personal dilemma variant. For the high trait group, the ‘uncomfortable’ ratings in relation to the utilitarian option in situations involving physical harm were negatively skewed for personal dilemmas. The agent scores in relation to the utilitarian option were positively skewed, both for situations involving physical harm (personal and impersonal variants) and those involving social harm (impersonal variant only). There was also one outlier in the high trait group for the agent score in impersonal dilemmas involving physical harm. Since these variables could not be transformed to normality, and both parametric and non-parametric tests showed the same pattern of findings, parametric tests for these data are reported.

Table 11.1: Mean scores and standard deviations for the two groups for the Utilitarian Judgments Task

	High PPI Group		Low PPI Group	
	Mean	(SD)	Mean	(SD)
(N=21)	(N=19)			
SOCIAL HARM ITEMS				
Utilitarian Choice (/4)				
Impersonal proximity	1.86	(1.11)	1.58	(1.26)
Personal proximity	1.14	(0.73)	1.00	(1.00)
Uncomfortable Rating				
Non-utilitarian option (/40)				
Impersonal proximity	24.14	(4.56)	25.63	(4.95)
Personal proximity	23.71	(5.78)	24.52	(3.02)
Utilitarian option (/40)				
Impersonal proximity	26.14	(5.73)	31.26	(5.54)
Personal proximity	29.67	(4.99)	33.00	(4.76)
Reasoning about characters (sophisticated score)				
Non-utilitarian option (/4)				
Impersonal proximity	2.19	(1.33)	2.21	(1.27)
Personal proximity	2.00	(1.22)	2.11	(1.41)
Utilitarian option (/4)				
Impersonal proximity	1.62	(0.97)	2.53	(1.39)
Personal proximity	1.38	(0.97)	1.74	(1.10)
Reasoning about agent				
Non-utilitarian option (/4)				
Impersonal proximity	1.14	(0.91)	1.37	(1.46)
Personal proximity	1.43	(1.12)	1.47	(1.26)
Utilitarian option (/4)				
Impersonal proximity	0.95	(1.07)	0.95	(0.97)
Personal proximity	0.95	(1.02)	1.74	(1.10)

PHYSICAL HARM ITEMS

Utilitarian Choice (/4)

Impersonal proximity	3.10 (1.18)	2.84 (1.84)
Personal proximity	2.05 (1.47)	1.58 (1.43)

Uncomfortable Rating

Non-utilitarian option (/40)

Impersonal proximity	29.86 (7.55)	32.44 (6.87)
Personal proximity	26.48 (8.51)	27.58 (8.49)

Utilitarian option (/40)

Impersonal proximity	33.29 (6.68)	37.89 (3.23)
Personal proximity	35.76 (6.03)	38.79 (2.37)

Reasoning about characters (sophisticated score)

Non-utilitarian option (/4)

Impersonal proximity	1.14 (0.96)	1.42 (0.96)
Personal proximity	0.95 (1.02)	1.32 (1.11)

Utilitarian option (/4)

Impersonal proximity	2.48 (1.33)	3.05 (0.78)
Personal proximity	1.90 (1.37)	2.32 (1.29)

Reasoning about agent

Non-utilitarian option (/4)

Impersonal proximity	1.90 (1.30)	2.37 (1.21)
Personal proximity	2.48 (1.43)	2.84 (1.21)

Utilitarian option (/4)

Impersonal proximity	0.48 (0.75)	0.58 (0.77)
Personal proximity	0.57 (0.81)	0.84 (0.58)

11.3.2 Utilitarian Choice

The high and low psychopathic trait groups were compared with respect to how frequently they chose the utilitarian course of action. Since the scenarios varied with respect to the type of harm and the proximity of the agent to the situation, a 2 x 2 x 2 ANOVA was conducted (group [high/low PPI] by type of harm [social/physical] by proximity [personal/impersonal]).

There was no significant three-way interaction between group, type of harm, and proximity ($F(1,38)=1.04$; $p=.314$). There were also no interactions between group and type of harm ($F(1,38)=.09$; $p=.768$) or group and proximity ($F(1,38)=.03$; $p=.861$). There was no main effect of group ($F(1,38)=.134$; $p=.254$).

There was a significant interaction between type of harm and proximity ($F(1,38)=8.77$; $p=.005$), such that both groups were more utilitarian in personal dilemmas than impersonal, and this was exacerbated in situations involving physical harm. There was a significant main effect of type of harm ($F(1,38)=15.55$; $p<.001$), such that both groups were more utilitarian in situations involving physical harm than those involving social harm. There was also a significant main effect of proximity ($F(1,38)=62.85$; $p<.001$) such that both groups were more utilitarian in impersonal dilemmas than in personal dilemmas.

11.3.3 Uncomfortable Ratings

The high and low psychopathic trait groups were compared with respect to how uncomfortable they would feel in relation to each utilitarian option. Since the scenarios varied with respect to the type of harm and the proximity of the agent to the situation, and participants rated both non-utilitarian and utilitarian options, a 2 x 2 x 2 x 2 ANOVA was conducted (group [high/low PPI] by type of harm [social/physical] by proximity [personal/impersonal] by utilitarian option (non-utilitarian/utilitarian)).

There was no significant four-way interaction between group, type of harm, proximity and utilitarian option ($F(1,38)=.15$; $p=.705$). There were also no significant three-way interactions between group, type of harm and proximity ($F(1,38)=.04$; $p=.852$), group, type of harm and utilitarian option ($F(1,38)=.14$; $p=.713$), or group, proximity and utilitarian option ($F(1,38)=.14$; $p=.705$). There were no interactions between group and type of harm, ($F(1,38)=.01$; $p=.926$), group and proximity ($F(1,38)=2.93$; $p=.095$), or group and utilitarian option ($F(1,38)=3.55$; $p=.067$). However, there was a main effect of group ($F(1,38)=5.27$; $p=.027$), such that the high trait group reported feeling less uncomfortable overall.

There was no significant three-way interaction between type of harm, proximity and utilitarian option ($F(1,38)=3.41$; $p=.072$). There was a significant interaction between type of harm and proximity ($F(1,38)=7.80$; $p=.008$), such that both groups were more uncomfortable in personal dilemmas than impersonal, but only in situations involving social harm. There was also a significant interaction between proximity and utilitarian option ($F(1,38)=32.48$;

$p < .001$), such that both groups were more uncomfortable in relation to the utilitarian option, particularly in personal dilemmas. There was no significant interaction between type of harm and utilitarian option ($F(1,38)=1.55$; $p=.220$). There was a main effect of type of harm ($F(1,38)=56.77$; $p < .001$), such that both groups reported greater discomfort in situations involving physical harm than social harm. There was also a main effect of utilitarian option ($F(1,38)=91.64$; $p < .001$), such that both groups were more uncomfortable in relation to the utilitarian option than the non-utilitarian option. Finally, there was no main effect of proximity ($F(1,38)=.12$; $p=.728$).

11.3.4 Reasoning about characters

In order to compare the high and low psychopathic trait groups with respect to their reasoning about the scenario characters affected by the agent's decision, a similar $2 \times 2 \times 2 \times 2$ ANOVA was conducted (group [high/low PPI] by type of harm [social/physical] by proximity [personal/impersonal] by utilitarian option (non-utilitarian/utilitarian)).

There was no significant four-way interaction between group, type of harm, proximity and utilitarian option ($F(1,38)=.45$; $p=.507$). There were also no significant three-way interactions between group, type of harm and proximity ($F(1,38)=.24$; $p=.629$), group, type of harm and utilitarian option ($F(1,38)=.44$; $p=.463$), or group, proximity and utilitarian option ($F(1,38)=1.39$; $p=.246$). There were no interactions between group and type of harm, ($F(1,38)=.05$; $p=.831$), group and proximity ($F(1,38)=.60$; $p=.444$), or group and utilitarian option ($F(1,38)=2.40$; $p=.130$). There was no main effect of group ($F(1,38)=2.63$; $p=.113$).

There was no significant three-way interaction between type of harm, proximity and utilitarian option ($F(1,38)=.24$; $p=.629$). There was no significant interaction between type of harm and proximity ($F(1,38)=.13$; $p=.725$). There was a significant interaction between proximity and utilitarian option ($F(1,38)=5.36$; $p=.026$), such that both groups used more sophisticated reasoning about the scenario characters in relation to the utilitarian option, and this was exacerbated for the impersonal dilemmas.

There was also a significant interaction between type of harm and utilitarian option ($F(1,38)=33.20$; $p < .001$), such that both groups used more sophisticated reasoning about the scenario characters in relation to the utilitarian option, but only for physical dilemmas. There was no main effect of type of harm ($F(1,38)=1.13$; $p=.294$). There was a main effect of utilitarian option ($F(1,38)=14.69$; $p < .001$), such that both groups used more sophisticated

reasoning about the scenario characters in relation to the utilitarian option than the non-utilitarian option. Finally, there was a main effect of proximity ($F(1,38)=17.19; p<.001$), such that both groups used more sophisticated reasoning about the scenario characters in impersonal dilemmas than personal dilemmas.

11.3.5 Reasoning about agent

The high and low psychopathic trait groups were also compared with respect to their reasoning about the agent in the scenarios using a 2 x 2 x 2 x 2 ANOVA: (group [high/low PPI] by type of harm [social/physical] by proximity [personal/impersonal] by utilitarian option (non-utilitarian/utilitarian).

There was no significant four-way interaction between group, type of harm, proximity and utilitarian option ($F(1,38)=.16; p=.696$). There were also no significant three-way interactions between group, type of harm and proximity ($F(1,38)=.01; p=.918$), group, type of harm and utilitarian option ($F(1,38)=.24; p=.646$), or group, proximity and utilitarian option ($F(1,38)=.17; p=.683$). There were no interactions between group and type of harm, ($F(1,38)=.41; p=.524$), group and proximity ($F(1,38)=.33; p=.571$), or group and utilitarian option ($F(1,38)=.93; p=.340$). There was no main effect of group ($F(1,38)=.48; p=.494$).

There was no significant three-way interaction between type of harm, proximity and utilitarian option ($F(1,38)=1.09; p=.303$). There was no significant interaction between type of harm and proximity ($F(1,38)=1.23; p=.274$). There was a significant interaction between proximity and utilitarian option ($F(1,38)=5.05; p=.031$), such that both groups used more agent-based reasoning in relation to the non-utilitarian option, and this was exacerbated for the personal dilemmas. There was also a significant interaction between type of harm and utilitarian option ($F(1,38)=33.91; p<.001$), such that both groups used more agent-based reasoning in relation to the non-utilitarian option, and this was exacerbated for the physical dilemmas. There was a main effect of type of harm ($F(1,38)=6.75; p=.013$) such that both groups used more agent-based reasoning in situations involving physical harm than those involving social harm. There was a main effect of utilitarian option ($F(1,38)=83.15; p<.001$), such that both groups used more agent-based reasoning in relation to the non-utilitarian option than the utilitarian option. Finally, there was a main effect of proximity ($F(1,38)=7.97; p=.008$), such that both groups used more agent-based reasoning in personal dilemmas than impersonal dilemmas.

11.3.6 Ethics Position Questionnaire

The high and low psychopathic trait groups were compared with respect to their 'idealism' and 'relativism' scores on the EPQ. Adopting a strict p value of .025 (.05/2), the high trait group was less idealistic than the low trait group, but this difference only approached significance ($t=2.18$; $p=.036$). The high trait group was significantly more relativistic than the low trait group ($t=2.76$; $p=.009$).

11.3.7 Moral Behavior Inventory

The high and low psychopathic trait groups were compared with respect to their judgments of various moral misdemeanours. The high trait group judged these misdemeanours to be significantly less 'wrong' than did the low trait group ($t=4.18$; $p<.001$).

11.3.8 Gender

In order to ensure that any group differences were due to PPI group membership rather than gender, these analyses were repeated using ANCOVAs with gender as a covariate. The effect of gender did not reach significance for any of these analyses ($p>.05$) and did not change the overall pattern of results.

11.4 DISCUSSION

The present study was designed to investigate utilitarian decision-making in people high and low in psychopathic traits. The Utilitarian Judgments Task described situations in which a main character or 'agent' was required to decide between two courses of action. The first was a non-utilitarian course of action that prioritised the needs of an individual scenario character over the needs of a group of characters. The second was a utilitarian course of action that prioritised the needs of the group over those of the individual. When asked to decide which course of action they would choose, the psychopathic trait groups did not differ in their preferences for the utilitarian or non-utilitarian options. The groups also did not differ with respect to their verbal reasoning about the scenario characters affected by the decision or about the agent making the decision. However, the high trait group reported that they would experience less discomfort when making such decisions.

A range of studies have found that the proximity of the agent to the situation is a relevant factor in utilitarian decision-making (e.g. Greene et al., 2001). For instance, in the classic trolley/footbridge problems, pulling a lever that kills one person to save five people is

considered an impersonal action, whereas pushing the fat man to his death to save five people is considered a personal action, and the evidence suggests that people are less utilitarian in personal dilemmas than in impersonal dilemmas. Thus, proximity was included as a manipulation in the present study. The current results corroborated the findings from the literature, since both groups were less utilitarian in personal dilemmas. In addition, both groups tended to give a higher proportion of sophisticated responses to impersonal dilemmas than to personal dilemmas; sophisticated responses were those that gave greater consideration to the ethical issues and perspectives or internal states of the scenario characters. With respect to the role of the agent, the groups tended to make reference to the agent less often in impersonal versus personal dilemmas. This is likely to reflect the fact that the agent's proximity to the situation was greater in personal dilemmas than in impersonal dilemmas, and thus the part they played in the situation may have been more salient.

The traditional trolley problem and other research tests (e.g. Greene et al., 2001; Moore et al., 2008) examine utilitarian decision-making in extreme dilemmas involving physical harm. These are unlikely to be representative of the types of dilemmas people more typically face in everyday life. In order to examine this further, the present study included both extreme dilemmas involving physical harm and everyday dilemmas involving social harm. With respect to this manipulation, both groups were significantly more utilitarian and reported greater discomfort in relation to situations involving physical harm than those involving social harm. This suggests that people may be more likely to resolve moral dilemmas on the basis of black and white principles such as utilitarianism in extreme, life-or-death contexts than in everyday contexts. For instance, in the trolley problem, the action that leads to the greatest number of people surviving (i.e. pulling the lever) is clearly the most optimal solution from a utilitarian perspective. By contrast, people may use more nuanced, complex reasoning when resolving everyday social problems. In the break-up example above, it is difficult to quantify the disappointment experienced by the group and weigh this against Amir's hurt feelings, and effectively decide which is the lesser of the two evils.

In order to examine how the groups reasoned about both non-utilitarian and utilitarian courses of action, in the current study, participants reported how uncomfortable they would feel in relation to both courses of action, and had to explain why each course of action might be the right thing to do. Participants across both groups reported that they would experience greater discomfort in relation to the utilitarian option than to the non-utilitarian option. This may reflect the fact that although the utilitarian course of action maximized benefit across

all the scenario characters, these actions tended to require the participants to actively choose for the agent to intervene. By contrast, choosing the non-utilitarian option may have somewhat absolved the participants of guilt, since they had not deliberately put the agent in a position where their actions led to a character being harmed. Another possible explanation for the difference in 'uncomfortable' ratings between the utilitarian options may relate to how the scenario characters in the Utilitarian Judgments Task were described. In order to ensure the scenarios were clear, the individual was given a name (e.g. Darren/Amir) and the members of the group were not. This may have made the participants more likely to sympathise with the individual, and resulted in greater discomfort when faced with the prospect of sacrificing that individual for the sake of the majority. In order to investigate this further, future research could examine the potential influence of named versus unnamed characters in utilitarian dilemmas.

How did the psychopathic trait groups compare in their performance on the Utilitarian Judgments Task? Firstly, the groups did not differ with respect to the frequency with which they made utilitarian choices, which was contrary to the prediction that the high trait group would make more utilitarian choices than the low trait group. Several lines of evidence pointed to this prediction. Firstly, this prediction was consistent with the dual-process theory of moral judgment (Greene et al., 2001), which posits that utilitarian decisions are associated with cognitive processes and non-utilitarian decisions are associated with emotional processes. However, there is research to suggest that this model is somewhat simplistic, and unable to adequately account for complex emotion-cognition interactions (Moore et al., 2008), since some studies have found that utilitarianism is impeded by cognitive processes (Moore et al., 2008) and others have found that utilitarianism is facilitated by cognitive processes (Greene et al., 2008; Bartels, 2008). Group differences in utilitarian choice were also predicted in view of two previous studies that have found people with psychopathy to be more utilitarian than control participants (Bartels & Pizarro, 2011; Koenigs et al., 2011). However, these studies were conducted in prison populations, and the extent to which moral reasoning is impaired in incarcerated populations is unclear (e.g. Blair et al., 2005). The findings may therefore not translate into the general population.

Although the findings relating to utilitarian choice did not support the predictions, it is unlikely that the trait groups' emotional reactions to the scenarios were comparable, especially since psychopathy has been commonly linked to deficits in emotional processing (Blair, 2008). Moreover, the participants completed an empathy measure (reported

in Chapter 10 above); the groups scored similarly with respect to the cognitive aspects of the measure, but the high trait group scored lower than the low trait group with respect to emotional aspects. The lack of group differences in utilitarian choice may have instead related to the particular demands of the task: in previous studies, participants were asked the extent to which they would endorse the non-utilitarian and utilitarian courses of action (e.g. Bartels & Pizarro; 2011). However, the concept of 'endorsement' may conflate what choice people would actually make with how they might feel about their choice. These two aspects were thus deliberately separated in the current study, with participants reporting both on their choice and on how uncomfortable they would feel in relation to both utilitarian and non-utilitarian courses of action. Despite the lack of group differences in utilitarian choice, the high trait group was less uncomfortable overall than the low trait group, which was in line with predictions. This discrepancy between choice and discomfort may suggest that the high trait group had the capacity to reason and make decisions to a similar extent to the low trait group. The high trait group simply felt less personally affected by the decision than the low trait group. This is consistent with evidence suggesting that psychopathy is associated with the ability to judge appropriately what actions constitute moral violations, but is also associated with a lack of emotional investment when such violations occur (Cima et al., 2010).

An intact cognitive ability in spite of impaired emotional ability in the high trait group may also account for the pattern of findings relating to verbal rationales, whereby participants were compared with respect to their reasoning about why each course of action would be the right thing to do. The trait groups were equally sophisticated in their reasoning about the scenario characters; they were similarly able to consider their internal states and cite guiding ethical principles when providing an explanation. Both groups were also similarly able to consider the agent's perspective and refer to the agent's role or responsibility in the situation. This suggests that the high trait group not only made similar choices to the low trait group, they were also able to provide similar rationales for these choices.

Although the present findings suggest the trait groups had a similar capacity to reason about utilitarian dilemmas, this does not necessarily imply that moral reasoning is uncompromised in those high in psychopathic traits. The additional measures administered in the present study (the EPQ and MBI) gave some credence to this, suggesting that the groups differed in their ethical views. The high trait group placed greater emphasis on contextual factors than absolute moral rules, and judged various misdemeanours less harshly, as compared to the

low trait group. The dilemmas in the Utilitarian Judgments Task tap into a very specific aspect of moral reasoning, and both the current study and previous research suggests that it is a strategy that is most typically adopted in relation to extreme, life-or-death situations rather than in day-to-day life, such as in the social dilemmas of the present study. Another consideration is that there was no incentive in the present study for participants to make a choice one way or the other; they had nothing to gain or lose irrespective of their chosen course of action. Psychopathy is associated with a tendency to prioritise one's own needs over the needs of others, and with a propensity for significant moral transgressions (Hare, 1993), which did not apply in the present study. Future research could be conducted to examine whether group differences in utilitarian decision-making emerge more clearly when the participants are personally affected by the decisions they make.

The pattern of results in the present study was consistent with the findings discussed in the previous two chapters. In the Competitiveness Task (reported in Chapter 9), the groups did not differ when deciding whether other people should succeed or fail. However, in comparison with the low trait group, the high trait group did experience greater pleasure when others failed and less pleasure when they succeeded. In the Counterfactual Thinking Task (reported in Chapter 10), participants read about a series of counterfactual alternatives that would have prevented them from experiencing a negative outcome (for instance, being unable to attend their graduation ceremony). These negative outcomes were caused by a scenario character's negligence (for instance, a sibling using the wrong fuel in the family car). The groups did not differ when deciding which counterfactual alternative they preferred. However, in comparison with the low trait group, the high trait group did experience less guilt in relation to the counterfactual alternatives. Finally, in the present study, the trait groups did not differ when deciding on a course of action, but the high trait group did experience less discomfort than the low trait group. This further supports the notion that those high and low in psychopathic traits may not differ in their active preferences for others, but that those high in psychopathic traits may be unlikely to experience negative emotions when others suffer as a result of their decision.

11.4.1 Summary

In summary, the present study employed a novel experimental task to compare utilitarian decision-making in people high versus low psychopathic traits. The findings suggested that the trait groups did not differ when choosing between a non-utilitarian and utilitarian course of action. Moreover, when asked to provide a verbal rationale as to why each course of action

might be the right thing to do, the groups were similarly sophisticated in their reasoning about the scenario characters affected by the decision and about the agent making the decision. However, irrespective of the course of action, the proximity of the agent to the situation or type of harm involved in the situation, the high trait group reported that they would experience less discomfort than did the low trait group.

Part 3: Discussion

Chapter 12: General Discussion

12.1 INTRODUCTION

The present thesis aimed to explore the ways in which psychopathic personality traits translate into everyday social functioning. The findings of the experimental studies presented in this thesis will now be described together. Firstly, this chapter will discuss the contributions of the methodological approach adopted and describe the novel aspects of the studies' experimental design. Secondly, the potential limitations of this approach will be considered. Thirdly, the findings will be considered in relation to the prominent aetiological models of psychopathy (reviewed in Chapter 2). Fourthly, the contributions of the current findings to understanding the influence of psychopathic traits on prosocial behaviour and moral judgment will be discussed. The clinical implications for expanding on the conceptualisation of psychopathy and for remediation will also be presented. Finally, the implications of the current findings for future research work will be discussed.

12.2 METHODOLOGICAL CONTRIBUTIONS AND NOVEL ASPECTS OF THE DESIGN

As reviewed in Chapter 1, psychopathy is a disorder characterised by emotional dysfunction, deficits in interpersonal relationships and antisocial behaviour (e.g. Hare, 1991; Blair, Mitchell & Blair, 2005). People with psychopathy tend to be manipulative, coercive and intimidating in their interactions with others. However, they are often also capable of being charming, funny and likeable (Cleckley, 1976). This paradoxical set of characteristics is thought to have consequences both for individuals and for society (Kiehl & Hoffman, 2011). Psychopathy therefore has significant implications for everyday social interactions. However, there is a paucity of work examining how the deficits associated with psychopathy translate into the more commonplace aspects of social functioning.

A substantial body of empirical work has investigated social and emotional difficulties in psychopathy using relatively abstract laboratory tasks. Studies have been conducted using neuroeconomic games such as the Prisoner's Dilemma as a measure of social cooperation (e.g. Mokros, Menner, Eisenbarth et al., 2008) and other classic tools such as lexical decision-

making tasks as measures of emotional processing (e.g. Lorenz & Newman, 2002). The findings of these studies have led to important and fundamental conclusions about psychopathy, demonstrating for instance that it may be characterised by emotional dysfunction, with relatively preserved cognitive functioning (e.g. Blair, 2008). However, limited work has been carried out in order to understand more subtle social and emotional difficulties. Thus, the present thesis aimed to address this gap in the literature by designing novel experimental tasks that tapped into specific aspects of everyday social performance.

The studies presented in the current thesis made a number of broad methodological contributions. Firstly, the participants were recruited from the general population. The vast majority of psychopathy research recruits participants from institutional settings, which may be problematic since many people with psychopathy are non-institutionalised and are thought to function successfully outside of prison (Levenson, Kiehl & Fitzpatrick, 1995; Lilienfeld & Andrews, 1996). Conducting research within the general population is therefore important, since criminality is commonly viewed as a correlate of psychopathy without being a central component (Skeem & Cooke, 2010), and can in fact be a confounding factor (Kirkman, 2002).

Secondly, in the present thesis, a continuum approach was adopted. Thus, large groups of participants were screened with a self-report measure of psychopathic traits. Those scoring in the upper and lower ranges formed the high and low psychopathic trait groups and participated in the experimental tasks. This addressed a limitation of much of the existing psychopathy research whereby participants are classified as either psychopathic or non-psychopathic. This traditional approach is somewhat inconsistent with recent views that conceptualise psychopathy as the extreme end of a range of personality traits lying on a continuum (e.g. Hare & Neumann (2008); Marcus, John & Edens, 2004).

Thirdly, the experimental tasks presented herein were designed to achieve a balance between ecological validity and laboratory control. As described above, this was an important contribution since an understanding of the everyday difficulties faced by those high in psychopathic traits is lacking in the literature. Therefore, the present studies involved scenario-based tasks that described social interactions with friends, family members and colleagues. Moreover, many of the studies included an analysis of participants' verbal responses. Thus, this research examined not only participants' decisions and numerical ratings but also the language used to convey their decisions and the strategies involved in

their reasoning. Whilst the current research aimed to examine psychopathic traits and everyday social behaviour using ecologically valid methods, the fundamental principles of laboratory control were upheld. For instance, all participants were administered identical sets of materials, in counterbalanced orders, in a carefully controlled experimental environment.

Taken together, the present thesis aimed to address many of the broad methodological limitations that are pervasive in psychopathy research: the focus on institutionalised populations, the conceptualisation of psychopathy diagnosis as binary rather than continuous, and the lack of ecological validity.

The primary novel contribution of the current research was the range of manipulations designed to tap into specific, fine-grained aspects of social behaviour. The first study in the present thesis (reported in Chapter 5) involved the use of the Social Strategy Task, which has previously been used to examine everyday social performance. In this study, the high and low psychopathic trait groups' responses to awkward requests were compared, and the high trait group was found to be less prosocial. The next set of studies was designed to follow up on this finding, by investigating what factors might differentially influence the groups' prosocial responding. Thus, a revised version of the Social Strategy Task was developed. In this version, the type of cost incurred by responding prosocially was manipulated. In one scenario, an unwelcome relative either made a request for a favourable opinion ("Do you like having me to stay?") or for a practical favour ("Can I come stay with you this weekend?").

In addition to the type of cost incurred, it was thought that the value of the cost might influence prosocial responding. As a result, the Social Exchange Task (described in Chapter 6) was designed in order to compare the groups' willingness to reciprocate. The value of the reciprocal favour was manipulated, such that it was either less costly or more costly than the original favour. One scenario in this task described an interaction in which the participant and a friend went for lunch, and the friend paid for the participant's sandwich. At a later date, they either go for coffee or for an evening meal, presenting the participant with an opportunity to reciprocate. In this scenario, paying for the coffee was less costly than the sandwich; paying for the evening meal was more costly than the sandwich. By manipulating the cost of prosocial behaviour, these studies systematically varied external, situational aspects of the interaction.

It was thought that internal, dispositional factors relating to the person in need of help might also influence prosocial responding. Thus, the next pair of studies investigated whether the trait groups were differentially influenced by the extent to which scenario characters were deserving. The Favours Task (reported in Chapter 7) involved characters making requests of the participants. One scenario involved a neighbour requesting that the participant carry a heavy parcel. The strength of justification for this request, and therefore the extent to which the character deserved help, was manipulated. In one variant, the neighbour provided a good reason; they had sustained a back injury. In the second variant, they provided a bad reason; they did not wish to get their shirt dirty. The Favours Task therefore focused on the extent to which the characters' deservingness would influence participants' prosocial behaviour.

The Deservingness Task (reported in Chapter 8) also examined the influence of deservingness, but from a different perspective. In this task, participants read scenarios in which a main character had experienced either a positive or a negative outcome. In order to manipulate the characters' deservingness, the events leading to positive and negative outcomes were varied. Accordingly, characters experienced a positive outcome, such as passing a driving test, either as a result of their own good actions and efforts (they worked hard and made few errors) or as a result of bad actions or by cheating (they made many errors but flirted with the driving instructor). In other scenarios, characters experienced a negative outcome, such as being reprimanded in front of a class. This outcome resulted either directly from their own bad actions (they failed to do the work) or from misfortune (the teacher was in a bad mood). Taken together, deservingness was manipulated in relation to both prosocial responding and reasoning about positive and negative outcomes affecting other people.

How might the groups' responses have differed in situations where they themselves experienced positive or negative outcomes? In order to address this question, next two studies focused on interactions with scenario characters that had direct consequences for the participants. The Competitiveness Task (reported in Chapter 8) investigated whether or not one's own personal success or failure differentially influenced groups' competitiveness. One scenario involved both the participant and the character taking an important exam. In one variant, the participant passed with a top grade and in a second variant, they failed. The Counterfactual Thinking Task (reported in Chapter 9) described situations where negative consequences for the participant resulted directly from the characters' negligent actions. In one scenario, a sibling inadvertently filled the family car with the wrong fuel, which caused the participant to miss their graduation ceremony. Thus, this task described scenarios in

which the characters had ‘done the wrong thing’. Participants had to reason about the ethical actions of other people.

In order to examine how the groups reasoned about their own ethical actions, the final study involved the development of a task in which participants had to reason about utilitarian moral dilemmas. In this study, the degree of proximity to the decision and the type of harm resulting from the decision were both manipulated. One scenario involved an adaptation of a classic moral dilemma in which participants chose whether or not a character should sacrifice one person in order to save five. The proximity of the character to the decision was manipulated, such that in one variant the decision was whether or not to pull a lever that would result in a man’s death, and in the second variant, the decision was whether or not to physically push the man to his death. The type of harm was manipulated by including scenarios describing both physical harm, such as injury or death, and scenarios describing social harm, such as social exclusion or hurt feelings.

Taken together, the key contribution of the present thesis was to assess how psychopathy translates into various subtle aspects of social functioning, using innovative and highly nuanced tasks.

12.3 LIMITATIONS

In spite of the novel contributions described above, there were some methodological limitations in the current thesis. With respect to the screening strategy adopted, the drawbacks of self-report measures should be considered. The PPI was used for screening psychopathic traits in all the studies reported herein. Self-report has been criticised on the grounds that people may be dishonest or inaccurate when assessing their own personality or behavioural tendencies. This may be due to a lack of insight, or due to a desire to present oneself in a positive light (Lilienfeld & Fowler, 2006). However, it was unfeasible to screen for psychopathic traits without relying on self-report. The only other screening tools that have been developed for use in non-institutionalised settings are also self-report questionnaires (e.g. Levenson Primary and Secondary Psychopathy Scale, Levenson, Kiehl & Fitzpatrick, 1995; Self-report Psychopathy Scale; Hare, 1985). Despite their limitations, studies have found that self-report measures tend to cohere with observer report (Lilienfeld & Fowler, 2006). Moreover, the PPI itself has been found to correlate with Hare’s Psychopathy Checklist, with psychiatric interview, with observer ratings and with family

history data (Lilienfeld & Andrews, 1996). Taken together, although there are a number of drawbacks to self-report measures, the weight of the evidence suggests that the use of the PPI in the present thesis was a sufficient measure of psychopathic personality traits.

Another potential limitation of the current studies concerns their statistical power. It should be noted that the sample sizes reported in the present studies were modest and may thus have failed to detect subtle group differences in some cases. Sample sizes were determined in accordance with the guidelines set out by Cohen (1992), indicating that a sample size of 20 participants per group is necessary to detect a large effect size, with power set at 80% and alpha at 10%. These sample sizes were also comparable with other research work involving groups with high and low PPI scorers (Long & Titone, 2007). Nevertheless, future studies could increase statistical power by recruiting larger sample sizes. This may reveal additional or stronger group differences.

Another methodological limitation in the present thesis was the lack of normative data. Whilst the development of new experimental tasks permitted more nuanced examination of psychopathic traits and social behaviour, it was unclear how most people in society (who were not selected on the basis of their psychopathic trait scores) would perform on these tasks. For instance, it was unclear whether the performance of the low trait groups or the high trait groups was closer to the population mean. Future research work could therefore attempt to validate the experimental tasks in larger samples.

One conceptual limitation of the present thesis is that it is unclear how the current findings might translate into more extreme, clinical populations. Whilst these studies were deliberately conducted within the general population for the reasons discussed above, psychopathy is associated with criminal activity and antisocial behaviour. It may thus be important in the future to administer these tasks to those with psychopathy within institutional settings. This may help to determine whether they represent the extreme end of the psychopathy continuum, showing a similar but more exaggerated pattern of performance, or whether their social performance is qualitatively different to those high in psychopathic traits.

Finally, the scenario-based tasks presented in this thesis were ecologically valid in some respects but not in others. They did describe everyday contexts and some offered participants the opportunity to respond as they would in conversation. This represented a move away from traditional laboratory tasks and towards ecological validity. However, genuinely

naturalistic environments are likely to be much more complex and multifaceted than those described in vignettes. Moreover, participants' responses in 'real-life' may differ substantially from their responses to hypothetical scenarios. Nonetheless, these studies did reveal interesting findings in relation to the more subtle aspects of social performance. Given that this had not been examined previously, it was important to do so in a controlled experimental setting in order to vary specific features systematically whilst limiting the influence of alternative environmental confounds.

12.4 FINDINGS IN RELATION TO PROMINENT AETIOLOGICAL MODELS

A range of aetiological models of psychopathy have been proposed (for an extensive review, see Salekin, 2002; Blair, et al., 2008; Patrick, 2006). These have mainly focused on the role of cognition and emotion. Turning to models of cognition, Chapter 2 reviewed the particularly prominent theoretical frameworks by highlighting the potential roles of executive dysfunction and cognitive bias.

Executive function refers to the regulation and control of cognitive processes (Elliott, 2003). Executive capacities include cognitive flexibility, working memory, and inhibition or behavioural control (Miyake, Friedman, Emerson et al., 2000). Psychopathy is characterised by features such as impulsivity and poor behavioural control (e.g. Hare, 1993), and lesions in the prefrontal cortex have been linked to both executive difficulties (Stuss & Knight, 2003) and to psychopathy (Shamay-Tsoory, Harari, Aharon-Peretz, & Levkovitz, 2010). In the present thesis, the high psychopathic trait participants were consistently found to be less prosocial than the low trait group. This could be explained by deficits in inhibition and behavioural control. The high trait group may have been unable to suppress any instinctive, selfish urges, or to consider the potential consequences of their responses before answering. However, research has generally found those with psychopathy to be unimpaired on a range of tasks measuring executive function (Pham, Vanderstukken, Philippot & Vanderlinen, 2003; Selbom & Verona, 2007; Hiatt, Schmitt & Newman, 2004), and deficits in inhibition may relate to emotional rather than executive dysfunction. This theoretical framework is therefore unlikely to account fully for the current findings.

The deficits seen in psychopathy have also been linked to cognitive bias. This refers to the process of distorting expectations, beliefs and values following subjective personal experiences (Blackburn, 2006). Within this framework, psychopathy is thought to arise from

maladaptive beliefs about the self and the world. In relation to the current findings, the high trait group may have held distorted views in relation to the characters; they may have believed that the characters were weak, stupid, and did not deserve their help, or that their own needs were more important than the characters' needs. However, there is very little empirical work in support of the role of cognitive bias in psychopathy, and the primary assumption that emotional responses result from cognitive appraisals has been called into question (Haidt, 2001).

Taken together, some of the current findings could have been explained by cognitive deficits. However, the literature suggests that the cognitive deficits seen in people with psychopathy (such as disinhibition) may in fact derive from emotional dysfunction, particularly since cognitive problems tend to be selectively in response to emotional stimuli.

The findings may therefore be better interpreted in light of emotional models of psychopathy.

Psychopathy has consistently been described as characterised by emotional dysfunction, and a range of different models has been proposed focusing on aspects of emotional functioning. The most prominent theoretical frameworks (as reviewed in Chapter 2) have emphasised the role of fear, responsivity to distress, and emotional empathy.

With respect to the role of fear, it has been posited that psychopathy arises as a result of deficiencies in the processing and modulation of fear (e.g. Lykken, 1995). According to this fear dysfunction hypothesis, people experience a fear response following punishment and are subsequently motivated to avoid whichever action led to the punishment. By contrast, people with psychopathy are thought to lack this aversive reaction (e.g. Peschardt, Morton & Blair, 2003). In the current thesis, the findings indicated reduced prosocial responding in the high psychopathic trait group. Thus, in relation to the fear dysfunction hypothesis, one possible explanation of group differences is that the high trait group may have been less averse to the prospect of any negative consequences resulting from a failure to behave prosocially. The low trait group may have been more likely to comply with requests for favours and behave reciprocally because they did not wish to damage the social relationship with the character or to damage their own reputation. However, the present tasks did not explicitly investigate what types of consequences the groups anticipated following their responses. It is therefore difficult to provide firm empirical support for the notion that the groups differed in their aversion to potential negative future consequences.

A criticism of the fear dysfunction hypothesis is that it overemphasises the role of punishment in moral socialisation. The evidence suggests that the role of empathy is much more important for moral socialisation than punishment (e.g. Hoffman, 2000). If this is the case, it implies that the low trait group was motivated to behave prosocially because they empathised with the characters, rather than because they feared reprisal. In view of the limitations of the fear dysfunction hypothesis, other prominent emotional models have emphasised the role of empathy.

One such model focused on the role of responsivity to distress. Blair (1995) noted that animals often suppress or withdraw aggression in response to distress or submission cues and posited a functionally similar mechanism in humans, the violence inhibition mechanism (VIM). According to VIM, people experience an empathic, emotional response when others are in distress. It has been postulated that VIM is impaired in psychopathy, resulting in a lack of responsiveness to others' distress cues (Blair, Jones, Clark & Smith, 1997). Thus, in the present thesis, prosocial responses may have involved perceiving or anticipating the characters' difficulties and being motivated to suppress selfish urges and/or to act in their best interests in order to alleviate their suffering. The high trait groups may have been less responsive to the characters' needs and therefore unmotivated to intervene.

In order to assess the extent to which the groups were responsive to distress cues, the nature of the distress cues provided in the current studies should be considered. In some studies, the characters' distress was implied. In scenarios such as the one describing a character being reprimanded in front of their class, the subtext may have been that they experienced humiliation or sadness. In others studies, the scenarios explicitly described consequences such as injury, death, or hurt feelings. This may have spelled out the characters' distress more clearly. However, VIM is thought to describe empathic reactions to non-verbal distress cues. These could include facial expressions or distress sounds, such as crying or screaming. In the present thesis, all studies involved vignette descriptions of interactions, and non-verbal distress cues were therefore not included. It is not clear whether VIM also embraces non-verbal cues derived implicitly from verbal descriptions. If so, the VIM model should be clarified to account for these issues. Taken together, whilst a lack of responsiveness to distress cues could plausibly account for the current findings, VIM may be unsuitable to explain group differences on scenario-based tasks. Future work might be able to examine

VIM more directly, by using images or videos of social interactions, or by setting up live role-plays.

Another model that focuses on empathy draws a distinction between cognitive and emotional aspects (e.g. Blair, 2008). According to this proposed dissociation, empathy consists of the capacity to understand the internal states of others (cognitive empathy) and to resonate with others' internal states by experiencing a corresponding emotional reaction (emotional empathy). A range of studies has linked psychopathy with impaired emotional empathy. For instance, people with psychopathy tend to lack physiological responsivity to emotionally salient stimuli (e.g. Lykken, 1957; Blair, 1999). By contrast, it is thought that they have intact cognitive empathy, since they tend to perform as well as control participants on tasks that examine understanding the perspectives and intentions of others (e.g. Dolan & Fullam, 2004).

A number of the current findings might be accounted for by a selective impairment in emotional empathy. For instance, in the Social Strategy Task (reported in Chapter 5), the high trait group was able to use sophisticated strategies that involved negotiating with the scenario characters, but nonetheless were more likely to refuse requests outright and less likely to comply with requests outright as compared to the low trait group. Moreover, as compared to the low trait group, the high trait group tended to rely less on emotional, empathic language that made references to the characters' positive attributes and highlighted the importance of treating them fairly. Conversely, they referred more frequently to practical reasons relating to saving time and money than did the low trait group. Finally, the present studies consistently found differences in the groups' ratings of their own emotional reactions to each situation. Thus, as compared to the low trait group, the high trait group found difficult situations to be less awkward, felt less satisfied when reciprocating and more satisfied when failing to reciprocate, experienced less pleasure when others did well and more pleasure when others did badly, had lower guilt ratings, and experienced less discomfort when resolving difficult moral dilemmas.

Despite the differences in their emotional responses, the groups often made similar choices. For instance, despite the high trait group experiencing more pleasure than the low trait group when others failed, they did not choose for others to fail more frequently. Arguably, if the high trait group had nothing to gain by behaving antisocially, their active preferences were in line with whatever was most socially appropriate. Alternatively, reduced prosocial

behaviour and emotional responding may suggest that the high trait group did not resonate with the characters' needs and feel motivated to sacrifice their own personal resources in order to preserve the characters' best interests.

Taken together, an explanation in terms of impaired emotional empathy, with intact cognitive empathy, accounts for the broadest range of current findings. In particular, this theoretical framework explains why the performance of the high trait groups in this thesis was comparable to that of the low trait groups in relation to some response variables but not in relation to others. The specific contributions of the present research for understanding the influence of psychopathy on prosocial behaviour and moral judgment will now be considered in turn.

12.5 CONTRIBUTIONS OF FINDINGS TO UNDERSTANDING THE INFLUENCE OF PSYCHOPATHIC TRAITS ON PROSOCIAL BEHAVIOUR

Prosocial behaviour refers to actions that are intended to benefit others (Fiske, 2004). These actions are thought to be advantageous, both for those in receipt of help and for those providing help. There are various manifestations of prosocial behaviour. For instance, altruism refers to actions that are motivated primarily by concern for others, and involve self-sacrifice without any obvious external rewards (Batson & Powell, 2003). Prosocial behaviour may also manifest in the form of reciprocity, whereby people take turns, return favours and engage in ongoing social exchanges. These exchanges are considered to be “two-sided, mutually contingent and mutually rewarding processes” (Emerson, 1972). As reviewed in Chapter 3, evolutionary theories state that these prosocial behaviours may have emerged as an evolutionary strategy. Collaborating with members of one's own tribe in order to gather resources or raise children was important in order to tackle instabilities such as unpredictable climate and competing tribes (Richardson & Boyd, 2005). By contrast, it is thought that an alternative evolutionary strategy led to psychopathy (Glenn & Raine, 2009). According to this alternative strategy, people engaged in tactics such as coercion or deception. These tactics were developed as a means to gather the maximum benefits or resources, whilst incurring the fewest costs. This suggests that when navigating their social world, people high versus low in psychopathic traits may employ different strategies, or may respond differently to various aspects of social situations. The present thesis aimed to investigate fine-grained social performance in those high versus low in psychopathic traits.

In order to design experimental paradigms that would tap into specific aspects of prosocial behaviour, it was important to consider what factors might influence people's decision to behave prosocially. It was thought that this decision may depend on both situational, external factors relating to the person providing help, and dispositional, internal factors relating to the person in receipt of help. With respect to situational factors, deciding to provide help may partially depend on the costs incurred. When acting in somebody else's best interests, people may need to sacrifice their own personal resources. Consider an example in which a friend needed help moving from their home. Offering to help them might have involved a range of practical consequences or costs. For instance, the friend might have lived far away, which would incur a cost of time and money; they might own a cat which triggers the helper's allergies; the helper might have intended to spend the day with their parents, and would have to sacrifice the experience in order to help the friend. Helping the friend might also involve more intangible costs. For instance, they might frequently make bad jokes which the helper feels obliged to laugh at; they might have a partner who often expresses strong opinions that the helper disagrees with and finds offensive. In addition to the different types of costs, prosocial behaviour may involve different levels or values of the same cost. In relation to the example above, the friend might require help for two hours or for the whole weekend. In order to reflect the types and values of cost involved in prosocial behaviour, these were systematically manipulated in the present thesis.

It was unclear whether or not the psychopathic trait groups would be differentially influenced by cost. It was thought that the high trait group may have been unwilling to incur a cost of any type or magnitude. Thus, they may not have differentiated between situations that incurred lesser costs and those that incurred greater costs to the same extent as the low trait group. For instance, in the Social Strategy Task: Revised (reported in Chapter 5), the high trait group may have been unwilling to tell an unwelcome relative that they enjoyed their company or to allow them to visit, despite the fact that the former involved very little effort. In the Social Exchange Task, one scenario described a character buying the participant a sandwich. The high trait group may have been unwilling to return the favour, regardless of whether the returned favour involved buying the character a cheaper coffee or buying them a more expensive meal. However, this was found not to be the case. Whilst the high trait group was less likely to comply with requests or to reciprocate overall, the implied cost influenced both groups in similar ways. Thus, prosocial responding was reduced in relation to more effortful favours, regardless of psychopathic trait group membership.

Turning away from cost, what other situational factors might influence prosocial responding? The personal circumstances of the individual providing help might play a role. For instance, people may be unwilling to help others if they have had a bad day; if somebody were to ask their friend to loan them money, the friend might be more compliant if they had recently won the lottery and less compliant if they had recently been mugged. In order to examine the influence of personal circumstances, the Competitiveness Task (described in Chapter 9) described competitive contexts and manipulated the ending such that participants had either succeeded or failed.

It was thought that any increased competitiveness in the high trait group may have been exacerbated when they themselves failed. They may have preferred a character to fail their exam to a greater extent than the low trait group, particularly if they themselves failed the exam. However, in practice, the success/failure manipulation influenced both groups in similar ways. Moreover, since people with psychopathy tend to be antisocial, and to feel an indiscriminate need to win at any cost (Ross & Rausch, 2001), it was expected that the high trait group would behave more competitively than the low trait group. However, this was not the case; the high trait group did not actively prefer the character to fail the exam more frequently than the low trait group. This seems surprising, but may relate to the fact that the resources in question were independent. The character's success or failure had no bearing on whether or not the participant passed or failed the exam. This suggests that those high in psychopathic traits may not be indiscriminately vindictive; they may only be more competitive when limited resources are available. This is consistent with the research evidence suggesting that people with psychopathy tend to behave antisocially in order to achieve a specific goal, rather than as an instinctive emotional reaction (Glenn & Raine, 2009). Nonetheless, as compared to the low trait group, the high trait group did feel more pleased when the participant failed and less pleased when the participant succeeded. Thus, the groups differed in their emotional responses, but not in their active preferences. In order to investigate whether the same pattern of findings emerges when the participants have something to personally gain or lose, a future study could examine competitiveness in situations where the participant could only succeed if the character were to fail. Taken together, the current findings revealed that external factors relating to the person providing help, such as the effort required or one's own success or failure, did not differentially influence the psychopathic trait groups.

Dispositional factors that relate to the person in need of help are also thought to influence prosocial responding. This might involve appraising a person's need on the basis of their physical appearance (e.g. Batson & Powell, 2003); thus, a young girl in rags might be more likely to elicit a charitable response than a middle-aged man in a business suit. People may also view a philanthropist more kindly than a philanderer, and they may be more likely to lend money to somebody who was made redundant than somebody who was fired for misconduct. Essentially, people may appraise the characteristics of others in order to determine whether or not they deserve help. However, it was unclear whether those high and low in psychopathic traits would make similar judgments about whether others deserved help, since it was thought that those high in psychopathic traits might be likely to transgress; they might themselves engage in the very behaviours that would render them undeserving of help from others.

In order to investigate deservingness more systematically, the Favours Task (reported in Chapter 7) described situations in which a character asked the participant for help. Their justification for needing help was manipulated such that they provided either a good reason or a bad reason. For instance, in one scenario, a neighbour asked the participant to carry a parcel upstairs for them, either because they had injured their back or because they did not wish to get their shirt dirty (see Chapter 7). The high trait group judged reasonable requests for favours (i.e. due to bad back) to be as acceptable as the low trait group. However, the high trait group judged unreasonable requests for favours (i.e. due to dirty shirt) to be more acceptable than did the low trait group. This may have related to the extent to which the character's request conformed to social rules. When the neighbour made an unreasonable request, he may have been taking advantage and behaving inconsiderately, and therefore in violation of social rules. People often impose sanctions when others violate social rules (Fehr & Fischbacher, 2004). By contrast, those with psychopathy are thought to be less bound by these rules (e.g. Dolan & Fullam, 2010). Thus, the high trait group may have been less shocked or frustrated by the neighbour's unreasonable request and judged them less harshly than the low trait group, possibly because they themselves were more likely to violate social norms.

Despite the high trait group's reduced discrimination between reasonable and unreasonable requests, they did not view both types of requests to be equally acceptable. They also did not judge unreasonable requests to be more acceptable than reasonable ones. Returning to the data, additional post-hoc tests were conducted and revealed that both the low and the high

psychopathic trait groups judged unreasonable requests to be significantly less acceptable than reasonable requests ($p < .001$). The high trait group thus still differentiated on the basis of deservingness; they simply did so to a lesser extent than the low trait group.

Taken together, the studies designed above examined specific situational and dispositional factors in relation to prosocial responding. Those presented in Chapters 5, 6 and 9 held the characteristics of the person requiring help constant and varied the context of the person providing help. By contrast, Chapter 7 held the helper's effort constant and varied characteristics relating to the person in need. For both types of manipulations, the high trait groups were less prosocial than the low trait groups, but only when they had something to gain or lose. Moreover, although the high trait group differentiated less on the basis of deservingness than the low trait group, the direction of the findings was comparable. This suggests that both groups were influenced by situational and dispositional factors in similar ways, but that the high trait group had a different threshold at which they were willing to incur a cost in order to help others.

This postulated difference in threshold may be linked to the fact that for the low trait group, the prospect of disappointing somebody else or causing them to suffer may have in itself been a cost. They may have had a particular interest in preserving the social relationship. Thus, when weighing up the costs and benefits of helping, the low trait groups considered both the preservation of personal resources and of other peoples' best interests to be potential benefits. By contrast, the high trait group may have been primarily concerned only with personal resources, leading to reduced prosocial responding.

Prosocial actions such as self-sacrifice, reciprocity and cooperation are intended to minimise the harm caused to others. As a result, these actions are typically judged to be morally right (Krebs & Denton, 2005). There is therefore a relationship between prosocial behaviour and moral judgment. The contribution of the current findings to understand the ways in which psychopathic traits translate into moral judgment will now be discussed.

12.6 CONTRIBUTION OF FINDINGS TO UNDERSTANDING THE INFLUENCE OF PSYCHOPATHIC TRAITS ON MORAL JUDGMENT

Moral judgment refers to the processes by which people differentiate between right and wrong (Fiske, 2004). As reviewed in Chapter 4, both cognitive and emotional factors can

contribute towards moral judgment. Cognitive aspects of moral judgment include the development of moral rules, reasoning about actions, intentions and outcomes, and discriminating between moral and conventional transgressions. Emotional aspects of moral judgment include moral emotions such as empathy, guilt and shame (Eisenberg, 2000) and judgments made on the basis of intuition (Haidt, 2001). Thus, moral judgment is thought to rely on both slow, controlled, deliberative reasoning processes that weigh up the costs and benefits of a particular course of action, and fast, instinctive responses that are sensitive to the potential distress for victims of moral transgressions (Greene, Nystrom, Engell, Darley & Cohen, 2004).

People with psychopathy are characterised by a propensity for immoral behaviours. However, the literature pertaining to moral judgment in psychopathy is somewhat mixed. Although there is some work suggesting deficits in moral reasoning, many studies suggest that this is preserved in psychopathy. By contrast, the evidence points to impairments in the emotional aspects of moral judgment (Blair, Mitchell & Blair, 2005). A selective impairment in moral judgment is consistent with the dissociation between cognitive and emotional empathy discussed above, and has led researchers to conclude that “psychopaths know right from wrong, but don’t care” (Cima, Tonnaer & Hauser, 2010).

How might the findings of this thesis expand on previous work focusing on moral judgment in psychopathy? Moral judgment was examined from two perspectives, firstly by looking at how people reason about the actions of others and secondly by seeing what choices they make when asked to decide on the most ethical course of action themselves. With respect to the actions of others, one study examined reasoning about whether people deserved a particular outcome.

As discussed above, deservingness was thought to play a role in prosocial responding; it may also play a role in moral judgment. For instance, is it morally wrong to cheat in order to get ahead, rather than to work hard? In order to address this question, the Deservingness Task (reported in Chapter 8) systematically manipulated the extent to which people deserved good and bad outcomes. In one scenario, a character passed their driving test, either because they worked hard and made few errors, or because they flirted with their driving instructor. In another scenario, a character was reprimanded in front of their class, either because they failed to complete the work or because the instructor was in a bad mood. The high trait group judged the people who cheated to be more deserving of their good outcome than did

the low trait group. Conversely, they also thought that victims of misfortune were more deserving of their bad outcome than did the low trait group. However, the implications of this finding were unclear. On the one hand, the groups may have shown opposite patterns of moral judgment, such that the cheaters and victims of misfortune were judged to be undeserving by the low trait group and deserving by the high trait group. On the other hand, the high trait group's judgments of deservingness may have been in the same direction as the low trait group; they may have simply differentiated less between deserved and undeserved outcomes. Additional post-hoc analysis revealed that this was indeed the case; the high trait group was narrower in their differentiation ($p < .001$). Thus, both groups judged that good outcomes linked to merit were more deserved than those linked to cheating, and judged that bad outcomes linked to deliberate transgression were more deserved than those linked to poor fortune. The low trait group was simply more extreme in their differentiation between the two variants. This may have been because they judged the cheaters more harshly and they felt more sympathy for the victims of misfortune than did the high trait group.

The above study of deservingness described deliberate moral transgressions, since one variant of the scenarios described people cheating in an attempt to get ahead. Another study in the present thesis investigated how the groups differed with respect to their reasoning about accidental moral transgressions. Rather than deliberately transgressing in order to gain an unfair advantage, the characters in the Counterfactual Thinking Task (reported in Chapter 10) performed accidental, negligent actions that had negative consequences for the participant.

For example, in one scenario, a sibling accidentally filled the car with the wrong fuel, causing the participant to miss their graduation ceremony. The high trait group felt that the sibling would regret their mistake less than did the low trait group. This was consistent with the view that if the high trait group had transgressed, they themselves may have experienced limited regret (Hare, 1993; Glannon, 2008). Participants also evaluated different counterfactual alternatives that could have prevented the negative outcome. These alternatives were practical, emotional or extreme in nature. In relation to the above example, one practical counterfactual alternative involved the sibling checking the fuel more carefully. An emotional alternative involved the sibling being more considerate or less selfish. One extreme alternative involved the sibling being too ill to attend the ceremony in the first place. Surprisingly, when choosing which of these alternatives they would prefer, no group differences emerged. This suggested that the high trait group was not actively vengeful or

vindictive, even when the characters had caused them to suffer. This may have been because all of the counterfactual alternatives were equally effective and therefore that any option would suffice. Thus, the high trait group may not have been motivated to choose extreme alternatives that would have resulted in the character experiencing harm. Nonetheless, the high trait group reported that they experienced less guilt in relation to these extreme alternatives. This echoed the findings from the Competitiveness Task (reported above). Both studies found that the groups differed in their emotional responses, even when they did not differ in their choices. A future study could examine whether introducing an incentive would make the high trait group more likely to choose the extreme counterfactual alternatives. The alternative could be manipulated, such that for some scenarios, they are all equally effective, and for others, choosing the extreme alternative achieves the best result for the participant.

The present thesis also examined moral judgment in relation to the choices people make when deciding on the most ethical course of action themselves. Thus, Chapter 11 described a study of utilitarian decision-making. Participants read scenarios in which the needs of an individual had to be weighed against the needs of a group. In each scenario, one decision would prevent harm for the individual at the expense of the group, and the other decision would prevent harm for the group at the expense of the individual. The type of harm was manipulated such that both physical harm and social harm were included. One scenario involved preventing the death of one versus many; another scenario involved preventing one versus many from experiencing hurt feelings. The proximity of the character making the decision to the situation was also manipulated. When making a decision that would lead to the death of one versus five, participants in the low proximity variant had to decide whether or not to pull a lever. In the high proximity variant, participants had to decide whether to physically push a man to his death.

The findings revealed that the groups did not differ in terms of their chosen course of action. They also did not differ in terms of the reasoning used to justify why each course of action might be the right thing to do. Nonetheless, the groups did differ in their emotional responses to utilitarian dilemmas. The high trait group reported that they would experience less discomfort in response to both the utilitarian and non-utilitarian course of actions. What might have accounted for the lack of group differences in chosen course of action and in verbal reasoning? One explanation is that the scenarios made it clear that the consequences were for the characters at risk of harm. The character making the decision would not be punished, nor would they benefit from either course of action. Previous tasks that involve

utilitarian decision-making have included scenarios in which the character making the decision was personally affected; in some scenarios, their life was in danger. However, this was not varied systematically. (Greene, Somerville, Nystrom, Darley & Cohen, 2001). The utilitarian study in the present thesis focused on situations where the decision-maker themselves was not at risk of harm. Future work could examine whether the extent to which they stood to gain or lose differentially influences the groups. A future study could therefore include a manipulation whereby in some scenarios, the decision-maker was at risk and in others they were not. Alternatively, a future study could include a manipulation such that the participant would personally benefit by prioritising the individual in half the scenarios and by prioritising the group in the remaining scenarios.

The findings reported in Chapter 11 were consistent with earlier findings, whereby manipulating aspects of the social situations (such as the costs incurred or the characters' deservingness) influenced both groups' responses in similar ways. The utilitarian study was also consistent with the findings from the competitiveness task, since the groups did not differ with respect to their chosen course of action, but did differ in their emotional reaction. Taken together, the studies presented in Chapters 8 and 10 examined moral judgment in relation to the actions of others. By contrast, Chapter 11 examined moral judgment in relation to people's own actions. The evidence suggests that factors relating to moral behaviour, such as the type of action involved or the type of harm resulting from the action, influenced both groups in similar ways. The findings also suggest that the tendency for people high in psychopathic traits to behave immorally may be primarily driven by potential gains. Despite a proclivity for immoral behaviour, the findings suggest that their capacity for moral reasoning is unimpaired. Nonetheless, their emotional reactions to moral dilemmas may be diminished in comparison to those low in psychopathic traits. This is consistent with the literature reviewed in Chapter 4, suggesting that people with psychopathy are likely to have intact moral reasoning and but a reduced experience of moral emotion (e.g. Blair, 1995; Aharoni, Sinnott-Armstrong & Kiehl, 2012). Thus far the current findings have elucidated some of the ways in which psychopathic traits translate into prosocial behaviour and moral judgment. The implications for broadening the conceptualisation of psychopathy will now be considered.

12.7 CONTRIBUTIONS OF FINDINGS TO CONCEPTUALISATION OF PSYCHOPATHY

As reviewed above, psychopathy is associated with a range of characteristics, including deficits in empathy and a propensity for antisocial behaviour. The findings have been considered in relation to these characteristics. Another characteristic relates to gender. The evidence suggests that psychopathy is more common in men than in women (e.g. Verona & Vitale, 2006), and that psychopathic traits may manifest differently in men and women (Forouzan & Cooke, 2005). To what extent do the findings in the present thesis cohere with this evidence? In view of the posited gender disparity, all of the studies (with the exception of the initial one) deliberately balanced gender across psychopathic trait groups. Gender was also included as a covariate in the analysis, and did not change the pattern of results. This implies that any group differences reported in the current studies were more likely to be attributable to psychopathic traits than to gender. Nevertheless, low-scoring male participants and high-scoring female participants were the most challenging to recruit. This is evidenced by the fact that there were a disproportionate number of female participants in the low trait group in the first study, before the decision to deliberately select participants according to both PPI score and gender was undertaken. Moreover, low-scoring men tended to have higher PPI scores than low-scoring women. Conversely, high-scoring women tended to have lower PPI scores than high-scoring men. Thus, although the findings were not primarily attributable to gender differences, they were consistent with the conceptualisation of psychopathy as more common in men.

However, it is important to recognise that by deliberately selecting the groups on the basis of both psychopathic traits and gender, the PPI scores of the high and low trait groups across this thesis were less differentiated than they would have been without adjusting for gender. It is therefore possible that the present findings underestimated any differences in social performance between those high and low in psychopathic traits in the general population.

The present chapter has thus far examined the ways in which the current findings cohere with the existing conceptualisation of psychopathy. These findings also offer two novel contributions. One such contribution relates to the fact that in many of the current studies, the pattern of findings was in the same direction for the high and low psychopathic trait groups, but the high trait group responded at a different threshold. For instance, as discussed above, both groups were more likely to reciprocate when doing so incurred a low cost than when it incurred a high cost. Nonetheless, the high trait group was less reciprocal than the low trait group overall. Another study found that both groups judged people who experienced positive outcomes after cheating to be less deserving than those who worked

hard. Both groups also judged people who suffered negative outcomes as a result of misfortune to be less deserving than those who deliberately transgressed. Nonetheless, the high trait group differentiated between deserved and undeserved outcomes to a lesser extent than the low trait group. This evidence suggests that there may be quantitative differences, or a different threshold, in the behaviours of those high and low in psychopathic traits. Thus, people high in psychopathic traits may behave less prosocially, or experience weaker emotional responses. However, their behaviours are not necessarily qualitatively different, since people high and low in psychopathic traits are likely to be influenced by various contextual factors in similar ways. This is consistent with the current conceptualisation of psychopathy as a number of traits lying on a continuum rather than as ‘psychopaths’ and ‘non-psychopaths’ being qualitatively different groups.

The current findings also suggest that the high trait group may show some sensitivity to others’ distress, albeit at a higher threshold to the low trait group. This was evidenced by the studies that deliberately manipulated the salience and legitimacy of others’ needs. These studies found that the high trait group did feel that victims of misfortune were less deserving of negative outcomes than those who had brought their problems upon themselves. The high trait group also felt that it was more acceptable for people to ask for help, and was more likely to comply with requests for help, when they were in genuine need or were suffering, as compared to when they were taking advantage. However, the implication that those high in psychopathic traits may have been somewhat sensitive to the characters’ distress in relation to the present tasks does appear to be in contradiction with much of the existing literature, whereby people with psychopathy have been conceptualised as lacking in responsiveness to distress cues (e.g. Blair et al., 1997).

What might underpin this apparent contradiction? It could be due to the fact that the present thesis adopted a relatively novel recruitment strategy; the high and low psychopathic trait groups were thus formed of subclinical participants, or ‘successful psychopaths’. Experimental work has found some qualitative differences between successful and unsuccessful psychopaths (e.g. Yang, Raine, Colletti, Toga & Narr, 2010). It is possible that if the psychopathic traits were extreme enough to register as clinically significant, any putative sensitivity to distress may disappear. Future studies could clarify this by comparing the everyday social performance of low-scoring participants, high-scoring, ‘successful psychopaths’ and high-scoring ‘unsuccessful psychopaths’. However, this design might be problematic, since the low-scoring and ‘successful psychopath’ groups would need to be

recruited from non-institutional settings, whereas the ‘unsuccessful psychopaths’ would by definition be institutionalised. The potentially confounding effects of institutionalisation may be difficult to control for, and would not be distributed evenly across all three groups. Regardless of any putative differences between ‘successful psychopaths’ and ‘unsuccessful psychopaths’, the fact that the present findings do point at some sensitivity to others’ distress may have important implications for remediation; these are outlined below.

The current findings offer another novel contribution to the conceptualisation of psychopathy, since they drew a distinction between participants’ active preferences and their emotional responses. Specifically, for many of the studies, the groups did not differ with respect to their chosen course of action or preferred outcome. However, the groups did consistently differ with respect to how they would feel. Thus, in comparison with the low trait group, the high trait group reported that they would feel more pleased in response to others’ failure, less pleased in response to others’ success, and that they would experience less guilt and discomfort. Notably, this distinction between action and emotion was only found in the studies where the consequences resulting from the various possible courses of action differed for the characters but not for the participant. For instance, in the Competitiveness Task (reported in Chapter 9), deciding that the character should pass or fail their exam did not change the fact that the participant had already passed or failed. Moreover, in one scenario in the Counterfactual Thinking Task (reported in Chapter 10), the participant had to choose the best way of preventing their negligent sibling from inadvertently using the wrong fuel in the family car and causing them to miss their graduation ceremony. The alternatives had different consequences for the characters, since some were practical and had no negative impact on them, whereas others resulted in them experiencing emotional harm or physical injury. However, each alternative was equally effective from the participants’ perspective; any of them would have sufficed and allowed them to attend their graduation ceremony. Finally, in the Utilitarian Judgments Task (reported in Chapter 10), different decisions had negative consequences for either an individual or a group. However, the person making the moral decision did not personally stand to gain or lose, regardless of what they chose.

In situations where the groups were not personally incentivised by any particular course of action, the high trait group may have chosen whichever option was most socially acceptable. This may have been motivated by the prospect of potential future benefits. For instance, in the study reported in Chapter 10, the participant did not gain any particular advantage by

choosing an extreme alternative that would cause the negligent sibling harm as opposed to a simpler, practical alternative. Similarly, in the study reported in Chapter 9, the participant did not gain any particular advantage by choosing for the friend to fail their exam. Thus, the high trait group may have felt that there was no point in angering or alienating the character. Instead, by choosing the more prosocial options, the participant may have been able to maintain the social relationship and thereby retain the possibility of taking advantage in the future, if an opportunity were to present itself. To paraphrase Harvey Cleckley's seminal work, by choosing the same courses of action as the low trait group, the high trait group may have been able to continue wearing "the mask of sanity" (Cleckley, 1941).

Taken together, the findings in the present thesis suggest that those high in psychopathic traits may behave in the same fashion as those low in psychopathic traits, but at a different threshold. Moreover, in situations where they did not stand to gain or lose, the high trait group made the same choices as the low trait group. These novel contributions suggest that those high in psychopathic traits may demonstrate the capacity for prosocial behaviour if sufficiently motivated. This evidence may provide some interesting implications for remediation. These implications will now be reviewed in turn.

12.8 IMPLICATIONS OF CURRENT FINDINGS FOR REMEDIATION

Psychopathy treatment programmes have typically achieved mixed success. Whilst those targeting juvenile offenders with psychopathy (Caldwell, Skeem, Salekin & Van Rybroek, 2006) or children with callous-unemotional traits (e.g. Viding, Fontaine & McRory, 2012) have led to modest improvements, the treatment of adults with psychopathy has traditionally been met with 'therapeutic pessimism' (Salekin, 2002). This is because psychopathic criminals are thought to be able to understand the illegality and the impact of their actions, without experiencing guilt or remorse. Moreover, there is some evidence suggesting that treatment may not only be largely ineffective, it may in some cases increase recidivism rates (Harris & Rice, 2006). This may be because treatment programmes that highlight the thoughts and feelings of the victims of crimes may make it easier for people with psychopathy to manipulate them. Fundamentally, offenders with psychopathy are thought to lack the motivation to change their behaviour (Hemphill & Hart, 2003). Thus, increasing motivational factors may be the key to successful remediation.

How might the current findings illuminate ways of increasing the motivation for those with psychopathy to behave prosocially? The experimental studies reported herein systematically

manipulated a range of factors relating to everyday social behaviour. It was found that varying situational characteristics relating to the person providing help and dispositional characteristics relating to the person requiring help influenced those high and low in psychopathic traits in similar ways, but at different thresholds. Although the high trait group tended to be less prosocial overall, both groups were more prosocial in situations requiring little effort, and in situations where people had good reasons for needing help. Thus, one approach to remediation could be to increase the salience of the factors that were found to promote prosocial behaviour in the present thesis. In other words, increased prosocial responding in those high in psychopathic traits may be achieved by “raising the signal”.

One method of raising the signal might be via an ‘other-route’, by focusing on the internal states of other people. This is supported by the findings from the deservingness manipulation discussed above (Chapters 7 and 8), whereby the high trait group demonstrated some sensitivity to the characters’ distress. They felt that people who were genuinely in need of help were more deserving than those who were taking advantage. They also felt that people who were the victims of misfortune deserved to suffer less than those who had brought their troubles upon themselves. Treatment approaches could therefore focus on the victims of crime and emphasise their distress, their innocence, their positive attributes or any factors that highlight the extent to which their suffering was undeserved. The findings from the utilitarian study reported in Chapter 11 may provide another way to raise the signal via the other-route. The findings revealed that both groups felt more uncomfortable in situations involving physical harm than in those involving social harm. Thus, treatment approaches could place greater emphasis on any physical harm resulting from the perpetrator’s actions. The utilitarian study also found that both groups were influenced by the proximity to the situation. When deciding whether or not to sacrifice one person to save a group, the decision was either low-proximity, and involved pulling a lever, or high proximity, and involved physically pushing a man to his death. Both groups used more sophisticated reasoning about the scenario characters in relation to high-proximity decisions. Highlighting the perpetrator’s proximity and involvement in the crime may also aid remediation.

Taken together, the findings from the present thesis offer some promising options in relation to promoting prosocial behaviour via the other-route. However, this approach might be particularly challenging, since it depends on the capacity to experience an empathic response. This is thought to be severely diminished in people with psychopathy (e.g. Blair et al., 2005; Blair, 2008). Moreover, previous remediation efforts that have focused on highlighting the

distress of crime victim have typically failed (Harris & Rice, 2006). It may therefore be impractical to 'raise the signal' enough to elicit an empathic response.

An alternative method of raising the signal might be via a 'self-route', by focusing on the aspects of the situation that affect people with psychopathy themselves rather than those that affect other people. This method acknowledges that those with psychopathy are likely to be primarily motivated by self-interest. Approaching treatment from a 'self-route' is also consistent with the current findings, whereby the groups only chose different courses of action when these had different consequences for the participants. Doing favours for the characters was in their best interests, but required the participants to incur a cost. In these situations, the high trait group was less prosocial. By contrast, choosing for the characters to succeed rather than fail was also in their best interests, but the participants had already succeeded or failed and therefore did not stand to gain or lose. When their decision benefitted the characters but did not affect them personally, the groups made similar choices.

The current findings therefore offer some options for raising the signal via the self-route, and thereby for motivating prosocial behaviour. The studies reported in Chapters 5 and 6 provide one such option. In these studies, the cost of prosocial behaviour was manipulated. Both groups were more likely to comply with requests for favourable opinions than with requests for favours. Both groups also behaved more reciprocally when the cost of doing so was low (e.g. paying for a friend's coffee) than when the cost of doing so was high (e.g. paying for a friend's meal). In view of this evidence, treatment approaches could make prosocial behaviour appear to be less effortful, by highlighting how easy it might be to provide help. A more direct way of motivating prosocial behaviour might be to make the advantages clearer. People may derive a range of personal benefits by behaving prosocially. By forming prosocial relationships with others, people may be able to gain resources from them in the future. They may also be able to elevate their personal status. Suppressing antisocial behaviour may also lead to significant benefits. For instance, avoiding incarceration may be in people's best interests, since they may be better able to make money, travel widely, or engage in other enjoyable behaviours that are not possible when their freedom is restricted. An approach to treatment that focuses on the benefits of behaving prosocially (rather than the drawbacks of behaving antisocially) is also consistent with the research literature demonstrating that people with psychopathy are receptive to prospective rewards but not to prospective punishment (e.g. Peschardt, Morton & Blair, 2003). Moreover, this approach may make those with psychopathy more likely to want to engage in treatment programmes

in the first place; research suggests that mandating treatment may preclude people from fully engaging in the therapeutic process (Hemphill & Hart, 2003).

Incentivising change via this ‘self-route’ is also consistent with the findings from remediation studies focusing on children with callous-unemotional traits (e.g. Dadds & Rhodes, 2008), who often go on to meet the criteria for psychopathy as adults (Frick & Viding, 2009). These studies have shown that these children are more responsive to reward-oriented strategies (i.e. treats for good behaviour) than to punishment-oriented strategies (i.e. disciplinary action for bad behaviour; Viding, Fontaine & McCrory, 2012). Focusing intervention strategies on antisocial children may be the most effective form of psychopathy remediation, since ‘nipping it in the bud’ might help to reduce the risk of future antisocial acts and subsequent institutionalisation. Thus, the ‘self-route’ approach to treatment could be applied to youth interventions, for instance, by highlighting the rewards provided by teachers following good behaviour in the classroom or playground, or those provided by parents following good behaviour in public or when interacting with siblings.

The current findings could also prevent the emergence of psychopathic traits in childhood by contributing to a broader education strategy. The UK national curriculum currently includes personal, social, health and economic (PSHE) education (Department for education, 2013). This was designed to teach children about topics such as sex and relationships, drug and alcohol abuse, financial responsibility, and social, cultural and moral values. Psychopathy has been extensively linked with problems in these areas (e.g. Cleckley, 1941; Hare, 1993; Blair, Mitchell & Blair, 2005). Presenting children with age-adapted versions of the types of social and moral dilemmas developed in this thesis might help to advance PSHE education and thereby identify and assist children with callous-unemotional traits.

Taken together, the current findings suggest that people high in psychopathic traits may behave more prosocially if doing so is in their best interests; this may have important implications for remediation in clinical settings and for youth intervention programmes.

12.9 IMPLICATIONS FOR FUTURE RESEARCH

The present Chapter and the experimental chapters presented in this thesis have made specific suggestions for possible ways that the tasks could be extended and manipulated further to follow up the findings to date. Broadly speaking, there are a number of key

methodological implications for future research that could be explored. As discussed above, a number of the current findings supported a distinction between action and emotion whereby the trait groups did not differ in their active preferences for the type of action they chose, but did differ in their emotional responses. The lack of group differences was thought to relate to the fact that in the hypothetical scenarios used in the present studies, the participants did not personally stand to gain or lose. Thus, future studies could compare respondents' active preferences in situations where their choices personally affect them. This may help to elucidate the point at which the high trait groups judge the potential gains to be sufficient, and therefore to feel that responding antisocially is worth risking potential negative consequences.

The types of social scenarios described in the present thesis also could have accounted for the lack of group differences in active preferences. Specifically, since people with psychopathy are thought to have a significant negative impact upon the individuals with whom they interact (Kiehl & Hoffman, 2011), the scenarios in the present thesis described interactions with characters known to the participant. However, the prospect of continual interactions with these characters and future potential opportunities to take advantage of them may have motivated the high trait groups to behave prosocially. Thus, the high trait groups may have been motivated by strategic considerations such as long-term gains rather than because they felt that acting in order to benefit others was intrinsically rewarding (Gervais, Kline, Ludmer, George & Manson, 2013). In order to investigate this further, future studies could focus on one-off interactions with strangers.

Another methodological implication for future research relates to the range of behavioural responses described in the present thesis. In response to real-life situations where people's choices have consequences for others, they may choose to behave prosocially, they may choose to do nothing in order to avoid incurring a cost, or they may choose to behave antisocially and to actively harm others in order to gain resources. The studies described herein focus on whether the high and low trait groups behave prosocially and act in others' best interests or choose to do nothing and retain their personal resources. Future studies could examine how people high and low in psychopathic traits differ with respect to everyday examples of antisocial behaviour. Research could focus on the extent to which they are willing to cheat, lie, steal or criticise others in order to gain an advantage over others.

Another future direction might be to administer the current research tasks in more extreme, clinical populations. This may help to identify subtle differences between ‘successful’ and ‘unsuccessful’ psychopaths. This may also help to resolve whether ‘successful’ and ‘unsuccessful’ psychopaths are qualitatively different groups, or whether they represent different points at the extreme end of a continuum of psychopathic traits. Finally, as discussed earlier, the methodological approach adopted in the present thesis aimed to balance ecological validity against laboratory control. The current findings offer some insights into the aspects of social performance that might be particularly pertinent in psychopathy. Thus, future research work could expand on these findings by conducting studies in more naturalistic settings. For instance, constructing role-play paradigms may offer a more realistic environment in which to investigate social performance, and recent work investigating social functioning in Autism Spectrum Disorder has involved the use of virtual reality paradigms (e.g. Georgescu, Kuzmanovic, Roth, Bente & Vogeley, 2014).

Taken together, these directions for future research work may help to develop a richer, more nuanced understanding of the ways in which deficits associated with psychopathy translate into everyday social performance.

12.10 CONCLUDING COMMENTS

The present thesis aimed to investigate how psychopathic personality traits influenced everyday social behaviour. In order to address this question, a range of novel tasks was developed that manipulated specific aspects of social performance, particularly in relation to prosocial behaviour and moral judgment. The findings revealed that the high psychopathic trait groups were less prosocial than the low trait groups, but only when they stood to gain or lose. The findings also suggested that the high trait participants’ capacity for moral reasoning was unimpaired. However, the groups consistently differed in their emotional reactions. The high trait groups reported lower levels of emotions such as awkwardness, guilt, and discomfort than the low trait groups in relation to difficult social situations. One particularly interesting finding was that the range of experimental manipulations included in the present studies did not result in the two groups demonstrating opposite patterns of behaviour. Although the high trait groups were broadly less prosocial and less emotional than the low trait groups, they still demonstrated some sensitivity to others’ distress. This finding was in contradiction to much of the previous literature suggesting that psychopathy is characterised by a lack of responsiveness to distress cues. Taken together, these findings

may contribute to the conceptualisation of psychopathy and ultimately to novel approaches to remediation.

Part 4: References

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