FACE VALIDITY: EXPLORING THE RELATIONSHIP BETWEEN FACIAL AFFECT RECOGNITION AND PSYCHOPATHIC TRAITS WITH HIGH-RISK PRISONERS IN NEW ZEALAND

A thesis
submitted in fulfilment
of the requirements for the degree
of

Doctor of Philosophy in Psychology

at

Massey University

by

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July 2011

Massey University

Te Kunenga Ki Pūrehuroa

Abstract

Psychopathy, as a psychiatric entity, psychological construct, and social idea has suffered from conceptual vagueness and misuse for over two centuries. Currently, psychopathic individuals are considered to present as having a constellation of affective, interpersonal, and behavioural characteristics that typically incurs great social, economic, and human costs by virtue of repeated displays of extreme antisocial behaviour. As such, individuals who are considered 'psychopathic' tend to be over-represented in judicial and correctional settings, tend to re-offend faster and more often than non-psychopathic offenders, and are also resistant to conventional treatment efforts – so much so, in fact, as to have the reputation of being 'untreatable'. Historical and current conceptualisations of psychopathy have emphasised moral, behavioural, cognitive, neurocognitive, and even physiological differences. However, the various social and interpersonal contexts in which these individuals interact and indeed offend do not appear to have been fully explored in the literature. This study explored social cognitive aspects of violent offenders with psychopathic traits with a view towards informing intervention approaches with this high-risk and potentially dangerous group. Furthermore, the impact of psychopathy is largely evident in the social realm and suggests differences in social information-processing. The role of emotions, especially those of others, is an important construct across theories of social interactions and impairments in affective processing, such as low empathy, guilt, and fear that are common features of psychopathy. Given that recognising emotions from facial cues is an early developmental marker of

emotional and social development, it presents as an interface between behaviour and social cognitive processes. This study sought to investigate the basic relationships between psychopathy and social cognitive phenomena. Male prisoners (*N* = 68) from New Zealand prisons were invited to (1) identify facial expressions from Ekman and Friesen's (1976) Pictures Of Facial Affect stimuli set; (2) discriminate emotions from displayed pairs of faces; and (3) repeat the tasks after being administered a frustrating task. It was hypothesised that men who presented with psychopathic traits (as measured on the *Psychopathic Personality Inventory-Revised; PPI-R;* Lilienfeld & Widows, 2005) would reveal biased responding before and after the stress intervention. Contrary to expectations, the findings from this study did not – on the whole – support the hypothesis. However, the outcomes called into question the supposedly pervasive and apparently cognitively-impaired nature of psychopathic social information-processing.

Acknowledgements

When I was four, my dad told me that when I grow up he wanted me to be a doctor...I'm not sure if this is what he meant...

First and foremost, I thank my wife Nicky who has stood by me throughout this entire process and, on occasions, had to tolerate my sketchy ideas of 'lifestyle balance' as a result. Boy, is she glad this is over! In addition, I thank my family (both sides) for their unwavering support and understanding (and their occasional curiosity was also appreciated).

Secondly, I thank my supervision team, a triumvirate that consisted of: Ian Evans – Mentor, benefactor and spellbinding teller of tales...Since the early 2000s, Ian has supported my unorthodox (so some have told me) research interests ranging from listening to Neil Armstrong's moon landing speech *in reverse*, to exploring magical ideation and spiritual phenomena with Māori psychiatric populations. So, when contemplating the idea of stressing-out violent prisoners with marked psychopathic traits, telling them that they have 'failed', and offering little in return bar the opportunity to press lots of buttons – guess who was my first choice of supervisor!

John Podd – Secondary supervisor, neurocognitive wizard and teacher. What began as a casual conversation over beer and chips grew into a mutual interest in psychopathy and social cognition, as well as a constructive learning

Fifthly, I am indebted to Malcolm Loudon (technical advisor), School of Psychology, Massey University for developing the software programme (and the response box) for this study.

Last, but not least, an extension of gratitude to the men themselves, all of whom participated for a variety of reasons – not least of which was to assist with increasing knowledge with no material reward. I remain very grateful for your contribution to this work and the various side conversations that psychologists are fortunate enough to enjoy in correctional settings.

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A Note on Terminology

It is acknowledged that categorisation serves the purposes of reducing complexity, exemplifying patterns of a phenomenon, and enabling one to order and relate classes of objects and events (Bruner, Goodnow, & Austin, 1956). However, because of the universally pejorative nature of the term '*psychopath*' in clinical, forensic, research, and everyday contexts – a peculiar xenophobia reflected in much of this literature[1] – I will refer to individuals who meet the clinical criteria (under whatever scheme) adjectively (i.e., 'John is psychopathic' or 'a psychopathic individual') or in a possessive sense (i.e., 'John exhibits psychopathic traits'), rather than as a noun (i.e., 'the psychopath', 'psychopaths' or 'John is a psychopath').

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[1] In a challenge to the legitimacy of the construct, Cavadino (1998) suggested substituting the term 'psychopath' with 'bastard' as a more accurate (if not more frank) descriptor: *"For 'predominantly aggressive psychopath', read: 'stroppy bastard'. For 'predominantly inadequate psychopath', read: 'useless bastard'"* (p. 6).

Preface

For now we see through a glass, darkly; but then face to face: now I

know in part; but then shall I know even as also I am known.

1 Corinthians 13:12 (King James Version).

*When I was at ***** prison, we had a 'kiddy-fucker'[2] on the block. I*

offered to take him out[3]. I had a reputation for viciousness and doing

what I said I would do...I made a shank[4] with barbed wire around it –

designed in such a way that it would go in easily, but make a real mess

coming out – I've always had a love of fishing – when the time came,

we were watching a movie on one of those old projectors...he was in

the row behind me. When I spotted him, I stabbed him – so much so

that I took out a lung. He was put on life support after that, and to my

knowledge – unless he's dead – still is. I got another three years for

that – on top of my five, but had won a lot of respect and loyalty from

others as a result (Retired New Zealand gang member, personal

communication, 2010).

Since becoming a psychologist for the Department of Corrections in

early 2003, I became intrigued by this notion of 'psychopaths', and over the

years had my fair share of experiences with offenders who were described

accordingly. Most memorable were my experiences as a therapist with the

experimental High-Risk Personality Programme, a pilot group-therapy

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[2] New Zealand prison slang: an identified (or assumed) child sexual offender.
[3] Slang: to intentionally kill or severely harm another individual, often in retribution.
[4] Slang: improvised stabbing implement, usually fashioned from makeshift materials.

violence prevention programme based at West North Block at Waikeria Prison. The 12 men who participated in the 10-month intensive therapy hailed from the four corners of Aotearoa and were screened for psychopathy with the Psychopathy Checklist-Revised (PCL-R) – the first time psychopathy had ever been formally diagnosed for this purpose in the history of the Department.

Over the year, as my team and I became acquainted with many of the most notorious prisoners in the system at that time, it became apparent that no two 'looked alike' – despite similar scores on the PCL-R. Furthermore, many other things were being observed that appeared contrary to the impression imparted by the experimental literature, such as the strong sense of attachment to us as therapists and an even stronger sense of affiliation – even amongst traditional rivals – that permeated this group, even years after the programme concluded.

In light of this, a number of questions presented themselves: are so-called 'psychopaths' really a 'case apart' as the literature would have me believe, or are these kinds of contraindicative traits as described reflective of emergent properties that require time, energy, patience, and curiosity on the part of others to discover? Are the more dramatic behaviours a consequence of impairments, or differences?

In any case, individuals around the globe who have met the criteria for psychopathy have been subject to some of the harshest measures that Western societies can offer – and perhaps rightly so. Whilst I do not claim to be 'romantic' about psychopathic offenders, the paradox that these (invariably) men form a vulnerable group that make *others* vulnerable cannot be ignored if safe and just societies are to be strived towards.

Chapter One: Background and Rationale

Psychopathy continues to capture the imagination of the public and research communities alike. Since the late 1970s, increased academic interest from sociology, psychology, and the forensic and legal field has seen the growth of a number of international handbooks dedicated to the theoretical and practice aspects of psychopathy (e.g., Cooke, Forth, & Hare, 1998; Gacono, 2000; Hare & Schalling, 1978; Heginbotham 2000; Hervé & Yuille, 2007; Millon, Simonsen, Birket-Smith, & Davis, 1998; Patrick, 2006; Reid, 1978). Arguably, one of the central issues is what sets psychopathic individuals apart from 'the rest of us'. Individuals with psychopathy are typically perceived as fundamentally different from the rest of humanity as well as invariably dangerous (Skeem, Polaschek, Patrick, & Lilienfeld, 2012).

A perusal of the psychopathy literature reveals a number of conceptual challenges that historical writers have attempted to address with regard to (1) establishing the existence of psychopathy, (2) clarifying the nature of psychopathy, (3) defining the core characteristics, and (4) reconciling commonalities amongst the various theories and models. In this chapter, I argue that (1) psychopathy exists as a psychological construct (albeit not without problems), and (2) that social cognition is common to historical and contemporary thought that warrants closer attention. As a starting point, 'psychopathy' has been described in the modern psychological and medical literature as:

> *A behavior disorder, manifesting particularly in the social sphere and interfering markedly with the ability of the person so classified to*

engage in satisfactory social relations and activities (Lindner, 1944, p.59).

A deviant developmental disturbance characterized by an inordinate amount of instinctual aggression and the absence of an object relational capacity to bond...a fundamental disidentification with humanity (Meloy, 1988, p.5).

 A *socially devastating disorder defined by a constellation of affective, interpersonal, and behavioral characteristics* (Hare, 1998, p.188)

An emotional disorder, which ... puts the person at risk of repeated displays of extreme antisocial behavior (Blair, Mitchell, & Blair, 2005, p.17).

Despite the somewhat emotive nature of these descriptions, there has been reasonable agreement on what the term 'psychopathy' means. However, it has not always proved easy to identify individuals who warrant the label 'psychopathic'. As an initial observation, conceptualisations of psychopathy – historic and contemporary – have been largely based on clinical observation, but more critically, in interpersonal contexts. Furthermore, the most apparent feature across most theories of psychopathy make specific reference to the (usually negative) impact that individuals with psychopathic traits inflict upon others. What this implies is (1) impairments these individuals can present in relating to others, (2) compromises of social meaning that may

reflect (3) the involvement of social cognitive differences that appear to separate these individuals as a more-or-less distinct group identified largely by their social behaviour. These differences in how social interactions and relationships are perceived and negotiated raise questions as to how central social cognitive processes are to the construct of psychopathy.

The history of any subject invariably reflects the purposes of the writer. For instance, Partridge (1930) attempted to address problems caused by the increasingly varied terminology that had developed – and contributed to the confusion and misuse of the 'psychopathic' concept – over the previous century; Maughs (1941) sought to explore the 'enigma' of psychopathy as a disease entity; Gurvitz (1951) expanded on this agenda and concluded that the status of psychopathy was primarily a clinical issue rather than a biological deficit; Craft (1965; 1966) attempted to clarify and justify a medico-legal position the construct had taken on in post-war Great Britain; Pichot (1978) charted the theoretical course of psychopathy as formulated by French and German thinkers; Millon, Simonsen, and Birket-Smith's (1998) account located psychopathy squarely as a diagnostic entity and surveyed the developments in Europe and the United States; and Arrigo and Shipley (2001; Shipley & Arrigo, 2001) considered the implications of selected conceptual transitions of psychopathy, such as the impact of diagnostic systems in the context of forensic science. In short, the history of psychopathy is complicated and replete with competing theoretical perspectives and varied usage of terminology.

The aim of the present chapter is to briefly review major historical developments of psychopathy as it relates to social cognitive processes and

the impact on relatedness (a key feature of personality disorder – Millon & Davis, 1996). It is not the intention here to revisit the history of psychopathy, but rather to provide a brief overview of selected conceptual developments that are included here on the basis of (1) *ætiology* – informing proposed causes and conceptualisations of psychopathy as a *disorder*; in relation to (2) *social cognitive* aspects – taken here to refer to the impact the development had on the relationship between psychopathic traits, antisocial behaviours, social interactions, and how the social environment is perceived and interpreted.

Unscrupulous and Ruthless: A Prehistory of Psychopathy

Some of the earliest extant descriptions of what would presage the contemporary study of psychopathic personality traits are found in the Hellenistic period. Theophrastus, a student of Plato and Aristotle, developed the first known recorded personality typology. In his *Characters* (c.319 BCE/1902), he presented brief and humorous 'sketches' of socially undesirable individuals or quirks of personality as observed in the social and cultural milieu of his times. Of particular note is the 'Shameless Man'[5], who is described, rather playfully, as one who *"robs a man and then returns to borrow money off him"* (p.18) as well as attempt to cheat a butcher at the market, or if unsuccessful, he *"snatches a piece of tripe from the bench and makes off with it laughing"* (p.19). From these early descriptions, it is apparent that Theophrastus had described a 'type' of individual who is identified as one

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[5] Also referred to as the 'Unscrupulous Man' in some translations (Millon, Simonsen, & Birket-Smith, 1998).

who exploited social relationships to their own advantage with little regard for moral or legal restraint – let alone the rights or feelings of others.

Although not intended as a psychological work, Niccolò Machiavelli's political treatise, *Il Principe*[6] (1532/2005), appeared to endorse – if not promote – amoral standards of behaviour in a prescriptive fashion for negotiating *realpolitik* when obtaining and maintaining positions of power (in this case, state rule in 16th century Florence). At one point he commented that *"cruelties are well used...that are carried out in a single stroke, done out of necessity to protect oneself"* (p.34). While Machiavelli was (mis)understood to support an ends-justify-the-means mode of political action, the phrase 'Machiavellian' has since come to characterize an individual with a relative lack in interpersonal relationships, a lack of concern with conventional morality, a lack of gross psychopathology, and a ruthless and goal-focused behavioural style reflecting low ideological commitments (Christie, 1970). Indeed, Machiavelli considered these attributes to be not only functional, but also *desirable* in managing situations where executive decision-making – at the expense of others[7] – was required.

By the late 18th century, clinical features were central to medical and philosophical inquiry about antisociality, particularly in the context of the long-standing debate about free will and whether moral transgressors were capable of understanding the consequences of their acts (Millon, 2004) – a debate that has continued to present times (e.g., Benn, 1999).

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[6] *The Prince.*
[7] As a guiding principal, he commented that *"it is much safer to be feared than to be loved, when one of the two must be lacking"* (p.58).

A Psychiatric Wastebasket: Pathologising Psychopathy (c.1800–c.1900)

The birth of modern conceptualisations of psychopathy is largely attributable to the contribution of Philippe Pinel, a Senior Physician at the Asylum de Becìtre during the French Revolution. His *Traité médico-philosophique sur l'aliénation mentale ou la manie*[8], published in 1801, was a textbook on psychopathological conditions, that contained within it clinical descriptions of what he termed 'manie sans délire' (or 'mania without delirium'; 1806, p.150). These were instances of 'maniacs' (p.155) who presented with impulsive and socially maladaptive behaviours in the absence of any detectable medical condition *"as if the active faculties alone sustained the injury"* (p.150). Of Pinel's three documented cases, perhaps the following startling example is the most resonant with present-day understandings of psychopathy:

> *An only son of a weak and indulgent mother, was encouraged in the gratification of every caprice and passion, of which an untutored and violent temper was susceptible. The impetuosity of his disposition increased with his years. The money with which he was lavishly supplied, removed every obstacle to his wild desires. Every instance of opposition or resistance, roused him to acts of fury. He assaulted his adversary with the audacity of a savage; sought to reign by force, and was perpetually embroiled in disputes and quarrels. If a dog, a horse, or any other animal offended him, he instantly put it to death. If ever he went to a fete or any other public meeting, he was sure to excite such tumults and quarrels, as terminated in actual pugilistic*

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[8] Translated as *A Treatise on Insanity* by D.D. Davis (1806).

encounters, and he generally left the scene with a bloody nose. This wayward youth, however, when unmoved by passions, possessed a perfectly sound judgement. When he came of age, he succeeded to the possession of an extensive domain. He proved himself fully competent to the management of his estate, as well as to the discharge of his relative duties; and he even distinguished himself by acts of beneficence and compassion. Wounds, law-suits, and pecuniary compensations, were generally the consequences of his unhappy propensity to quarrel. But an act of notoriety put an end to his career of violence. Enraged at a woman, who had used offensive language to him, he precipitated her into a well (pp. 151-152).

Although little else is reported on this case, it is suggested that this individual possessed largely intact, if not proficient, executive functioning, but also engaged in regular and extreme destructive behaviour that had deleterious consequences for others (and himself) in his social environment. Pinel noted that this condition may present as either 'continued or intermittent' (p.156), indicating that excessive acts, such as those noted above, may reflect situation-specificity rather than the global effects typical of an organic disorder.

American physician, Benjamin Rush described in his *Medical enquiries and observations upon the diseases of the mind* (1812), a number of similar cases to that of Pinel, and proposed that the socially disturbing behaviours reflected an *"innate, preternatural depravity"* (p. 358) that was observed with these individuals and attributed to a *"defective organisation in those parts of*

the body which are occupied by the moral faculties of the mind and motivated by self-love" (p. 358). He recognised the importance of the social environment as a factor with these patients' behaviours and suggested that highly structured lifestyles in the absence of negatively influential associates as a promising intervention strategy to mitigate ongoing socially inappropriate behaviour.

Rush is perhaps considered to have initiated a movement of reformulating psychopathy from a morally neutral clinical observation to one of social condemnation (Arrigo & Shipley, 2001; Millon, Simonsen, & Birket-Smith, 1998), a view that was informed by a contemporaneous puritanical Christian worldview.

British physician, J.C. Pritchard (1835), coined the term *"moral insanity"* (p. 22), where antisocial behaviour was seen as the consequence of long-standing clinical traits that reflected a reprehensible defect (so-called 'social depravity'; Millon, Simonsen, & Birket-Smith, 1998). This view reflected something of an intolerance amongst the medical community in the West and stood in stark contrast to Pinel's (1801) morally neutral attitude that suggested this condition was attributable to an inability to restrain emotions without a corresponding loss of reasoning. Consistent with Rush, the causal mechanisms behind the identified negative social effects of so-called moral insanity were lost in moralistic rhetoric.

English psychiatrist, Henry Maudsley, argued for the existence of a specific cerebral centre underlying 'natural moral feelings'. In his *Responsibility in mental disease* (1898), he commented that:

> *There is a class of them* [offenders] *marked by defective physical and mental organisation, one result of their natural defect, which really determines their destiny in life, being an extreme deficiency or complete absence of moral sense* (1898; p. 34).

The idea of an impaired 'moral sense' reflected Maudsley's belief in an inability (or disability) of some individuals to appreciate and conform to social norms. Such a view may well descend from earlier political thought of the enlightenment era, such as Rousseau's 'social contract' (1762/1968), whereby the same duties are imposed on all members of a community, and the same freedoms are similarly forfeited, in order to establish a civilisation governed by a mandated political authority. In this sense, the destructive interpersonal behaviour that had become recognised as characteristic of this group can be seen as a violation of such a social contract, and hence a desecration of society. Further on, Maudsley added what may well have been the earliest known social cognitive metaphor of psychopathy:

> *As there are persons who cannot distinguish certain colours, having what is called colour-blindness, and others who, having no ear for music, cannot distinguish one tune from another, so there are some few who are congenitally deprived of moral sense. Associated with this defect there is frequently more or less intellectual deficiency, but not always; it sometimes happens there is a remarkably acute intellect with no trace of moral feeling* (pp. 62-63).

This description emphasised an organic basis for psychopathy and was considered to have advanced differentially from other developmental indicators (e.g., intellect).

Emil Kræpelin (1915) recognised psychopathic behaviours as largely indicative of *deviance* rather than as an identifiable disease process. However, he proposed that psychopathic individuals suffered from an inherited deficiency in their ability to restrain poorly-controlled gratification of immediate self-centered desires and suggested that for these individuals, the *"inadequate development of the moral feelings is more conspicuous than that of the intellect"* (p.516). By the 1915 edition of his *Lehrbuch der psychiatrie*[9], he had identified four types of 'psychopathic personalities' that were akin to what we consider today to be *subtypes* of psychopathy and antisocial personalities, such as (1) the *born criminals* whose antisocial behaviour was evident across the lifespan and were observed to be impulsive, callous (especially towards animals), show a lack of sympathy, and generally unresponsive to kindness, and would *"find themselves out of harmony with any social environment in which they are located"* (1915, p.519); (2) the *Unstable*, who were characterised by a weakness of the will in all their activities, poor work ethic, irresponsible behaviour and lack of long-term planning; (3) *Morbid liars and swindlers* who were noted for their marked deceitfulness, superficiality, pathological lying, and their ability to positively manage impressions; and, lastly, (4) the *Pseudoquerulants* who were described as essentially grandiose, manipulative, and with shallow affect.

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[9] Translated as *Clinical Psychiatry: A textbook for students and physicians* (1915) by A.R. Diefendorf.

For each of these categories, Kræpelin identified specific interpersonal differences in how these individuals perceived and negotiated their social environments. For instance, 'morbid liars' were noted to *"understand how to make an impression, and to inspire common* [sic] *people with confidence and respect"* (p.529), whereas 'pseudoquerulants' natural tendency to exaggeration – as influenced by intense feelings – resulted in *"persons and conditions…often incorrectly judged"* (p. 531). Taken together, Kræpelin's categories were most easily identifiable by virtue of their characteristically unusual, and often hazardous, interpersonal styles that were informed by their specific perceptions of their social environment.

In reaction to the prevailing pejorative use of the terminology of his times, German psychiatrist, J.L. Koch, offered a somewhat politically-charged recapitulation that was to replace 'moral insanity' with the (slightly more) neutral 'psychopathic inferiority' (Millon, Simonsen, & Birket-Smith, 1998). Furthermore, he observed that delimiting psychopathic states was difficult because they presented a conceptual grey area between mental illness and normality (Pichot, 1978), offering one of the earliest thoughts on the clinical *dimensionality* of psychopathy.

Kraft-Ebbing (1897) noted an oblique relationship between psychopathy with sadism and masochism where psychopathy was seen as an aggravating feature across a range of deviant sexual behaviours rather than as a prominent diagnostic entity. In his *Psychopathia Sexualis* (1899), he noted that:

> *Through such cases of infliction of pain during the most intense emotion of lust, we approach the cases in which a real injury, wound,*

or death is inflicted on the victim. In these cases the impulse to

cruelty which may accompany the emotion of lust, becomes

unbounded in a psychopathic individual; and, at the same time,

owing to defect of moral feeling, all normal inhibitory ideas are absent

or weakened (p. 79).

Excessive aggression against others was seen here as an exaggerated

response that reflected a failure to moderate behaviour that was driven by

intense emotions. Further on he noted that:

> *The most monstrous and most perverse sexual acts have been*
>
> *committed by persons of sound mind.* The perversion of feeling must
>
> be shown to be pathological*. This proof is to be obtained by learning*
>
> *the conditions attending its development and by proving it to be part*
>
> *of an existing general neuropathic or psychopathic condition*
>
> [emphasis in original] (p. 474).

Suggesting here that it had yet to be determined as to whether

psychopathy was either reflective of an emergent property in specific

situations, or represented a unique and reliable cluster of pervasive

traits.

Over the 19th century, psychopathy was increasingly

recognised and defined by the medical community as an anomalous

(but not uncommon) pathological condition that was observed as

impairments in interpersonal interactions which were not

characteristic of psychotic states or other known conditions,

indicative of a disconnect between internal perceptions and an external 'reality'. These early formulations of psychopathy were typically based on a few dramatic cases and emphasised rationality – an artefact of enlightenment thought – as a critical defining feature of mental health. Hence, self-defeating behaviours accompanied by a *clarity* of thought were considered pathological under this paradigm. However, because of the variety of theoretical (and moral) propositions, the diagnostic fuzziness of the construct remained.

Psychopathy vs Antisociality: Conceptual Confusion (1900s–1940s)

Throughout the early 20th century, the concept of psychopathy assumed a number of guises in attempts to separate out the construct from that of other pathological conditions which shared similar expression – particularly overt antisocial behaviour. For instance, Meyer introduced the idea of a 'constitutionally inferior' type to separate psychopathic cases from other 'psychoneurotic' disorders (Millon & Simonsen, 2010, p.39).

In 1909, Birnbaum suggested that psychopathy was a social construct and introduced the term '*socio*pathic' to emphasize the external and interactional causes of antisocial behavior (Millon, Simonsen, & Birket-Smith, 1998). Psychopathy was conceptualised as a social issue with social causes and social consequences. In the 1920s, Schneider recognised that psychopathic individuals not only progressed to criminality but were also found in society at large (Pichot, 1978). In this sense, psychopathy was not seen as simply a 'criminal' issue, but a psychological problem that occurred at all levels of society, irrespective of socioeconomic status or intelligence.

Karpman (1929) considered the prevailing medical perspective of crime as inadequate in recognising the range of motives for antisocial acts, particularly when considering 'personality types' (referred to as the 'psychopathies'), here characterised by a marked failure to adjust socially. Like other writers in this era (e.g., Partridge, 1930), he offered a detailed description of a 'typical' psychopathic life course. Of interest is his emphasis on apparent social cognitive processes:

> *The earliest characteristic that becomes apparent is that his* [sic] *behaviour anomalies are mostly at the social level – in one way or another, he is in constant conflict with the environment in which he lives. A striking feature of this is that while his behaviour is not acceptable to the society, it is entirely acceptable to him – if one could only grant the psychopath the ability to reflect on the social-personal meaning of his deed – which he has not; he merely does not care whether anyone suffers from his acts or not…not, perhaps, that they want to be deliberately mean, but merely that the act, serving their personal needs, fails to take into consideration the human or humane aspect of the situation…the desire of the moment being their one goal* (p. 500).

Karpman's description is of particular relevance because of his focus on the individual's apparent failure to attend to peripheral social cues as a central factor contributing to the dysregulation of behaviour, as well as the impact of situational variables (i.e., competing stimuli) as giving rise to poorly-judged behaviour that appeared to typify this group.

Franz Alexander's (1930) description of the so-called 'neurotic character' offered the first psychoanalytic assessment of psychopathy, and recognised that antisocial behaviours reflected an inextricable interplay amongst intrapsychic processes, social forces, and constitutional dispositions. He concluded (somewhat tentatively) that antisocial behaviour was likely to be a *consequence* of a pathological condition he identified as *'alloplasticity true criminality'* (p.306), marked by unmodified and uninhibited gratification due to failed defences (but a preserved ego organization).

Hervey Cleckley's *The Mask of Sanity* (1976), first published in 1941, and now considered to be a landmark work in the field, offered a series of vivid and detailed case studies of individuals who were admitted to a Veterans Administration psychiatric institution. They were selected and described by Cleckley to (re)open the discussion about psychopathic personality as a diagnostic entity. Like other writers of his day (e.g., Maughs, 1941; Partridge, 1930), he attempted to clarify problems of terminology and reverse the trend of the over-inclusive usage of 'psychopathy' as an open category for a diverse range of disorders. In short, he served to operationalise psychopathy as well as proposed his theory of 'semantic aphasia', an artefact of language that appears linguistically well-constructed but lacking symbolic depth. Such individuals were considered to be able to verbalise moral and social 'rules', but were seemingly unable to understand them in the same way others do – hence the 'mask of sanity'. Although the term semantic aphasia attracted little obvious following, of importance was his clinical description of primary psychopathic traits (see Table 1) that have informed the psychopathy research agenda ever since (e.g., Blair, Mitchell, & Blair, 2005; Hare, 1970;

1980; 2003; Hare & Schalling, 1979; Reid, 1978). Drawing attention to the bizarre and apparently self-defeating behaviour of psychopathic individuals, he added that:

> *Not consistently seeking to inflict major disaster on anyone, more characteristic is the psychopath's pettiness and transiency of affect (both positive and negative) and his failure to follow a long-range plan either for good or evil. The emotional damage he* [sic] *may (and often does) inflict on others, mate, parents, children, is not, it seems, inflicted for any major voluntary purpose or from a well-focused motive, but from what weighs in at little more than whim or caprice…* (1976, p.322).

Consistent with contemporaneous writers, Cleckley suggested that the harm caused by these individuals was indicative of *symptoms* rather than *motives*. These symptoms manifested in primarily social contexts and indicated a disconnect between affect and behaviour that resulted in impoverished interpretations of social cues, in spite of the so-called 'mask of sanity'.

Table 1

Cleckley's Diagnostic Criteria for Psychopathy

Superficial charm and good "intelligence"

Absence of delusions and other signs of irrational thinking

Absence of "nervousness" or psychoneurotic manifestations

Unreliability

Untruthfulness and insincerity

Lack of remorse or shame

Inadequately motivated antisocial behaviour

Poor judgment and failure to learn by experience

Pathogenic egocentricity and incapacity for love

General poverty in major affective reactions

Specific loss of insight

Unresponsiveness in general interpersonal relations

Fantastic and uninviting behaviour with drink and sometimes without

Suicide rarely carried out

Sex life impersonal, trivial, and poorly integrated

Failure to follow any life plan

Note: from Cleckley (1976, pp. 338-364).

Echoing Maudsley, he further commented that:

> *A man who had never understood visual experience would lack appreciation of what is sustained when an ordinary person loses his eyes. So, too, the real psychopath seems to lack understanding of the nature and quality of the hurt and sorrow he brings to others* (p. 322).

Gough (1948) conceptualised psychopathy squarely in the context of social behaviour, with the assumption that manifestations of mental disorder were essentially defined by, and more detectable in, social environments. Gough echoed George Herbert Meads' sentiments of the development of 'self' as recognising and utilising appropriate attitudes and gestures of other individuals as integral to the development of one's own normative social conduct. Such a developmental approach presupposes social interaction, the ability to assume various roles as guided by the interaction-situation, and the resultant learned internal representations to produce suitable behaviours and prohibit inappropriate behaviours. In this sense, role-playing makes one sensitive *in advance* to the reactions of others allowing one to modify or deter potential behaviours. Gough posited that psychopathic individuals lack fundamental role-playing skills and as a consequence were unable to assess their own behaviour from another's standpoint and foresee the social consequences of their behaviour, thus increasing social maladjustment.

Hare (1970) and Salekin (2002) critiqued Gough's role-playing deficiency theory, commenting that it did not adequately explain *why* psychopathic individuals lack role-taking skills or account for those factors that underlie such a deficiency. Nevertheless, Gough's account emphasised the role of social cues and perceptions in the development of appropriate (or psychopathic) social conduct.

By the middle of the 20th century, the concept of psychopathy was still very much derived from the traditional case study approach, but was no longer considered to be a mere 'illness'. Furthermore, questions were raised as to whether psychopathy was a manifestation of *deviance* – most notably in

the form of antisocial and criminal behaviour. It is also possible that the clinical focus on harmful behaviour during this period may have been influenced by two world wars and the impact of the Depression era – precarious times where the partial collapse of civil institutions and social organisation may have created opportunities for individuals with psychopathic traits to prosper by means of crime against civil order, and at its most extreme, humanity. Post-war psychodynamic thought reflected an increased emphasis on the darker aspects of human personality, such as Jung's concept of the 'shadow', a *"lower level of personality…one behaves more or less like a primitive* [sic]*, who is not only the passive victim of his affects but also singularly incapable of moral judgment"* (1951/1959, p. 9) and the sadistic traits that can be expressed as authoritarian and destructive responses to a state of 'freedom from' the determinism of instinctual forces (Fromm, 1942, p. 116).

Deficits and Dysfunction: Biopsychological Constructs (1950s–1970s)

Psychiatric thought in Britain during the early 1950s framed psychopathy as an accepted clinical phenomenon in much the same way as depression and psychosis. Henderson commented that psychopathy presented a *"malignant core"* (1952, p. 84) that was identifiable in people across the socioeconomic spectrum, and that the focus for psychiatry was that of understanding and managing the serious behaviours presented by this group since *"neither Medicine nor the Law nor our social organization has been able to make adequate provision for them"* (p. 85).

John Bowlby's (1953) commissioned report to the World Health Organisation on maternal care and mental health suggested that psychopathic behaviour in youth originated in a disrupted, deprived or impoverished home environment due to a likely childhood background of parental death, divorce, or separation that resulted in exposure to chaotic working models (i.e., representational cognitive models that individuals develop of the world and their place in it to assist to perceive events, forecast the future and construct plans), and a disrupted capacity to make and maintain affectional bonds – a core process in attachment. It was a view that pervaded analytical thinking for decades (e.g., Storr, 1968).

In the 1960s, Hans Eysenck's (1977) early use of factor analytic approaches to the study of personality structure proposed that an inherited temperamental predisposition towards extraversion that inclined psychopathic individuals to acquire antisocial behaviours. In other words, antisociality was seen as a *consequence* of psychopathy, rather than as a criterion. He added that persons with high degrees of extraversion (exemplified by a hypoactive nervous system) tended to condition slowly and acquire values and inhibitions of their social group to a minimal degree. In this respect, psychopathy was seen not as a disease, but as a constitutional trait based on conditioning differences that made learning fear to punished behaviour less likely.

Startle-response conditioning experiments with prisoners revealed that psychopathic offenders (defined by Cleckley's criteria) exhibited reduced anxiety conditionability and less avoidance on punished responses. As a result, Lykken (1957) proposed that psychopathy derived from an inherently low fearfulness (or low 'fear quotient') in childhood that predisposes the

individual with insufficient motivation to avoid punishment, whereby the child

becomes difficult to socialise using typical parental disciplinary practices.

Similarly to Gough (1948) and Bowlby (1953), social interaction was seen by

Lykken as a primary source of behavioural feedback and conditioning that

contributed, over time, to the development of conscience. Failure to detect the

saliency of social cues from others was considered to impair this process.

In contrast to Eysenck (1977), Quay (1965) implicated a *hyper*active

nervous system as a causal factor in the development of psychopathy. More

specifically, an over-active nervous system promoted stimulation-seeking

behaviour in children, and because this (often risky and aggressive) behaviour

would be aversive to others, parents who retreated or engaged in

inconsistent, rejecting, and/or hostile detachment would inevitably offer fewer

effective socialising experiences. Quay (1977) later revised his theory, adding

that a sequelae of a hyperactive nervous system involved poor anticipatory

responses to pain. Subsequently, these children were likely subjected to early

excessive punishment and maintained a reduced level of stimulus input.

Hare's *Psychopathy: Theory and research* (1970) presented the first

comprehensive summary of the experimental literature concerning

physiological, cognitive and behavioural differences between psychopathic

(as defined by the Cleckley criteria) and non-psychopathic individuals. In

contrast to the moral, legal, or sociological aspects that had characterized

much of the literature of the times, Hare's summary of the growing body of

applied scientific research suggested that psychopathy was likely the result of

impaired psychophysiological, learning and socialization processes. The

status of psychopathy as a distinct pathological entity has been supported by

numerous experimental studies that have revealed differences between psychopathic individuals and other persons across a range of autonomic, physiological, cortical, and neuronal activity – particularly in response to affective material (Hare, 2003; Hiatt & Newman, 2006; Patrick, 2007; Raine & Yang, 2006). Furthermore, as mentioned earlier, psychopathic individuals have been considered to not readily develop conditioned fear responses (Lykken, 1957), thus making it difficult to learn responses motivated by fear (or its reduction) (Eysenck, 1977; Fowles, 1980). All of which complicates the issue of whether behaviour attributed to psychopathy is indicative of a poor *ability* to learn from experience (e.g., Gough, 1948; Ullmann & Krasner, 1969), or an *inability* to learn certain behaviours necessary for efficient social functioning (e.g., Eysenck 1967; Hare, 1970).

In contrast, psychodynamic perspectives of psychopathy emphasized complex constellations of internal drives – expressed as aggressive, exploitative, sadistic, or predatory behaviour. Individual differences in social cognition were seen as a consequence of these internal dynamics. For instance, Bursten's (1972) 'manipulative personality', where psychopathic individuals were considered to bolster their esteem through contempt of others and needing to *"put something over"* them (p. 319), challenged the prevailing view of the relationship between psychopathy and responsiveness to conditioning (especially to social cues), arguing instead that these individuals are often intelligent and demonstrate adequate abilities to learn from experience – with a particular skill at assessing social situations. It is noted that psychodynamic approaches emphasised negative emotional reactions experienced by those who encounter individuals with marked

psychopathic presentations (e.g., suffering, being duped, subjugation, exploitation) which indicated an apparent skill in accurately attending to others' emotion as a specific feature of some variants of psychopathy (e.g., 'malignant narcissism'; Kernberg, 2004; 'grandiose self-structure'; Meloy, 1988).

In summary, research over this period maintained a deficit focus (despite some challenge from the psychodynamic community), but also revealed a greater recognition of the role of conditionability and the critical impact of early experiences. In this sense, interpersonal differences between psychopathic individuals and others were emphasised as an issue of impaired cognitive and socialisation processes rather than a disorder of motivation.

Deviance and Disorder: Psychopathy and Mental Health (1980s–1990s)

Pathological egocentricity, lack of empathy, and self-defeating behaviour were central to historical conceptualizations of psychopathy in the latter 20th century. Whilst chronic and severe antisociality often accompanied such behaviours, it was neither sufficient or necessary to meet most clinical conditions for psychopathy. However, by the third revision of the *Diagnostic and statistical manual of mental disorders* (*DSM-III*; American Psychiatric Association, 1980), and its later revisions (*DSM-III-R*; American Psychiatric Association, 1987; *DSM-IV*; American Psychiatric Association, 1994; and *DSM-IV-TR*; American Psychiatric Association, 2000), the criteria were broadened to allow for affective involvement and personal distress such as *"complaints of tension, inability to tolerate boredom, depression, and the conviction (often correct) that others are hostile toward them…and dysphoria"*

(1980, p. 318), with chronic and severe antisocial behaviour very much a necessary and sufficient condition for a diagnosis of what was now known as 'Antisocial Personality Disorder' (ASPD). The DSM criteria for ASPD allowed for greater reliability amongst clinicians as it offered the most behavioural indicators for any of the identified personality disorders, but was criticised for representing a construct that was distinct from psychopathy as well as for emphasizing reliability at the expense of validity and failing to adequaltely cover the Cleckley criteria for psychopathy (Widiger, 2006). By this stage, definitions of the disorder emphasized harmful and socially disruptive behaviours rather than interpersonal processes.

According to Blackburn (1998), psychopathy was defined by callous indifference to effects of behaviour on others, lack of affectional bonds, and manipulation or exploitation – factors easily located as combinations of hostility and dominance (Leary, 1957), and proposed that psychopathy is a manifestation of attempts to maintain coercive control of the individual's social environment, and supported by negative expectations of others. In these terms, psychopathic individuals are considered to create conditions of interpersonal conflict in order to maintain their world view. Similarly, Frick, Barry, and Bodin (2000) suggested that a unique temperamental style, identified by low behavioural inhibition, but more significantly, by callous-unemotional traits that served to predispose conduct problems and antisocial acts as a consequence of low fearfulness to novel and threatening situations and poor responsiveness to punishment cues. Social-cognitive processes appeared to provide a key to understanding the relationship between psychopathy and the use of violence.

Disability and Difference: Current Conceptualisations (1990s–2000s)

The 1990s were marked by an increased focus on experimental research. For instance, Damasio (1994) proposed that cost/benefit analyses occur in the body ('soma') that 'marks' an image (i.e., 'marker'). The function of the so-called 'somatic marker' is to direct attention on to anticipated negative outcomes to which a given action may lead (an automated alarm system). This signal promotes the immediate rejection of a negative course of action and thus direct an individual to choose among other (and fewer) alternatives. Cost/benefit analyses are presumed to occur after this first drastic step. He proposed that psychopathy is likely reflective of an individual's deficiency in forming somatic markers, that resulted in an inability to form and utilise affective associations. Schmitt, Brinkley, and Newman (1999) tested this hypothesis with psychopathic offenders ($N = 157$) using a gambling task designed to promote risk aversion via a biased penalty/reward ratio and found that anxiety rather than psychopathy was predictive of response choices. However, Blair, Colledge, and Mitchell (2001) found impairments on decision-making with 'psychopathic' youth on a similar task. In addition, Lösel and Schmucker (2004), again using a gambling task, found no general relationship between performance and psychopathy. Although these studies failed to support the hypothesis that psychopathic individuals have poorly formed somatic markers, they also emphasised the importance of situational variables as a viable research approach with this group.

Newman's (1998) investigations with cognitive tasks indicated that psychopathic individuals are less adept at allocating cognitive resources to secondary tasks while engaged in goal-directed behaviour, implicating an

information-processing deficiency – and consequent self-regulation failures –

as a causal mechanism of maladaptive behaviour. These self-regulation

failures were seen as reflective of a compromised ability to link immediate

action and environmental cues with past experiences. Similarly, Lynam (1998)

suggested that psychopathic individuals exhibited difficulties incorporating

feedback from the environment and the use of this information to modulate

responses while pursuing rewards. The idea of psychopathic individuals

processing information from their environment *differently* raises the question

of what particular processes are impaired or compromised in attending,

encoding and interpreting information with this population. Specifically, what

effect do particular situations have on these processes? For instance, social

interactions – as a form of 'situation' – present a multitude of signals

transmitted via multiple sensory and perceptual channels. These kinds of

situation are of importance because exposure to multiple and complex stimuli

increases the likelihood of *competing* stimuli and, by extension, impose

limitations on cognitive resource allocation. To explore these processes

(especially if different) with psychopathic individuals offers opportunities to

understand the functions of behaviours often deemed 'psychopathic' (e.g.,

maintaining dominance in social encounters to reduce complexity).

Rationale for the Present Study

In summary, the concept of psychopathy has – over time – suffered

from theoretical vagueness. Despite this, the time-honoured tradition of case

studies as a research approach to gain insight into *uniqueness* has informed

clinical diagnosis and offered a rich source of hypotheses about the etiological

pathways and functional mechanisms apparent in psychopathic individuals. Generally accepted definitions of psychopathy, particularly Cleckley (1976) and Hare (2003), have demonstrated utility in clinical and research environments that have reduced the amorphousness of the concept and allowed researchers to make more declarative statements about psychopathy as well as a definitive platform from which to guide research. Alternatively, experimental and correlational approaches have also shown promise in establishing indices of individual *differences* and how critical variables relate to predict outcomes. Taken together, it is suggested here that a common symptomatic theme observed with identified psychopathic individuals is that of impaired social functioning attributable in part to compromised social cognitive processes.

Given the aforementioned observations from the last 200 years, the current study assumes that (1) psychopathy is considered to be an issue of *personality*; (2) personality is most often experienced in *social contexts*; (3) social contexts involve *situations*; (4) situations involve *interactions*; (5) interactions – however simple or complex – provide a host of salient cues subject to *psychological processes* (e.g., encoding of social stimuli); (6) what aspects of social situations are *attended* to; how they are *perceived* and *interpreted* (and under what conditions: internal and external) as well as likely *engagement* strategies (i.e., behaviour) are core psychological processes central to social information-processing and cognition; (7) social information-processing is central to a range of functional cognitive processes that inform personality; arguably then, (8) social information-processing is important in understanding psychopathy.

Emphasis on one specific area of experience risks over-simplifying a complex – and controversial – psychological construct. However, it is of interest that the most reported impairments and features of psychopathy remain in the context of social relationships and are well-known to incur negative impacts on others. As such, a focus on social cognition with this population presents as a viable research area of enquiry. This is important because (1) of the need for greater clarity on the difference (if any) between psychopathic and non-psychopathic individuals, and (2) exploring the kinds of situation that may elicit these differences.

Chapter Two: Introduction

In this chapter, I will (1) briefly outline the major social, moral and clinical issues associated with psychopathic individuals and why this is an important area of research; (2) discuss psychopathy in the context of *personality*, and the accompanying conceptual problems and issues of measurement as it relates to social behaviour, and why personality is both apt as a conceptual domain, but also problematic in understanding the construct of psychopathy; (3) briefly consider the role of social cognitive factors, particularly social information-processing, as an introduction to the experimental focus of this study; and, (4) an examination of facial affect recognition as a form of social information-processing, with a focus on specific experimental research on the abilities (or lack thereof) of psychopathic individuals to engage with this process.

The 'Problems' with Psychopathic Offenders

According to international estimates (Coid, Yang, Ullrich, Roberts, & Hare, 2009; Neumann & Hare, 2008), prevalence rates for individuals identified with marked psychopathic traits (as assessed with the Psychopathy Checklist[10]) is perhaps less than one percent of the general population. However, this figure is problematic as accurate community estimates are considered difficult to ascertain due to the challenges of diagnosis (Porter & Porter, 2007). Furthermore, the prevalence of psychopathy in prisons is

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[10] Although the Psychopathy Checklist (and the later revision) has been used as a major assessment instrument for much of the modern empirical research on psychopathy, the measure is not without problems (This is discussed more fully in section on specific issues of psychopathy measurement, p. 51-52).

reported to be as common as 15% to 25% (Kirkman, 2002). A central concern is that, as a group, psychopathic offenders[11] are *"responsible for a markedly disproportionate amount of the serious crime, violence, and social distress in every society"* (Hare, 1996, p.26). However, despite the growing recognition of an apparent crime-psychopathy relationship (Monahan et al., 2001), it is also recognised that a number of highly psychopathic individuals do not come into contact with the criminal justice system (DeMatteo, Heilbrun, & Marczyk, 2005).

The conspicuous absence of distress and suffering – a necessary criterion for mental illness (American Psychiatric Association, 2000; Kraemer, 2010) – experienced by psychopathic individuals suggests that 'psychopathy' may be the first pathological condition to arise purely from the negative effects it has on *others*. Whilst most literature on this subject concerns the social impact psychopathic individuals have on English-speaking societies, this is not to imply that psychopathy is *confined* to Western communities. For instance, Murphy's (1976) oft-cited description of the *kunlangeta* is an example of psychopathy-like behaviour from a community of Yupik-speaking Inuit peoples, and is a term applied to *"a man who…repeatedly lies and cheats and steals things and…takes sexual advantage of many women— someone who does not pay attention to reprimands and who is always being brought to the elders for punishment"* (p.191). When asked how *kunlangeta* are typically managed, a member of this community replied, *"Somebody would have pushed him off the ice when nobody else was looking"* (p.191).

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[11] Given the vast proportion of the psychopathy literature concerns antisocial, criminal and forensic populations, all references to psychopathic individuals will be drawn from these populations unless otherwise stated.

Cooke and Michie (1999) compared PCL-R scores derived from prisoner and forensic patient samples from the United States ($n = 2,067$) and Scotland ($n = 246$) using Item Response Theory, and concluded that the Scottish prisoners required higher levels of the underlying trait before certain characteristics became apparent, indicating that the expression of psychopathy may vary across ethnic groups. The expansion of this work to encompass non-English-speaking and indigenous populations has been an ongoing agenda (Cooke, personal communication, 2010). Although identified as problematic across some cultures, the varied expressions of psychopathic traits may well reflect cultural differences not only in how the disorder manifests, but also how it is *perceived* (e.g., 'superficial charm' in one culture may be considered normative – and appropriate – in another). Given that culture is, at one level or another, mediated by social cognitive phenomena, the question is raised as to whether psychopathy is merely in the eye of the beholder. In the following sections, I will discuss the salience of psychopathy in the context of social, moral, legal and clinical domains.

The (anti-)social impact of psychopathy.

Porter and Porter (2007) sum up the essential social issues raised by psychopathic offenders, who tend to (1) have long-term criminal careers, (2) begin their criminal careers at a younger age, (3) engage in more versatile and extensive criminal behaviour, (4) violate conditional releases much sooner than non-psychopathic offenders, (5) commit reactive, often explosive, violence (murders committed by psychopathic offenders are largely premeditated with a clear external goal), (6), derive pleasure from inflicting

pain, and (7) probably commit more non-sanctioned violence than anyone else. Consequently, psychopathic offenders get incarcerated more frequently and for longer. For instance, New Zealand-based research using the Psychopathy Checklist-Screening Version (Hart, Cox, & Hare, 1995) revealed that offenders who rated high on this measure reoffended more rapidly and more frequently than comparable offenders who did not (Wilson, 2003), thus incurring greater *human* costs in terms of impact on victims, greater *economic* costs due to the expense incurred following repeat interactions with judicial and correctional systems, and greater *social* costs due to difficulties detecting these individuals – particularly in non-institutional settings – and a seeming inability to reform them (Harris & Rice, 2006; Salekin, 2002; Wong & Hare, 2005). Douglas, Vincent, and Edens (2006) report on a number of meta-analyses indicating clear support for a general relationship between psychopathy and future criminal conduct.

Sanity, responsibility and punishment: The (a)morality of psychopathy.

Arguably, moral issues inform legal decisions, which in turn, inform research agendas. I will briefly comment on the modern philosophical debates concerning the place of psychopathic offenders in the moral community. Many 19th century writers regarded psychopathy in its various formulations as a moral issue and appealed to arguments of rationality and free will (Millon, Simonsen, & Birket-Smith, 1998), until the early 20th century where a pathological focus predominated as psychiatric, psychoanalytic and

psychological thinkers attempted to establish (albeit largely unsuccessfully)

conceptual consistency.

Problems. Vinit Haksar (1965) rejuvenated the moral question of

psychopathy and responsibilty, and argued that 'psychopaths' (defined

broadly as repeat recidivists) were 'insane' because they engaged in self-

defeating behaviour as evidenced by a wanton disregard for their liberty,

happiness, and health. It was further argued that these individuals were

ineligible for punishment because they were not considered to be 'responsible

agents' (i.e., are unable to choose their moral values – only responsible

agents are eligible for punishment). Smith (1984) argued that Haksar's

treatment of psychopathy as a 'case apart' is questionable – as evidenced by

the continuum/taxon debates of the 2000s (e.g., Edens, Marcus, Lilienfeld, &

Poythress, 2006; Guay, Ruscio, Knight, & Hare, 2007; Wright, 2009). Glannon

(1997) added that deep knowledge of 'right' and 'wrong' is more than merely

rational and involved emotional and volitional components as well.

Furthermore, rational egoists were assumed to be adept at planning and

decision-making – whereas psychopathic individuals were not. Because of an

impairment in their capacity for decision-making, they may be responsible for

the commission of their behaviour, but may not be responsible for the

consequences due to deficiencies in foreseeing long-term outcomes. Glannon

argued further that if 'responsibility' is predicated upon a cognitive capacity to

form beliefs about the probable (temporally remote) consequences of their

actions and omissions, then psychopathic individuals may, at best, only be

partially responsible for the consequences of their actions, given an assumed

and inherent short-sightedness as evidenced by the impulsive and self-defeating behaviours characteristic of this group.

Piers Benn (1999) contended that because psychopathic individuals may not be proper targets of 'participant reactive attitudes'[12], and by extension, lack fundamental moral capacities, they thereby lose their entitlement to be treated as having a *full* set of rights. Adshead (1999) extended this argument by questioning whether psychopathic individuals actually rejected moral precepts or if they were simply not in the 'game' (i.e., as members of the moral community) at all. Adding, perhaps disturbingly, whether psychopathic individuals were to be considered as 'non-persons'. Gillett (2010) echoes this sentiment, suggesting that psychopathic individuals *"develop in such a world…where he* [sic] *is radically unwanted and devalued so that he comes to mirror in his actions, that evaluation in relation to the other critters around him"* (p.297). Harold and Eliot (1999) warned that caution should be exercised before depriving someone of rights, arguing that the focus should be on abilities that psychopathic individuals have rather than what they do not have. Lastly, Ciocchetti (2003) asserted that psychopathic individuals *are* members of the moral community, but because they fail to interpret their actions as part of their relationships, punishment would be inappropriate.

Solutions? Blackburn (1988) regarded psychopathy to be an ill-conceived category, adding that the construct as commonly understood in psychiatry was little more than a moral judgement disguised as a clinical

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[12] Derived from Strawson (1962), participant reactive attitudes reflect moral understanding based on natural human reactions to the good, ill, or indifference of others towards us as displayed in *their* attitudes and actions.

diagnosis, and argued that the term should be discarded. Consistent with this view, Gunn (1998) suggested that the terms such as 'psychopath', 'psychopathic', and 'psychopathic (personality) disorder' are confusing and misleading terms that placed psychopathic individuals squarely into a medical framework that served to further marginalise an already marginalised group.

Behavioural geneticist Lykken (1998, 2006), presented the controversial argument that, (1) serious antisociality has some genetic basis; (2) parenting is one of the most complex duties of all (adding that the family unit is the primary context for social learning); and, (3) many antisocial parents not only likely contain genetic material that predisposes a person to more readily adopt behaviour that is likely to involve antisocial consequences, but are also poor parents (ineffectual, unskilled, unsocialised, or even abusive). Therefore, interventions for reducing chronic antisociality need to occur at the parenting level. His proposed solution? State-imposed parental licensure.

In short, moral arguments concerning psychopathy have largely been concerned with the relationships between psychopathic individuals and responsibility. However, these writers have typically treated psychopathic individuals as two-dimensional and a discrete category largely on the basis of an assumed incapacity for moral reasoning, and argue from extreme positions that often promoted false dichotomies. By contrast, clinical observations reveal that psychopathic individuals have a much richer experiential world that is often not noted in the philosophical literature.

Punishing the label? Psychopathy and the law.

Researchers and decision-makers have essentially been concerned with psychopathy as it relates to predicting recidivism and managing future harm (Wright, 2009). International judicial efforts to address the offence-related challenges posed by offenders with psychopathic traits have resulted in (1) prolonged incarcerations and compulsory detention orders (Graham, 1962). For instance, in 1997, the United States Supreme Court upheld the constitutionality of the civil commitment procedures to continue confining sexually violent criminals *after* completing their sentence (Peters, 2010). Beck (2010) argued that such punitive regimes were politically-driven, and suggested that the 2007 amendment to the 1983 Mental Health Act (UK) offered the government an opportunity to appear responsive to the needs of British citizens by protection from risk of violence, but also draws a stronger belief in the supposed relationship between mental illness and violence – A view that was challenged by the MacArthur study in the US (Monahan et al., 2001) – and risk increased stigma associated with mental illness[13]; and, (2) the creation of specialised treatment facilities such as the Dangerous and Severe Personality Disorder units in the United Kingdom (Tyrer et al., 2010); special treatment approaches in Denmark (Hansen, 1998), and the High-Risk Personality Programme in New Zealand[14]. Despite these large-scale and resource-intensive responses to contain or rehabilitate psychopathic offenders, Ogloff and Lyon (1998) warned that while psychology deals with normative data, the law must deal with the individual case. Furthermore, given

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[13] A recent review by Douglas, Guy, and Hart (2009) indicated that the association between mental illness and violence is not clear cut, and is complicated by moderating effects such as the method and severity of violence, as well as the setting where the violence occurs.
[14] See Preface.

that psychopathy is a psychological term and not a legal one, careful consideration must be exercised on whether expert testimony about psychopathy is relevant to the case in the first instance.

The legal debates extended the moral arguments by assuming that psychopathic individuals form a distinct group on account of their dangerousness – a vulnerable population who (by definition) make *others* vulnerable.

Unmotivated and untreatable: Psychopathy in clinical settings.

Psychopathic individuals are unlike people with other clinical concerns, such as Axis I disorders like generalised anxiety, depression, or psychosis. The distinction here is one of stability and chronicity. That is, Axis I disorders tend to be discretely defined and characterised by episodic, acute or stable presentations with later onset, whereas pervasive developmental disorders and personality disorders (of which psychopathy is arguably *both*) tend to be acquired, chronic, and persistent across situations and over much of the person's lifetime. Predictably, psychopathic individuals characteristically present with a range of challenges for clinicians and allied professionals such as (1) difficult interpersonal behaviour (Doren, 1987), (2) poor motivation, (3) tendency to engage in disruptive behaviour, (4) less likely to complete treatment, (5) a tendency to get convicted at a higher and faster rate than non-psychopathic offenders for post-treatment criminality (Hemphill & Hart, 2002), (6) suffer little personal distress[15], (7) lack insight (or concern) with the negative impact of their behaviour on others (Hare, 2003), (8) attempt to

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[15] It has been suggested, perhaps cynically, that psychopathic prisoners are likely to seek treatment for reasons of secondary gain (e.g., as an attempt to avoid prison or when seeking probation or parole) (Wong & Hare, 2005).

deceive and manipulate others – often with no remorse or apparent reason[16],
and (9) overt effort in treatment with few notable gains in their behaviour
(Looman, Abracen, Serin, & Marquis, 2005), or in some instances, a
deteriorating effect on behaviour (Rice, Harris, & Cormier, 1992).
Understandably, the challenging and sometimes self-defeating and
paradoxical nature of the behaviour of psychopathic individuals can occlude
the ability to perceive their vulnerability.

The literature in regard to the use of therapy to change the antisocial
behaviour associated with high-risk psychopathic offenders has revealed a
gloomy outlook with most studies recommending excluding such individuals
from treatment (Coid, 1992; Wong & Hare, 2005). Indeed, most works on the
subject devote only a small section to this issue[17]. The prevailing view has
been that the attitudes and behaviours of psychopathic offenders are
intractable, if not impossible, to modify with traditional forms of treatment,
intervention, and management (Dolan & Coid, 1993; Hare, 1998; Lösel, 1998;
Suedfeld & Landon, 1978). Consequently, many clinicians will not even
attempt to treat offenders with these traits, and an increasing number of
corrections authorities take the position that it is cost-effective to *exclude* high
risk offenders from their standard treatment programs.

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[16] The phenomena of supposedly motiveless deceptions and 'manipulative' behaviour
observed with psychopathic individuals towards their therapists has been recognised and
described in the psychiatric literature as indicative of core psychopathic traits (i.e.,
'untruthfulness and insincerity', Cleckley, 1941/1976; 'pathological lying' and
'conning/manipulative' items from the *PCL-R*; Hare, 2003), a natural consequence of a
'manipulative personality' style (Bursten, 1972) or 'grandiose self structure' (Meloy, 1988), or
the so-called 'duping delight' (Doren, 1987).
[17] For instance, only 14 out of 469 pages of Cleckley's fifth edition of *The Mask of Sanity*
(1976) specifically addresses the issue of treatment, and Wong and Hare's (2005) *Guidelines
for a psychopathy treatment program* – arguably the most recent published work *solely*
dedicated to this issue, reaches a mere 74 pages (or 55 pages – excluding references).

In spite of this pessimistic outlook, Hemphill and Hart (2002) commented that psychopathy treatment research is largely hampered by methodological flaws and inconsistencies such as (1) a lack of adequate control groups, (2) failure to control for heterogeneity within treatment groups, (3) inconsistent concepts and measures of psychopathy, (4) a lack of attention to developmental factors, (5) inadequate definition and implementation of treatment, and (6) severely restricted outcome criteria.

Salekin (2002) further challenged this negative view and argued that there was little scientific basis for pessimism, based on a review of 42 treatment studies that presented apparent positive outcomes for psychopathic individuals in a variety of clinical treatment contexts. However, Harris and Rice (2006) argued that there was little scientific basis for optimism based on their review of the same 42 studies investigated by Salekin, and revealed disagreement over diagnostic criteria, variable understanding of etiology, with poorly identified treatment targets and equally poorly defined standards for treatment 'success'. However, other writers (e.g., Doren, 1987; D'Silva, Duggan, & MacCarthy, 2004; Lösel, 1998; Wong & Hare, 2005) advocated a position of 'cautious optimism'[18] given the lack of resolution regarding the complexities evident in treatment outcome research with this population, leaving the issue of the treatability of psychopathic individuals as an open question.

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[18] One of the challenges of psychotherapy outcome research is accounting for the lack of specificity of the therapeutic process as well as 'non-specifics' (e.g., working alliances, culture) that are often not reported on – or measured. Furthermore, treatment engagement with offender populations involves a set of assumptions that set the stage for progress, and include: (1) acknowledging personal problems and freely participate in treatment, (2) an interest in change, (3) a belief that interventions are helpful, (4) acceptance of a (central?) role in their problems, and (5) an ability to exercise reflection and insight – all of which are *motivational* deficits that are considered to be typical of psychopathic offenders in these settings (Hemphill & Hart, 2002).

The multitude and scope of issues presented by – or associated with –

psychopathic offenders on communities and individuals alone indicates this

topic is an important area of investigation with the aim of furthering

understanding of this population (however defined), and reducing harm in

communities where psychopathy presents as a factor. The impact of

psychopathy across so many domains of existence – social, moral, and legal,

amongst others – is far-reaching. However, given the clinical focus of this

research, the next section will discuss psychopathy in the context of

personality.

Psychopathy as a Personality Disorder

Psychopathy can be considered to be a disorder of *personality*, which

has been identified in the literature as (1) an enduring and inflexible deviant

behaviour pattern over time and across social situations; (2) having an early

onset (e.g., Forth & Mailloux, 2000; Frick, O'Brien, Wootton, & McBurnett,

1994; Lynam, 2002; McCord & McCord, 1964), and (3) a durable, chronic and

relatively stable course (American Psychiatric Association, 2000, p.686) – this

is despite a lack of formal recognition by international diagnostic systems

such as the DSM (American Psychiatric Association, 1952, 1968, 1980, 1987,

1994, 2000) and the *International Classification of Diseases – 10th revision*

(*ICD-10*; World Health Organisation, 1994).

At its most basic, personality represents important aspects of

behaviour in a social milieu (Skinner, 1953), that develops and sustains in a

transactional, systemic relationship with the individual's environment (Millon &

Davis, 1996). In this sense, personality disorder can be considered to be a

'system malfunction', and has been described as a failure to achieve adaptive solutions to life tasks as evidenced by a poor ability to incorporate failures to establish stable and integrated representations of the self and others, as well as poor adaptability in social functioning (Livesley, 2003). Millon and Davis (1996) suggested that personality pathology is indicated by the severity of three principal features of disorder: (1) *tenuous stability* under conditions of subjective stress, where an individual's characteristic behavioural strategies inadvertently amplify adaptive difficulties (i.e., a positive feedback cycle that maintains an existing lack of effective coping skills that leave the individual vulnerable to new difficulties and disruptions); (2) *adaptive inflexibility* where alternative strategies for relating to others, achieving goals, and coping with stress are few in number and rigidly practiced. Opportunities for testing and acquiring new, more adaptive strategies are reduced, consequently life experiences become more narrowly circumscribed; and, (3) a tendency to foster *vicious circles* where individuals restrict opportunities for new learning experiences, misconstrue essentially benign events, and provoke reactions from others that reactivate earlier problems. The rapidity and frequency of the criminal activity of offenders with psychopathic traits further supports the self-defeating nature of psychopathy as a personality disorder.

Personality disorders are controversial, not least because of the heavy diagnostic philosophy inherent in all editions of the DSM and ICD-10, but also due to the highly variable assessment approaches (e.g., self-report, structured decision-making tools, projective assessment, clinical judgement – *"he looked psychopathic"*), and the considerable overlap amongst personality disorder categories (Retzlaff, 1997). Furthermore, substantial variability exists among

personality disorder presentations[19] that cause challenges for (1) conceptual definition and, by extension, (2) measurement of the construct.

Psychopathic subtypes: Recognising heterogeneity.

As part of the larger debate on whether personality disorders are distinct from normal personality, or if they reflect extremes on various dimensions, is the question of whether psychopathy represents something *qualitatively different* (i.e., a taxon) from 'normal' personality, or form part of a *continuum* (i.e., dimension) that shades from normality into severely psychopathic. Put simply, taxons are categorical and contingent upon exhibiting a sufficient number of criteria, whereas dimensional models are presumed to be continuous and predicated upon the *intensity* of traits. Hare (1970) summarises this distinction, commenting that a taxonomic perspective would argue that A is more psychopathic than B if A has all criteria but B has only two thirds, whereas a dimensional perspective would argue that B is more psychopathic than A because, although having fewer traits, are more severe. Such a dichotomy is problematic. For instance, if psychopathy was a taxon (in a 'pure' sense), then one would expect behavioural and/or cognitive differences to present somewhat uniformly across this group. The identification of so-called 'successful psychopaths' (i.e., those who embody the essential characteristics of psychopathy, but refrains from serious antisocial behaviour; Hall & Benning, 2006) and the growing literature of psychopathic *subtypes* suggests this is not the case.

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[19] This phenomenon was most acutely obvious to me during my experience as a therapist for the experimental High-Risk Personality Programme, where all of the participants had met criteria for psychopathy according to the PCL-R, yet all presented very differently. For instance, some individuals displayed a domineering 'larger than life' interpersonal style whereas others appeared as unassuming and avoidant of social attention.

Subtypes and variations are typically established by means of clinical observations (e.g., Karpman, 1941; Kræpelin, 1915) and/or relationships between established measures of psychopathic traits (e.g., PCL-R) with external correlates (e.g., antisocial behaviour), and may include data reduction techniques such as exploratory factor analysis or cluster analysis (Hicks et al., 2004). The concern of the psychopathy typology literature has focused on the variability of how psychopathy manifests whilst recognising core characteristics (Hervé, 2007; Poythress & Skeem, 2006; Skeem, Poythress, Edens, Lilienfeld, & Cale, 2003). Arguably, Kræpelin's (1915) 'personalities' was the first formative attempt to address variability amongst this population. Karpman (1941) suggested two categories ('symptomatic' and 'idiopathic' psychopathy) to distinguish two conditions that have a similar phenotypic presentation to Cleckley's characterization from the same year. Other research has suggested categorical distinctions of psychopathy based on temperament and extreme biological responsiveness to aversion (Lykken, 1995), affective deficits attributed to genetic or acquired origins (Porter, 1996), personality style as a sequelae of differential developmental pathways[20] (Millon & Davis, 1998), degree of proactiveness in provocative situations (Blackburn, 1998), and comorbidity with other personality patterns (e.g., sadistic, narcissistic, and borderline; Murphy & Vess, 2003). Subtypes are useful insofar as they inform behavioural functioning in social interactions and illustrate the range of typical presentations of psychopathy as an alternative to monolithic and amorphous conceptualisations.

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[20] Unlike other typologists that tended to identify their categories in reference to the degree of centrality a given criterion has with core characteristics of psychopathy (i.e., 'primary' and 'secondary'), Millon and Davis (1998) suggested 10 subtypes and adopted a more descriptive – if not judgemental – approach with exemplars such as the 'malevolent psychopath', 'malignant psychopath' and the 'spineless(!) psychopath' amongst others.

Dimensional approaches, as derived from factor analytic methods (Cattell, 1965), render a construct subject to measurement across a range of continua – defined orthogonally – and so are also constrained by categorical limitations. Alternatively, given traits are likely to be weighted differently, with some features considered more central to the construct than others, psychopathy may be better explained by other approaches. For instance, (1) 'prototypal' models, which are essentially categorical, treat behavioural data in approximation to an 'ideal' exemplar, or prototype (Morey, 1997), such as Cleckley's (1976) descriptors and Hare's (2003) PCL-R; (2) 'circumplex' models that are multi-axial and predicated upon inter-relationships between traits to reducible forms (i.e., like primary colours; Plutchik, 1996). Blackburn's (1988) interpersonal model of psychopathy is an example of a circumplex approach; or (3) 'systems' models, characterised by structural-functional interdependence of essential variables (i.e., what exists in one domain of the system constrains what can comfortably coexist elsewhere) (Millon & Davis, 1996). This distinction is important with regard to (1) clarity of definition, (2) validity of the construct, but also (3) recognising the complexity of the construct, and (4) whether psychopathy can be construed as a dynamic system or merely as a common clustering of symptoms.

Although modern research has largely supported the status of psychopathy as a somewhat distinct pathological entity, these empirical differences do not necessarily equate to the existence of a homogenous and uniform construct.

Measuring psychopathy: Challenges of personality assessment.

Despite reasonable agreement amongst researchers as to what psychopathy is, the issue of conceptual consensus remains. Validity is compromised if a construct is not clearly-defined. However, approaches to reducing conceptual cloudiness have been developed to make measurable sense out of psychopathy, and will be explored in this section. Measures of personality are invariably trait-based despite issues raised as to the suitability of traits as adequate constructs. Broadly speaking, 'traits', as building blocks of personality, tell us something about (1) patterns of behaviour in (2) types of situation that (3) presuppose something characteristic about a person (Cattell, 1965). A trait represents a disposition to behave expressing itself in consistent patterns of functioning across a range of situations, and is inferred from behaviours which, in turn, are the basis of inferences to other behaviours. Furthermore, traits are considered to be stable over time. However, debate exists as to whether these 'durable' traits really represent core features of personality or whether current assessments are neglecting important aspects (i.e., non-trait aspects of personality functioning as well as environment) that maintain consistency and resist change. Traits are descriptive and require explanations rather than offer explanations. Subsequently, traits may be inadequate to define *function* (Pervin, 1994). Current measures of psychopathy, like other measures of personality, define the construct by presumed core traits (e.g., PCL-R, PPI-R). A major benefit of trait approaches is an ability tease out *structural* properties. For instance, Neumann, Hare, and Newman (2007) offered evidence to support a super-ordinate construct to psychopathy based on the relationship between the factors of the PCL-R.

However, structural solutions do not easily inform of *function* or explanation. In the absence of context, trait models can only tell us about the degree to which an individual behaves over time but not how, why, or for what purpose (Harlow, 1994).

A second critical factor in personality measurement is the role and impact of *situations*. Situations are considered to be an important determinant of behaviour in particular, and also how personality in general is expressed (Mischel, 1968; 1973). Consideration of situations and their properties creates opportunities to make inferences based on conditional statements (e.g., 'if…, then…') about an individual's behaviour – a particular issue when exploring characteristic psychopathy traits such as manipulativeness and 'superficial charm' that, arguably, are only definable in situational contexts. A primary challenge with situations is disentangling them from personality (Wagerman & Funder, 2009; Asendorpf, 2009), not least because 'real world' situations are subject to a variety of psychological processes such as the non-random selection of social environment, responses evoked by interaction in the situation, and manipulating aspects of the situation to yield an outcome (Buss, 1987). Contrived and abstract situations presumably remove much of the 'noise' that is present in naturalistic situations by deliberately controlling for extraneous variables and create opportunities for a narrower range of a person's expectancies from the environment – the basis of experimental research (Robson, 2002). Given that existing research suggests variation amongst the psychopathic population, Skeem et al. (2003) argued that identifying dimensions that may maximally distinguish among these variants is the next logical step in capturing any hypothesised differences. Situational

factors, specifically in interpersonal and social contexts, play a central role in establishing personality traits of interest. The study of situations offers opportunities to observe behaviour in the ecological context where it would typically express. Disadvantages of researching behaviour in naturalistic situations involves consideration of a vast and complex array of stimuli and salient variables that threaten to confound the effects of any manipulated variables. Furthermore, defining the situation in terms of relevant variables (not to mention the 'start' and 'end' of the situation) is often difficult to specify under open conditions. An alternative strategy is to deploy laboratory-based paradigms. Despite being artificial and contrived, controlled experimental procedures reduce the amount of 'noise' in the data array, and allow for ease of manipulation of selected variables and greater clarity in observations of outcomes. Performance tasks are a common feature of experimental approaches to behaviour, especially those designed to elicit a specific response from participants (e.g., startle, autonomic arousal). Interference tasks are a specific category of tasks that elicit stressful responses from participants due to the conflict between competing cognitive processes and behaviours with a resulting decrement in performance (e.g., dichotic listening task). In this regard, the Stroop task (Stroop, 1935) has been seen as a 'benchmark' measure of attention (MacLeod, 1992), and is notable for the 'Stroop effect' where division of cognitive resources (e.g., 'naming' colours and 'reading' words) results in increased response time. Although a major cognitive experimental approach, psychological stress has been associated with the Stroop task (Taylor, Kornblum, & Koeppe, 1996), and has been shown to increase heart rate, respiration rate, electrodermal activity, and

feelings of anxiety (Boutcher & Boutcher, 2006; Renaud & Blondin, 1997; Tulen, Moleman, van Steenis, & Boomsma, 1989). Furthermore, the stressful effects of the task have been shown to magnify when research participants have been subject to time pressure – an acknowledged stressor on its own (Sharma & McKenna, 2001).

Stroop experiments with psychopathic individuals revealed normal performance on the standard task, but greater interference effects when the words and colours were spatially separated (Hiatt, Schmitt, & Newman, 2004), suggesting that psychopathic individuals' failure to accommodate contextual information may reflect limited capacity for cognitive resource allocation (an attentional deficit, or 'bottlenecking', Eysenck & Keane, 2000) that is most likely to be apparent in goal-directed behaviour (Hiatt, Schmitt, & Newman, 2004).

Specific issues of psychopathy measurement.

Whether one considers psychopathy as constituting a taxon or continuum, meaningful research is compromised in the absence of objective and (reasonably) validated diagnostic measures (Lykken, 1995). Modern assessment approaches for psychopathy have reflected typical techniques for broader personality assessment, such as projective testing, self-report inventories, and trait-based checklists and rating scales (Anastasi, 1988). Indeed, the legal fate of many individuals with psychopathic traits rests with (imperfect) assessments to reliably distinguish between psychopathic and non-psychopathic individuals (Ciocchetti, 2003). Whilst it is recognised that no single test does everything, and no single interpretation applies to all tests

(Cronbach, 1970, p.489), some representative approaches to psychopathy assessment, advantages and limitations, will be briefly discussed here:

Clinical judgement. A perusal of the historical literature up to the 1950s revealed that most assessments of psychopathy (or whatever label was in vogue) were based on clinical descriptions (e.g., Partridge, 1930), or inferred from criminal histories (e.g., Cason & Pescor, 1946). Karpman (1946) suggested that a 'yardstick' for measuring psychopathy was identifiable by the type of motivation (i.e., superficial and related to discoverable conditions, or not – the latter being indicative of 'idiopathic psychopaths'). Unfortunately, these approaches (1) lacked consistency across studies, adding to the conceptual confusion that dogged the concept over this time, (2) were not explicitly subject to inter-rater judgments and presented convenient, albeit unreliable, conceptualisations, and (3) were problematic in terms of eliciting generalities.

Behavioural observation. In reaction to a dearth of objective data on what was becoming an otherwise psychoanalytically-defined issue, Gosline (1918) offered what may have been the first attempt to objectively measure psychopathy via basic operant data-gathering strategies in an attempt to separate observable behavioural data from emotive interpretations of that behaviour that may *"cloud the vision of the observer"* (p. 69) due to prejudicial or transference reactions on the part of (medical) staff. Although useful in terms of separating behaviours from motivations, early behavioural

approaches alone offered little by way of insight into explanatory variables that contribute to apparently self-defeating behaviour.

   Projective tests. Hare's (1970) review of projective testing included findings from a doctoral thesis from the 1950s where the Rorschach was administered to psychopathic and non-psychopathic inmates in a military disciplinary barracks. Psychopathic inmates were reported to indicate impulsiveness, immaturity, hostility, aggressiveness, shallowness and egocentricity on this measure 'significantly more' than the comparison group. Advocates of projective testing measures such as the Rorschach argue that these approaches are better suited for the assessment of psychopathy because it is less prone to impression management (particularly malingering) than face valid measures, and inter-rater reliability has been found in studies where the measure was used to discriminate psychopathic from non-psychopathic subjects (Meloy & Gacono, 2000). However, a meta-analysis of 22 studies examining Rorschach assessments against the PCL (or variant) with nearly 800 forensic patients contradicted this view (Wood et al., 2010). Despite popular use since the 1920s, issues as to its temporal stability (e.g., over a 3-month interval) have been questionable. Meyer and Viglione (2008) argued that the complexity of an individual's protocol has been proposed to have an impact on responses across occasions. Gacono, Loving, and Bodholdt (2001) commented that contrary research is likely to reflect poor understandings of methodological issues related to assessment as well as psychopathy and the Rorschach itself, adding that readers of this literature are vulnerable to *"Rorschach 'bashing'"* (p. 33).

Self-report personality measures. The Psychopathic-deviate (*Pd*)

scale of the Minnesota Multiphasic Personality Inventory and the Socialisation

(*So*) scale of the California Personality Inventory were used to identify

psychopathic individuals in research for a number of decades (Hare, 1985;

2007). However, these measures, although widely used, were considered to

be of limited clinical and research value due to suboptimal content validity

(i.e., inadequate coverage of the Cleckley criteria; Lilienfeld & Fowler, 2006).

Construct-specific rating checklists. Initially developed as a

research measure for the assessment of psychopathy in criminal populations

(Hare, 1980), the Psychopathy Checklist[21] (PCL) has become established as

a well-validated behaviour checklist with an impressive empirical history, and

extensive use in forensic and psychiatric settings. The PCL-R (and the related

'screening version', the PCL-SV) has demonstrated respectable predictive

validity with respect to risk of dangerousness amongst offender populations

(Monahan et al., 2001; Wilson, 2003). However, the 20 items of the PCL-R

are not necessarily reflective of 'traits'. For instance, the emphasis on

criminality reflected in items such as 'Juvenile Delinquency', 'Revocation of

Conditional Release', and 'Criminal Versatility' limited the ability of this

measure to capture individuals with psychopathic traits who *do not* offend.

Furthermore, to satisfy rating criteria, the data would normally derive from

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[21] Later to become the Psychopathy Checklist-Revised (PCL-R) in 1991 (Hare, 2003). Despite
the conceptual cloudiness that has long characterised psychopathy research, as well as
changes to analogous constructs such as Antisocial Personality Disorder (American
Psychiatric Association, 1980, 1987, 1994; Millon & Davis, 1996), the PCL has only been
subject to one revision, and coupled with voluminous empirical support, indicates that it has
been successful in identifying a subgroup of high-risk offenders.

behavioural exemplars from over the person's lifetime[22], so it is not

considered suitable as a measure of behaviour change. In addition, the

negative valence of almost all items assume a 'fault-finding' approach that,

arguably, does not cue raters to seek contrary 'positive' exemplars of the

items. Lastly, given the lack of guidance about establishing functional

relationships amongst the items, the PCL-R presents conceptual challenges

in developing an individualised profile or treatment plan.

Multimodal dynamic approaches. The Comprehensive Assessment

of Psychopathic Personality – Institutional Rating Scale (CAPP-IRS; Cooke,

Hart, Logan, & Michie, 2004) is a multi-method measure designed to rate an

individuals behaviour across a range of domains (attachment, behaviour,

cognition, dominance, emotion, and self) in institutional settings, as well as to

detect behaviour *change* over relatively short periods, so is amenable to

treatment settings, and the item pool allows for the recording of a wide range

of observable behaviours and finer-tuned measurement. Furthermore, the

resultant profile highlights discrete targets for change. In addition, the CAPP

employs less judgmental item labels and descriptors than other measures of

psychopathy. However, the size of the measure does not allow for economy

of assessment time and, although empirically-informed, is yet to be validated.

Construct-specific self-report. Self-report of psychopathy has been

controversial (even paradoxical) given a core characteristic is dishonesty.

Lilienfeld and Fowler (2006) outline the benefits of this approach for

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[22] In this respect, the PCL-R assumes properties of static measures (i.e., historic and/or unchangeable data).

psychopathic subjects as including (1) utility in the assessment of subjective emotional states and traits. With regard to psychopathy, the relative *absence* of such states and traits (e.g., guilt, empathy, fear, and feelings of intimacy) is probably most diagnostically relevant; (2) brief and easy to complete as well as requiring minimal training on the part of administrators; (3) compared with interviews, self-report measure response styles can be assessed systematically; and, (4) lack of reliance on inter-rater reliability because self-report measures do not require 'judgement calls' by interviewers or other observers. However, disadvantages of this approach include (1) dishonesty as characteristic amongst the psychopathic population – and not always in a functionally obvious way; (2) poor insight into the nature and extent of their psychological problems or behaviour; and, (3) the challenges inherent in asking individuals who have never experienced an emotion (or only a weak variant) to report on its absence[23]. The Psychopathic Personality Inventory-Revised (PPI-R; Lilienfeld & Widows, 2005) is a brief self-report personality inventory designed to pick up on specific psychopathic traits. The PPI-R subscales are descriptive and relate to functionality rather than a monolithic prototypal construct where traits are simply 'present' or not (as per the PCL-R). Unlike other measures, the PPI-R is able to be used with non-offending populations, and is thus far more versatile than other measures of psychopathy. The PPI-R has also shown moderate construct validity and correlates with other self-report measures of psychopathy (e.g., the Self-Report Psychopathy scale and the Levenson Primary and Secondary Psychopathy Scales), and has validity scales that are designed to account for

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[23] For instance, 'semantic aphasia' (Cleckley, 1976) was marked by an individual's poor ability to label affective experiences.

erratic or biased responding (e.g., impression management and dishonesty) considered typical of this population. In this sense, psychopathy may be best regarded as a *compound* trait (i.e., emergent composites of separable, often unrelated, lower-order traits) rather than as a *multifaceted* trait (i.e., consisting of narrower facets that covary because of the causal influence of the higher-order trait) (Lilienfeld & Fowler, 2006).

In sum, the last century has seen the development of a broad range of clinical approaches to assess for (1) the presence of psychopathic traits (e.g., clinical judgement, PCL-R), (2) the severity of traits (e.g., CAPP), and (3) the functionality of traits (e.g., behavioural observation, PPI-R). However, the variety of measures also reflects the diversity of interpretations of 'psychopathy'. Furthermore, core traits, such as deceitfulness, create particular challenges for the construction, administration, and interpretation of these measures.

The historical and empirical literature supports the notion of 'psychopathy' as a distinct conceptual entity. However, differences appear nebulous and with ill-defined boundaries. Various assessment and diagnostic approaches have offered some promise in systematically identifying psychopathic features in forensic settings, but are also hampered by the complexities inherent in the construct itself (e.g., deceitfulness, self-defeating behaviour).

Social Cognition: Implications for Psychopathy

So far, I have argued that psychopathy exists as a psychological construct that is supported by (1) reasonably – albeit not universally –

consistent clinical observations from the last 200 years; (2) psychometric

evidence of measurable consistencies across this group; and, (3)

experimental findings that have illuminated differences between individuals

considered to be psychopathic and non-psychopathic. I have further argued

that the construct of psychopathy is best located as a disorder of personality,

because (1) presentations of psychopathic traits are consistent with

recognised criteria (DSM, ICD) for personality disorders and, (2) common

sequelae of psychopathy include antisocial behaviour and (for many)

imprisonment – which presents impediments in occupational and social

functioning. I have also suggested that the severity of psychopathic traits is

likely to be impacted by differences in social cognition. In this section, I will

discuss the implications of social cognitive processes as a domain of special

interest in understanding psychopathy.

Gough's (1948) theory of role-playing deficits and Bursten's (1972)

description of manipulative behaviours as inimical in some personality

patterns presaged later writings about the possible relationship between

information-processing differences and the destructive and self-defeating

behaviours of psychopathic individuals. Recent discussion has emphasised

the roles of social cognition in general, and the social information-processing

model in particular, as offering some promise in understanding critical

differences between psychopathic and non-psychopathic individuals (Serin &

Brown, 2005; Wong & Hare, 2005).

Broadly speaking, social cognition refers to cognitive processes and

structures that influenced and are influenced by social behaviour (Vaughn &

Hogg, 2002), or the manner in which we interpret, analyse and remember

information about the social world. This includes knowledge structures, interpersonal processes of knowledge creation and dissemination (i.e., encoding, storage, retrieval, and activation of social information), and the actual content of this knowledge. Primary assumptions of social cognition include (1) an emphasised importance on relationships with other people, (2) how social information is received and interpreted according to social context and experience; and (3) 'cognitive miserliness', or the existence of heuristics and strategies that form to compensate for an individual's limited ability to manage complex information. For instance, compromising accuracy for speed allows for quick decision-making (e.g., somatic markers), but is also a source of error. In short, social cognition concerns cognitive *structures* (e.g., schema, prototypes, exemplars, etc.) and *processes* (attention, accessibility of cognitive structures, memory, information-processing, etc.) (Howard & Renfrow, 2006).

The social information-processing model (Crick & Dodge, 1994) is a well-known social cognitive model that involves a number of discrete stages that occur cyclically, and incorporates (1) encoding of cues (internal and external); (2) interpretation of those cues (attributional biases, other-intentions, and an inventory of self-evaluations); (3) clarification of goals (as well as arousal regulation); (4) accessing or constructing a behavioural response; (5) a response decision (i.e., incorporating outcome expectancies and response selection); and, (6) the behavioural response itself – all of which are shaped by the evaluations and responses of peers. Revisions of Crick and Dodge's (1994) model included greater emphasis on affect with regard to relationships with peers as well as an heuristic (i.e., somatic markers;

Damasio, 1994) to guide response selection (Lemerise & Arsenio, 2000; Orobio de Castro, 2004). One strength of the social information-processing model is the emphasised interaction of personality variables (e.g., schema, outcome expectancies) and situational factors.

Social information-processing differences have been studied most rigorously in the context of child and adolescent aggression. Dodge and Frame (1982) implicated biased attributions as a direct antecedent to aggressive responses in three studies with pre-school and primary-school-aged boys. Furthermore, selective recall of hostile cues partially accounted for differences between aggressive and non-aggressive boys. Lastly, naturalistic observations of many of the identified 'aggressive boys' revealed that they were often the *targets* of peer aggression (albeit at a lower rate than their own violent behaviour towards others) suggesting that attributional biases may have a basis in experience. Vignette-based studies with primary school-aged children indicate that reactively aggressive children are more likely to act violently in response to ambiguous-provocation situations than non-aggressive boys (Crick & Dodge, 1996).

The recognition of the interplay of internal processes and external factors as mediating and guiding behaviour is a strength of Crick and Dodge's (1994) model for understanding psychopathy in relation to violence. I will summarise the primary stages as follows: (1) *encoding and interpretation:* aggressive children tend to encode a relatively small number of cues, are less likely to seek further information in ambiguous situations, and tend to selectively attend to hostile or provocative cues in their social environment (Dodge & Schwartz, 1997). These social cues are considered to inform an

individual as to the appropriateness of their behaviour and to modulate their response to social encounters in the event that situational demands change. Cognitive research has revealed that psychopathic individuals have a deficiency in attending to social cues that likely impacts on their ability to exercise self-regulation and monitoring (Newman, 1997; 1998); (2) *goal clarification and response access/construction:* Typically an individual considers a range of behavioural options open to them. Aggressive children have shown fewer generated response options possibly due to over-learnt aggressive behaviours. Similarly psychopathic offenders may likely resort to violence more rapidly in order to achieve goals due to aggression being dominant in their response set; and, (3) the *response decision* stage involves heavy reliance on an individual's ability to weigh costs and benefits of differing options (as determined by prior stages) as well as self-efficacy. The ability to effectively engage with this stage can be compromised for psychopathic individuals by high levels of arousal – whereby attendance to and utilisation of contextual cues are diminished (Wallace, Schmitt, Vitale, & Newman, 2000).

My study is concerned with initial stages of social information-processing, namely encoding and interpretation of social cues, because (1) it provides an opportunity to examine possible social cognitive processes at an early stage of the process, and (2) social cognitive variables, in this case situational determinants, are likely to be most easily manipulated and observed at this level.

About face: The role of emotion expressions in social cognition.

Faces provide a wealth of information that influence the course of social interactions. In addition to recognising the identities of others (O'Toole, 2005), the affective valence of another's facial expression can signal very specific social outcomes for the observer; For instance, a smiling face may indicate the prospect of a romantic encounter, whereas a threatening expression may signal hostility. Other people's intentions and emotional states must be rapidly and efficiently discerned to anticipate beneficial or dangerous situations – in this sense, an attentional bias for detecting facial expressions would be of considerable adaptive value. A preference for more effective allocation of attention to threatening (than non-threatening) stimuli has been demonstrated repeatedly (Frischen, Eastwood, & Smilek, 2008).

The formative statement of the modern study of emotional expressions of the face and its role in psychology can be traced to Charles Darwin's landmark work, *The expression of emotions in man and animals* (1872/2009), where he drew upon a widely disseminated questionnaire (international), perused hundreds of photographs of actors, babies and psychiatric patients, as well as his own observations. He noted that facial expressions appeared to be universal across peoples – and even species – commenting that emotional expressions were essentially stereotyped responses to matched internal cognitive-affective phenomena. Darwin's work framed the ensuing research agenda (and debates) such as determining the functionality of emotions (including communicability), the development of emotions, and whether emotional expressions are learned (culture-specific) or innate (universal).

Innovations in 20th century research (Ekman, Sorenson, & Friesen, 1969; Ekman & Friesen, 1975; Izard, 1971) drew upon observations from 'preliterate' (i.e., a community group that was assumed to be 'isolated' from the influence of contemporary urban societies) and 'literate' cultures to assert that (1) emotions are shown primarily in the face, not in the body (the body was considered to reveal how people *cope* with emotion). Furthermore, there were no recognised fixed action patterns or specific stereotyped body movement patterns that always signalled anger or fear, but there was increased identification of facial patterns specific to each emotion; (2) interpretations of emotion from facial expressions appeared to be pan-cultural – that is, unanimous judgements of emotions from facial cues have been made from various peoples across the globe – thus challenging a long-held notion that emotional expressions were socially learned and culturally variable; and, (3) the face was recognised to be a multisignal, multimessage system that provided more than one kind of signal (i.e., 'static' signals – more or less permanent aspects of the face such as skin colour; slow changes in facial appearance which occur gradually in time (e.g., wrinkles), and rapid movements in the facial muscles like winking or raising the eyebrows) to convey more than one kind of message (emotion, mood, attitudes, character, intelligence, attractiveness, age, sex, etc.). In short, the face offers a rich source of social data. It follows that facial emotion expressions play a significant role in the development of social cognitive processes, and arguably, behaviour.

Facial Affect Recognition: A Specific Form of Social Cognition

Facial affect recognition is recognising facial change in response to a person's internal emotions, intentions, or social communication, and is but one of several modes of nonverbal communication. The basic cognitive aspects of facial expression recognition typically consists of (1) face acquisition, (2) facial data extraction and representation, such as by features (bottom-up) and by appearance (top-down), and (3) facial affect recognition by frame (static) and sequence (dynamic) (Tian, Kanade, & Cohn, 2005). One of the primary functions of recognising expressions in others' faces is that of social communication, because the face offers critical cues for guiding social behavior in socialization and normal social interaction (Corden, Critchley, Skuse, & Dolan, 2006; Fridlund, 1991). Indeed, aggression and other maladaptive behaviors may result from failure to be appropriately guided by others' social cues. Blair (2003) suggested that distress-related cues, particularly fearful expressions, play an important role in inhibiting antisocial behavior. Consequently, a number of studies have found impairments and/or differences in processing distress-related cues among antisocial populations (Marsh & Blair, 2008).

Children without form vision exhibit spontaneous emotional expressions similar to those who are with sight but give less sophisticated voluntary expressions (Charlesworth & Kreutzer, 1973). Given they lack the opportunity to imitate expressive behaviour in others through visual channels suggests that emotional expressions are innate, and also that the role of human faces in social cognition is likely to be, in part, inherited (Charlesworth & Kreutzer, 1973; Izard, 1971). Furthermore, infantile detection of facial

expressions implies that faces are (1) a primary source of social stimulation, and (2) recognition of expressions via facial signals forms part of a critical social transaction whereby social signals reliably elicit social responses.

What emotions does the face show?

In an attempt to develop a 'vocabulary' of facial emotion expression, six emotions – happiness, sadness, surprise, fear, anger, and disgust – were commonly found across researchers (Ekman & Friesen, 1975; Russell, 1994). However, alternative lists have been proposed based on differing theoretical orientations. For example, Izard (1977) proposed that fundamental emotions were definable by their unique motivational properties that were seen as having crucial importance to broader evolutionary goals by mobilizing energy for physical or cognitive activity, and included: interest-excitement, joy, surprise, distress-anguish, anger, disgust, contempt, fear, shame, and guilt. Lazarus (1991) suggested that emotions were goal-relevant and included goal-congruent (positive) emotions: happiness-joy, pride, love-affection, and relief; and, goal-incongruent (negative) emotions: anger, fright-anxiety, guilt-shame, sadness, envy-jealousy, and disgust.

Not all emotions are expressed equally with regard to duration and intensity. Some basic interpretations are presented here (from Ekman & Friesen, 1975) to illustrate features of interest with six basic emotions: (1) *Surprise*: Considered to be the briefest emotion with a sudden onset and desistence. Surprise is typically triggered by *un*expected (i.e., unusual and unanticipated) and *mis*expected (aroused specific anticipation for something different to occur) events. Once the event has been evaluated, surprise

moves into another emotion (e.g., happiness or – more commonly – fear due to unexpected events often being perceived as dangerous). Fear and surprise can be confused because of similarities in their facial expressions; (2) *Fear*: Given that survival depends on an individual's ability to learn to avoid or escape from situations that cause severe pain and the likelihood of physical injury in anticipation of danger. Fear and surprise can appear similar; however, fear differs from surprise in that fear is invariably unpleasant, can occur independently of surprise (i.e., anticipated and foreseeable), and can occur gradually and can last much longer. Fear varies in intensity; (3) *Disgust*: Aversion is a common feature of disgust and usually involves an avoidance response. Disgust can vary in intensity and can be used to mask anger, particularly when there are social prohibitions about expressing anger; (4) *Anger*: Arguably, the most 'dangerous' emotion because of the role it plays in escalations of interpersonal violence (Potegal, 2010). When angry, an individual is most likely to hurt others purposefully. Part of the experience of anger is the risk of losing control; (5) *Happiness*: Happiness is the emotion that is universally positive, can co-occur with both pleasure and excitement, and independent of either. Happiness varies in type and intensity; and, (6) *Sadness*: Sadness expresses suffering in subdued form and is rarely brief. Distinct from *distress* in that the suffering involved with distress is overt and audible.

Research methodology and challenges.

Studying emotions in the face typically involves displaying images of facial expressions to observers, who are asked to identify what emotion they

see in each face. The observers may be given a pre-determined list of

emotion words to choose from (i.e., forced choice), or left to their own

resources to reply with whatever emotion word comes to mind (Ekman &

Friesen, 1975; Russell, 1994). Facial affect recognition research in 'real world'

settings is problematic (compared with 'posed' images) due to (1) head

motion, (2) absence of neutral faces for comparison, and (3) low intensity

expressions which complicate analyses. Furthermore, non-verbal cues (e.g.,

body, hands), or a social context are not available, and static images lack

temporal information of sequences to recognize the expressions as they occur

in real life[24] (Tian et al., 2005).

A core assumption is that emotion-specified expressions have

corresponding prototypic facial expressions. In everyday life, however, such

prototypic expressions occur relatively infrequently. Instead, emotion is

communicated by subtle changes in one or more discrete facial features and

context.

Masks and sanity: Facial affect studies with psychiatric

populations.

Differences have been found in individuals diagnosed with

schizophrenia and bipolar disorder. For instance, patients with aberrant

behaviour following orbitofrontal cortex lesions have been reported to have

displayed impairments in emotion recognition (Hornak, Rolls, & Wade, 1996).

Getz, Shear, and Strakowski (2003) compared 'manic bipolar' individuals and

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[24] Posed expressions tend to have questionable 'face' validity (no pun intended). For instance, 'deliberate' and 'spontaneous' facial behaviors are mediated by separate motor pathways, therefore fine-motor control of deliberate facial actions is often inferior and less symmetrical than what occurs spontaneously – the basis of lie detection research (Tian et al., 2005).

controls on a face recognition task (with differing durations). Although little difference was found between the two groups overall, the bipolar group performed significantly more poorly on reaction times, suggesting that this group are able to recognise faces, but have difficulty processing facial affective cues. Kornerich et al. (2003) noted that individuals with opiate-dependence also exhibit impairments in facial emotion recognition suggesting neuropsychological dysfunction. Furthermore, impairments in facial affect recognition were observed in participants with traumatic brain injuries (TBI) compared with a control group (i.e., non-TBI) when asked to match and label facial expressions with and without context. However, improvements with this group were noted when context was added (Croker & McDonald, 2005).

Taken together, inaccuracies in recognising other peoples emotional expressions may be considered symptomatic of some forms of mental illness. However, and more critically, given the central role of affect with many forms of mental illness (especially mood disorders), the prioritising of cognitive resources when experiencing affectively demanding states – or situations – likely reflects a compromise of social cognitive abilities such as attending to social cues. For instance, empathy is a primary example of applied social cognition (i.e., recognition of distress in others and offering a helpful response).

In the next section, I will look at specific studies that investigate psychopathy and the recognition of facial emotions.

Facing fears: Facial affect recognition and psychopathy.

As has been discussed, accurately processing the emotional expressions of others is crucial for socialisation and normal social development. Individuals with disorders marked by antisocial behaviour (i.e., psychopathy) frequently show deficits in recognising displays of emotion expression, particularly facial affect (Marsh & Blair, 2008). Since 2000, a number of studies have explored the ability (or deficiency) of psychopathic individuals to recognise others' facial expressions. One of the basic postulates of this research is that differences in identifying others' emotional state is indicative of core characteristics of psychopathy, particularly lack of empathy, and that these specific differences with non-psychopathic individuals are non-random. Marsh and Blair's (2008) meta-analysis of facial affect recognition deficits amongst antisocial populations in general, and psychopathic groups in particular, revealed an apparent deficit in fear recognition. However, the consistency of this finding is challenged by studies finding no such impairments (Wilson, Juodis, & Porter, 2011). A comparison of participant features and selection criteria across these studies can be found in Table 2, and procedural features can be seen in Table 3. A brief review of this small body of research follows:

Blair and Cipolotti (2000). This study reported on a neurology patient who developed heightened levels of aggression and an apparent disregard for others following brain trauma to the right frontal region - a condition referred to as 'acquired sociopathy' by the authors. The participant completed a series of experimental tasks designed to test a range of cognitive dysfunctions, such as

reverse learning, emotional responding, social cognition, and expression recognition. They were compared with 10 prisoners from Wormwood Scrubs Prison, five of whom were identified as psychopathic on the PCL-R, the remainder serving as a control group. Although the two *groups* were not directly compared, the results indicated that the psychopathic offenders performed significantly poorer on recognising fear. However, whilst offering experimental insights into potential social cognitive differences, this study was hampered by a small sample size.

Blair and Coles (2000). Fifty-five children drawn from mainstream education[25] and included boys ($n = 31$) and girls ($n = 24$) aged between 11 and 14 years ($M = 12.4$, $SD = 1.0$). Psychopathy was measured using the *Psychopathy Screening Device* (*PSD,* Frick & Hare, 1996). The facial affect stimuli involved 'morphed'[26] versions of Ekman and Friesen's (1976) Pictures of Facial Affect set. Blair and Coles (2000) found that children with elevated psychopathic traits tended to make more errors on recognising fear and sad expressions. Although this study included a greater sample size than Blair and Cipolotti (2000) as well as consideration of gender, the identification of children as psychopathic is controversial and involves (1) the stigma of the diagnosis, (2) proneness to over-representation, (3) overlap of psychopathic behaviours with those of developmental norms (as well as temporal stability; Salekin & Lynam, 2010), and (4) overlap with other constructs (e.g., conduct disorder, oppositional defiant disorder, and attention deficit hyperactivity disorder).

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[25] By United Kingdom standards, c.2000.
[26] This procedure involves blending two prototype expressions of increasing intensity to create ambiguity and assess for more subtle facial features of expressed emotion.

Table 2

Comparison of Sample and Psychopathy Selection Features Across Facial Affect Recognition Studies

Source	Sample		Selection basis (psychopathy)	
	Demographic	N (n = psychopathic)	Measure	Criterion
Blair & Cipolotti (2000)	Adults	10 (5)	PCL-R	30+
Blair & Coles (2000)	Children	55 (11)	PSD	13+
Blair et al. (2001)	Children	51 (20)	PSD	>28
Stevens et al. (2001)	Children	18 (9)	PSD	>25
Kosson et al. (2002)	Adults	67 (34)	PCL-R	30+
Blair et al. (2004)	Adults	38 (19)	PCL-R	30+
Montagne et al. (2005)	Adults	32 (16)	BIS/BAS	>90th percentile
Dolan & Fullam (2006)	Adults	98 (49)	PCL-SV	17+
Deeley et al. (2006)	Adults	15 (6)	PCL-R	25+
Glass & Newman (2006)	Adults	111 (50)	PCL-R	30+
Hastings et al. (2008)	Adults	145 (22)	PCL-SV	>18
Hansen et al. (2008)	Adults	43 (43)	PCL-R	None reported
Iria & Barbosa (2009)	Adults	62 (38)	PCL-SV	>18

Table 3

Comparison of Facial Emotion Stimuli Methods and Outcomes Across Facial Affect Recognition with Psychopathy Studies

Source	Stimuli set	Intensity	Facial expressions						Errors
			Happy	Sad	Angry	Fear	Surprise	Disgust	
Blair & Cipolotti (2000)	Ekman & Friesen	Morphs	✓	✓	✓	✓	✓	✓	Fear
Blair & Coles (2000)	Ekman & Friesen	Hexagon	✓	✓	✓	✓	✓	✓	Fear, Sad
Blair et al. (2001)	Ekman & Friesen	Morphs	✓	✓	✓	✓	✓	✓	Fear, Sad
Stevens et al. (2001)	DANVA	Full	✓	✓	✓	✓	-	-	Fear, Sad
Kosson et al. (2002)	Ekman & Friesen	Full	✓	✓	✓	✓	✓	✓	Disgust
Blair et al. (2004)	Ekman & Friesen	Morphs	✓	✓	✓	✓	✓	✓	Fear
Montagne et al. (2005)	Frigerio et al.	Morphs	✓	✓	✓	✓	✓	✓	Fear
Dolan & Fullam (2006)	AFFECT	Morphs	✓	✓	✓	✓	✓	✓	Sad
Deeley et al. (2006)	FEEST*	Two levels	✓	-	-	✓	-	-	Nil
Glass & Newman (2006)	NimStim*	Variable	✓	✓	✓	✓	-	-	Nil
Hastings et al. (2008)	Hess & Blairy**	Two levels	✓	✓	✓	✓	✓	-	Sad, Happy
Hansen et al. (2008)	Ekman & Friesen*	Full	✓	✓	✓	✓	✓	✓	Sad
Iria & Barbosa (2009)	NimStim*	Variable	✓	-	-	✓	✓	-	Fear

* Stimuli also included 'neutral' faces.
** Stimuli included 'shame' faces.

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Blair, Colledge, Murray, and Mitchell (2001). This study involved boys from three schools for children deemed too problematic for mainstream education due to significant emotional and behavioural difficulties. They were divided into a 'psychopathic' group as assessed on the PSD, and were aged between 9 and 17 years ('psychopathic' group: $n = 20$, M(age) = 12.9, $SD =$ 2.5; non-psychopathic group: $n = 31$, M(age) = 12.8, $SD = 1.8$). The stimuli used were Ekman and Friesen's (1976) facial expression set that were morphed, and revealed that youth with psychopathic traits tended to make more errors on recognising sad and fearful faces.

Stevens, Charman, and Blair (2001). This study involved 18 youth attending a school for children with emotional and behavioural difficulties. They were aged between 9 and 15 years ($M = 11.7$, $SD = 1.7$). Psychopathy was measured by the PSD with nine scoring in the high range, and nine in the low range as a comparison group. Facial affect recognition was tested using the Diagnostic Analysis of Non-Verbal Accuracy (DANVA; Nowicki & Duke, 1994), a procedure designed to assess facial and vocal emotion perception across four emotion categories (happy, sad, anger, fear) with child and adult exemplars. Although using an alternative stimuli set, the findings were consistent with other studies where youth with more psychopathic traits performed more poorly than the comparison group on recognising fearful and sad faces.

Kosson, Suchy, Mayer, and Libby (2002). Using an adult male sample ($N = 67$) drawn from a US federal corrections facility, the participants

were divided into two groups (defined by the PCL-R) that included a psychopathic group ($n = 34$, age: $M = 27$, $SD = 6.6$) and a non-psychopathic comparison group ($n = 33$, age: $M = 27$, $SD = 6.5$). Facial affect was tested via Ekman and Friesen's (1976) stimulus set, and included only 30 slides (i.e., five presentations of six emotions). In contrast to previous studies, these researchers found that the psychopathic group made more errors in relation to disgust than the comparison group.

Blair et al. (2004). This study involved 38 male prisoners housed at a high-security facility (US). They were aged between 22 and 50 years ($M = 33.6$, $SD = 9.2$), and screened using the PCL-R. The study utilised modified (i.e., morphed) variants of the Ekman and Friesen (1976) set. Outcomes indicated that psychopathic individuals performed comparatively poorly on recognising fear. It is noted that morphed stimuli increases the degree of ambiguity of facial emotion expressions – arguably approximating 'real world' displays of affect – but can also complicate measurement (e.g., what constitutes 60% of 'happy'?).

Montagne et al. (2005). This study involved 32 students from Urtrecht University (Netherlands) and included both males and females aged between 19 and 25 years. Psychopathy was assessed with the BIS/BAS scale (Carver & White, 1994), where strong BAS (behavioural activation system) and a weak BIS (behavioural inhibition system) presupposed traits typical of psychopathy (i.e., fearless, reward-craving, punishment insensitive). Facial affect stimuli involved the 'standard six' emotions that were derived from an

image-hoard developed from 26 local actors (Frigerio, Burt, Montagne, Murray, & Perrett, 2002). The resultant stimuli set involved 48 faces (six emotions x two views x four actors). These images were also morphed at increasing levels of intensity. Outcomes revealed that individuals meeting the low-BIS/High-BAS profile tended to perform more poorly on recognising fear in others. However, a small sample size, the use of a non-standardised alternative facial set with few exposures of key emotions coupled with a narrow measure of psychopathy present as limitations for this study.

Dolan and Fullam (2006). This study involved 49 adult participants in two groups: psychopathic prisoners ($n = 22$; M (age) = 35.2, $SD = 10.3$) and non-psychopathic University volunteers ($n = 27$; M (age) = 32.6, $SD = 9.1$). Psychopathy was assessed with the Psychopathy Checklist-Screening Version (PCL-SV; Hart, Cox & Hare, 1995). Facial affect was measured via the Animated Full Facial Expression Comprehension Test (AFFECT; Gagliardi et al, 2003), which included morphed variants of Ekman and Friesen's (1976) stimuli set. Of further interest is the inclusion of reaction times for participant responses to the stimuli, which revealed that psychopathic individuals made more errors on recognising sad faces in others than did those scoring low on the PCL-SV.

Deeley et al. (2006). Using the PCL-R to define a psychopathic group ($n = 6$; M(age) = 36, $SD = 9$) who were detained under the Mental Health Act (UK) and comparison group of adult male volunteers from the community ($n = 9$; M(age) = 27, $SD = 5$), this study sought to examine brain functioning whilst

processing facial emotion. The stimuli set was the Facial Expressions of Emotion: Stimulus Tests (FEEST; Young, Perrett, Calder, Sprengelmeyer, & Ekman, 2002), a standardised series of prototypical facial expressions. Unlike other studies, this research only exposed participants to happy, fearful, and neutral faces. However, the outcomes revealed no difference in accuracy between groups across stimuli. The narrow range of emotion categories (4) and small sample size (6) used in this study create barriers to generalising these results.

Glass and Newman (2006). This study involved 111 male prisoners housed at a maximum-security facility (US), who were aged up to 45 years, and screened using the PCL-R. The stimulus set was the then-experimental MacBrain Face Stimulus Set (aka NimStim; Tottenham et al., 2009) which included more models (43) and a wider range of expressions than the now-familiar Ekman and Friesen (1976) set. Outcomes indicated that psychopathic individuals performed as well as the comparative group across all emotion categories. Of the reviewed papers so far, this study included the largest 'psychopathic' sample in a specialised antisocial population. However, the facial stimulus set – although having the advantages of being contemporaneous and ethnically diverse – create challenges for making comparisons and generalisations across studies.

Hastings et al. (2008). One hundred and forty-five male prisoners (M(age) = 30.9, SD = 9.5) rated images on a facial affect recognition task that displayed images at one of two levels of intensity. Psychopathy was

measured using the PCL-SV, and found an overall negative relationship with psychopathy and emotion recognition, particularly sad, and – surprisingly – happy faces.

Hansen et al. (2008). A Norwegian study that involved a group of male prisoners ($N = 43$; M (age) = 31.8), and rated on the PCL-R (no cut-offs reported), and using the Ekman and Friesen (1976) stimulus set found that sadness yielded the most recognition errors. Furthermore, the data were also analysed by facet scores with significant relationships found between facet 3 (antisocial lifestyle) and 4 (social deviance) with errors recognising disgust.

Iria and Barbosa (2009). Comparing four groups (i.e., offenders with psychopathy ($n = 22$) and without ($n = 11$), and community samples with psychopathy ($n = 16$) and without ($n = 13$)) on their ability to accurately recognise happy, fearful and neutral faces derived from the NimStim, this study revealed that both psychopathic groups revealed poorer performance on recognising fear in others facial expressions.

Taken together, these studies indicate a relationship between psychopathic traits and low accuracy on fearful expressions of emotion (and sadness, to an extent). However, they also reveal that psychopathic populations are also as accurate as non-psychopathic populations in recognising most other basic emotion categories. Given these studies essentially report baseline data for their respective samples, and that it might be assumed that the experimental processes occurred in environments that reduced distractions and offered greater opportunities to focus on the explicit

task, what is perhaps less known is the effect that an emotive situation may have on the accuracy of task performance.

Critically, these studies have: (1) investigated differences between psychopathic and non-psychopathic participants based on taxonomic assumptions of psychopathy where the use of score thresholds determines membership categorically – taxonomic approaches involve a reduced ability to explore phenomena dimensionally. Global indications of psychopathy may be less informative than specific functional subgroups; (2) involved the same experimental approach of forced-choice responses with most using similar stimulus sets (e.g., Ekman & Friesen, 1976), with some variation in delivery (i.e., morphed, static). Similarity of approaches assumes a degree of consistency of the construct under question and allows for some comparison across studies. However, none of these studies have looked at other variables that impact on accuracy and assume a uniformity of experimental conditions across participants; and, (3) related to the previous point, none of these studies involves an intervention to explore situational factors that impact on performance, and, by extension, presumed group differences.

Hypotheses

To recap, I have argued that (1) psychopathy is best considered as a disorder of personality; (2) the problematic interpersonal behaviour exhibited by psychopathic individuals exerts negative social effects and indicates that social cognitive factors may be central to this disorder; (3) facial affect recognition is an index of social cognitive competence; and, (4) recent evidence offers some support to the hypothesis that a general relationship

exists between psychopathy and recognising others' facial emotions. The global question asked in this study is: *Do psychopathic offenders have social cognitive differences?* In other words, *are highly psychopathic offenders better or worse than less-psychopathic offenders on tasks that engage social cognitive processes?* More specifically, I was interested in exploring the relationship between psychopathy and facial affect recognition. The following primary hypotheses were put forward in order to test this: (1) that psychopathic individuals have biases (deficits) in *recognising* other's facial emotional expressions. More specifically, that psychopathic individuals are likely to have biases in recognising *specific* facial emotion expressions. Furthermore, given the complexities of personality per se and the variety of psychopathic presentations in particular, that participants with the prominence of certain psychopathic traits will reveal biases (deficits) in recognising facial emotional expressions more than others. Expected biases would include identifying fear and sad faces (see Table 3); (2) that psychopathic individuals are likely to show biases (deficits/difficulties) in *discriminating* others facial emotions quickly in relation to less-psychopathic individuals. Furthermore, psychopathic individuals may also reveal biases (deficits) in discriminating *specific* facial emotion expressions, and that certain types of psychopathic individuals have biases (deficits) in discriminating others' facial emotional expressions under these conditions.

A second question asked in this study concerned what impact a stress-inducing intervention has on facial affect recognition and discrimination task performance with psychopathic individuals. A proposed hypothesis is that psychopathic individuals are likely to reveal a greater bias in recognising *and*

discriminating others' facial emotion expressions when experiencing a

stressful situation.

Chapter Three: Method

Participants

   Selection.

   The initial participant pool was generated from an enquiry on the

Corrections Analysis and Reporting System (CARS)[27] to locate offenders who

were:

- male;

- aged 18 years or older;

- resided in a New Zealand Prison at the time of the study; and,

- had an index offence[28] OR most serious offence for violence; or,

- were serving a sentence of at least five years.

   Recruitment.

   Candidates who met my selection criteria were sent an

invitation/information letter via Principal Corrections Officers or Unit

Managers. The letter included the rationale of the research, how the

participants were being selected, brief details of the study procedure, contact

details of the researcher and field supervisor, and an invitation to find out

more information through a face-to-face meeting with the researcher (see

Appendix A). Because of the volume of potential participants who met the

criteria, a further decision was made to approach candidates who resided at

institutions convenient to the researcher.

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[27] CARS is the Department of Corrections' data warehouse and contains continually updated information on the Departments' business activities, such as offender demographics, sentence management and risk details.

[28] An index offence is the most recent offence.

Broad demographic information such as age and ethnicity were collected in addition to offence-specific variables such as sentence length, the 'most serious offence', and level of static risk. A brief explanation of these offence-specific variables follows:

Offence type. Typically index violent offences provide an indication of relative recency of violent behaviour, but can become misleading by the inclusion of multiple counts, several victims, and varied offence dates (i.e., current and historical – sometimes by many years). Prospective participants were grouped according to the 'most serious offence' (MSO) for which they were convicted. MSO ratings are determined from the Ministry of Justice Seriousness of Offence Scale, which orders offences in accordance with the average number of days imprisonment imposed by judges, for that specific offence type, over the past five years. Both Index offences and MSOs are defined legally rather than behaviourally. Furthermore, MSOs have an implied morality, as such ratings suggest that a given offence is more or less 'serious' than other kinds of offence (this is especially salient when some charges have been reduced due to plea bargaining, thus reducing the apparent 'seriousness' of the offence). However, as a means of eliciting offence types in a systematic way, the MSO categorisation scheme allows a researcher to quickly apply delimiters to large offender databases and create comparisons across offender groups.

Sentence length. Lengthy sentences indicate overall severity and seriousness of offending (violent or other). However, similar to offence type,

sentence lengths are primarily a function of legal outcomes rather than psychological processes. Conversely, whilst acknowledging this limitation, sentence length – particularly those sentences that require imprisonment – suggests the likely high impact an individual's behaviour may have had on the community.

Risk of recidivism. A measure of risk of further reoffending provides an indication of (1) imminence of reoffending, and (2) likely seriousness (Andrews & Bonta, 2010). The RoC*RoI (Risk of Conviction, Risk of Imprisonment) is a New Zealand-based risk measure predicated on actuarial principles and developed for use by the New Zealand Department of Corrections to assist in the accurate prediction of an offender's risk of conviction and likelihood of reimprisonment (Bakker, O'Malley, & Riley, 1998). This static measure (i.e., based on a range of historical and unchangeable factors such as age at first offence) has demonstrated predictive accuracy by means of a Receiver Operating Characteristic (ROC) analysis with an Area Under the Curve of 0.76 (Bakker et al., 1998), meaning that it has demonstrated an above-chance ability to predict future offending.

Detailed information on the sample will be presented in the Results chapter.

Primary Measures

Psychopathic Personality Inventory-Revised (PPI-R; Lilienfeld & Widows, 2005).

The PPI-R is a 154-item self-report psychometric instrument designed to measure psychopathic traits by means of a global psychopathy index and component subscales indicating a variety of interpersonal behavioural phenomena considered to be characteristic of psychopathy for use in clinical and non-clinical settings (see Table 4 for subscale descriptions). The participants respond to the PPI-R items on a 4-point Likert scale (i.e., *'false'*, *'mostly false'*, *'mostly true'*, and *'true'*).

Although no New Zealand normative data currently exist in relation to this measure, the PPI-R has been standardised and validated for use with men and women from ages 18-86 years in the USA. Adults in the community/college development sample reflected 2002 US Census data for ethnicity, educational background, and geographic area. The PPI-R also includes normative data for a male sample (N = 154; aged 18 to 57) of offenders in a New Jersey pre-release treatment facility (Lilienfeld & Widows, 2005).

Table 4

Descriptions of PPI-R Content Scales

Scale (and abbreviation)	Construct description
Machiavellian Egocentricity (ME)	Narcissistic and ruthless attitudes in interpersonal functioning
Rebellious Nonconformity (RN)	Reckless lack of concern regarding social norms
Blame Externalization (BE)	Tendency to blame others for one's problems and to rationalise one's behaviour
Carefree Nonplanfulness (CN)	Attitude of indifference in planning one's actions
Social Influence (SOI)	Perceived ability to influence and manipulate others
Fearlessness (F)	Absence of anticipatory anxiety concerning harm and a willingness to participate in risky activities
Stress Immunity (STI)	Absence of marked reactions to anxiety-provoking events
Coldheartedness (C)	Propensity toward callousness, guiltlessness, and lack of sentimentality

Note: from Lilienfeld & Widows (2005, p.21).

Similar to its predecessor, the PPI (Lilienfeld & Andrews, 1996), the

PPI-R is considered to be construct valid, time efficient, and capable of

detecting response styles that are considered potentially relevant to psychopathy (i.e., positive or negative impression management, random or careless responding). The scope of the PPI-R is broader than that of traditional measures of psychopathy where antisocial or criminal behaviours are central (e.g., Factor 2 items on the PCL-R). The PPI-R measures a continuum of psychopathic personality traits present in a range of individuals and can be used in both clinical (e.g., forensic) and nonclinical (e.g., student, community) settings. Evidence for construct validity of the PPI-R also was obtained via significant correlations with the Self-Report Psychopathy Scale-II (Total score) and the Levenson Primary and Secondary Psychopathy Scale scores in the community/college and offender samples (Lilienfeld & Fowler, 2006). Internal consistency is adequate for the PPI-R Total score and the PPI-R Content scale scores, with coefficient alphas ranging from 0.78-0.92 for the community/college sample. For the offender sample, internal consistency estimates for the Total and Content scale scores ranged from 0.72-0.84 (Lilienfeld & Widows, 2005). More recent comparative data from the United Kingdom found a strong relationship ($r = 0.54$) between the PPI-R and PCL-R in a sample of male offenders ($N = 52$) (Copestake, Gray, & Snowden, 2011).

The PPI-R contains content scales that reflect variations in the levels of the traits measured by each scale, with higher scores indicating more pronounced levels of these traits (Lilienfeld & Widows, 2005). Intercorrelations of the original PPI scale (Lilienfeld, 1991) suggested that the scales were not uniform and factor analyses revealed two factors: PPI-I ('Fearless-

Dominance') and PPI-II ('Impulsive-Antisociality')[29]. This two-factor solution has proven somewhat inconsistent in a number of community samples (Benning et al, 2005; Toney Smith, Edens, & Vaughn, 2011; Uzieblo, Verschuere, Van den Bussche, & Crombez, 2010), and a poor fit with offender samples (Edens & McDermott, 2010; Neumann, Malterer, & Newman, 2008).

The PPI-R provides a measure of psychopathic and antisocial personality traits, is easy to administer with larger samples, has adequate construct validity and offender norms, and the promise of offering more functional information regarding personality pathology than other available – and relevant – measures. Given the current study is (1) exploratory in that the PPI-R has not been formally researched in New Zealand, as well as (2) an apparently inconsistent relationship with the factor scales (PPI-I and PPI-II), the content scales were used in this study to explore variations amongst the sample.

Positive And Negative Affect Schedule (PANAS; Watson, Clark, & Tellegen, 1988).

The PANAS is a pair of brief, self-report inventories designed to measure 10 positive (PA) and 10 negative (NA) affective components of temperament. The 10 PA items (interested, excited, strong, enthusiastic, proud, alert, inspired, determined, attentive, and active) and the 10 NA items (distressed, upset, guilty, scared, hostile, irritable, ashamed, nervous, jittery, and afraid) are assessed on a 5-point Likert-scale ranging from experiencing

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[29] Subscales loading onto PPI-I included Social Influence, Fearlessness, and Stress Immunity, whereas PPI-II was composed of Careless Nonplanfulness, Machiavellian Egocentricity, Rebellious Nonconformity, and Blame Externalisation. Coldheartedness did not load on either factor (Benning et al, 2003).

the emotion *very slightly or not at all* (1) to *extremely* (5). Although not initially

designed for special populations, the PANAS (with modifications) has been

used in psychopathy research (Hicks & Patrick, 2006; Patrick, 1994).

The original development cohort consisted of large samples ($N =$

4,217) of American psychology undergraduates and non-students across a

number of different temporal instructions (how they felt 'right now', 'today',

'during the past few days', etc.). To date, no New Zealand normative data are

available on the PANAS.

The PANAS has demonstrated high internal consistency across time

instructions. For instance, PANAS administration under a 'moment' temporal

instruction (i.e., 'right now') yielded Cronbach's α of 0.89 for PA and 0.85 for

NA. In addition, test-retest reliabilities were also seen to sustain across

temporal instructions with 'moment' stability of 0.54 for PA and 0.45 for NA

(Watson et al., 1988). The PANAS is considered to be a valid measure of the

constructs it was intended to assess (Crawford & Henry, 2004) and correlate

with measures of related constructs such as the Beck Depression Inventory

and State-Trait Anxiety Inventory, as well as with external criteria (e.g., social

activity) (Watson et al., 1988). On account of the flexibility of the measure,

ease of administration, and ability to detect acute changes in affect, I included

the PANAS as a pre- and post-intervention measure to gauge participants'

affective states in the period immediately before and after the experimental

task.

Secondary Measures

Given the special nature of the sample and the specific focus of the experiment, the following secondary measures were utilised to detect any psychiatric or perceptual anomalies that might have had an impact on the participants' ability to engage with the tasks:

Criminal Attitudes to Violence Scale (CAVS; Polaschek, Collie, & Walkey, 2004).

The CAVS is a 20-item self-report inventory that measures respondents' attitudes to criminal violence. Item are responded to on a 5-point Likert scale (*'disagree strongly'*, *'disagree mildly'*, *'neutral'*, *'agree mildly'*, and *'agree strongly'*). This instrument has been developed on a number of New Zealand male violent offender prison samples. The ethnic make-up of the development sample included New Zealand Māori (54%), New Zealand European (25%), Pacific peoples (13%) and other (3%). The mean age of this sample was 29.2 ($SD = 9.8$).

The CAVS has demonstrated high internal reliability (Cronbach's $\acute{\alpha} = 0.95$), and adequate content validity with the 20 items correlating with the physical aggression score from the Aggression Questionnaire (Buss & Perry, 1992) of 0.48 or greater (Polaschek et al., 2004). The CAVS has demonstrated adequate construct validity in terms of measuring attitudes towards criminal violence, and risk of recidivism. The measure is able to differentiate scores between offender groups with different offence histories.

Although still a new instrument, the CAVS is easy to administer, has been developed on a New Zealand offender population consistent with my

target sample (demographically and offence type), has good construct validity, and can be considered sensitive to important constructs related to facial affect recognition and social information-processing, such as attitudes towards aggression to others (and the supposed normalcy of this).

Symptom Assessment-45 (SA-45; Sitarenios, Rayes, & Morrison, 2000).

A 1999 study of psychiatric morbidity in New Zealand prisons revealed a higher prevalence of mental disorders than in the community, particularly for schizophrenia, bipolar disorder, major depression, obsessive-compulsive disorder and post-traumatic stress disorder (Simpson, Brinded, Laidlaw, Fairley, & Malcolm, 1999). These disorders are noted for their debilitating effects on an individual's perceptions and behaviour, so I considered it appropriate to administer a measure of psychiatric symptoms. The SA-45 is a 45-item, self-report questionnaire derived from the Symptom Checklist-90 (Derogatis, Lipman, & Covi, 1973), and designed to assess acute symptoms of anxiety, hostility, obsessive-compulsiveness, phobic anxiety, somatisation, depression, interpersonal sensitivity, paranoid ideation, and psychoticism. It is considered to be psychometrically sound (Reynolds, 2001) with adequate reliability and moderate sensitivity and specificity data with adult patient and non-patient samples. The measure has also shown an adequate degree of construct validity (Viswesvaran, 2001). Strong correlations between this measure and its parent measures, the Symptom Checklist-90 (SCL-90) and Brief Symptom Inventory (BSI), suggest adequate criterion validity. No New Zealand normative data were available on the SA-45. Although not used to

exclude any participants, the SA-45 was administered to detect the presence of any active psychiatric symptoms that might have had an impact on overall responding.

Farnsworth-Munsell Dichotomous D-15 Standard Hue Test (Farnsworth, 1943).

'Colour blindness', or altered colour vision, is more prevalent in males than females. Given that the entire sample consisted of males and included a colour Stroop task in the experimental manipulation phase, a colour perception screen was used. The Farnsworth-Munsell D-15 is a 2-minute screen for extreme cases of common colour-vision defects such as red (protan), green (deutan) or yellow (tritan) colour confusion (Bassi, Galanis, & Hoffman, 1993). Administration involved individuals arranging 15 coloured caps in a predetermined sequence. Correctly arranged sequences indicate an absence of colour-perception deficits.

Apparatus

Hardware.

The experimental procedure and data collection was conducted via an Acer TravelMate 260 portable laptop computer powered by Windows® XP. The monitor screen measured approximately 290mm(w) x 215mm(h) and was often located 600mm to 900mm from the participant during the experimental trials. This variation in distance between participants and the monitor was largely dependent on (1) the participants sitting posture, and (2) the layout of immovable furniture and fixtures in research settings (e.g., narrow offices).

Participants generated their responses to the facial stimuli and Stroop tasks via a response box. The response box was made of black plastic and roughly cuboid in shape, measuring approximately 190mm(l) x 125mm(w) x 30mm(h). The uppermost response surface revealed a slight incline allowing for ease of access to the response buttons. Similar to the response box casing, the response buttons themselves were made from durable black plastic and were easily accessed and operated with either thumbs or fingers. The response box transmitted the participants' responses via USB connection with the computer. A number of masking boards were placed over the buttons to assist the participants as to the function of each button for the different phases (see Figures 1, 2, and 3).

Happy ◯	Sad ◯	Angry ◯	Surprise ◯
Disgust ◯	Fear ◯	Neutral ◯	ENTER ◯

Figure 1. Layout of the response buttons for Phase 1 and 4 (single faces).

YES ◯	NO ◯	◯	◯
◯	◯	◯	ENTER ◯

Figure 2. Layout of the response buttons for Phase 2 and 5 (pairs).

Red ◯	Blue ◯	Green ◯	Yellow ◯
◯	◯	◯	ENTER ◯

Figure 3. Layout of the response buttons for Phase 3 (Stroop tasks).

Software.

The stimulus sets were delivered via a customised programme that presented all stimuli according to my pre-set specifications (see procedure, below). Each individual stimulus measured approximately 105 mm(w) x 160 mm(h). The paired presentations maintained these same dimensions but were spaced 25 mm apart horizontally. The programme also measured response time (in milliseconds) that commenced and terminated at predetermined events (i.e., button press) as a measure of reaction time to the stimuli in Phases 2 and 5 (see below).

The inclusion of computer-administered stimuli and response-capture provided a reduction in error by requiring discrete response options and accurate recording of reaction time. Given the emphasis on accuracy and speed across tasks, the need to reduce human factors from the data-recording was essential.

Pictures Of Facial Affect.

Although a range of facial stimuli have been developed for research use over the last few decades, the original Pictures Of Facial Affect (Ekman & Friesen, 1976) were used because of their standardised format (allowing for easy coding in forced choice experiments), long-standing history as a research tool for validation of universally recognised affect displays, and the widest usage as stimuli for facial affect recognition across cultures and over time (for examples, see Figure 4) (Marsh & Blair, 2008). Despite these advantages, the Pictures Of Facial Affect, although universal in application, are monocultural in origin – reflecting predominantly white American faces

from the early 1970s. To date, no New Zealand normative data currently exist on this stimulus set as an indicator of universality of facial affect displays. The sole emphasis on static images offer concrete presentations of emotional expression that may not convey the transitional aspects of facial displays (e.g., fine muscular movements). Furthermore, the Pictures Of Facial Affect images are of heads and faces only and are squarely presented to the viewer, thus presenting a much narrower range of stimuli that may contribute to accurate interpretations of the emotion than is normally available in real world settings (e.g., body posture, movement, tone of voice). This may be especially salient in collectivist cultures where broader contextual information may receive emphasised attention rather than specific features.

(a)   (b)   (c)

Figure 4. Examples of the Pictures Of Facial Affect stimuli set: (a) fear; (b) disgust; and, (c) happy.

Colour Stroop test.

Although typically used to study selective attention, a modified Stroop test was introduced in this study to provide a task that would offer a mildly

challenging activity with sufficient face validity in that it would be usable on the

same computer-based format as the facial stimuli. Developed by Stroop

(1935), the colour Stroop task was designed as a cognitive interference task

(MacLeod, 1992), and was used in this study as a challenging task for

participants that was administered in an 'unfairness' condition (see Figure 5,

and procedure below). The non-invasive and innocuous nature of the task

allowed the presentation of a condition designed to mildly elevate stress and

negative affect with minimal risk of harm to either researcher or participant.

Red	Blue	Green	Yellow
Blue	Red	Yellow	Green
Yellow	Blue	Green	Red
Red	Green	Yellow	Blue
Yellow	Blue	Red	Green
Green	Red	Blue	Yellow

(a)
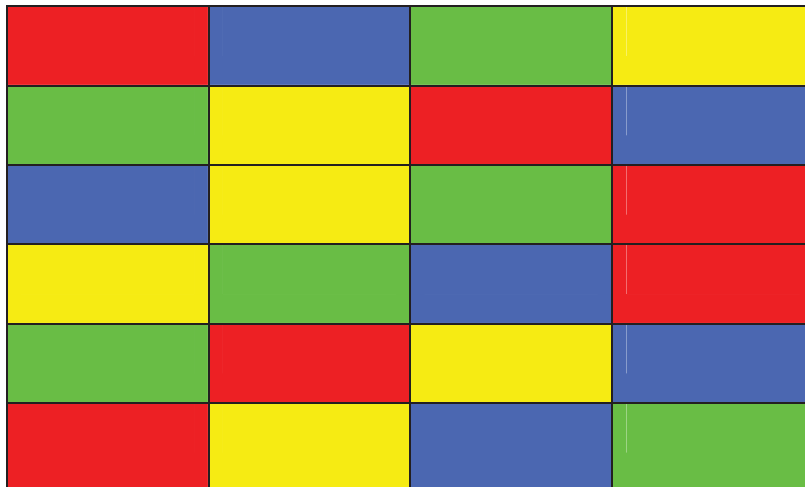
(b)

Blue	Red	Yellow	Green
Yellow	Red	Green	Blue
Green	Yellow	Blue	Red
Yellow	Blue	Green	Red
Red	Green	Blue	Yellow
Blue	Yellow	Green	Red

(c)

Figure 5. Stroop task conditions with (a) congruent word and colour, (b) colour patches, and (c) incongruent word and colour.

Procedure

Pre-experiment interview.

Interviews with participants were arranged via Principal Corrections Officers and Unit Managers if selected participants agreed to a face to face meeting. Participants met with the researcher in prison settings, such as interview rooms, therapy rooms, or in an office. Opportunity for *karakia timatanga* was offered[30] and introductions made before a fuller explanation of the study and opportunities for questions to be asked. Additional relevant information such as current medication regime (if applicable) was collected to ascertain any factors likely to impact on task performance (e.g., prosopagnosia). Participants were offered multiple opportunities to withdraw involvement. Informed consent forms (Appendix A) were signed.

Psychometric administration.

Prior to the computer tasks, participants were administered (in groups, or individually), the PPI-R, SA-45, CAVS, Farnsworth-Munsell D15, and the PANAS (pre- form). Almost all of the participants demonstrated sufficient literacy ability (as noted by verbal self-report or evidenced by reading aloud some items from the measures). I offered assistance to the few who appeared to struggle with the verbally demanding aspects of the procedure.

Experimental trial Phase 1 – Accuracy.

Participants were invited to sit facing the laptop. In addition to my providing a verbal brief, the participants were instructed to attend to a series

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[30] This process was not always offered, and the researcher was guided by the participants themselves as well as by ongoing cultural consultation throughout.

of stimuli (single faces) and respond using the response box. This first task

required participants to match a given facial stimulus (e.g., a smiling woman)

with the matching emotion word, or closest approximation amongst the

available options (see Figure 1), by pressing the corresponding button (e.g.,

'Happy'). Verbal instructions also appeared on the screen (see Figure 6).

Thank you for taking part in this study. Very shortly you will see a series of
images of people's faces. Your task is to tell us (using the buttons below)
what emotion is being shown.

For example:
▪ If you think the person in the image is <u>happy</u>, then press the "Happy" key.
▪ If you think the person in the image is <u>surprised</u>, then press the "Surprise"
   key.

Please note:
▪ For each image, you will only be able to choose ONE emotion option.
▪ You will NOT get an opportunity to go back and repeat any trials.
▪ Choose carefully, but do not take too long to make your choice.

You will now be presented with 2 test items to get you familiar with this task.

When you are ready, press **ENTER**

Figure 6. Example of an instruction screen presented to participants prior to

each experimental phase.

Following the participant's selection by button-press, the monitor would

display a blank white screen for 1 s after which the next image would appear.

Each image in this phase was presented individually. Following two test items,

the participants would be presented with an encouraging message before

being instructed to respond to 28 stimuli (see Figure 7). Accuracy on this task

was established by a simple count of correct responses.

GOOD WORK!

That completes the test items.

You are now ready to do the rest of the task.

Please note:
- *For each image, you will only be able to choose ONE emotion option.*
- *You will NOT get an opportunity to go back and repeat any trials.*
- *Choose carefully, but do not take too long to make your choice.*

When you are ready, press **ENTER**

Figure 7. Example of an encouraging message presented to participants upon completion of a facial affect recognition task.

Phase 2 – Accuracy and speed.

Immediately after completing the first phase, an encouraging message was presented followed by an instruction screen for Phase 2. Participants were informed that this phase concerned accuracy and reaction time. A series of five pairs of faces was presented as test items and participants were required to communicate whether a given pair of faces revealed the same/similar emotion (e.g., both were identified as 'happy') or different emotions altogether (e.g., one 'happy' and the other 'sad'). The stimulus pairs were exposed for a maximum of 3 s before the screen would go blank – any further stimuli would only present after a button-press (see overlay, Figure 2). As such, participants were instructed to respond to each stimulus 'as quickly as possible'. After the test items, a similar encouraging message to that in Figure 7 was displayed before the participants were required to respond to

122 pairs. This phase was followed by another encouraging message similar to Figure 7. Accuracy on this task was established by a simple count of correct responses.

Phase 3 – Stress.

Participants were instructed to complete brief colour Stroop tasks. The layout of each phase is shown in Figure 4 where the participants were instructed to enter the order of colour words (see Figure 4a.), colour patches (see Figure 4b), or the colour of the word (see Figure 4c) line by line starting from the upper-left corner. Participants were directed to use the response box (with the overlay, as per Figure 3) to enter the data. The participants were informed that (1) each Stroop condition would display for only 15 s; (2) there would be no test items; and (3) there would be no opportunity to repeat any of the tasks. Despite overtly informing the participants that the stimuli would disappear after 15 s, the stimuli actually did so after only 10 s – irrespective of whether they responded correctly and quickly enough or not – creating an 'unfair' condition designed to induce mild levels of stress. After each Stroop task, a 'failure' message (see Figure 8) would appear and would remain displayed until the participants activated the screen via button-press.

Phase 4 – Accuracy and Stress.

Participants were directed to repeat Phase 1 (not including the test items).

TOO BAD!
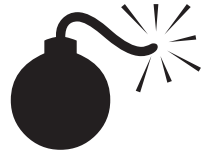
You were too slow or made too many errors.

You have failed this task.

To continue to the next task, press **ENTER**

Figure 8. Example of the 'failure message' presented to participants following each of the Stroop tasks.

Phase 5 – Accuracy, Speed and Stress.

Participants were directed to repeat Phase 2 (not including the test items).

Post-experiment.

The PANAS was re-administered to participants before they were debriefed about the experiment and had opportunities to discuss their experience of the trial and their level of stress/residual agitation (if applicable). I also offered the men an opportunity to de-stress or debrief (either at this point in the session and/or provided contact details of the nearest Psychological Services office).

Wrap-up and follow-up information.

At the conclusion of these tasks, all participants were advised that they would receive a letter of thanks for their contribution to this study; be informed of the outcomes of this study; and, offered an open invitation (if interested) to participate in any further studies (Appendix B).

Ethical Considerations

The protocol was reviewed and approved by senior management within the Department of Corrections. Research ethics approval was sought from the Massey University Human Ethics Committee, and formally granted after some negotiation regarding my access to confidential information and the fact that I had a dual role as both researcher and a psychologist within the service. I explain below how these issues were resolved.

Confidentiality.

Given the sensitivity required when working with incarcerated men with histories of violence and serious antisocial behaviour, confidentiality is a particularly important priority issue. Only I knew each of the participants' identities and any possible identifying characteristics have been altered in the final work to ensure full confidentiality.

Informed consent.

The participants gave consent to be part of the research. A consent form that was dated and signed by each participant covered this (see Appendix A). In addition, an information sheet was provided to each

participant outlining the intentions of the study (also Appendix A). Given that

most prisoners' contact with psychologists involves psychological

assessments of risk that may inform the Courts or the New Zealand Parole

Board with the added complication of increased imprisonment or conditions

upon release, it was imperative for the researcher to explain that any research

involvement is entirely voluntary and will have no negative impact on their

sentence, regardless of whether they participate (fully or partially) or not. This

message was embedded in the written consent form and in the trial sessions.

Despite being potentially functionally illiterate, the process was described to

them verbally. In addition, opportunities for nominated staff members (of the

participant's choice where available) were offered where applicable.

Deception.

Instructions for Phase 3 (i.e., the Stroop task) informed the participants

that they had 15 s to complete each task when in fact they only had 10 s. The

role of the deception was to assist in eliciting mild negative affect from the

participants by presenting an 'unfairness' contingency. The rationale for not

proactively revealing the intent of the stress task to the participants until task

completion was to create and reinforce an overt perception of the task that

was at variance with the actual *experience* of the task (i.e., to assume that the

task would take longer than it would in reality). Although prisoners are

generally free to liaise with each other regularly and if those who are informed

about the stress condition of the study as being actively deceptive, they are

likely to reveal the deceptive aspect of this study to upcoming participants

prior to their participation, thus undermining one of the key features of this study via sample contamination.

Debriefing.

Individual debriefing occurred at the end of each session, and participants were reminded of the purpose of the study and informed of the deception and why it was included as part of the design. During this aspect of the study, participants were encouraged to describe and discuss their experience of the experiment, particularly the Stroop intervention.

Relevance for Māori.

Although this study was not primarily focussed on Māori, the over-representation of Māori in New Zealand prisons and the even higher proportion who fall into higher-risk (of violent reoffending) categories (Wilson, 2004), guaranteed that this ethnic group would comprise a significant proportion of participants. To address this likelihood and inform the appropriateness of the study questions and process, front-end and regular ongoing consultation was conducted with one of the Department of Corrections' appointed cultural advisors[31]. Due to the implications of this study for the wider Corrections Department (i.e., offender assessment and treatment), ongoing liaison with the Department's cultural advisors has been maintained beyond that of the study period.

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[31] Departmental Cultural Advisors have Mana Whenua status and have an extensive history working with violent offenders in correctional/forensic and treatment/rehabilitation settings.

A comment on the design

      Similar to previous research on facial affect recognition and psychopathy (see Tables 2 and 3), this study included (1) adult male offenders – a demographic consistent with samples used in all but three (Blair & Coles, 2000; Blair et al., 2001; Stevens et al., 2001) of the previous studies; (2) a well-known stimuli set for facial affect recognition (i.e., Ekman & Friesen, 1976); (3) a forced-choice paradigm; (4) the commonly accepted range of basic emotion categories (including 'neutral'); and (5) a measure designed to pick up on psychopathic traits (PPI-R). The similarity of demographic factors, general experimental approach, and stimuli set allowed for greater comparison across studies. However, the use of a dimensional measure of psychopathic personality traits with established subscales allowed for an exploration of *relationships* between variables that is not always permissible with categorical measures. The inclusion of the PPI-R created opportunities to explore any revealed differences with respect to *function* based on subtypal variations of psychopathy and degree of intensity of the traits. Lastly, whilst being interested to see if the general effect of so-called facial affect recognition deficits is present with this group, I was interested to see what impact – if any – the imposition of a mildly stressful situational task may have on accuracy and performance.

Chapter Four: Results

My findings will be presented in the following sequence: (1) I will provide a brief description of what the experimental procedure was like, how the men who had agreed to participate responded to the task and the overall experimental situation; (2) I will present descriptive data summarising the scores obtained on the various measures, starting with the key measures of the participants (the independent variables); (3) I will then move on to summarise the general accuracy of the sample on the facial affect recognition tasks; (4) As mentioned earlier in the rationale for the research I explained that there were likely to be differences in accuracy of facial affect recognition according to the specific emotion being expressed. Specifically, it is expected that recognition of some emotions (e.g., happy, angry) would be revealed to be relatively simple tasks for the participants with expected high levels of accuracy, whereas recognition of other emotions (e.g., fear, surprise) might present as more challenging and ambiguous (more mistakes, low level of accuracy). To compare recognition scores across the seven emotions, overall summary statistics will be presented for each emotion depicted in the Pictures of Facial Affect set.

(5) The next major section of results will be to systematically examine whether the data support my original hypotheses. The first of these is whether psychopathy scores are associated with overall accuracy on the facial affect recognition tasks. To address this hypothesis I will present correlational data of primary variables of interest (i.e., PPI-R and facial affect recognition accuracy); (6) Then, from my table of intercorrelations I will examine whether

psychopathy scores predict accuracy on some emotions better than others.

(7) Since the psychopathy measure consists of possible subtypes or factors, I will present data correlating factor scores with the facial affect recognition accuracy scores. This entire section of the results will answer questions about the basic relationship, if any, between psychopathy scores and performance on facial affect recognition tasks; and, (8) Lastly, it should be remembered that the tasks were presented twice, and for each presentation there were two ways of measuring skill in recognising facially expressed emotion: there is the simple accuracy measure (correct identification of the emotion being expressed in the stimuli) and there is the differentiation measure (whether the emotion expressed in the paired stimuli is the same or different). In this second task, I also measured reaction time—how long it took for the same/different decision to be made, with the expectation that psychopathic offenders would reveal increased bias in their responding due to greater demands on cognitive resources.

(9) The next set of hypotheses to be considered are concerned with the effects of the stress manipulation on facial affect recognition and discrimination performance. The first issue to be considered is whether the stress manipulation had any effect on current emotion or mood, which I measured using the PANAS. I present PANAS scores before and after the stress manipulation and carry out *t*-tests to investigate the statistical significance of any observed changes. Regardless of whether I can confirm the effect on mood of the stress manipulation, my hypothesis was that stress would cause deterioration in facial affect recognition performance. I thus present means for facial affect recognition scores before and after the stress

manipulation, and then conduct statistical tests to asses the significance of any changes observed.

(10) The preceding analyses were planned comparisons, based on my expectations and the hypotheses being tested in the research. But observation of the data and looking carefully at the scores and what they might be indicating raises a series of other questions that have now emerged. The final section of my results presentation will inquire into some of these other possibly interesting features of the data. I will look at a few individual cases of the highest and lowest facial affect recognition scorers—what was it about these men that made them so good—or so bad—at affect recognition? This final section of the results is presented for information only and for suggesting possible new avenues of research or for helping to explain the major findings related to my formal hypotheses.

1. Observations Regarding the Experimental Procedures

Generally speaking, the testing of all of the participants proceeded with few difficulties. The most common reaction of the participants was that of interest and curiosity about the experiment itself, but also social comparisons between how 'well' they did compared with others, perhaps assuming that their skills were being assessed and thus motivation to engage with the tasks appeared very high. This is important since motivation for a difficult task with little by way of apparent (i.e., material) pay-offs is not considered to be part of the 'nature' of psychopathic individuals. However, some participants did express frustration at the nature of the experiment – especially the Stroop

task/stress intervention – that required relatively fine-grained judgments to be made under pressure.

Reasons for declining.

Approximately 25 candidates declined to participate after being approached[32]. Reasons for this (when offered) included (1) confusion about the purpose of my visit (despite repeated attempts to clarify); (2) perceptions that I was conducting intake assessments for rehabilitation programmes – a prospect that was considered undesirable by some candidates; (3) competing interests, such as work, rehabilitation, assaulting other prisoners, or a sunny day; or, (4) a lack of interest in research participation. A small number of participants ($n = 5$) were unable to complete the trials due to being relocated to institutions in other geographic locations[33].

Ulterior reasons for participating.

My on-site presence at a number of New Zealand prisons appeared to have generated a great deal of attention from some members of the prison community, particularly given my professional role as a clinical psychologist. Consequently, a small number of participants revealed secondary reasons for participating in the study, and included (1) perceived access to programmes, (2) an opportunity to express their dissatisfaction about their Parole Board

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[32] This is a likely underestimate as some potential candidates were approached by custodial staff whilst I was on-site during the data-gathering stage. Typical prisoner responses, such as *"fuck off!"* or *"I don't want to see no fucking psychologist!"*, indicated that the inadvertent use of prison officers to 'cold call' candidates was unsuccessful as a strategy to generate sufficient interest in the study.

[33] The early sessions were designed to be conducted in two visits (i.e., session 1: introduction and screening measures, session 2: PANAS, Facial affect recognition tasks and debrief), but were later decided to be combined or at least occur as close as possible to avoid a depleting sample (see Appendix C for the information letter pertaining to this second aspect of the study).

outcomes, or (3) to discharge pent-up feelings of frustration about perceived injustices experienced in the system. In all instances, I made particular efforts to clarify my role (i.e., as a researcher representing both the Department of Corrections and Massey University) prior to any data-collection. However, this was not always possible as a small number of men contacted me some time after they had participated in the experiment with requests to engage with Psychological Services for reasons unrelated to the study but consistent with the correctional protocols (e.g., enquire about referral process). My professional role with the Department and my then-knowledge of Corrections referral pathways allowed me to refer the participant to an appropriate member of staff in order to process their requests. No distress beyond that noted in the experimental session by some participants were reported or made aware to me throughout the study.

2. Descriptive Information on the Independent Variables

The sample, psychometric measures, and experimental data collected using the procedure outlined in the previous chapter were used to create a database to enable univariate, bivariate and multivariate analyses to be conducted.

Descriptive information on the sample.

The participants were 68 adult males who resided at three New Zealand prisons.

Age. The men were aged between 18 and 58 years, with a mean age of 32.0 years ($SD = 10.1$). There was no significant difference in the ages of the research participants and the prison population ($M = 34.8$, $SD = 12.0$), $t(6794) = 1.92$, $p > 0.05$ (see Table 5). The distribution did not violate assumptions of normality.

Table 5

Comparison of Age of the Research Sample and the New Zealand Male Prisoner Population

Group	M	SD	Min	Max
All prisoners*	34.8	12.0	16	83
Participants**	32.0	10.1	18	58

* $N = 6,728$; ** $n = 68$.

Ethnicity. The participant's ethnicity was established via self-identification and/or file information (e.g., CARS). The majority (65%) of this sample were of New Zealand Māori descent, 19% were of New Zealand European ethnicity, and the remaining 16% comprised of various Pacific peoples. In contrast, the ethnic composition within the contemporaneous broader prison population included smaller proportions of New Zealand Māori (50%) and Pacific peoples (12%), a larger proportion of New Zealand European (34%), and the presence of Asian peoples (2.4%), and other (e.g., Middle Eastern and other European) (1.3%). These proportions are consistent with Departmental data that indicated a larger proportion of Māori in the higher risk category (Wilson, 2004).

Offender-specific characteristics.

Determinate sentence length. The participants' sentence lengths, where applicable ($n = 47$), ranged from 1.9 years to 20.1 years, with an average of 6.6 years ($SD = 3.9$). Consistent with the inclusion criteria, there was a significant difference in the sentence length between the research participants and the prison population ($M = 4.2$, $SD = 3.5$), $t(5900) = 5.6$, $p = 0.001$, where the sample were revealed to be serving generally longer finite sentences (see Table 6).

Table 6

Comparison of Determinate Sentence Length (in Years) of the Research Sample and the New Zealand Male Prison Population

Group	*M*	*SD*	Min	Max
All prisoners*	4.2	3.5	0.0	24.5
Participants**	6.6	3.9	1.9	20.1

* $N = 5,834$; ** $n = 47$.

Indeterminate sentences. It was of note that almost a third (31%) of men in this sample were imprisoned with indeterminate sentences, with 22% serving life imprisonment and almost 9% serving preventive detention. This is in contrast to the general prison population where less than a tenth (8.5%) of all male prisoners are serving indeterminate sentences.

Most serious offence. The most serious offences documented for the participants included violence (84%) (e.g., murder, manslaughter, aggravated

robbery, kidnapping, grievous bodily harm, and wounding with intent),

property offences (9%), sexual offending (i.e., against adults) (3%), and drug-

related offences (4.4%). This is in contrast to the general prisoner population

where approximately 40% have violence as their most serious offence,

followed by sexual offences (child and adult victim) (20.5%), dishonesty

(17%), and drug-related offences (11%), with the remaining offence

categories being traffic, administrative, property, and miscellaneous crimes[34].

Risk of recidivism. The RoC*RoI scores for the research sample

ranged from 0.29 to 0.95, with an average of 0.69 ($SD = 0.15$). There was a

significant difference in the research participants and the prison population

with respect to calculated level of risk ($M = 0.52$, $SD = 0.24$), $t(8762) = 9.25$, p

< 0.01 (see Table 7), with the research sample exhibiting generally higher

estimates of risk of recidivism.

Table 7

*Comparison of RoC*RoI Scores of the Research Sample and the New*

Zealand Male Prison Population

Group	M	SD	Min	Max
All prisoners*	0.52	0.24	0.00	0.96
Participants**	0.69	0.15	0.29	0.95

* $N = 8,696$; ** $n = 68$.

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[34] These data captured via the Department of Corrections' *Weekly offender summary* (November 2010).

Adjunctive measures.

Acute mental health problems. The participants T-scores on the SA-45 Global Symptom Index (GSI) indicated a mean of 71.34 (*SD* = 21.12). The SA-45 protocol recommends a cut-off T-score of 60, so this finding suggests that a large proportion of this sample had experienced a range of symptoms consistent with mental health problems in the week leading up to the experiment. However, specific issues that would have an anticipated impact on task performance, such as psychosis-related symptoms or a depressive episode, were not observed on this measure or other interactions (e.g., self-report) as part of this study.

Colour-perception differences. Although not central to this study, a proportion of participants (35%) made errors on the Farnsworth-Munsell D15 test. All participants who made errors were invited to complete a re-test. Approximately 15% (*n* = 10) accepted, of which nearly half (*n* = 4) made further errors. Two participants committed similar errors that involved reversing consecutive caps at retest, whereas two other participants yielded grossly erroneous results suggestive of notable colour perception deficits.

In sum, my research sample can be considered to have been typical in age to the general prison population and also shared some broad similarities in ethnic composition. However, this group had some notable differences, in particular they were serving generally longer finite sentences and a comparatively larger proportion of the sample were revealed to be serving indeterminate sentences. Furthermore, the majority of the sample had committed violence as a most serious offence compared with other antisocial

behaviour evident with the broader prison population, and – expectedly –

presented with higher actuarial risk of further reoffending.

Distribution of scores on the psychometric measures

Psychopathic Personality Inventory-Revised. Figure 9 presents a

frequency histogram of overall scores for the PPI-R, showing the measures of

central tendency and standard deviation of scores.
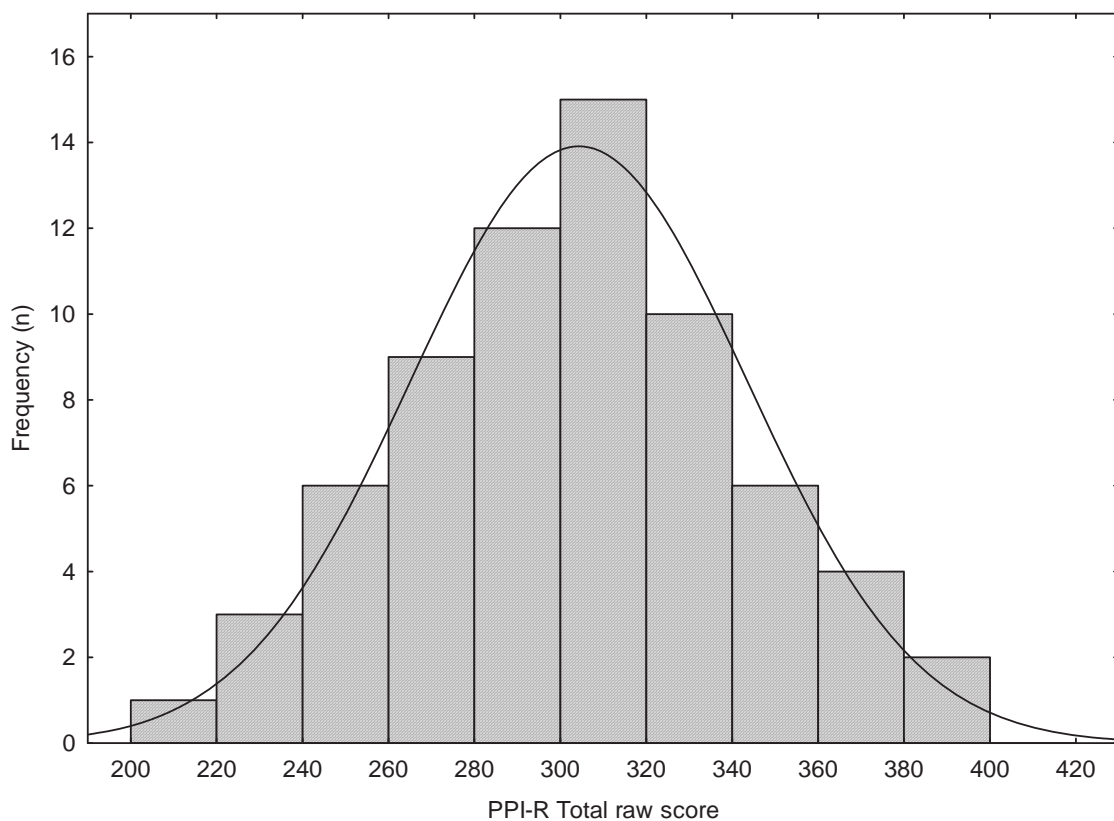
Figure 9. Distribution of sample PPI-R Total Psychopathy raw scores.

The participants' raw scores on the PPI-R Total Psychopathy scale

revealed a mean of 304 (*SD* = 39). The distribution of the sample was normal

with regard to a lack of skewness and kurtosis. All subscales of the PPI-R

revealed normal distributions for this sample as shown in Table 8. There was

a significant difference in the total scores of the research participants and

those of the original PPI-R development offender sample (n = 154) from a

New Jersey pre-release treatment facility[35] (*M* = 284, *SD* = 29.0; Lilienfeld &

Widows, 2005), *t* (220) = 4.2, *p* = 0.01.

Table 8

Descriptive Statistics for Sample PPI-R Raw Scores on Total Scale and

Subscales

Scale	*M*	*SD*	Min	Max
Total	304	39.0	219	391
Subscales				
ME	43	12.9	5	79
RN	34	9.8	16	53
BE	40	8.8	19	57
CN	36	8.9	22	64
SOI	43	9.4	18	62
F	39	8.6	18	55
STI	36	6.8	19	52
C	34	8.6	16	58

Note: ME = Machiavellian Egocentricity, RN = Rebellious Nonconformity, BE
= Blame Externalization, CN = Carefree Nonplanfulness, SOI = Social
Influence, F = Fearlessness, STI = Stress Immunity, C = Coldheartedness.
For subscale descriptions, see Table 4 (p. 83).

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[35] Risk, offence type and sentence length for this sample not known.

In addition, a validation sample of 52 prisoners in a high-security facility in the United Kingdom (*M*(age) = 38; *SD* = 9.7 years; Copestake, Gray, & Snowden, 2011), 85% of whom were serving Life sentences, revealed significantly lower scores on the Total Psychopathy scale and all subscales, except Social Influence (*SOI*), than did my sample, indicating generally lower degrees of psychopathic traits (and variations) in the UK prison sample. An intercorrelation matrix of the sample PPI-R Total and subscale scores is presented in Table 9, and reveals strong correlations between the Total score and *ME*, *RN*, *CN,* and *F* scales, indicating that these scales are more strongly related than the others subscales. The Coldheartedness (*C*) scale revealed the weakest overall relationships with other scales indicating that it measures a more independent facet of the construct.

Table 9

Pearson Product-Moment Correlation Matrix of the PPI-R Total and Subscale

Scores

	ME	RN	BE	CN	SOI	F	STI	C	Total
ME	1.00	---	---	---	---	---	---	---	---
RN	0.70*	1.00	---	---	---	---	---	---	---
BE	0.43*	0.42*	1.00	---	---	---	---	---	---
CN	0.45*	0.38*	0.13	1.00	---	---	---	---	---
SOI	0.25*	0.13	0.00	-0.10	1.00	---	---	---	---
F	0.59*	0.61*	0.28*	0.24	0.17	1.00	---	---	---
STI	-0.28*	-0.31*	-0.38*	-0.50*	0.25*	-0.01	1.00	---	---
C	0.22	0.08	-0.24	0.36*	0.05	0.19	0.00	1.00	---
Total	0.86*	0.78*	0.44*	0.52*	0.42*	0.74*	-0.15	0.38*	1.00

Note: ME = Machiavellian Egocentricity, RN = Rebellious Nonconformity, BE = Blame Externalization, CN = Carefree Nonplanfulness, SOI = Social Influence, F = Fearlessness, STI = Stress Immunity, C = Coldheartedness. For subscale descriptions, see Table 4 (p. 83).

* $p < 0.05$.

Cognitions About Violence Scale. The participants scores on the CAVS are presented in Figure 10, below and revealed a mean of 49.3 ($SD = 20.4$). There was a significant difference in the scores of the research participants and those of the original CAVS development sample who had a conviction for violence ($M = 58.8$, $SD = 19.7$; Polaschek et al., 2004), $t(189) = 3.15$, $p = 0.01$. Distributions on the CAVS were normal.
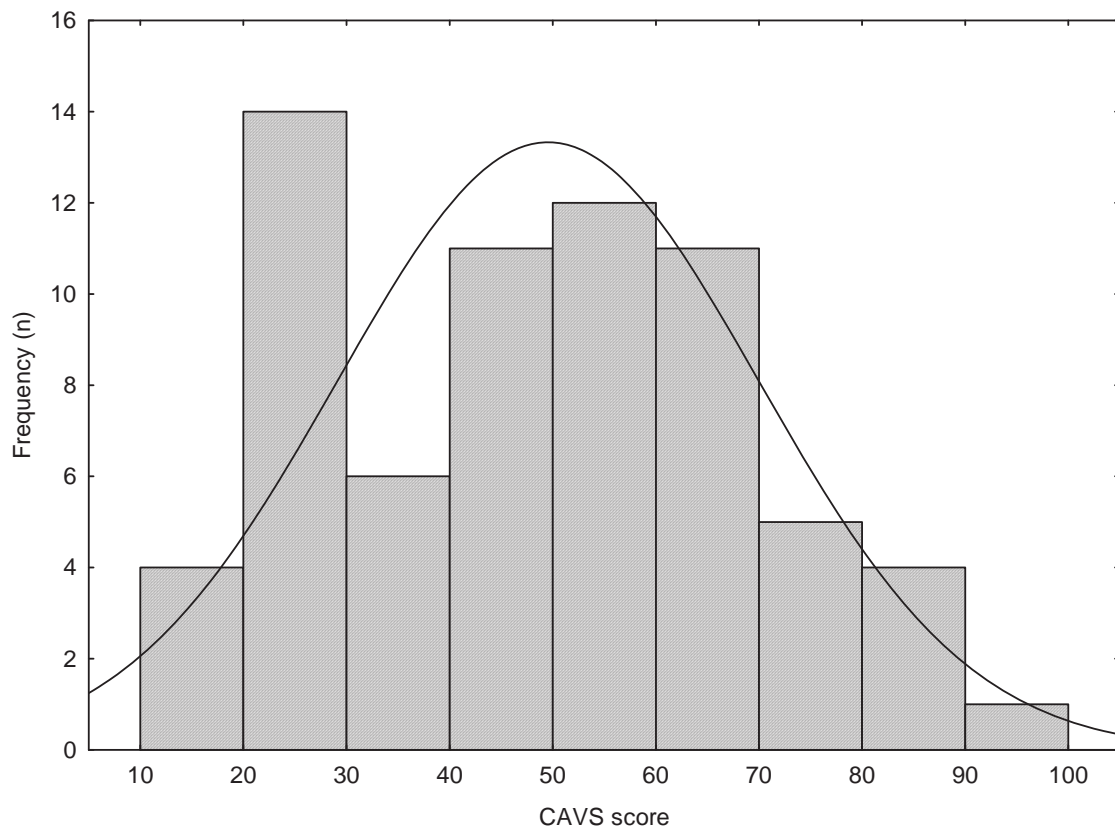
Figure 10. Distribution of CAVS scores.

3. Global Facial Affect Recognition (Phase 1)

The participants' combined raw scores for baseline (i.e., Phase 1) accuracy across all emotion categories revealed a mean score of 21.1 ($SD =$ 3.2), meaning that no ceiling effects were observed across the whole task for the entire sample, and that the task demonstrated a degree of variability (i.e., errors were made with no 'perfect' scores[36] noted).

4. Specific Facial Affect Recognition

A separation of the facial affect stimuli into discrete categories allows for closer examination of separate emotion perceptions. As is shown in Table

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[36] Each correct response received a score of 1 and errors received 0, so given the facial affect recognition task presented 28 faces, the maximum possible score was 28.

10, the participants' average accurate responses by category (expressed as a percentage) reveals that emotions are not recognised with the same degree of ease. Although the *actual* Ekman and Friesen (1976) developmental studies appear to have not been published (i.e., reported numbers across trials range from $n = 24$ to $n = 147$), the present research sample revealed similarities of high rates of correctly recognising 'happy', 'surprise', and 'sad' images (see Table 11). Of interest was the differences between the samples, for instance the research sample displayed moderately high agreement on most items except 'disgust', whereas the Pictures Of Facial Affect sample showed high agreement in recognising this emotion. Greater variation in relation to recognising 'neutral' was noted with the Pictures Of Facial Affect sample, but high agreement shown with research sample.

Table 10

Comparison of Ranked Accuracy Judgements (%) of the Research Sample in Relation to the Pictures Of Facial Affect Development Sample for Each Emotion Category

Emotion	Research sample (%)	Development sample* (%)
Happy	99.3	98.6
Neutral	84.6	15.6
Surprise	83.5	92.4
Sad	79.8	89.2
Anger	68.8	88.9
Fear	64.3	87.7
Disgust	47.8	92.3

* $n = 24\text{-}147$.

Table 11

Descriptive Statistics for Each of the Emotions Categories at Phase 1

Emotion	M	SD	Min	Max
Happy	3.97	0.17	3	4
Sad	3.19	0.95	0	4
Anger	2.75	0.89	1	4
Surprise	3.34	0.92	1	4
Disgust	1.91	1.13	0	4
Fear	2.57	1.20	0	4
Neutral	3.38	1.08	0	4
All emotions	21.1	3.16	13	27

5. Relationship Between Psychopathy and General Facial Affect Recognition

The first primary hypothesis concerned the relationship between psychopathy and general affect recognition: that psychopathic individuals have biases in recognising others' facial emotional expressions. It was expected that a negative relationship would exist between PPI-R Total scores and overall accuracy on facial affect tasks, meaning higher degrees of psychopathic traits would correspond with poorer accuracy. The relationship between global psychopathy scores (as measured by the PPI-R Total score) and facial affect recognition accuracy (as measured by the facial affect recognition task) was investigated using the Pearson product-moment correlation coefficient. Preliminary analyses were performed to ensure no violation of the assumptions of normality and linearity. There was no correlation between the two variables [$r = 0.07$, $n = 68$, $p > 0.05$].

6. Relationship Between Psychopathy and Specific Facial Affect Recognition

Given the 'real world' variability concerning the accuracy of recognising different affective facial expressions, it is perhaps no surprise that no discernible relationship was revealed when collapsing disparate emotional expression categories together. A secondary hypothesis, then, would follow that a more likely relationship exists between psychopathy and *specific* emotional expression recognition: that psychopathic individuals have biases in recognising other people's specific facial emotional expressions. It was expected that a negative relationship would exist between PPI-R Total scores

and accuracy on specific emotion categories on the facial affect recognition task, meaning that higher degrees of psychopathic traits would correspond to poorer accuracy, with variations, across emotion categories. The relationship between global psychopathy scores (as measured by the PPI-R Total score) and facial affect recognition accuracy (as measured by the facial affect recognition task by emotion category) was investigated using the Pearson product-moment correlation coefficient. Preliminary analyses were performed to ensure no violation of the assumptions of normality and linearity. There was a small relationship between psychopathy total scores and accuracy detecting neutral ($r = -0.22$), disgust ($r = 0.15$), sad ($r = 0.14$), anger ($r = 0.12$) and surprise ($r = 0.11$), but no relationship revealed between psychopathy and fear ($r = -0.04$) or happy ($r = -0.01$) (See Table 12).

Table 12

Correlations of Accuracy Scores for Emotion Categories and PPI-R Total Score

Emotion	r
Happy	-0.01
Sad	0.14
Anger	0.12
Surprise	0.11
Disgust	0.15
Fear	-0.04
Neutral	-0.22
All emotions	0.07

7. Relationships Between Psychopathic Subscales and General Facial Affect Recognition

A further secondary hypothesis concerned whether a relationship exists between the various 'types' of psychopathy and emotional expression recognition: that individuals with specific psychopathic traits have biases in recognising others' facial emotional expressions. It was expected that individuals with higher scores on the PPI-R subscales are likely to be less accurate and yield more errors than individuals with lower scores on facial affect recognition tasks. The relationship between specific psychopathy scores (as measured by the PPI-R subscale scores) and facial affect recognition accuracy (as measured by the facial affect recognition task) was investigated using the Pearson product-moment correlation coefficient. Preliminary analyses were performed to ensure no violation of the assumptions of normality and linearity. As is shown in Table 13, there was a small but significant negative relationship between the Coldheartedness (C) scale and global facial affect recognition accuracy [$r = -0.26$, $n = 68$, $p < 0.05$]. There were further small but not significant relationships between global affect recognition and the Stress Immunity (STI) ($r = 0.22$), Social Influence (SOI) ($r = 0.22$), Rebellious Nonconformity (RN) ($r = 0.12$), and Machiavellian Egocentricity (ME) ($r = 0.11$) scales. There were no other correlations observed between global facial affect recognition and the other PPI-R subscales. These post hoc analyses presented opportunities for Bonferroni corrections. However, this procedure decreases the likelihood of Type I errors (rejecting the null hypothesis when it is true) whilst also increasing the likelihood of Type II errors (failing to reject the null hypothesis when it is false)

(Perneger, 1998). Whilst both types of error are important in establishing the truth value of findings, rigid adherence to one or the other compromises integrity (Cabin & Mitchell, 2000), and risks having truly important differences being deemed as non-significant. Consequently, the Bonferroni correction was not conducted with these analyses.

Table 13

Comparison of Correlation Co-efficients Between Sample PPI-R Subscale Raw Scores and Total Facial Affect Recognition Accuracy

PPI-R Subscale	r
Machiavellian Egocentricity (ME)	0.11
Rebellious Nonconformity (RN)	0.12
Blame Externalization (BE)	-0.10
Carefree Nonplanfulness (CN)	-0.07
Social Influence (SOI)	0.22
Fearlessness (F)	0.03
Stress Immunity (STI)	0.22
Coldheartedness (C)	-0.26*

* p < 0.05.

8. Relationship Between Psychopathy and Facial Affect Discrimination

The second primary hypothesis concerned the relationship between psychopathy and general affect discrimination: that psychopathic individuals have biases in discriminating others' facial emotional expressions than less-psychopathic individuals when under pressure. It was expected that

individuals with higher scores on the PPI-R (Total score) would be likely to be less accurate and yield more errors than individuals with lower scores on facial affect discrimination tasks. The relationship between global psychopathy scores (as measured by the PPI-R Total score) and facial affect discrimination accuracy (as measured by the facial affect discrimination task) was investigated using the Pearson product-moment correlation coefficient. Preliminary analyses were performed to ensure no violation of the assumptions of normality and linearity. There was no correlation between the two variables [$r = 0.06$, $n = 68$, $p > 0.05$].

Despite the general lack of relationship between the PPI-R Total scores and discrimination accuracy, the separation of emotion categories against PPI-R subscales is suggested. A perusal of Appendix D reveals that significant negative relationships exist between Coldheartedness (*C*) subscale scores and discrimination accuracy with surprise (r = -0.35), disgust (r = -0.34), anger (r = -0.32), and fear (*r* = -0.25). An additional relationship of interest included the Fearlessness (*F*) subscale and surprise (r = -0.25).

Relationships between psychopathy and specific facial affect discrimination.

As mentioned earlier, a general lack of relationship between Total Psychopathy scores and lumped emotion categories is unsurprising given the variety of stimuli being rated. A secondary hypothesis, then, would follow that a more likely relationship exists between psychopathy and *specific* emotional expression discrimination: that psychopathic individuals have biases in rapidly discriminating other people's specific facial emotional expressions. It was

expected that individuals with higher scores on the PPI-R (Total score) are likely to be less accurate and yield more errors than individuals with lower scores on facial affect recognition tasks. The relationship between global psychopathy scores (as measured by the PPI-R Total score) and facial affect recognition accuracy (as measured by the facial affect discrimination task by emotion category) was investigated using the Pearson product-moment correlation coefficient. Preliminary analyses were performed to ensure no violation of the assumptions of normality and linearity. As shown in Table 14, there was a small negative but significant relationship between high PPI-R Total scores and correctly discriminating surprise (i.e., both images displaying 'surprised' faces) [$r = -0.25$, $n = 68$, $p < 0.05$]. Furthermore, there were small relationships between PPI-R total scores and anger ($r = -0.23$), happy ($r = 0.13$), and fear ($r = -0.13$).

Table 14

Comparison of Correlation Coefficients Between Facial Affect Discrimination (by Category) and PPI-R Total Scores

Emotion category	r
Happy	0.13
Sad	-0.02
Angry	-0.23
Surprise	-0.25*
Disgust	0.04
Fear	-0.13
Neural	0.01

* p < 0.05.

Relationships between psychopathic subscales and general facial affect discrimination.

A further secondary hypothesis concerned whether a relationship exists between the various 'types' of psychopathy and emotional expression discrimination: that individuals with specific psychopathic traits have biases in discriminating others' facial emotional expressions. It was expected that individuals with higher scores on the PPI-R subscales are likely to be less accurate and yield more errors than individuals with lower scores on facial affect discrimination tasks. The relationship between specific psychopathy scores (as measured by the PPI-R subscale scores) and facial affect discrimination accuracy (as measured by the facial affect discrimination task) was investigated using the Pearson product-moment correlation coefficient.

Preliminary analyses were performed to ensure no violation of the assumptions of normality and linearity. As is shown in Table 15, there was a small negative but significant relationship between the Coldheartedness (*C*) scale and global facial affect discrimination accuracy [$r = -0.26$, $n = 68$, $p < 0.05$].

Table 15

Comparison of Correlation Coefficients Between PPI-R Subscales and Total

Facial Affect Discrimination Accuracy

PPI-R Subscale	r (emotions)		
	All	Same	Different
Machiavellian Egocentricity (ME)	0.06	-0.08	0.08
Rebellious Nonconformity (RN)	-0.12	-0.01	-0.12
Blame Externalization (BE)	0.01	-0.06	0.03
Carefree Nonplanfulness (CN)	-0.05	0.00	-0.05
Social Influence (SOI)	0.16	-0.03	0.18
Fearlessness (F)	0.11	-0.05	0.13
Stress Immunity (STI)	0.09	0.12	0.06
Coldheartedness (C)	-0.02	-0.37*	0.08

* $p < 0.05$.

9. The Effects of Stress on Facial Affect Recognition

The inclusion of a frustrating task was intended to increase sufficient emotional arousal and, by extension, serve to compromise cognitive resources as the participants repeated the first two Phases. The first concern

in this section is to establish whether the task actually induced stress. Two indices will be discussed: (1) self-report questionnaire data from the PANAS, and (2) the participants' verbal self-report.

PANAS (PA): Comparison with development sample.

Pre- and post- scores for the Negative Affect and Positive Affect scales are examined (see Table 16). The participants' scores on the Positive Affect scale of the PANAS revealed a mean of 32.2 ($SD = 8.4$) at pre-administration and a mean of 31.3 ($SD = 10.3$) after the experiment. There was no significant difference between the pre- and post-intervention scores on positive affect. There was no significant difference in the scores of the research participants and those of the original PANAS development sample (American psychology undergraduates; $n = 660$) who, similarly to this sample, were instructed to report how they felt 'right now' at test administration ($M = 29.7$, $SD = 7.9$; Watson et al., 1988).

PANAS (NA): Comparison with development sample.

However, their scores on the Negative Affect scale of the PANAS revealed a mean of 12.7 ($SD = 4.1$) at pre-administration and 12.5 ($SD = 4.2$) afterwards (see Table 16). There was no significant difference between the pre- and post-intervention scores on negative affect. However, there was a significant difference in the scores of the research participants and those of the original PANAS development sample who had a conviction for violence ($M = 14.8$, $SD = 5.4$; Watson et al., 1988), $t(726) = 3.10$, $p = 0.01$, and $t(726) = 3.41$, $p = 0.01$ respectively, indicating that the research sample had generally

lower scores on the negative affect scales than the development sample.

Furthermore, distributions across scales and conditions were normal.

Table 16

Descriptive Statistics for Sample PANAS Positive and Negative Affect Scale

Scores

Scale	*M*	*SD*	Min	Max
Positive affect				
Pre-experiment	32.16	8.44	15	49
Post-experiment	31.32	10.32	12	50
Negative affect				
Pre-experiment	12.71	4.08	9	27
Post-experiment	12.5	4.18	10	25
Development sample*				
Positive scale	29.7	7.9	-	-
Negative scale	14.8	5.4	-	-

* $N = 660$ (Watson et al., 1988).

A paired-samples *t*-test was conducted to evaluate the impact of the

stress intervention on participants' scores on the PANAS (Positive Affect)

scale. There was no statistically significant difference in Positive Affect scores

from Time 1 (*M* = 32.2, *SD* = 8.4) to Time 2 (*M* = 31.3, *SD* = 10.3, *t*(67) =

1.29, $p > 0.05$), indicating that reported levels of positive emotional states were unchanged for this sample before and after the stress intervention.

A second paired-samples t-test was also conducted to evaluate the impact of the stress intervention on participants' scores on the PANAS (Negative Affect) scale. Consistent with the Positive Affect scale scores, no statistically significant difference was observed with Negative Affect scores from Time 1 ($M = 12.7$, $SD = 4.1$) to Time 2 ($M = 12.5$, $SD = 4.2$, $t(67) = 0.53$, $p > 0.05$), indicating that reported levels of negative affect were also unchanged across the sample before and after the stress intervention.

Self-report.

Almost all participants verbally reported a notable degree of frustration with the stress intervention, with many commenting on the apparent (actually *real*) shortened timeframe than that which had been formally stated.

Impact of stress on facial affect recognition accuracy.

Given the low level of measured stress but a higher level of *perceived* stress, this section concerns the impact (if any) the stress intervention may have had on task performance. It was expected that psychopathic individuals are likely to reveal a greater bias in recognising and discriminating others' facial emotion expressions when experiencing heightened arousal. Specifically, high-scorers on the PPI-R (Total score) were predicted to be less accurate (i.e., make more errors) than low-scorers on facial affect recognition tasks when under stress.

Post-intervention (i.e., Phase 4) accuracy on the recognition task revealed similar outcomes (see Table 17), with neither distributions violating normality assumptions. A paired-samples *t*-test was conducted to evaluate the impact of the stress intervention on participants' combined accuracy on facial emotion recognition. There was no statistically significant difference of global facial affect recognition scores between Phase 1 and Phase 4.

Table 17

Descriptive Statistics for Sample Facial Affect Recognition Accuracy Scores (Phases 1 and 4)

Condition	M	SD	Min	Max
Accuracy score (pre)	21.12	3.16	13	27
Accuracy score (post)	21.22	3.81	9	27

The distribution of the combined scores for both Phases 1 and 4 indicate that accurately identifying emotional expressions from static, face-specific stimuli was a challenging task for many of the participants with some scoring lower than 20 out of a possible total score of 28 for each phase (see Figures 11 and 12).
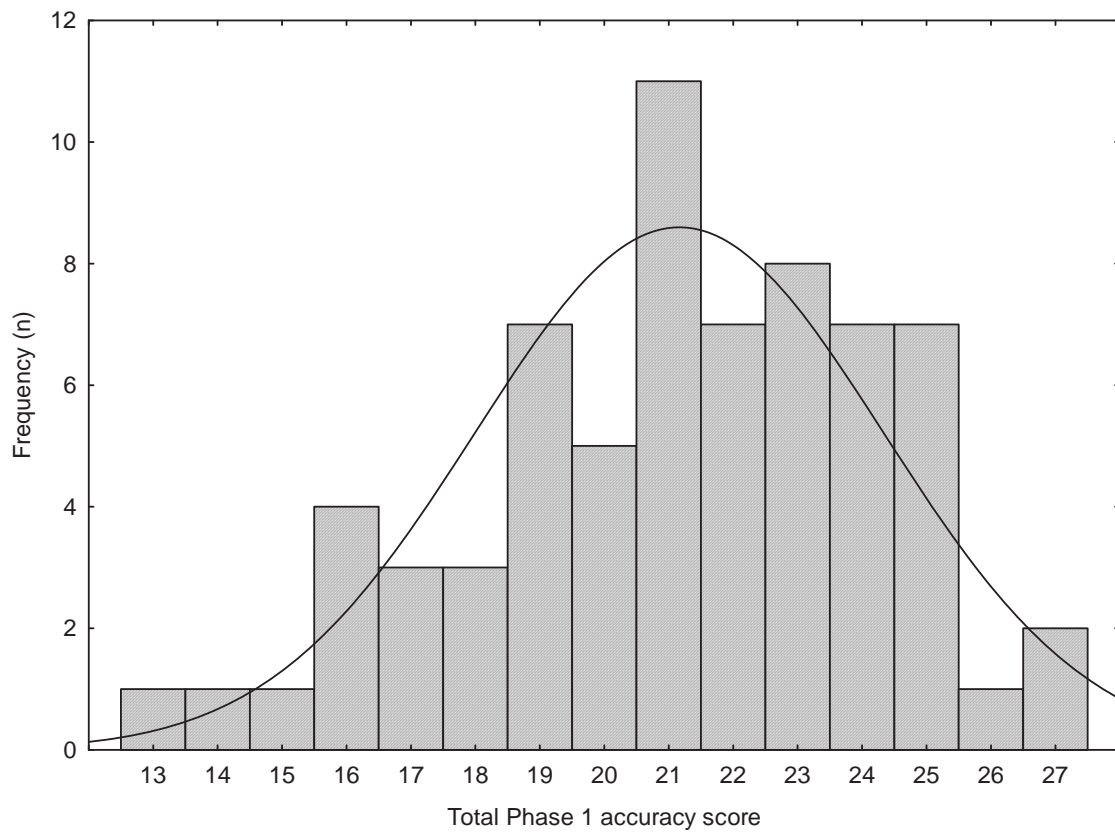
Figure 11. Distribution of combined accuracy scores for Phase 1 (pre-

intervention).
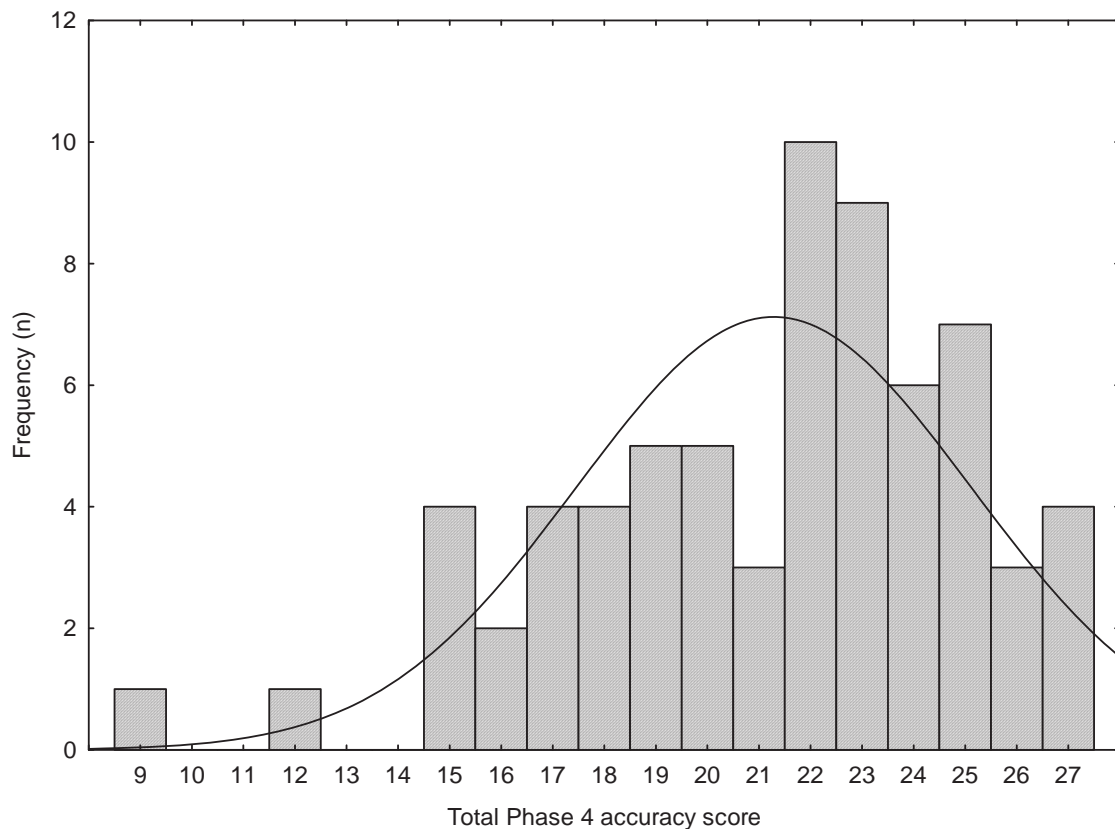
Figure 12. Distribution of combined accuracy scores for Phase 4 (post-

intervention).

A perusal of the inter-correlations table (Appendix E) revealed no

significant relationship between PPI-R Total scores and facial affect

recognition accuracy consequent to the stress intervention ($r = 0.09$).

However, significant relationships between Stress Immunity (*STI*) and fear ($r =$

0.29), and Social Influence (*SOI*) and anger ($r = 0.26$), as well as a negative

relationship (i.e., more errors) between Blame Externalisation (*BE*) and

disgust ($r = -0.27$) were observed consequent to the stress intervention.

Impact of stress on facial affect discrimination: Accuracy.

A paired-samples *t*-test was conducted to evaluate the impact of the

stress intervention on participants' scores on the discrimination task. As

displayed in Figure 13, there was a statistically significant increase in the sample's accuracy scores on this task from Time 1 (M = 84.38, $S.D.$ = 12.5) to Time 2 (M = 88.19, $S.D.$ = 11.61, $t(67)$ = -4.33, p < 0.001).

Figure 13. Box and Whisker representation of the samples' global accuracy on the facial affect discrimination task before and after the stress intervention.

Accuracy: Dual. To determine whether there was a difference with respect to dual presentations of the same emotion during trials (e.g., both 'happy'), a paired-samples *t*-test was conducted to evaluate the impact of the stress intervention on participants' accuracy scores on the discrimination task for dual presentations only. There was no statistically significant difference in scores on discriminating the 'same' emotions before or after the stress intervention*.*

Accuracy: Mixed. To determine whether there was a difference with respect to mixed presentations (e.g., 'happy' paired with 'sad') during trials, a further paired-samples *t*-test was conducted to evaluate the impact of the stress intervention on participants' accuracy scores on the discrimination task for mixed presentations only. There was a statistically significant increase in accuracy scores from Time 1 ($M = 60.7$, $SD = 11.9$) to Time 2 ($M = 64.8$, *S.D.* $= 12.0$, $t(67) = -4.72$, $p<0.0001$). The disparity of sample accuracy between conditions is shown in Figure 14.

Figure 14. Box and Whisker representation of the samples' accuracy on the mixed facial affect discrimination task before and after the stress intervention.

A perusal of the table in Appendix E reveals that specific PPI-R subscales related to accuracy in the discrimination task on selected emotions.

For instance, there was a negative relationship between Coldheartedness (*C*) and sad (*r* = -0.42), indicating more difficulties for this subgroup to discriminate this emotion when paired with a similar facial display than between any other pairing. In addition, the Fearlessness (*F*) scores yielded a significant negative relationship with discriminating pairs of fearful faces (*r* = -0.24). Of interest, the Social Influence (*SOI*) scores correlated positively with discrimination scores on sadness (*r* = 0.27).

Impact of stress on facial affect discrimination: Reaction time.

Reaction time on the facial affect discrimination task was also measured. It was hypothesised that the pre-/post-intervention difference would be reflected in slower reaction times. Outcomes for 'dual' (i.e., similarly paired emotions) and 'mixed' (i.e., disparate paired emotions) are summarised:

Reaction time: Dual. A paired-samples *t*-test was conducted to evaluate the impact of the stress intervention on participants reaction times during the dual (i.e., same emotions paired) presentations only. As shown in Figure 15, there was a statistically significant decrease in reaction time (measured in ms) across the sample, indicating that their responses became more rapid from Time 1 (*M* = 1626, *SD* = 341) to Time 2 (*M* = 1526, *SD* = 323, *t*(67) = 3.89, *p* < 0.001).
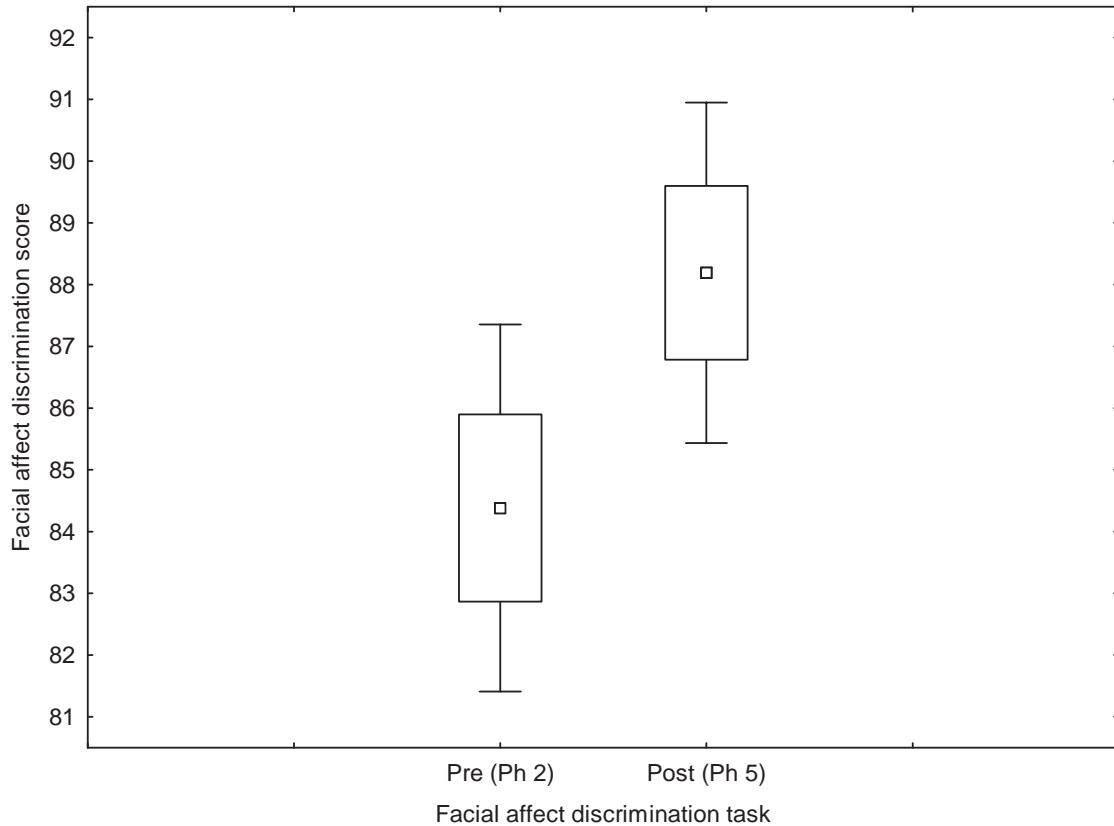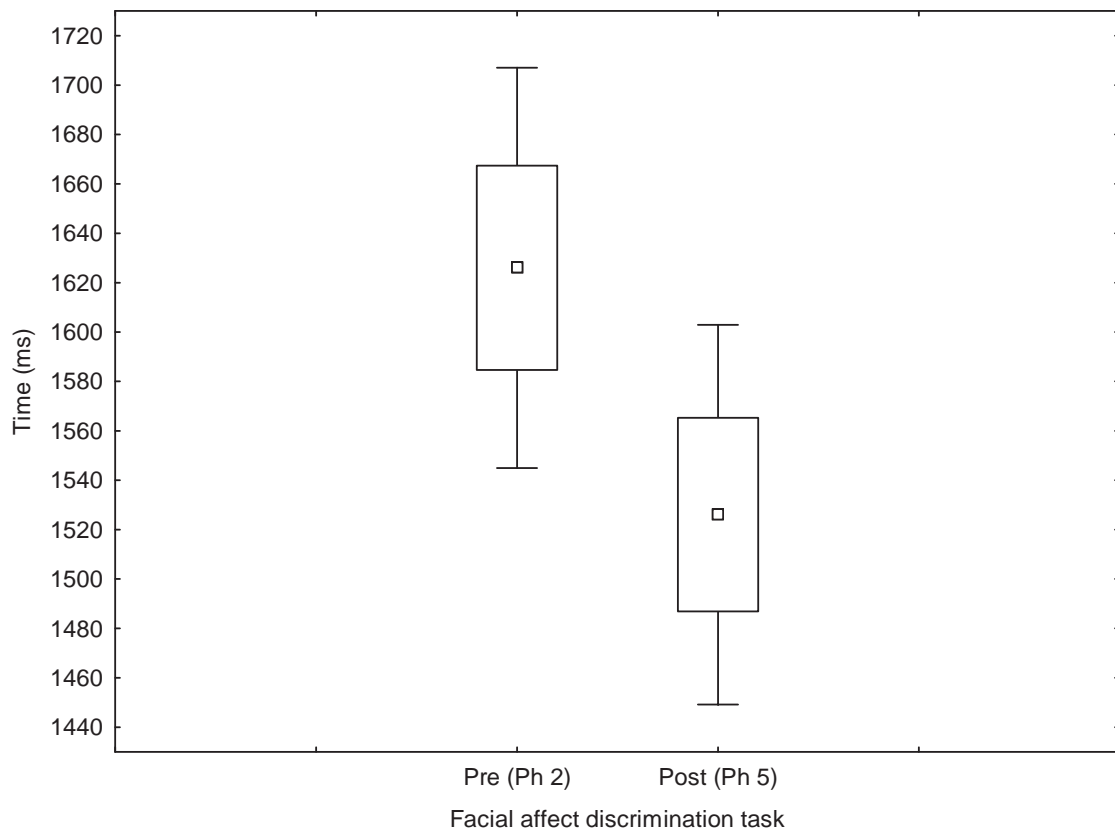
Figure 15. Box and Whisker representation of the samples' reaction time on the facial affect discrimination task before and after the stress intervention when emotions were similar.

Reaction time: Mixed. A paired-samples *t*-test was conducted to evaluate the impact of the stress intervention on participants reaction times during the mixed (i.e., different emotions paired) presentations only. As shown in Figure 16, There was a statistically significant decrease in reaction time (as measured in ms) across the sample, indicating that their responses became more rapid from Time 1 (*M* = 1782, *SD* = 375) to Time 2 (*M* = 1641, *SD* = 369, *t*(67) = 5.04, *p* < 0.001).
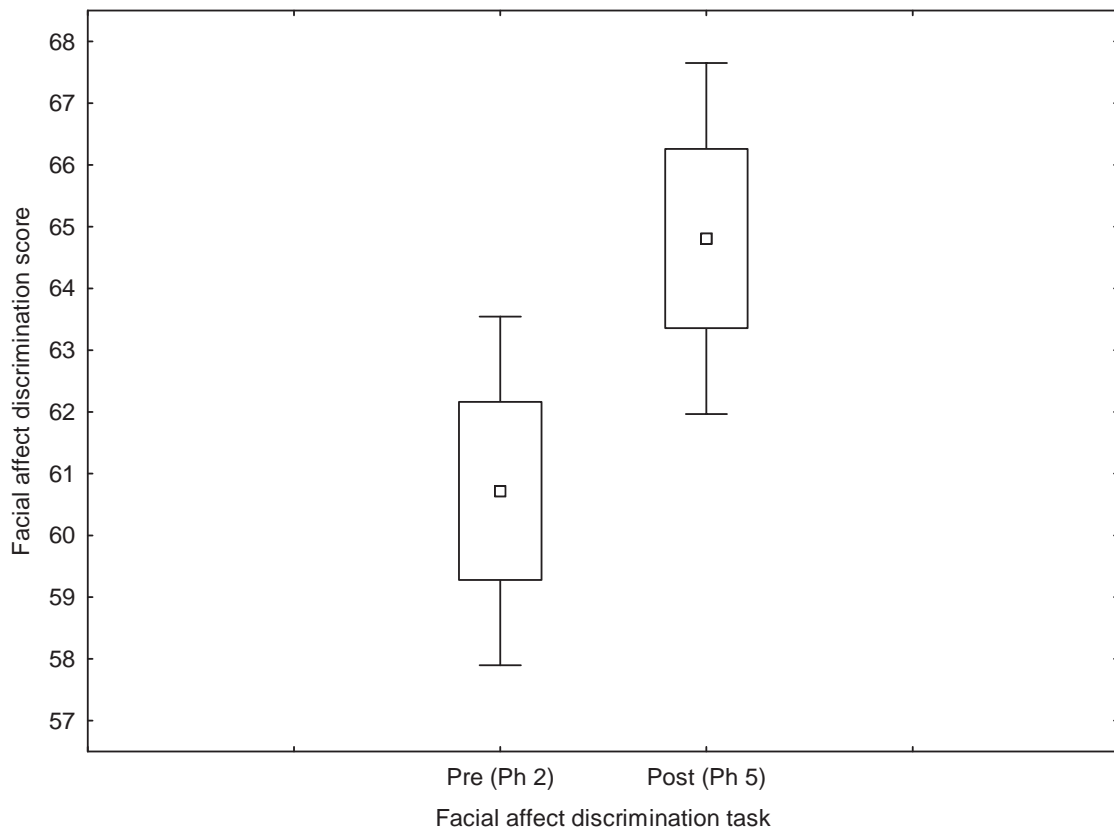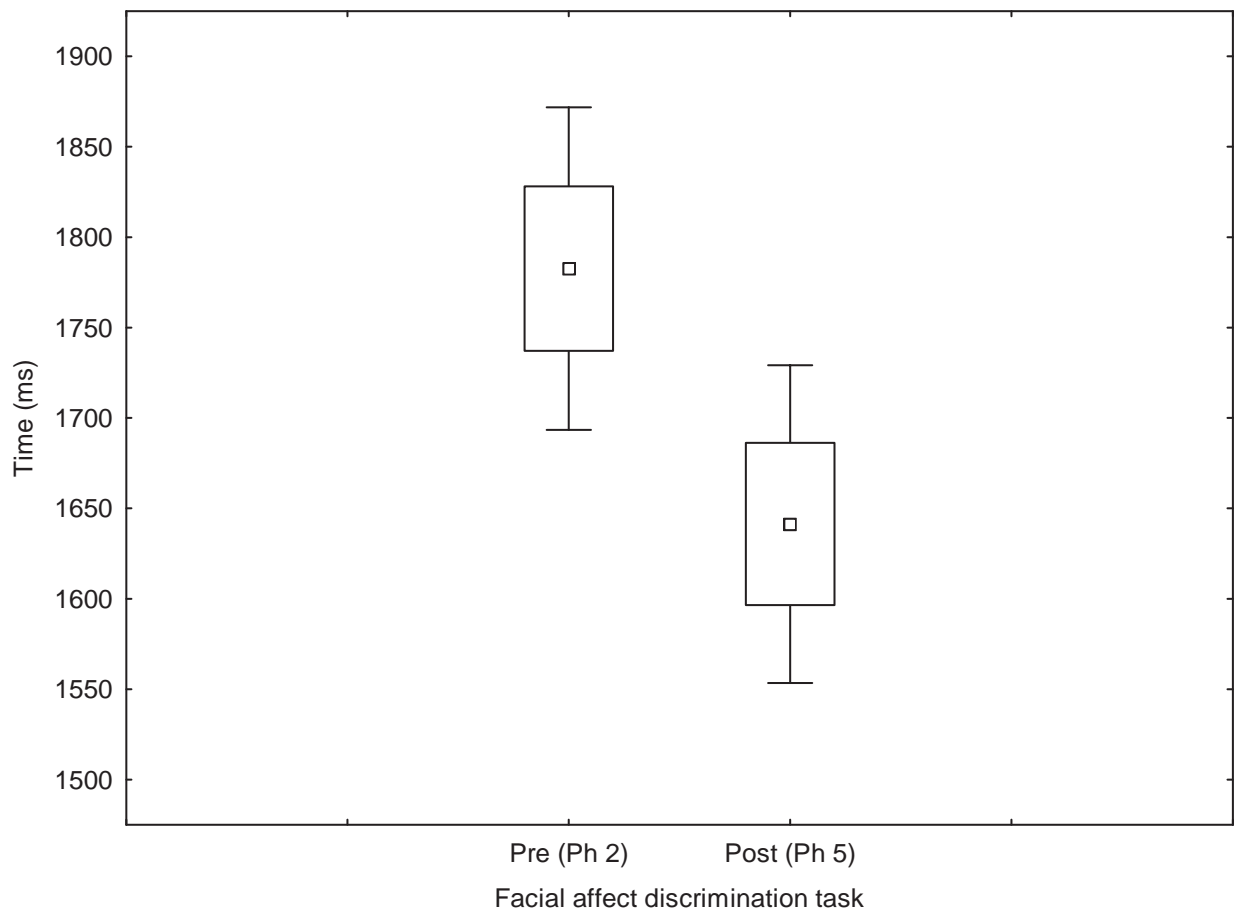
Figure 16. Box and Whisker representation of the samples' reaction time on

the facial affect discrimination task before and after the stress intervention

when emotions were mixed.

Chapter Five: Discussion and Conclusions

Overall, the findings from this study do not support the primary hypothesis that psychopathic offenders would exhibit differences in recognising facial emotion expressions in others. Furthermore, these findings do not support the second primary hypothesis that any differences revealed by psychopathic individuals in the facial affect recognition task would be further exaggerated following a stressful situation. Taken together, facial affect recognition offers an inconsistent index of psychopathic individuals' ability to engage in social cognitive processes. However, secondary hypotheses suggest that consideration of variations of psychopathic personality are likely to yield more insight into functional differences on social cognitive factors both within this group and in relation to others.

Recognition

General accuracy was normally distributed for the sample on Phase 1, and suggests that the participants' ability to recognise facial expressions of emotion is variable and possibly a useful individual difference variable when clinically assessing offenders who report the way people, especially victims, responded to them emotionally. The spread of scores suggest that these participants may not be exposed to a full range of emotions in others on a frequent or regular basis over time or across situations. For instance, one of the participants (aged in his early 20s) shared with me some of his early experiences in prison, commenting that he had to learn how to 'switch off' his emotions – particularly when 'feeling down' – in order not to expose

vulnerability to other men in his unit. He added that talking about feelings was not encouraged – and sometimes actively punished by verbal abuse for this reason. Disturbingly, he commented that over time, he had felt less in touch with his emotions, particularly due to what he felt was extreme social pressure within the institution to not disclose perceived weakness.

Given that emotions vary in terms of antecedents, internal processes, and function (Darwin, 1872; Ekman & Friesen, 1975; Lazarus, 1991), coupled with the variability of participants' (in)sensitivity to specific affective cues suggests that a global index of affect recognition is not an adequate indicator of ability across multiple emotion categories for psychopathic individuals. However, consistent with the empirical literature (see Table 3), the participants' scores on specific emotions indicated that notable errors occurred on only a small number of emotion categories. For instance, the data in Tables 10 and 11 revealed that almost no errors occurred when identifying happy faces, with largely accurate scores on neutral and surprise. Conversely, the low agreement on identifying disgust, fear and anger is of interest for this group because these are (1) negative emotions; (2) largely unambiguous (at least according to Ekman and Friesens' development sample); (3) expected reactions from victims of crime (it is remembered that all of these participants were high risk offenders, a number of whom had committed extreme violence – sometimes on many occasions); and (4) all emotional expressions that communicate threat or aversion on the part of the actor. At the most general level, the whole sample presents a fairly atypical picture of ability to identify some emotions in others in relation to the development sample.

Furthermore, the apparent lack of relationship between global facial affect accuracy and psychopathy may reflect clustering contrasting phenomena together, such as easy to identify emotions (e.g., happy) combined with ambiguous faces (e.g., disgust and fear). Such an approach, in hindsight, assumes a degree of conceptual equivalence of emotional expression that clearly does not bear out in laboratory contexts. Hence, it should not be surprising that a global measure of emotion recognition tells us little about the ability of this (admittedly broad) population to detect and identify emotions in others.

When exploring the specific emotions on the recognition task themselves, the lack of relationship with global psychopathy and fear was contrary to expectations, especially given that eight of the thirteen previous studies had reported this emotion category as being the most problematic for psychopathic samples (measured globally) to identify (see Table 3). This finding may reflect compound traits (Lilienfeld & Fowler, 2006) that imply the impact of separate and essentially unrelated lower-order traits. For instance, the PPI-R was developed orthogonally and is made up of subscales that, being independent in principle, cloud the overall picture when considered as a whole. So, in this sense, exploring the relationships between PPI-R subscales meant that functional subgroups could be identified and compared against the social cognitive tasks. As shown in Table 9, the PPI-R scale scores for this sample revealed a mixed picture where a moderate to high degree of relatedness is apparent amongst the scales, indicating greater conceptual overlap across the scales. However, the presence of relatively independent scales (e.g., Coldheartedness) also indicates clearer grounds to establish at

least one distinctive subtype amongst this group. In addition, almost none of the subscales yielded significant relationships on the recognition task, save that of the small and negative relationship between Coldheartedness (*C*) and general accuracy, meaning that high-scorers on this subscale made more errors on the task, suggesting that these individuals experienced more ambiguity amongst the stimulus set. This is consistent with the concept of this subscale as defined by Lilienfeld and Widows (2005), and reflects the characteristic lack of empathy that is experienced with individuals who exhibit this trait. A lack of empathy also suggests that such an individual is less likely to be guided – or perhaps even *cued* into others' emotional state due to a heightened degree of indifference and/or callousness, along with negative social schema.

Like psychopathy, the cognitive impact of emotions are difficult to measure when clustered together as a single category. The separation of differing emotions categorically allows one to 'unpack' identifiable processes for both personality and affect recognition in order to detect, not just individual differences, but also rich conceptual areas that inform the roles of personality and recognising emotions in others. At a basic level, 'psychopathy' per se may not tell us very much about an individual's ability to detect social cues from others, but specific subtypes may be more informative, arguably because of functional differences amongst these groups.

Discrimination

The discrimination tasks invited participants to consider a number of demands in order to complete the task: (1) identify the displayed emotions on

paired presentations; (2) assess the categorical similarity or differences of each pair; and, (3) respond as rapidly as possible due to time constraints (i.e., stimulus duration) and goal-approach (i.e., aim to respond 'as quickly as possible') under instruction. The primary assumption that supported the use of this task was the increased demand on cognitive resources as impacting on performance (Lynam, 2002; Newman, 1998; Wallace et al, 2000). That is, participants were instructed to attend to both social cues and their *response time*. This task was designed to tap into the encoding (i.e., visual simulus) and interpretive (i.e., meaning-making, comparison with existing cognitive representations) stages of Crick and Dodges' (1994) social information-processing model. In this task, Total Psychopathy scores correlated negatively (i.e., higher error rate) with pairings of surprised faces. This suggests that global psychopathy is likely to be less sensitive to surprise as an emotion. This finding is contrary to expectations given that poor accuracy to surprised faces was not found by any of the previous studies in Table 3. Surprise has been identified as a very brief emotion that is quickly replaced by other more durable affective states, such as fear (Ekman & Friesen, 1975) – a common emotion exhibited by persons under threat (e.g., victims of violence). This finding may support the impairments in behaviour modulation observed by Lynam (1997) and Newman (1997), especially in the presence of competing stimuli.

Although not a formal hypothesis in this study, a perusal of PPI-R subscales in relation to specific emotion categories under this condition reveal that high-scorers on the Coldhearted (*C*) scale incurred more errors across more emotion categories on the discrimination task than any other subscale at

baseline (see Appendix D) as well as the highest reported negative correlation (i.e., with paired sad faces) after the stress intervention (see Appendix E), suggesting that these individuals may perceive selected and similarly presented emotions more ambiguously than other groups. It is unclear as to whether this apparent confusion of social cues is not only symptomatic, but also causal of low empathy and callousness amongst this subgroup – a question that warrants further investigation.

Emerging Questions

Having explored the basic relationships between psychopathy (as reflected in the PPI-R and accompanying subscales) and a form of social cognition (as expressed in facial emotion), additional questions are raised that suggest further exploration of (1) extreme scores; (2) situational variables; and, (3) consideration of the presence of bias by other stimuli features.

Extreme scores.

Given the PPI-R Total scores for my sample were normally distributed and that most analyses have been framed accordingly, a closer look at the accuracy patterns (if any) of the extreme groups (i.e., those that were the most – and least – accurate on the recognition and discrimination tasks) may yield insights into both psychopathy and social cognition that may be lost when comparing the entire group. Five participants from each end of the score ranges for total accuracy across Phases 1, 2, 4, and 5 were collated, with subgroup means and distributions available in Appendix F. At a glance, participants who made the most errors on the initial recognition task (Phase 1)

revealed above-average scores across almost all PPI-R subscales, except

Social Influence (*SOI*) and Stress Immunity (*STI*). Furthermore, a brief sketch

of how these groups were formed across conditions is displayed (Appendix F),

and reveals that a small number of participants consistently rated faces

accurately as well as inaccurately over the course of the experiment

(Appendix G). In-depth case-by-case exploration of individuals that performed

at the extremes of the score continuum may present a useful research

strategy to unpack the factors pertinent to participants 'on the edge' of the

sample.

Impact of the stress intervention.

A unique feature that separates this study from previous research on

psychopathy and social cognition is the inclusion of a stress intervention. The

decision to include this condition was based on an assumption that some

abilities and traits are (1) situation-specific (i.e., more likely to be elicited under

relevant conditions), and, by extension, (2) amenable to being elicited in

experimental settings. As has been shown, the impact of the stress

intervention as used in this study appears to be questionable at best.

However, this raises interesting methodological issues about applied

stressors. For instance, would increasing the *intensity* of the stressor more

likely yield a differential outcome? Or, would varying the *range* and *variety* of

competing stimuli offer greater insights into social cognitive processes? In the

first instance, affective processes would be emphasised, as was the case in

my study. To pursue this direction further would also require increased ethical

sensitivity – especially if attempting to 'stress-out' psychopathic offenders! In

the second instance, deploying multiple tasks as competing stimuli emphasises cognitive resource allocation (with affective change as a secondary consideration) – an area of noted interference with psychopathic individuals in the experimental literature (Lynam, 2002; Newman, 1998; Wallace et al., 2000). My approach may have had more features of the latter whilst attempting to achieve the goals of the former. Further development of effective (but safe!) stressors that implicitly promote sufficient degrees of arousal and/or cognitive interference to create a cognitive-affective change in individuals who exhibit psychopathic (global and subtypal) traits warrants further exploration.

Impact of other stimuli on response bias.

The entire stimuli set displayed white American faces from the 1970s, and approximately half of the images were of females expressing negative emotions. Although demographic differences were not a primary concern for this study, the possible presence of a bias based on features 'other than' or 'as well as' expressed emotion (e.g., gender, perceived age, etc.) in relation to psychopathic traits such as empathy (or, Social Influence on the PPI-R) and callousness (i.e., Coldheartedness) would be of interest. Furthermore, perceptions of *context* for the facial stimuli set were also neither discussed nor assumed in this study. One participant created a 'story' based on his perceptions of the faces that he narrated at the same time as he responded to the tasks (i.e., *"and that's the face that my victim had when I showed up in Court … and that's the face the Judge had when he handed me my sentence…and that's what my wife looked like when I was led out of the*

dock…"). Although not observed elsewhere in this study, *how* others'
emotions are perceived by this group may offer further insights into the
individual's own sense of role in social interactions and the impact they have
in these situations.

In addition, the decreased reaction times, although indicative of
improved performance across the group – particularly in light of similar overall
scores before and after the stress intervention also suggests the presence of
practice effects. However, given that no feedback on accuracy or speed was
offered at any stage, as well as the volume of stimuli on both Phases 2 and 5,
indicates that this is a difficult relationship to tease out with the available data.

Reflections on the Data

'Deficit' or 'difference'?

All previous studies cited here on the relationship between
psychopathy and facial affect recognition (see Table 3) indicated that
psychopathic individuals were as accurate (if not more so in some cases) than
non-psychopathic participants on recognising some facial emotions (e.g.,
happy, angry). Given the experimental literature has typically assumed a
deficit-focus with this group, Bursten's (1972) observation that psychopaths
may be *better* at picking up other's social cues – especially vulnerabilities – is
not altogether unreasonable. If this is indeed the case, a further question is
posed as to what social cues are likely to be attended to and under what
conditions?

Simplicity vs sophistication.

The findings from both the recognition and discrimination tasks across the group were consistent with the general observation that emotions are functional and expressed non-equivalently (Ekman & Friesen, 1975; Lazarus, 1991). This study was intended to test the idea that an artificially-induced emotional situation would yield effects on task performance. Using the common approach of a forced-choice response paradigm and the Ekman and Friesen (1976) stimuli set (see Table 3), this study found no change from baseline. This lack of post-intervention change may have reflected an overly-simple stimuli set and response demands (i.e., button-press responses and small number of basic emotion categories) despite errors across the group. Developing situations that approximate 'real world' scenarios, such as the use of standardised audio-visual vignettes of common stress-eliciting situations (e.g., argument with partner, interactions with the Police), may offer a promising next step to elicit differences in responding to subtle cues that may not have been captured by the design in this study. For instance, moving images that incorporates fine motor movement and a social context and other (ambiguous) contextual cues may offer richer stimuli (i.e., in 'real time'), and present more challenging responses.

Limitations and Challenges

In retrospect, a number of significant challenges likely impacted on the integrity of this study as an approach to addressing the initial research questions and touch a number of major aspects such as: (1) participant characteristics; (2) selection and use of measures; (3) the procedure itself; (4)

data management; (5) the apparatus used; (6) contagion effects; and, (7) researcher characteristics. Discussed here in turn:

Participant characteristics.

Mental illness, the stress of residing in higher-security facilities, upcoming Parole Board hearings, and polysubstance abuse (i.e., current use or long-term effects of historic abuse) are all factors that stand to impact on individual differences in task competence and the assumed homogeneity of the sample. Indeed, given the small sample size and lack of measurement of alcohol and substance abuse, it was not possible to control for opiate use – a noted correlate of facial affect inaccuracy (Kornerich et al., 2003). The inclusion of the SA-45 and my own clinical sensitivities assisted in reducing (or at least detecting) the presence of clinical factors that threaten the integrity of the study. However, given the enmeshment of these issues, obtaining 'pure' cases becomes a highly unlikely outcome. It is a reality in New Zealand prisons that high-risk offenders who have lengthy sentences, long and varied offence histories, as well as possessing marked psychopathic traits are, sadly, normative rather than exceptional. However, a 'take-home' reminder for me was that despite being identified as 'prisoners', research samples derived from offender populations should never be assumed to be homogenous and I was vigilant not to impose stereotypes onto this community – a process that was greatly assisted during the debrief, and even afterwards as a number of participants expressed ongoing interest in the study months after I had met with them.

Measurements.

Whilst the PPI-R is (1) brief to administer; (2) does not tax raters

through arduous administration time; and, (3) offers functional information not

easily gleaned from other psychopathy measures, it also presents challenges

when attempting to compare my study with other research that have utilised

alternative criteria. For instance, 12 of the 13 studies cited (see Table 2) used

the PCL-R (or a related variant). Although, 'psychopathy' measures are

intended to detect the same overall construct *in principle*, the criteria – and

approach – that comprise various instruments reflects differences in item

selection, administration, interpretation, and level of analysis (i.e.,

inclusion/exclusion criteria for diagnostic measures, dimensional criteria for

self-report). In this regard, multi-method approaches are an obvious solution

to triangulate the phenomena of interest, but are likely impractical in real world

contexts due to the volume of effort required to produce a comprehensive (if

such an idea even applies) clinical or research picture of this most elusive of

constructs.

Procedure.

Although the Ekman and Friesen (1976) Pictures Of Facial Affect is the

most widely-used facial stimulus set, it is also culturally and chronologically

biased (i.e., white American faces revealing 1970s fashions, etc.). Although

much of the indigenous-specific research supports a 'universality' of emotion

expression and recognition cross-culturally (e.g., Ekman, Sorenson, &

Friesen, 1969; Russell, 1994), it is still an open question as to how this applies

to prison 'cultures', especially where some emotional expressions can be interpreted by some in these social environments as hostile or threatening.

Despite the lack of apparent stress caused by the Stroop task, the application of the PANAS – in hindsight – is questionable for the following reasons: (1) contrary verbal reports from most of the participants at the time of the experimental sessions; (2) the use of the PANAS as a measure of acute emotion state – this is a brief measure that uses a small (and arguably limited) range of single-word descriptors to assist participants to quantify their own emotions into two broad categories (i.e., positive, negative). The efficacy of the measure relies on the participant's understanding of the items (which was not always verifiable). Furthermore, (3) the sequencing of the PANAS – sometimes up to 20 minutes after the stress intervention – allowed the participants opportunities to 'cool off' and focus on the task, thus presenting a likely different affective state from that *immediately after* the Stroop task and, arguably, informing little about the immediate affective sequelae of the stress task. Alternative approaches such as administration of the PANAS closer to the stress intervention and/or the deployment of multimodal (e.g., psychophysiological) approaches may offer improved efficacy in measuring acute changes in affect as an index of task performance.

Data management.

Two primary issues are germane here: (1) the issue of 'too much' data became something of a concern, especially because of the myriad possible relationships and analyses that opened up; and (2) the analytic approach was largely correlational – because relationships between continuous variables

offered the most parsimonious approach to addressing the research

hypotheses. However, a hazard with such correlational approaches is that

individual differences get lost – a common feature of psychopathy research.

Apparatus.

Although a portable laboratory offered the advantages of being

compact enough to allow for ease of transport through a number of prisons,

as well as enable me to conduct the experiment in a range of settings that

would not be possible with more cumbersome equipment, it also meant that

the research 'environment' was not always consistent (or similar), with some

trials conducted in interview rooms and therapy rooms, whereas other

sessions took place in busy 'high-traffic' areas such as visitors rooms or halls

where it was not unusual for other prisoners – or prison staff – to gather

around the windows to observe the process. This posed particular challenges

to the integrity of the experimental process given that the stress task was

designed to be a 'controlled' distraction and offer a consistent source of

cognitive compromise across trials.

Sample contagion.

As anyone who has worked in prison environments will attest, prisoners

'talk'. So, the participants' experiences of the experiment, whether positive,

negative (stressed!), mixed, or indifferent, would likely be shared amongst

other members of the prison community – presenting more threats to the

integrity of the study, especially the aspects of the experiment that relied on

the (short-term) naïveté of the participants in order for the deceptive element

of the stress task to elicit the required response (i.e., frustration and increased arousal). Indeed, the effectiveness of the stress task was likely compromised if participants were in some way informed sufficiently enough for them to prepare, anticipate, and detect the presence a covert process designed to 'catch them out'.

Researcher characteristics.

My own demographics and professional identity played a more prominent role than initially expected. For instance, I am (1) a Māori male – a demographic shared with many high-risk prisoners in New Zealand; (2) a professional who works for the 'system' – especially as a psychologist in an environment where prisoners' primary involvement with psychologists is often negative and due in part to occurring in the context of risk assessments or rehabilitation – common sources of anxiety amongst New Zealand prisoners who are deemed to be at high risk of reoffending (i.e., the demographic I was interested in); and, (3) related to (2), a *psychologist*. It was not uncommon for prisoners to access me when it was made known that I was on-site and approaching me for reasons other than the research (e.g., advice on sentence management, establishing contact with services, etc.). In most instances, participant interest and – eventually – compliance was obtained during these seemingly-tangential contacts. There were also occasions when prospective participants perceived the research interviews as an opportunity to vent about their treatment in their respective institution or were quick to disengage when I disclosed that I was not actively recruiting for treatment programmes.

Far less pivotal, but an issue nevertheless, was managing some prisoners' expectations around rewards. In the midst of data-gathering, it became apparent to me that other researchers were rewarding (or possibly bribing) prisoners with access to sought-after reinforcers (e.g., confectionary) that I was unable to offer. Given that my professional role involves likely regular contacts with the prisoner community, I was mindful to not engage in 'prison economics' for (1) reasons of prisoner safety[37], and (2) avoiding setting a potentially costly precedent for future researchers who work in this environment.

In sum, primary challenges seemed to be in negotiating the human elements of the research process as well as factors that were difficult to establish control over in highly secure environments.

Implications

Although the findings from this study did not support the primary hypotheses that (1) differences in facial affect recognition accuracy are related to global psychopathy, or that (2) this proposed difference would be exaggerated when following the introduction of a task designed to induce arousal, secondary hypotheses that fell out from these initial predictions indicated that psychopathy variants that reflect either subtypes or prominence of specific traits (e.g., callousness, low empathy) are likely to be more informative. Significance of this work for people in the field include:

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[37] That is, individuals being 'stood over' by more predatory prisoners for their received items.

The legal environment.

In the Introduction chapter, I reported a number of legal reactions to psychopathy. Such measures as prolonged incarceration and legislation designed to contain individuals diagnosed with psychopathy were invariably based on a taxonomic basis at the expense of subtle features (i.e., social cognitive variables) that can inform risk of offending (e.g., *global* lack of remorse) as well as desistance (e.g., *conditional* empathy). This study supports the possibility of differential expressions of psychopathic traits and the varied outcomes that may occur – other than violence – in the context of social information-processing (Crick & Dodge, 1994; Dodge & Schwartz, 1997).

Psychological assessment.

The assumed consistency of psychopathic traits across contexts as suggested by taxonomic approaches was not supported by this study. The variability of psychopathic personality 'profiles' or trait composition suggests differences in cognitive capacities and processes (i.e., what social stimuli are attended to (or not) in a given situation, and why) that may contribute to offending as well as desistance behaviour. Issues such as a lack of empathy may be more likely to manifest in some individuals under specific situational demands (e.g., personal stress). Many assessment approaches to personality are not situation/context-sensitive, and the possibility of emphasising situational factors into assessment approaches offers to inform conditional statements of behaviour prediction – and by extension – management.

Psychological treatment.

Broad generalisations of psychopathic individuals often reported in the treatment literature are not supported by this study. The possibility of functional differences amongst sub-variants of psychopathy as they relate to others suggests (1) differential behavioural development pathways; (2) different functional emphases of phenotypically similar traits; and by extension, (3) greater possibilities for customisable treatment plans that take relevant psychopathic traits into account as responsiveness-to-treatment issues rather than as a problem in and of itself.

Possibilities for Future Research

Although the overall null results suggest that poor facial affect recognition accuracy is not a salient feature of psychopathy per se, the findings of this study have indicated that facial affect recognition with psychopathic offenders is (1) a potential function of specific psychopathic *traits*, especially callousness, and/or (2) the downstream effect of converging variables over and above those detectable in simple analogue tasks. Exploring callousness traits present as an obvious area of interest given that more errors in the experimental tasks were noted by those high on this trait than any other variant. Furthermore, investigating experimental approaches that approximate 'real world' forms of facial affect displays and other forms of social cognitive phenomena that are sophisticated enough to elicit discriminant responses (where they may exist), but also structured enough to be reliably measured would be a promising next step. Such approaches may

involve audiovisual techniques that incorporate context and observable

competing stimuli that are ecologically valid.

Conclusions

Although facial affect recognition may not be an index of psychopathy,

it is argued here that its importance lies in informing the *function* of specific

personality *expressions* of psychopathy. The general identification of emotions

in non-provocative settings is not likely to adequately elicit definitive

personality features of psychopathic individuals apart from others, but is likely

to be more informative with the consideration of (1) subtypes of psychopathy,

and (2) a provocative situation that has sufficient cognitive demands to elicit

compromises in the performance of individuals with some constellations of

psychopathic traits. To reiterate, while the exploration of social cognitive-

informed methods may offer promise in exploring perceptual differences

between groups, the use of these approaches may also tell us something

about functional differences. The findings of this study indicated that there is

no significant relationship between psychopathy – as a global construct – and

accuracy in identifying others' emotions from facial cues. However, these

findings also revealed that specific expressions – or subtypes – of

psychopathy experience ambiguity with some forms of social cognitive stimuli

that are not observed in other subtypes let alone a broader general

conception.

Postscript

Keep your emotions down. Keep your emotions down. Children, it will not hurt … Stop this crying, all of you (Rev. Jim Jones, 18 November 1978).

They're looking for something dirty in everything, and if you're looking for something, you'll find it. You have to put up some kind of face for them, and that's the only face they understand (Charles Manson in an interview with *Rolling Stone*, Felton & Dalton, 1970, p. 28).

Since commencing work on this study over four years ago, my thoughts about research in general, and psychopathy in particular, have undergone something of a transition over this time. My natural inclinations as a researcher have typically veered towards qualitative approaches, so part of my rationale for undertaking a laboratory-based experiment with quantitative analysis for doctoral study was to broaden my epistemological scope and develop a greater sense of balance as a researcher. Perhaps the greatest learning experience for me in this context has been to 'see a story' in the data where there was previously just a sea of integers. Having applied this tenuous lens onto my data set, I am perhaps less convinced that so-called 'psychopaths' per se are a 'case apart'. Although the present findings support the null hypothesis, and that a global measure of psychopathy has a modest relationship with facial affect recognition accuracy, the stand-out relationship between the Coldheartedness (*C*) scale and emotion expression accuracy

supports the idea that specific variations of psychopathy are likely to yield clearer messages about the role of social cognitive processes and disordered personality.

Whilst the PCL-R has been hugely instrumental in drawing a line in the conceptual sand by allowing researchers to identify and examine a range of differences with a more or less definable group, perhaps the time has come to tease out the *functional* differences within the broader construct of psychopathy and explore social cognitive factors in the context of personality-situation interactions.

Admittedly, my initial expectations of the psychopathy and social cognition relationship has been challenged, the subtleties in these findings arguably mirror 'real world' people rather than the two-dimensional constructs as is too-often portrayed in the forensic and psychological literature. An awareness and further understanding of the more subtle differences between psychopathy variants is likely to better inform the management of those individuals so-identified as 'psychopathic' in criminal justice systems. It is hoped that this study can offer a humble contribution to this end.

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Looking at anti-social personality differences in violent offenders - An invitation to participate in research -

All the Information

Tena koe,

My name is Armon Tamatea and I am currently planning research that looks at men who have committed violent offences in New Zealand. One of the goals of this research is to develop better ways of working with men who have been convicted of this kind of offence. I am doing this research as part of a university qualification--my Doctorate (PhD) with Massey University.

Researcher contact details:	Armon Tamatea Senior Advisor Psychological Research Community Probation & Psychological Services Dept. Of Corrections P O Box 19003, Hamilton Phone (07) 858 1630 armon.tamatea@corrections.govt.nz

Here are some questions that you might ask::

What's it all about?

I would like to invite you to take part in a small study that looks at the thinking processes of individuals who have committed violent offences. I am interested in looking at what makes some people behave more aggressively than others.

This brief study is part of a larger research study contributing to the Corrections Department's goal to design and review effective intervention programmes for individuals with violent behaviour. We see this as very important because violent offences have a serious impact in our communities.

How come you approached me and how can I help?

As you are probably aware, a good deal of your personal information exists on the Corrections' database. You were selected for invitation to this study based on information from this database. For the purposes of this study, I am interested in talking with male adults (i.e., aged 18 years or older) in prison, whose current conviction is for a violent offence, and have a sentence of 5 years or longer.

All you will be required to have is some spare time and a basic literacy level (if you have been able to read this letter with little or no assistance, then you qualify!). Your perspectives are viewed as very valuable for both the Corrections Department and this study.

What's going to happen? What will *I* have to do?

There are two parts to this project:
1. The initial visit will occur at your unit and involves a small number of very simple pen and paper tests and should take no more than **40 minutes** of your time. These tests are NOT exams and do not involve 'right' or 'wrong' answers. Given that we are looking for certain types of thinking styles, these tests are included to help us to determine who we will follow up for the second part of the study.
   - If you are **not** invited for the follow-up part of this study, your contribution will still be very helpful.
   - If you **are** invited for the follow-up part of this study, you will receive another letter asking for your permission to take part.

2. The follow-up visit will also occur at your unit and involves some computer activities that will involve you in making choices based on a series of pictures. Participants who are asked to take part in this part of the study will first be more fully informed of this process in the follow-up letter.

What are the benefits of this study?

Your input into this study will help us improve current and future projects working with men with violent behaviour.

What about my confidentiality and privacy?

Although your name has been used for the purpose of approaching you, only a number will identify any information you give during the study. All personal information that you give will not be told to anyone, so nobody can know that what you wrote or said came from you. No information that would identify you will be published or made available to Corrections Department staff, or anyone else.

There is one situation when information about you may be reported and that is if we receive information that someone plans to harm themselves or someone else. In that case we may have to pass that information on to make sure no one is hurt.

Are there any negative consequences for me?

Your involvement in any part of this study is strictly voluntary (you only do it if you want to) and is intended to have **no effect**, good or bad, on your sentence or any other aspect of your interactions with the Department of Corrections.

You are free to withdraw from the study at any time without penalty of any kind!

What happens to the information?

The information we get from the tests and study procedure will be used to guide a larger study helping to develop more appropriate treatment approaches for other individuals who have violent convictions, aiming to reduce the risk of reoffending. More information about this research can also be obtained from my field supervisor:

Supervisor contact details:	Nick Wilson PhD.
	National Advisor Psychological Research
	Community Probation & Psychological Services
	Dept of Corrections
	P O Box 19003, Hamilton
	Phone (07) 858 1606

I also have another supervisor at Massey University. His name is Professor Ian M. Evans, and you can contact him via e-mail at **i.m.evans@massey.ac.nz**, or by phone at 04 801 5799 extn 62125, or write to him at Private Box 756, Wellington 6140, NZ

If you agree to take part in the first part of the study, please complete the consent form at the bottom of this letter and get your PCO or UM to let me know. The researcher (either myself or Dr Nick Wilson) will then travel to your Unit to speak with you.

Next Step: If you are interested in taking part in the first part of this study, please sign the consent form below and inform your PCO or UM. You will be seen by Armon or Nick and asked if you wish to participate. Any questions you may have will be answered at your convenience.

This project has been reviewed and approved by the Massey University Human Ethics Committee: Southern A, Application 08/44. If you have any concerns about the conduct of this research, please contact Professor John O'Neill, Chair, Massey University Human Ethics Committee: Southern A, telephone 06 350 5799 x8771, email humanethicsoutha@massey.ac.nz.

Please keep this part of the letter

Consent Form

Signing this form before the start of the test provides permission for Armon Tamatea (Senior Advisor Psychological Research) or Nick Wilson (National Advisor Psychological Research) from Corrections' Community Probation & Psychological Services to discuss this study with me, and if I agree, to conduct some tests to explore my responses to a range of situations. I understand that I may decide not to go ahead with the test and there will be no questioning of my actions.

I, _____ (name) have read and understand the above and agree to take part in the first part of this study.

Participant's signature:_____ Date:_____

Please detach this page only and hand to the researcher. If you agree to participate, you should keep the information provided in the rest of this letter

Appendix B: Letter of Thanks

11 February 2010

John XXX
c/- Waikeria Prison

TE AWAMUTU

Dear Mr XXX,

Thank you for taking the time to read this letter. You may recall volunteering to take part in a study that involved some pen-and-paper questionnaires, a colour perception test, followed by a series of computer-based tasks where you were asked to rate the emotions on people's faces. These activities were part of a research programme that looked at how men may see their social environment (what is sometimes referred to as "*social information-processing*"). I would like to take this opportunity to acknowledge that your participation in this research was of great value and has contributed to our understanding of the thinking processes that some people use that may result in them behaving aggressively against other people.

As promised, a summary of this phase of the research will be sent to you when all necessary data has been collected and analysed. However, please be aware that this may take some months.

Please accept this letter as an acknowledgement of your role in this research and as a small 'thank you' for participating in my efforts to understand some of the psychological factors involved with men who have committed violent offences. It is only with the generous co-operation of individuals such as yourself that these kinds of research initiatives can take place.

Kind regards,

Armon Tamatea
Senior Advisor, Psychological Research

Can violent offenders recognise other peoples' facial emotions? A Computerised Task

All the information

Researcher contact details:	Armon Tamatea Senior Advisor Psychological Research Community Probation & Psychological Services Dept. Of Corrections P O Box 19003, Hamilton Phone (07) 858 1630 armon.tamatea@corrections.govt.nz

What's it all about?
Thank you for taking the time to read this letter. You have already volunteered to take part in a study that, so far, has involved some pen and paper tests and a colour perception test. I would now like to invite you back to take part in the next stage of my research. I am still interested in looking closer at the thinking processes that some people use that makes them behave more aggressively than others.

This study help the Corrections Department to design and review effective intervention programmes for individuals with violent behaviour. We see this as very important because violent offences have a serious impact in our communities.

How come you approached me again?
Since I last saw you, I have had an opportunity to score the questionnaires that you completed for me. Your responses revealed thinking and behaviour that is of interest to this study. As such, I am pleased to invite you back to take part in this next stage.

If you agree to take part, I will ask for no more than 30 minutes of your time (maximum).

What's going to happen?
This study will take place at your unit and will involve you making simple choices based on a series of pictures that you will see on the computer screen. For these activities, we are interested in your accuracy and your speed of responding.

You may find some parts of the experiment frustrating. If at any stage you feel this way, please feel free to discuss this with the researchers (Armon and Nick are Senior Clinical Psychologists with the Department).

What are the benefits of this part of the research?
As with the previous study, your input into this research will help with current and future projects working with men with violent behaviour. This means that your responses will be kept for use for ongoing research. However, because your participation has guaranteed anonymity, no identifying information will be made available to the Department or any other party.

What does the researcher get out of it?
As mentioned in the previous study, in addition to developing more effective interventions for violent offenders this study will help me to complete my Doctorate (PhD) with Massey University.

What about confidentiality and privacy?
Although your name has been used for the purpose of approaching you for this follow-up, only a number will identify any information you give during the study. All personal information that you give will not be told to anyone, so nobody can know that what your responses on the tasks were came from you. No information that would identify you will be published or made available to Corrections Department staff, or anyone else.

There is one situation when information about you may be reported and that is if we receive information that someone plans to harm themselves or someone else. In that case we may have to pass that information on to make sure no one is hurt.

Are there any negative consequences for me?
Your involvement in any part of this study is strictly voluntary (you only do it if you want to) and is intended to have **no effect** on your sentence or any other aspect of your interactions with the Department of Corrections.

You are free to withdraw from the study at any time without penalty of any kind!

What happens to the information?
The information we get from the tests and study procedure will be used to guide a larger study that aims to contribute to developing more appropriate treatment approaches for other individuals who have violent convictions, and help to reduce the risk of reoffending. Information about this research can also be obtained from my supervisor:

Supervisor contact details:	Nick Wilson PhD.
	National Advisor Psychological Research
	Community Probation & Psychological Services
	Dept of Corrections
	P O Box 19003, Hamilton
	Phone (07) 858 1606

I also have another supervisor at Massey University. His name is Professor Ian M. Evans, and you can contact him via e-mail at **i.m.evans@massey.ac.nz**, or by phone at 04 801 5799 extn 62125., or write to him at Private Box 756, Wellington 6140, NZ.

If you agree to take part in this second stage of the study, please complete the consent form at the bottom of this letter and get your PCO or UM to let me know. The researcher (either myself or Dr Nick Wilson) will then travel to your Unit to speak with you.

This project has been reviewed and approved by the Massey University Human Ethics Committee: Southern A, Application 08/44. If you have any concerns about the conduct of this research, please contact Professor John O'Neill, Chair, Massey University Human Ethics Committee: Southern A, telephone 06 350 5799 x 8771, email humanethicsoutha@massey.ac.nz.

Next Step: If you are interested in taking part, please sign the consent form below and inform your PCO or UM. You will be seen by Armon or Nick and asked if you wish to participate. Any questions you may have will be answered at your convenience.

Please keep this letter for your information purposes

Consent form

Signing this form before the start of the test provides permission for Armon Tamatea (Senior Advisor Psychological Research) or Nick Wilson (National Advisor Psychological Research) from Corrections' Community Probation & Psychological Services to discuss this study with me, and if I agree, to conduct a brief series of computerised tasks in order to explore my responses to a range of situations. I understand that I may decide not to go ahead with the test and there will be no questioning of my actions.

I, _____ (name) have read and understand the above and agree to take part in the second part of this study.

Participant's signature:_____
Date:_____

Please detach this page only and hand to the researcher

Appendix D: Correlation Table of PPI-R Scales, Primary Measures and Facial Affect Tasks (Pre-intervention)

PPI-R	PANAS		CAVS	Facial Affect Recognition (Ph1)								Facial Affect Discrimination (Ph2)									
	PA	NA		HAP	SAD	ANG	SUR	DIS	FEA	NEU	Total	Total	same	diff	HAP	SAD	ANG	SUR	DIS	FEA	NEU
ME	-0.16	0.18	0.59*	0.06	0.16	0.19	0.15	0.13	0.00	-0.23	0.11	0.06	-0.08	0.08	0.18	-0.03	-0.17	-0.21	0.09	-0.18	0.02
RN	0.03	0.35*	0.54*	-0.09	0.18	0.13	0.09	0.17	-0.03	-0.11	0.12	-0.12	-0.01	-0.12	0.02	0.05	-0.07	-0.11	0.16	-0.04	-0.07
BE	-0.10	0.19	0.23	0.01	-0.15	0.12	0.14	-0.04	-0.07	-0.28*	-0.10	0.01	-0.06	0.03	0.09	-0.07	-0.14	0.02	0.04	-0.05	-0.11
CN	-0.24*	0.22	0.52*	-0.08	0.11	0.08	-0.08	0.02	-0.15	-0.13	-0.07	-0.05	0.00	-0.05	0.20	0.04	-0.10	-0.19	0.08	-0.06	0.09
SOI	0.22	-0.12	0.07	0.09	-0.01	0.01	0.26*	0.26*	0.09	0.03	0.22	0.16	-0.03	0.18	0.11	-0.08	-0.08	-0.08	0.03	0.04	-0.08
F	0.17	0.08	0.44*	0.00	0.07	0.01	-0.11	0.15	0.11	-0.16	0.03	0.11	-0.05	0.13	0.11	0.17	-0.18	-0.25*	0.08	-0.04	-0.06
STI	0.11	-0.45*	-0.26*	0.21	0.10	-0.05	0.13	0.07	0.18	0.16	0.22	0.09	0.12	0.06	-0.10	0.03	0.11	0.19	-0.01	0.16	0.14
C	-0.20	0.10	0.32*	-0.21	0.06	-0.17	-0.18	-0.08	-0.23	-0.15	-0.26*	-0.02	-0.37*	0.08	-0.17	-0.21	-0.32*	-0.35*	-0.34*	-0.25*	0.09
TOTAL	-0.07	0.16	0.64*	-0.01	0.14	0.12	0.11	0.15	-0.04	-0.22	0.07	0.06	-0.12	0.10	0.13	-0.02	-0.23	-0.25*	0.04	-0.13	0.01

* $p < 0.05$.
NOTE: 'Total' (Facial Affect Discrimination) refers to accuracy over the whole trial, 'Same' indicates all similar emotions that occurred in pairs, and the single emotion categories refer to specific pairs (e.g., HAP = two 'happy' faces displayed simultaneously).

Appendix E: Correlation Table of PPI-R Scales, Primary Measures and Facial Affect Tasks (Post-intervention)

PPI-R	PANAS		CAVS	Facial Affect Recognition (Ph4)								Facial Affect Discrimination (Ph5)										
	PA	NA		HAP	SAD	ANG	SUR	DIS	FEA	NEU	Total	Total	same	diff	HAP	SAD	ANG	SUR	DIS	FEA	NEU
ME	-0.14	0.25*	0.59*	0.11	0.13	0.22	0.03	0.01	0.07	-0.15	0.08	0.10	0.01	0.10	-0.03	0.12	-0.18	0.12	0.16	-0.11	-0.05
RN	0.00	0.41*	0.54*	0.13	0.11	0.18	-0.11	0.12	-0.02	-0.14	0.05	-0.08	-0.10	-0.05	-0.10	0.06	-0.20	0.00	0.09	-0.14	-0.13
BE	-0.06	0.19	0.23	0.02	-0.01	0.02	-0.07	-0.27*	-0.04	-0.18	-0.17	0.00	0.05	-0.02	-0.05	0.24*	0.01	-0.06	0.26*	-0.17	-0.07
CN	-0.28*	0.32*	0.52*	0.13	-0.02	0.06	-0.15	0.07	-0.03	0.01	0.01	-0.04	-0.07	-0.02	-0.13	-0.04	-0.14	-0.06	0.14	0.00	-0.04
SOI	0.24*	-0.14	0.07	0.20	0.14	0.26*	0.11	0.13	0.15	0.16	0.28*	0.31*	0.11	0.27*	0.13	0.27*	0.02	0.08	0.15	-0.10	-0.17
F	0.08	0.19	0.44*	-0.02	-0.04	0.08	-0.15	0.01	0.20	-0.07	0.04	0.17	-0.11	0.19	0.01	0.09	-0.20	-0.21	0.16	-0.24*	-0.05
STI	0.06	-0.22	-0.26*	-0.09	0.06	0.07	0.09	0.19	0.29*	0.12	0.26*	0.13	0.14	0.09	0.24*	0.03	0.18	0.04	-0.03	0.00	0.10
C	-0.13	0.04	0.32*	-0.02	-0.10	-0.09	-0.18	-0.07	-0.15	0.02	-0.15	-0.07	-0.29*	0.01	-0.16	-0.42*	-0.23	-0.05	-0.10	-0.10	-0.01
TOTAL	-0.07	0.28*	0.64*	0.13	0.09	0.22	-0.09	0.04	0.08	-0.07	0.09	0.13	-0.06	0.14	-0.04	0.11	-0.20	-0.02	0.21	-0.20	-0.11

* $p < 0.05$.
NOTE: 'Total' (Facial Affect Discrimination) refers to accuracy over the whole trial, 'Same' indicates all similar emotions that occurred in pairs, and the single emotion categories refer to specific pairs (e.g., HAP = two 'happy' faces displayed simultaneously).

Appendix F: PPI-R Subscale Score Comparisons of Least and Most Accurate Respondents Across Conditions*

PPI-R	Sample	Recog. accuracy (Ph1)		Disc. accuracy (Ph2)		Recog. accuracy (Ph4)		Disc. Accuracy (Ph5)	
	(N = 68)	Least	Most	Least	Most	Least	Most	Least	Most
ME	42.6 (12.9)	51 (17.4)	52.4 (14.8)	42.4 (10.1)	48.4 (17.9)	48.6 (18.4)	52.4 (14.8)	34.4 (4.8)	48.6 (13.4)
RN	33.6 (9.8)	43.2 (5.6)	40 (7)	39.2 (8)	36.6 (13.2)	39.8 (8.1)	38.8 (8.4)	29.4 (4.0)	37 (6.5)
BE	38.9 (9.8)	47.8 (7.8)	38.4 (7)	43.2 (8.2)	37.8 (11.7)	45.2 (8.6)	36.2 (9.9)	37 (13.9)	40 (8)
CN	36.4 (8.9)	41.2 (15.1)	36 (13.2)	36.4 (10.1)	34 (4.4)	36.6 (8.5)	37 (12.6)	33.6 (9)	34.6 (5.4)
SOI	42.7 (9.4)	35 (14.5)	50.4 (9.2)	38.2 (13.7)	47.6 (6.2)	39.4 (14.8)	52 (7)	35 (12.6)	46.4 (6.1)
F	39 (8.6)	41.4 (7.4)	40.6 (4.7)	36.8 (7.5)	39.8 (12.1)	37.2 (6.5)	42 (5.5)	33.8 (5.7)	42.2 (5.4)
STI	36.3 (6.8)	27.6 (5.8)	38.6 (5.8)	30.8 (7)	37.4 (7)	31.6 (5.3)	38.8 (5.8)	36.8 (6.4)	37.4 (3.4)
C	33.9 (8.5)	37.2 (13.6)	32.8 (4.9)	34.2 (12.2)	34.4 (7.5)	36.4 (13)	34.4 (4.2)	36.6 (11.8)	34.8 (4.1)
TOTAL	303.7 (39)	324.4 (54.1)	329.2 (43.8)	301.2 (38)	316 (49.4)	314.8 (51.7)	331.6 (40.4)	276.6 (29.2)	321 (39.8)

NOTE: All columns display means (standard deviations in parentheses). * $n = 5$ Unless otherwise specified.

Appendix G: Participants who Formed Most and Least Accurate Groups

Across Conditions

Case No.	Phase 1	Phase 2	Phase 4	Phase 5
Lowest score				
1	✓	✓	✓	✓
2	✓			
3	✓	✓	✓	✓
4	✓		✓	
5	✓			
6		✓		
7		✓	✓	✓
8		✓		
9				✓
10				✓
11			✓	
Highest score				
12	✓	✓	✓	✓
13	✓	✓	✓	✓
14	✓		✓	
15	✓			
16	✓		✓	
17		✓		
18		✓		
19		✓		
20			✓	
21				✓
22				✓
23				✓