DOCTORAL THESIS

Understanding the Manifestation of Psychopathic Personality Characteristics Across Populations

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Understanding the Manifestation of Psychopathic Personality Characteristics Across Populations

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Abstract

Psychopathic personality traits have been identified in research on criminal and noncriminal samples (Hare, 2003; Babiak, Hare, & Neumann, 2010). A large body of research exists on criminal psychopathy; however, limited empirical understanding has emerged for noncriminal psychopathy. It is unknown whether the empirical knowledge on criminal psychopathy is generalisable to psychopathic personality in the broader community (Gao & Raine, 2010). The current thesis sought to address the lack of research on psychopathy outside of the correctional setting (Hall & Benning, 2006; Skeem, Polaschek, Patrick, & Lilienfeld, 2011). The present research aimed to develop a greater understanding of psychopathic traits across specific populations, incorporating three samples. These were a community based sample (n = 115), criminal sample of community based probation and parole offenders (n = 44) and business sample consisting of working professionals and students completing a Master of Business Administration Degree (n = 60).

The current research conducted three separate studies designed to expand on the understanding of the manifestation of psychopathic traits in specific populations. It was hypothesised that the findings of these three studies would have important implications for understanding psychopathic personality across different populations. Psychopathy was assessed in the current research using the self-report measure the Psychopathic Personality Inventory-Revised (Lilenfeld & Widows, 2005). The first two studies examined the relationship between psychopathy, emotional and social capabilities, negative emotionality, gender and age. The current research partially consisted of self-report measures and examined mimicry, emotional recognition and social information processing through experimental procedures. The emotional recognition experiment was developed based on Niedenthal, Brauer, Halberstadt, and Innes-Ker (2001) and social information was examined using the methodology developed by Wilson, Demetrioff, and Porter (2008). Study one and study two specifically examined, psychopathy, empathy, emotional intelligence, emotion recognition, mimicry, social information processing, and negative emotionality. Study one investigated the relationship between these variables in a community sample and study two examined business and criminal samples.

Based on a Mixed design ANOVA, the higher psychopathy group was found to have poorer emotional recognition for the mimicry experimental task, although this was not

observed in the business or community samples. A series of Mixed Design ANOVA's were conducted to examine the effect of psychopathy on character recognition and recall. The results were partially consistent with Wilson et al. (2008) with psychopathy found to significantly predict recall of the unsuccessful character in the community sample, however, this result was not found in the business or criminal samples. Hierarchical regressions analyses were conducted to examine emotional intelligence and empathy in both studies. Psychopathy was found to be a significant negative predictor of empathy in the criminal and community samples, but not the business sample. For both study one and study two, psychopathy did not significantly predict emotional intelligence.

The third study sought to examine the manifestation of psychopathic traits in the specific samples, investigating differences in psychopathy factors. The additional contribution of interpersonal factors such as assertiveness, locus of control and impression management in explaining psychopathy was examined. Findings from a MANOVA revealed significant sample differences for psychopathic factors. Significantly, higher scores of fearless dominance were found in the business and community samples, while higher levels of self-centered impulsivity were observed in the criminal and community samples. A multinomial regression analysis was conducted, revealing that the business sample had significantly higher levels of fearless dominance compared to the community sample and that the criminal sample had significantly elevated levels of self-centered impulsivity compared to the community sample. The results of the thesis provided support for theories of criminal and noncriminal psychopathy, suggesting that theoretical differences may be attributed to populations examined. Implications for the current study lie within advancing the empirical data on noncriminal psychopathy, including psychopathic traits differences between offenders and individuals in corporate positions.

Keywords: psychopathy, psychopathic personality, noncriminal, successful, personality traits, emotion, social information, empathy, emotional intelligence

Declaration by Author

This thesis is submitted to Bond University in fulfilment of the requirements of the degree of Doctor of Philosophy. This thesis represents my own original work towards this research degree and contains no material that has previously been submitted for a degree or diploma at this University or any other institution, except where due acknowledgement is made.

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Signature

Nathan Brooks

Research Outputs and Publications During Candidature

Peer-reviewed Publications

Brooks, N. & Fritzon, K. (2016). Psychopathic personality characteristics amongst high functioning populations. *Crime Psychology Review, 2*, 22-44. doi: 10.1080/23744006.2016.1232537

Croom, S., Fritzon, K., & Brooks, N. (in press). The incidence and nature of corporate psychopathy in supply executives. *Journal of Purchasing and Supply Management*.

Fritzon, K., Bailey, C., Croom, S., & Brooks, N. (2016). Problematic personalities in the workplace: Development of the Corporate Personality Inventory. In P. Granhag, R. Bull, A. Shaboltas, & E. Dozortseva (Eds.), *Psychology and law in Europe: When West meets East*. CRC Press.

Published and Presented Conference Abstracts

Brooks, N., & Fritzon, K. (2016, September). *The emergence of noncriminal psychopathy*. Symposium conducted at the Australian Psychological Society: Psychology united for the future. Melbourne, Australia.

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Ethics Declaration

The research associated with this thesis received ethics approval from the Bond University Human Research Ethics Committee. Ethics application number RO1525.

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Abbreviations

Assessing Emotions Scale	AES
Comprehensive Assessment of Psychopathic Personality	CAPP
Depression, Anxiety and Stress Scales-21	DASS-21
Interpersonal Reactivity Index	IRI
Levenson Self Report Psychopathy Scale	LSRP
Locus of Control Scale	LC
Paulhus Deception Scales	PDS
Psychopathy Checklist	PCL
Psychopathy Checklist Revised	PCL-R
Psychopathic Personality Inventory	PPI
Psychopathic Personality Inventory-Revised	PPI-R
Social Response Inventory	SRI
Social Response Inventory-Assertiveness	SRI-A
Social Response Inventory-Over Assertiveness	SRI-OA
Social Response Inventory-Under Assertiveness	SRI-UA
Self Report Psychopathy Scale-III	SRP-III

Chapter 1
Broad Overview of Thesis

The construct of psychopathy is defined by a constellation of interpersonal, affective and lifestyle characteristics (Cleckley, 1941; Hare, 1999a). Individuals with psychopathy are considered to be free of psychosis and mental deficiency (Cleckley, 1941, 1976). Traits associated with psychopathy include: insincerity, pathological lying, egocentricity, unreliability, lack of remorse and an inability to experience empathy or concern for others (Cleckley, 1941; Hare, 1999b; Hare & McPherson, 1984). Psychopathy has been described as one of the most important forensic concepts in the early stages of the 21st century (Monahan, 2006). Experts suggest that psychopathic traits are best viewed based on a continuum, allowing for research to examine the construct outside of institutional settings (Dutton, 2012; Edens, Marcus, Lilienfeld, & Poythress, 2006; Hare & Neumann, 2009). In this thesis, the terms psychopathy and psychopathic personality will be used respectively to describe the clinical construct of psychopathy (psychopathy) and a person who is high on psychopathy or a constellation of traits related to psychopathy (psychopathic personality).

While the violence and criminal behaviour commonly associated with psychopathy is of paramount concern to society, many individuals with psychopathy never commit acts of violence or serve a period of incarceration in a correctional facility (Dutton, 2012; Hare, 1999a). Hickey (2010) argued that psychopathic people might be more likely to operate as white-collar criminals than as violent murderers. It is estimated that on the most commonly used instrument to assess psychopathy, between 15 to 25 percent of correctional inmates meet the required cut off score to be considered as psychopathic (Hare, 1996; Hart & Hare, 1996), while approximately one in 100 people would meet the same cut-off score in the community (Hare 1999a). Hare (1999a) contended that in North America alone, there are two million people that could be considered as psychopaths in the community, with up to 100,000 in New York City. Emerging research has also begun to investigate psychopathic personality in the business sector, with initial studies identifying varied prevalence estimates, ranging between 4 to 20% (Babiak, Neumann, & Hare, 2010; Fritzon, Bailey, Croom, & Brooks, 2016; Howe, Falkenbach, & Massey, 2014).

The etiology of psychopathy has been subject to much debate (Blair, Mitchell, & Blair, 2005; Hare, 2003). Research has found evidence suggesting genetic (Blonigen, Carlson, Krueger, & Partick, 2003; Larsson, Andershed, & Lichtenstein, 2006; Viding, Blair, Moffitt,

& Plomin, 2005), neurological (Blonigen et al., 2003; Fallon, 2014; Raine, Phil, Stoddard, Bihrle, & Buchsbaum, 1998) and environmental (Gao, Raine, Chan, Venables, & Mednick, 2010; Meloy & Shiva, 2007) contributions to the personality disorder. Findings from a number of studies have provided evidence that each etiological area may contribute differently in individual cases (Baron-Cohen, 2011; Blair et al., 2005; Glenn & Raine, 2014; Hare, 2003; Raine et al., 1998; Stone, 2009). The environmental contribution to psychopathy has been demonstrated through studies that have found significant relationships between psychopathic personality and poor parental bonding (Gao et al., 2010) and childhood abuse/victimisation (Gao et al., 2010; Weiler & Widom, 1996). With the development of medical technology over the past two decades, research has begun to provide greater insight and understanding into the specific genetic basis of psychopathy. Science has observed what has been termed a "warrior gene", with some individuals possessing a monoamine oxidase-A polymorphism called MAOA-L (Dutton, 2012; McDermott, Tingley, Cowden, Frazzetto, & Johnson, 2009; Shih & Chen, 1999). The variation to this gene has been linked with "dangerous and psychopathic behaviour" (Dutton, 2012; Frydman, Camerer, Bossaerts, & Rangel, 2011; McDermott et al., 2009). One notable study supporting a relationship between psychopathy and MAOA involved the examination of several generations of a Dutch family. The research found that over a number of generations the family had incidences of violent and criminal behaviour in male family members who were found to have an abnormality in the MAOA gene (Brunner, Nelen, Breakefield, Ropers, & Van Oost, 1993; McDermott et al., 2009).

Neuropsychological research has identified notable differences in brain structures relevant to emotions, autonomic arousal and attachment in psychopathic individuals (Blair et al., 2005; Kiehl, 2014). Studies have found that psychopathic personality is associated with abnormal brain structures, observing significant variances in several areas of the brain relevant to emotional and moral processing. These areas include the amygdala, hippocampus and the anterior and posterior cingulate (Blair et al., 2005; Dolan, Deakin, Roberts, & Anderson, 2002; Glenn & Raine, 2014; Glenn, Raine, & Schug, 2009; Kiehl, 2014; Kiehl et al., 2001). Initial neurological research has provided a promising contribution to understanding psychopathic personality (Fallon, 2014; Glenn & Raine, 2014), however, some inconsistencies and issues with methodologies and findings have been observed in this field of research (see Blair, 2006; Gao & Raine, 2010; Umbach, Berryessa, & Raine, 2015), suggesting that consistent replication across studies is needed to identify shared etiological

causes (Glenn & Raine, 2014; Hare, 2003; Müller et al., 2003). Early issues with this form of research have included: small sample sizes, failure to include control groups, stringent laboratory requirements, lack of replicability, variances across findings based on technological measurements, discrepancies in activation of brain regions, and anatomical functional specificity suggestive of causality (Decety, Chen, Harenski, & Kiehl, 2013; Gao & Raine, 2010; Glenn & Raine, 2014; Umbach et al., 2015).

Theory and Assessment of Psychopathy

The first comprehensive clinical conceptualisation of psychopathy (Blonigen, Hicks, Krueger, Patrick, & Iacono, 2006; Hicks, Markon, Patrick, Krueger, & Newman, 2004) was provided by Hervey Cleckley (1941) in his book *The Mask of Sanity*. Cleckley's work on psychopathy was based on his widespread experience working with psychiatric patients at a Georgia Hospital (Cleckley, 1941; Skeem, Polaschek, Patrick, & Lilienfeld, 2011). The title of Cleckley's book, *The Mask of Sanity*, refers to the ability of psychopathic individuals to present as personable, confident and well adjusted in comparison to other psychiatric patients; however, behind the mask is a character with a severe underlying pathology, as revealed through their actions and attitudes (Cleckley, 1941, 1976; Skeem, et al., 2011).

Cleckley (1941) identified 16 key characteristics that were used to help operationalise the construct of psychopathy. Characteristics consistent with a psychopathic persona included: superficial charm and intelligence, poor judgment and a failure to learn, lack of remorse and shame, unreliability, an absence of delusions or nervousness, antisocial behaviour, loss of insight, poverty in affective reactions, pathological egocentricity and an incapacity to love (Cleckley, 1941, 1976). Importantly, Cleckley did not depict psychopathic people as predatory, violent, cruel or dangerous, despite recent research suggesting the contrary (see Hare, 2003; Hare, 1999a; Hare & McPherson, 1984). Instead, Cleckley believed that the harm caused by these individuals was a secondary consequence of the shallow and feckless nature (Cleckley, 1941; Skeem et al., 2011). In his book, Cleckley cited not only criminals as being psychopathic, but also provided case examples of businessmen, scientists, doctors, and psychiatrists who had psychopathic personalities.

At the same time as Cleckley's work, Karpman (1941) published his formative theory of psychopathy. Karpman (1941, 1948) contended that two forms of psychopathy were evident, distinguished by the presence or absence of neuroticism, most notably anxiety. He believed that both forms of psychopathy could be characterised by antisocial, irresponsible

and hostile behaviour, yet differentiated in etiology and motivation (Karpman, 1941, 1948; Skeem, Poythress, Edens, Linfield, & Cale, 2003). Karpman termed the two types as primary psychopathy and secondary psychopathy. Primary psychopathy was characterised by an absence of conscience, while individuals with secondary psychopathy possessed a conscience, but their functioning was disrupted due to perceiving their environment and others as hostile (Skeem et al., 2003). Karpman's theory of psychopathy has received empirical support through research examining the correlates of the personality construct (Kosson & Newman, 1995; Lykken, 1995; Skeem et al., 2003). However, due to the methodological challenges of examining the biological and developmental pathways of psychopathic personality traits, the causal aspects of Karpman's theory have not been rigorously tested (Skeem et al., 2003; Skeem et al., 2011).

Building on the work of Cleckley (1941), Dr. Robert Hare operationalized the construct of psychopathy; identifying 22 core characteristics that he argued depicted psychopathic personality (Hare, 1980). These characteristics were developed into a criterion-based protocol, consisting of an interview and review of collateral documentation to assess the presence of psychopath. Hare (1980) called the measure the Psychopathy Checklist (PCL; Hare, 1980). After its introduction the PCL was revised by Hare (PCL-R; Hare, 1991, 2003) and reduced to a 20-item checklist of characteristics. Much of Hare's conceptualization of psychopathy was developed from his research on North American criminal offenders.

Hare believed that impulsivity and aggression were a core trait of the personality construct, rather than a secondary symptom (Hare, 2003; Skeem et al., 2011). The discrepancies between Cleckley (1941, 1976) and Hare's work on psychopathy appears to reflect population differences. Cleckley's understanding of psychopathy was largely based on community/hospital based patients, while Hare's work was influenced by North American offenders. According to Hare (2003) the construct of psychopathy could be characterised by two over-arching factors, these were an interpersonal-affective factor comprising of an interpersonal facet and an affective facet, and an antisocial factor which consisted of a lifestyle facet and an antisocial facet. Interpersonal features included: glibness and superficial charm, manipulation, pathological lying, and a grandiose sense of self-worth. Affective characteristics included: lack of remorse or guilt, callousness/lack of empathy, failure to accept responsibility for actions, and shallow affect. The lifestyle facet of psychopathy included: impulsivity, irresponsibility, lack of realistic long-term goals, need for stimulation/proneness to boredom, and parasitic lifestyle. The fourth dimension, antisocial

features included: early behavioural problems, poor behavioural controls, juvenile delinquency, criminal versatility and revocation of conditional release (Hare, 1999a, 2003).

Alternative factor structures have been found for the PCL-R, including three (Cooke & Michie, 2001; Johansson, Andershed, Kerr, & Levander, 2002) and five factor models (Hare, 1980; Međedović, Petrović, Kujačić, Želeskov Đorić, & Savić, 2015), which challenge the theoretical underpinnings of the PCL-R. The difference in trait constellation has lead researchers to suggest that the interpersonal-affective features and the antisocial-lifestyle characteristics of psychopathy are etiologically distinct from one another (Hall & Benning, 2006; Patrick, 2007). It remains possible that an individual could meet a diagnosis of psychopathy based on the PCL-R due to elevated scores on one factor, yet low to moderate scores on factor two (Hall & Benning, 2006). The two-psychopathy factors therefore, although similar, are unique dimensions. This position provides support for the notion of psychopathic personality variants (Hall & Benning, 2006). It is unclear whether psychopathy traits are similar across criminal and noncriminal populations, or if certain traits may share a stronger association with a specific population. The thesis sought to investigate the manifestation of psychopathy traits across sample populations.

Since the development of the PCL (Hare, 1980) and the PCL-R (Hare, 1991, 2003), psychopathy has largely been assessed based on Hare's instrument. Despite evidence that suggests that psychopathy is a dimensional trait rather than a discrete category or taxon (Edens et al., 2006; Skeem et al., 2011), a cut-off score of 30 on the PCL-R is routinely used to indicate whether an individual is or is not a psychopath (Hare, 2003; Skeem et al., 2011). While the use of the PCL-R, as well as the large body of research conducted by Hare, has contributed immensely to the understanding of psychopathy, the PCL-R has effectively usurped the construct (Skeem & Cooke, 2010) and become heralded as the only sole representation of psychopathy (Skeem et al., 2011). As all measures of constructs are fallible (Crohnbach & Meehl, 1955), inferences made about psychopathy based solely on one measure may prove misleading or problematic (Skeem et al., 2011). Subsequently a large body of knowledge exists about "the psychopathic offender as defined by the PCL-R" (MacDonald & Iacono, 2006, p. 383), but not necessarily about the nature, structure and boundaries of the psychopathy construct as a whole (Skeem et al., 2011).

Several psychometric measures and conceptual theories have recently emerged to counterbalance the large body of literature that exists on psychopathy based on the PCL-R

criteria (Butcher, Graham, Ben-porath, Tellegen, Dahlstrom, & Kaemmer, 2001; Cooke, Hart, Logan, & Michie, 2012; Levenson, Kiehl, & Patrick, 1995; Lilienfeld & Widows, 2005; Patrick, Fowles, & Krueger, 2009). The different assessment measures and theoretical conceptualisations of psychopathy each provide important contributions to the empirical knowledge of the construct. Self-report measures allow for a broader understanding of different populations of people (such as community and business) with psychopathic personality characteristics, other than the forensic population that the PCL-R instrument was designed to measure (Lilienfeld & Widows, 2005). The use of the PCL-R in noncriminal populations has been restricted due to the use of a criterion-based interview and in depth collateral information gathering required to complete the assessment (Skeem et al., 2011).

The Psychopathic Personality Inventory-Revised (PPI-R; Lilienfeld & Widows, 2005) has been established as a sound psychometric self-report measure of psychopathy. In comparison to other assessment instruments, the PPI-R has had significant use in community and criminal samples (Lilienfeld & Widows, 2005), as well as being heavily utilised for research (Lilienfeld & Andrews, 1996; Lilienfeld & Widows, 2005). The measure is established based on Cleckley's (1941) conceptualisation of psychopathy, and considers antisocial behaviour including violence to be separate or secondary to the core features of psychopathy, and yet is relatively concordant with the PCL-R (Patrick & Zempolich, 1998; Skeem et al., 2003). The PPI-R consists of two higher order factors (fearless dominance and self-centred impulsivity), and one subscale (coldheartedness) that remains primarily independent of the other two factors (Lilienfeld, & Widows, 2005; Skeem et al., 2011).

The structure of the PPI-R supports recent theoretical positions proposed by Patrick et al. (2009) and Cooke et al. (2012). The triarchic model (Patrick et al., 2009) details an account of what psychopathy is phenotypically, rather than provide an explanation as to the etiology of psychopathy (Patrick et al., 2009; Skeem et al., 2011), while the Comprehensive Assessment of Psychopathic Personality model (CAPP; Cooke et al., 2012) acts as a concept map for understanding the dynamic personality traits of psychopathy (Sellbom, Cooke, & Hart, 2015a). The CAPP model consists of six broad domains (self, emotional, dominance, attachment, behavioural and cognitive), which are characterised by 33 personality traits or symptoms (Sellbom et al., 2015a). However, due to the early developmental stages of the CAPP and the limited research with the PPI-R, the triarchic model provided a better theoretical fit for the current research.

The triarchic model provides an overarching conceptualisation that identifies three discrete and intersecting phenotypic constructs that resemble the building blocks of historical and contemporary conceptualisations of psychopathy (Patrick, 2009; Skeem et al., 2011). The three constructs of the triarchic model are: disinhibition, boldness and meanness. Disinhibition entails a general propensity towards impulse control problems, including a lack of planfulness or foresight, insistence on immediate gratification, inhibited regulation of affect or urges, and deficient behavioural restraint (Patrick et al., 2009; Polaschek, 2015; Skeem et al., 2011). The term boldness refers to a capacity to remain calm and focused in threatening and pressured situations, the ability to rapidly recover from stressful events, a tolerance for danger and unfamiliarity, as well as a high level of self-assurance and social efficacy (Patrick et al., 2009; Skeem et al., 2011). The third construct of the triarchic model, meanness, entails a constellation of attributes including deficient empathy, disdain for and a lack of close attachments/relationships with others, excitement seeking, exploitativeness, rebelliousness, and empowerment through cruelty (Patrick et al., 2009; Polaschek, 2015; Skeem et al., 2011). Figure 1 depicts the hypothesised interrelation between the phenotypic constructs of the triarchic model.

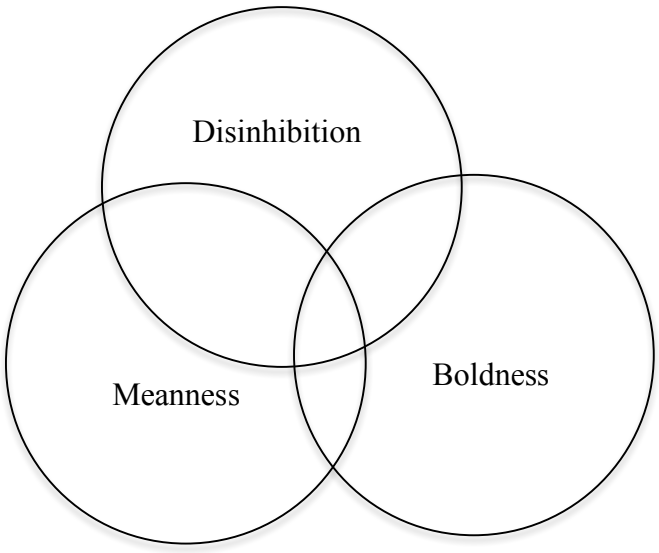

Figure 1. Triarchic model of psychopathy, adapted from Patrick et al. (2009, p. 933).

The themes of boldness, meanness and disinhibition provide a conceptual means to understand the underlying traits of psychopathic personality, however, Lynam and Miller (2015) contend that the model is merely reflective of the broader personality framework of the

Five Factor Model (FFM; Costa & McCrae, 2003) According to this interpretation, boldness resembles high extraversion and low neuroticism, meanness reflects low agreeableness and disinhibition represents low conscientiousness (Crego & Widiger, 2014; Miller, Lamkin, Maples-Keller, & Lynam, 2016). Miller et al. examined the relationship between the FFM and the recently developed Triarchic Psychopathy Measure (TPM; Patrick, 2010). The TPM is based on the theoretical underpinnings of the triarchic model and is a self-report measure consisting of 58 items. The researcher's conducted two studies, the first study involved 362 participants completing the IPIP-NEO-120 (Maples, Guan, Carter, & Miller, 2014) and TPM. After analysing the data from study one, a sample of academics were asked to rate FFM profiles that were derived from relationships with the TPM totals scores and factors, assessing the degree to which individuals in the profile manifested symptoms consistent with psychopathy (Miller et al., 2016). Across the two studies, low agreeableness (or meanness) was found to be the strongest predictor of psychopathy, with experts rating this as a stronger predictor than overall TPM scores. Profiles associated with boldness were found to be less reflective of psychopathy. The author's challenged the need for the triarchic model to capture psychopathy, contending that the FFM provided a more appropriate framework to understand the personality type due to the large body of empirical findings on the role of the FFM in personality. One notable issue of employing the FFM framework is the difficulty with conceptualising the shared, yet unique relationship between psychopathic personality traits, which together form the underpinnings of the construct (Patrick et al., 2009).

The findings by Miller et al. (2016) provide an important empirical review of the triarchic model and offer caution in equating the model as representative of psychopathic personality. Despite reservations, other researchers have found support for the use of the model in examining and understanding psychopathy (see Hall et al., 2014; Polaschek, 2015; Skeem et al., 2011). Unlike the PCL-R and PPI-R, which have been extensively used in the assessment of psychopathy, the triarchic model and TPM are in the early stages of empirical application. Initial studies investigating the triarchic model and the TPM have found shared empirical overlap with the PPI-R and PCL-R (Hall et al., 2014; Polaschek, 2015; Skeem et al., 2011; Sellbom, Wygant, & Drislane, 2015b). Preliminary research has found that boldness is indexed by fearless dominance of the PPI-R and partially captured by factor one of the PCL-R (Benning, Patrick, Blonigen, Hicks, & Iacono, 2005; Sellbom et al., 2015b; Skeem et al., 2011). It is evident in the PCL-R that disinhibition is measured by factor two and for the PPI-R a substantial overlap is observed with the self-centred impulsivity factor (Blonigen et al.,

2005; Patrick, Hicks, Krueger, & Lang, 2005; Sellbom et al., 2015b; Skeem et al., 2011). The coldheartedness subscale of the PPI-R appears to capture meanness as defined by the triarchic model, while meanness is predominately reflected in factor one of the PCL-R (Benning et al., 2005; Blonigen et al., 2005; Patrick et al., 2005; Sellbom et al., 2015b; Skeem et al., 2011). A notable difference between the PCL-R and PPI-R, is that the PCL-R does not measure boldness or meanness separately from disinhibition/antisocial behaviour, with overlap evident across the two PCL-R factors (Skeem et al., 2011). The advantage of a model that provides a phenotypical account of psychopathy is that a diverse operationalisation of the construct is possible across different samples, contexts and practical applications (Skeem et al., 2011).

The understanding of psychopathic personality has emerged from work based on criminal offenders and a criterion checklist, through to present assessment methods that involve self-report measures in the community. The refinement in the empirical knowledge of the construct has raised questions as to whether psychopathic personality is of a dimensional or discrete nature. A dimensional trait is one in which there is a continuation of a trait or variable along a continuum, while a discrete category suggests that a distinct class or end point exists, qualitatively different from others or things (Edens et al., 2006). The PCL-R score is often used to determine whether someone is a psychopath, although research suggests that psychopathy is a dimensional trait rather than a discrete category or taxon. This suggests that individuals are not psychopathic per se, but instead vary from other people based on degree rather than on kind (Dutton, 2012; Edens et al., 2006; Skeem et al., 2011). Therefore, the degree of psychopathy is founded in the relativity of psychopathic traits (Edens et al., 2006). This distinction has important implications for research, assessment, treatment, decisions based on risk, and policy/court decision making (Hare, 2003; Skeem et al., 2011). An advantage of using a dimensional definition of psychopathy is that it overcomes arguments put forward by proponents of the taxonomic perspective, that psychopathic individuals do not benefit from treatment, due to psychopaths being qualitatively distinct and different from the rest of the population (Harris & Rice, 2006). However, one issue with classifying psychopathy on dimensional nature is the challenge of determining the implications of psychopathic traits. For example, psychopathic traits may be adaptive or problematic dependent on the quantity and type of characteristics displayed by a person. While valuable to examine psychopathy along a continuum, it remains important to adequately understand the construct, due to the risks of traits becoming equated with

psychopathic personality (Skeem et al., 2011). The present research intended to explore psychopathy as dimensional construct using the PPI-R to examine psychopathic personality.

Psychopathic Personality Traits

Psychopathic personality is comprised of a unique constellation of traits that reflect pervasive psychopathology (Skeem et al., 2011). The construct has received considerable attention in the scientific field in relation to the aggressive and ruthless behaviour associated with the personality. The drive to dominate others and obtain enjoyment in achieving an outcome, even when it comes at a cost to others, is the cornerstone of psychopathy (Benjamin, 1993; Blackburn, 1998, 2006; Meloy & Shiva, 2007). The ruthless and aggressive behaviour associated with psychopathy is attributed to reduced levels of fear, empathy and guilt (Blair et al., 2005; Coyne & Thomas, 2008; Hare, 2003; Newman, MacCoon, Vaughn, & Sadeh, 2005). For example, individuals with primary psychopathy may enjoy the harm they cause others as it often leads to the attainment of a specific reward or outcome that they wish to acquire (Coyne & Thomas, 2008; Decety et al., 2013; Lykken, 1995). In contrast, the harm and violence associated with secondary psychopathy may be a consequence of impulsiveness, reactivity and hostility (Cornell et al., 1996; Morrison & Gilbert, 2001). A large body of empirical research has been conducted on psychopathic personality, in particular the relationship between psychopathic traits and co-occurring factors. These traits include: ruthlessness and aggression, emotional deficiency, absence of moral concern, fearlessness, manipulation, deceit, propensity towards exploiting vulnerability, grandiosity, entitlement, and charm.

Emotional deficiency, Absence of Moral Concern and Fearlessness

In his early writings Cleckley described psychopathic individuals as being absent of emotion, immoral and incapable of love (Cleckley, 1941). The limited and/or reduced ability to form sustained affectional attachments to other living people or objects is considered as a cornerstone feature of psychopathic personality (Bowlby, 1944; Meloy, 2005). Research has suggested that psychopathy is characterised by reduced moral identity and deficits in moral decision-making, more likely to make utilitarian judgments on moral issues due to a general lack of emotion (Glenn, Koleva, Iyer, Graham, & Ditto, 2010). The diminished fear response displayed by those with psychopathy is one of the primary reasons that the personality pattern has been associated with persistent and serious criminality (Hare, 2003). For psychopathic

individuals, fear is experienced as a shallow emotion, without the common unpleasant psychological body sensations (Hare, 1999a).

An early pioneering study conducted by Hare (1965) investigated the relationship between psychopathy and fearful arousal. Hare utilised galvanic skin conductance to measure fear arousal in inmates in response to an electric shock, and found that participants in the psychopathic group had lower levels of skin conductance prior to the administration of the shock in comparison to the non-psychopathic group. This suggested that psychopathic individuals did not demonstrate a pattern of increased fear in response to the aversive stimuli. A follow up study conducted by Hare (1966), which incorporated a varied methodology, found that when given the option of receiving the electric shock immediately, or later, psychopathic offenders were less likely to choose to receive the shock immediately in comparison to non-psychopathic offenders and a non-criminal sample. This provided further support to suggest that psychopathic people experienced limited concern in response to imminent distress (Hare, 1966). These findings have also been replicated more recently by Viet et al. (2013) and López, Poy, Patrick and Moltó (2013). The latter study utilised an undergraduate sample, and the PPI-R, thus supporting the relationship between psychopathy and fear outside of criminal samples.

The impoverished response to fear and difficulty with moral judgements associated with psychopathic personality has important implications for understating the behaviour and emotional difficulties associated with the construct. The callous disregard for others and lack of moral concern associated with psychopathy is attributed to a lack of empathy (Hare, 1999a). Empathy is an emotional state and trait that involves experiencing a sense of emotional similarity in response to another person's expressed feelings (Baron-Cohen, 2011; Decety & Jackson, 2004). Brook and Kosson (2013) investigated the emotional and empathic capacities of psychopathic and non-psychopathic offenders using the PCL-R to assess psychopathy. The study included 103 adult male offenders from a county jail. The Interpersonal Reactivity Index (IRI; Davis, 1983) was used to measure empathy and an empathic accuracy task (see Ickes, 1997) was employed to examine accuracy at detecting emotional states. Participants were required to view video vignettes of targets describing an emotional event in their life and rank the emotions experienced by the target in the vignette, as well as their perception of their own accuracy. The study also examined intelligence, reading level and emotional intelligence. Findings of the research found a negative relationship between psychopathy and empathic accuracy, identifying significant differences

between psychopathic offenders and non-psychopathic offenders for empathic accuracy scores. Psychopathic offenders were found to have lower levels of empathic accuracy in comparison to non-psychopathic offenders after controlling for intelligence, reading ability and perceived emotional intelligence (Brook & Kosson, 2013).

Domes, Hollerbach, Vohs, Mokros, and Habermeyer (2013) conducted a study that found results inconsistent with the work of Brook and Kosson (2013). The authors examined psychopathy and emotional empathy in 90 male offenders (categorised into high, medium and low psychopathy groups). The study utilised the PCL-R and a series of empathic and social functioning measure including the IRI (Davis, 1983), Emotional Quotient Inventory (Baron-Cohen & Wheelwright, 2004), the Reading-the-Mind-in-the-Eyes Test (Baron-Cohen, Wheelwright, Hill, Raste, & Plumb, 2001), and the Multifaceted Empathy Test (Dziobek et al., 2008). The authors hypothesised that psychopathy would be associated with impairments in emotional empathy, but not cognitive empathy; however, the results did not support this. The researchers found that while offenders in the sample had generally lower levels of emotional and cognitive empathy, the high psychopathy group was not found to have significant impairments in their levels of emotional and cognitive empathy. The authors speculated that the inconsistent findings may be due to the potential intelligence levels of those in the high psychopathy group (which was not measured in the study), as well as the mimicry skills associated with psychopathy; portraying greater levels of emotional and cognitive empathy. An alternative explanation for these findings was that the mean score for the sample of offenders fell within the average range of the PCL-R guidelines and a cut off score of 21 and above was used to distinguish the high psychopathy group. Although the highest score in the sample was 34 on the PCL-R, it is possible that the remainder of participants in the high psychopathy group were in fact at the lower range of the PCL-R scoring criteria and not considered psychopathic as defined by the PCL-R assessment guidelines. The PCL-R manual specifies that a diagnostic cut-off score of 30 or above is required for an individual to be considered psychopathic (Hare, 2003).

Traditionally research investigating psychopathy and empathy has focused on the relationship between the two factors in offender samples (Dutton, 2012; Hare, 2003). Two studies that have examined psychopathy and empathy in a community setting are Mullins-Nelson, Salekin and Leistico (2006) and Watt and Brooks (2012). Mullins-Nelson et al. investigated the relationship between psychopathy and emotional processing capabilities in 44 male and 130 female undergraduate students. The authors utilised an abridged version of the

Psychopathic Personality Inventory (PPI; Lilienfeld & Andrews, 1996) that comprised of 56 items from the PPI to measure psychopathy, while Davis's (1983) IRI was used to assess empathy. The study utilised the Diagnostic Analysis of Nonverbal Accuracy (Nowicki & Duke, 1994) to examine participants' abilities to recognize non-verbal affective cues and the Test of Self-Conscious Affect (Tangney, Wagner, & Gramzow, 1989) to examine perspective taking and empathic concern. Results of the study found no significant relationship between psychopathy, empathy and gender, however a significant negative relationship was found between total psychopathy scores, perspective taking and affective empathy. The results provided preliminary support for the relationship between psychopathy and lower levels of empathy in a community/undergraduate sample. A notable limitation of the study was the correlational nature of the research, which did not employ multivariate methods to analyse the relationship between psychopathy, empathy and perspective taking uniquely.

Watt and Brooks (2012) investigated psychopathy in an Australia community sample, using the Self Report Psychopathy Scale, Third Edition (SRP-III; Paulhus, Hemphill, & Hare, in press). The authors examined the relationships between psychopathic traits and empathy as measured by the IRI (Davis, 1983) in 327 community participants. Findings of the research found that participants with higher levels of callous-affect had greater deficits in empathy, especially for empathic concern, in comparison to participants with lower levels of callous-affect. This supported findings (Dutton, 2012; Hare, 2003) that suggest that psychopathy is marked by an empathy deficit. The interpersonal manipulation subscale of the SRP-III was found to be associated with a deficit in empathic concern and perspective taking. However, higher scores were found for the fantasy scales of the IRI (Davis, 1983) and total psychopathy scores. This suggested that those with higher psychopathy scores had a tendency for greater imagination and creativity, which may serve to enhance the capacity for manipulation and deceit. Participants with higher levels of psychopathy were also likely to report higher levels of depression, anxiety, and stress. The finding may suggest that living an erratic life style and manipulating others could lead a person to experiencing a greater level of adverse circumstances, subsequently increasing their risk for mental health issues (Watt & Brooks, 2012). The study provided support for the relationship between psychopathy and lower levels of empathy in the community; however, a limitation of the research was that 24% of the sample was identified as students, while 47% had a university degree. Therefore, due to the high level of education, the sample may not be representative of a broad community sample.

The relationship between psychopathy and a lack of empathy is evident, yet also unclear. This relationship has led some to speculate that psychopathy is associated with a so-called "chameleon effect". The chameleon describes the unintentional and non-conscious drive to imitate/mimic others actions (Iacoboni, 2008). Hatfield, Cacioppo, and Rapson (1994) call this, *emotional contagion*, which is the tendency of humans to converge emotionally, as well as mimic vocalisations, postures and movements. The theory of emotional contagion has been explored in a number of studies, which have demonstrated a positive relationship between mimicry and empathic concern (see Chartrand & Bargh, 1999; Iacoboni, 2008; Niedenthal, Barsalour, Winkielman, Krauth-Gruber, & Ric, 2005; Niedenthal, Brauer, Halberstadt, & Innes-Ker, 2001). It has been contended that those with higher levels of psychopathy could be considered as performing a role that has been developed through observation and the mirroring of others' actions. The use of these skills may allow psychopathic individuals to move from role to role, fixating on their next target or victim.

Fecteau, Pascual-Leone, and Théoret, (2008) investigated the relationship between psychopathy, empathy and the unconscious ability to observe and mirror the emotional state of others. The authors examined mirror neurons, which refer to neural circuits in the brain that are activated in an individual when observing the actions of another person, or when an individual copies or executes an act previously performed by another person (Chartrand & Bargh, 1996; Fecteau et al., 2008; Iacoboni, 2008. The researchers hypothesised that psychopathy would be negatively associated with mirror neuron activation and empathic concern in response to four sets of videos pertaining to needles penetrating various objects (e.g., hand, fruit). Using transactional magnetic stimulation to measure motor evoked potentials the authors found a number of important results. Total psychopathy scores (as measured by the PPI; Lilienfeld & Andrews, 1996) were not significantly correlated with neural activation during observation of the painful video-imagery condition (Fecteau et al., 2008). Notably, a significant relationship was found between the coldheartedness (callous affect) subscale of the PPI and motor evoked potentials (mirror neuron activation). Although this relationship was significant, the relationship between the coldheartedness subscale and motor evoked potentials in response to painful stimuli was positive in nature (Fecteau et al., 2008). The coldheartedness subscale was also found to be significantly correlated with lower scores of empathy. As effect sizes were not provided in the reporting of results for this study, it is difficult to establish the strength of these findings, however, the correlation between cold-

heartedness and motor evoked potential was noted to be a moderate to large magnitude of effect size (Cohen & Cohen, 1983).

A similar set of findings was observed in a study conducted by Decety et al. (2013). The authors investigated the relationship between psychopathy and perspective taking in offenders. The findings of the study indicated that offenders with high levels of psychopathy had an atypical response to adopting an imagine-other perspective, although displayed a normal pattern of response for image-self perspectives. This suggested that psychopathic offenders had self-awareness, but were limited in their ability to adopt the perspective of others (Decety et al., 2013). The implications of these two studies suggest that psychopathy may be positively associated with sensory aspects of the empathy construct (ability to observe and understand the affective/emotional states). However, on the other hand, psychopathy may be negatively related to emotional, state or trait empathy (Decety et al., 2013; Fecteau et al., 2008). This suggested that those with higher levels of psychopathy may in fact have the ability to observe and take on the perspective of the victim (presence of mirror neuron functioning), yet lack emotional concern or regard (emotional empathy) for the victim (Dolan & Fullam, 2004; Fecteau et al., 2008).

The lack of conscience, reduced fear arousal and emotional deficits, makes psychopathy a personality pattern that is interpersonally and affectively disengaged and disconnected from others and society norms (Hare, 1999a). The deficits discussed in the aforementioned areas have important implications for psychopathy research as well as clinical implications. The impairments of emotional capacity associated with psychopathy are evidenced in both the community and forensic setting. This indicates evidence suggesting that emotional deficits are found irrespective of the particular population of psychopathic people being examined, with lower levels of empathy observed in offenders and individuals residing in the community. The current thesis aimed to investigate the relationship between psychopathy and empathy across different sample populations.

Manipulation, Deceit and Propensity Towards Exploitation

The construct of psychopathy is associated with manipulation, feigning of emotions, and the appearance of a veneer of stability, normality and friendliness (Hickey, 2010). Individuals with psychopathy often see the world as being comprised of "givers and takers, and predators and prey" believing that "it would be very foolish not to exploit the weaknesses of others" (Hare, 1999a, p. 49). For example, recent research has demonstrated that

psychopathic traits were related to lying for no reason, having a perceived greater ability to lie and telling lies pertaining to dominance, sincerity and sexual intentions (Jonason, Lyons, Baughman, & Vernon, 2014). Despite a relationship between psychopathy and deception, it is not clear whether traits of lying and deception are more common in psychopathic offenders or in psychopathic people in positions of corporate status.

While deception and lying are associated with psychopathy, manipulation is a core trait of the personality construct (Hare, 2003). Manipulation is the deliberate act of attempting to create a favorable outcome through the calculated use of actions and words (Hare, 1999a; Simon, 2010). Manipulation often requires an awareness of another's values or weaknesses and typically involves the exploitation of these. Many of the skills used in manipulation require the ability to understand another's emotional state. The ability to regulate emotions and present in a manner that shows an understanding of another's perspective is often referred to as social and emotional intelligence (Goleman, 1995). Emotional intelligence refers to the abilities and skills needed to manage both the intrapersonal and interpersonal components of emotional and social interactions (Goleman, 1995). Despite emotional intelligence being an important attribute for interpersonal interactions (Baron-Cohen, 2011), it has been postulated that a "darker side" of social and emotional intelligence exits in which personality constructs such as psychopathy, machiavellianism and narcissism exploit social and emotional skills for self-gratifying advances and pursuits (Grieve & Panebianco, 2013; Nagler, Reiter, Furtner, & Rauthmann, 2014; Simon, 2010).

The relationship between the dark triad personalities (psychopathy, narcissism and machiavellianism) and social and emotional intelligence was examined in a large sample of 594 community participants (438 females and 138 males; Nagler et al., 2014). Results of the study found that narcissism had a significant positive relationship with socio-emotional expressivity and control, and a negative relationship with social and emotional sensitivity (subscales of the Social Skills Inventory; Riggio & Carney, 2003). Psychopathy was found to have no relationship with socio-emotional expressivity, but a significant positive relationship with socio-emotional control, and significant negative relationship with socio-emotional sensitivity. Machiavellianism had a positive relationship with emotional control and a negative relationship with the other subscales of the SSI. All three of the dark triad personality types were found to have a significant relationship with emotional manipulation. Moderation analyses revealed that narcissism significantly moderated the relationship between emotional control and emotional manipulation, suggesting that higher levels of

narcissism were associated with greater levels of emotional control and emotional manipulation (Nagler et al., 2014). Psychopathy was found to significantly moderate the relationship between emotional control and emotional manipulation. A moderated relationship was found between emotional sensitivity and emotional manipulation, with psychopathy moderating this relationship. The results of the study provided evidence that psychopathy and narcissism were related to the use of social and emotional intelligence for emotional manipulation (Nagler et al., 2014). The authors of the study identified that psychopathy was associated with emotional manipulation and emotional control, however, the authors did not investigate whether this relationship was influenced by gender and if males and females employed different forms of emotional manipulation.

Grieve and Panebianco (2013) investigated emotional manipulation and social and emotional intelligence in males and females. In a study of 243 participants from an Australian university, higher levels of social information processing skills, emotional intelligence, indirect aggression and self-serving cognitive distortions were found to be significant predictors of emotional manipulation by males (Grieve & Panebianco, 2013). Interestingly, although the authors examined psychopathy, this was not found to be a predictor of emotional manipulation by males. For females, a younger age, indirect aggression, traits of primary psychopathy, higher levels of emotional intelligence and lower levels of social awareness were found to significantly predict emotional manipulation. The authors concluded that although there were overlapping predictors of emotional manipulation (indirect aggression and emotional intelligence) between the two genders, emotional manipulation differed as a function of gender, with primary psychopathy (interpersonal traits of psychopathy, rather than behavioural) a greater predictive factor of emotional manipulation by females rather than males. The findings by Grieve and Panebianco provide support for primary psychopathy being more dominant and calculated in comparison to secondary psychopathy. The findings were partially consistent with Ali, Amorim, and Chamorro-Premuzic (2009) who found no association between primary psychopathy and emotional intelligence, but a significant negative relationship between secondary psychopathy and emotional intelligence. The research by Grieve and Panebianco (2013) provides an important understanding of the relationship between the types of psychopathy, gender, and emotional processing skills in a non-incarcerated sample. However, as the research was conducted on a student sample, further analysis of the relationship between these constructs in the community is required.

The relationship between psychopathy, emotional intelligence, and criminal thinking was investigated in a sample of 111 university students by Fix and Fix (2015). The authors used self-report measures to examine the constructs of the study and found support for psychopathy as a positive predictor of offending and illegal behaviour. Based on a regression analyses, psychopathy was found to significantly predict facets of emotional intelligence, associated with higher scores for stress management and interpersonal relationships and lower scores for interpersonal and mood. The authors concluded that in a student sample psychopathy was related to positive adaptive features of emotional intelligence, yet also associated with criminal behaviour (Fix & Fix, 2015). The results indicated support for the concept of noncriminal psychopathy (Hall & Benning, 2006), identifying psychopathic traits in university students. The present thesis aimed to investigate the association between psychopathy and emotional intelligence, including whether a positive relationship was evident between the two constructs in noncriminal samples.

The capacity of those with psychopathic characteristics to manipulate and deceive others has significant implications for the criminal justice system and broader community. Porter, ten Brinke, and Wilson (2009) investigated psychopathic traits and the likelihood of being granted conditional release from custody. The authors reviewed the offence history and correctional documentation of 310 male offenders from a Canadian medium security prison. Psychopathy was analysed using the PCL-R to rate offenders' levels of psychopathy. From the sample, 90 were classified as psychopathic (score of 30 or over on the PCL-R), of which 36 were rapists, seven child molesters, 15 a mixed type of rapist and molester, and 32 were non-sex offenders. The findings of the analysis revealed that psychopathy was strongly related to the perpetration of both violent and non-violent offences; however, no significant difference was found for sexual offences. Offenders with high levels of psychopathic traits were found to have a higher rate of non-sexual recidivism, but not sexual recidivism. Despite the findings suggesting that psychopathic offenders were of greater likelihood to re-offend for non-sexual crimes, they were two and a half times more likely than non-psychopathic offenders to be successful in their application for conditional release. The results of this study have important implications for the criminal justice system and parole boards, in particular considering the extensive information parole boards receive, or should receive, regarding an offender (Häkkänen-Nyholm & Hare, 2009). The findings suggest that despite a greater risk of recidivism, individuals with high levels of psychopathic traits are capable of presenting an impression that conveys a change in behaviour and a reduction in risk to the community.

Similar findings were reported by Häkkänen-Nyholm and Hare (2009) in an analysis of 546 Finnish homicide offenders (460 males and 86 females). The study investigated the effects that psychopathy had in relation to post-homicidal offence behaviour. The authors utilised a similar methodology to that conducted by Porter et al. (2009), reviewing case files on offenders and conducting retrospective PCL-R assessments to evaluate psychopathy. The study examined self-reported reasons for committing the killing, post offence behaviour, outcomes from lower level court decisions, and the final sentencing verdicts. The relationship between psychopathy, denial of charges and subsequent sentencing decisions was also investigated. Based on scores of 30 and above on the PCL-R, 18% of the sample (19.4% of male offenders and 10.5% of female offenders) were considered to be psychopathic. High scores on the PCL-R were found to be associated with leaving the scene of the killing, denying the charges, being convicted of a less serious crime and receiving final sentencing in a higher level of court. Offenders with high levels of psychopathic traits were prone to deny responsibility for their actions and place blame on external factors, rather than experiencing remorse. Offenders high on psychopathic traits were also more likely to be granted leave to appeal the decision, only granted in the Finnish justice system if the sentence is considered to be too lenient or too severe. Of the psychopathic offenders that had their final sentence in the Supreme Court, one third of these offenders were scored as meeting the maximum score on the PCL-R for pathological lying (Häkkänen-Nyholm & Hare, 2009). In addition, those with high scores on items related to manipulation and pathological lying were also more likely to make pleas of self-defence as the main reason for the killing (Häkkänen-Nyholm & Hare, 2009). One notable issue of the research was possible tautology. The authors suggested that offenders placed blame and denied responsibility for offending, however, due to these items being contained within the PCL-R, the findings may fail to provide further empirical evidence other than what is already captured by the measure.

Häkkänen-Nyholm and Hare (2009) suggested that the role of psychopathy and impression management is vital to the investigation and prosecution of crime, requiring greater understanding through research and by forensic psychologists and law enforcement personnel. Further research has suggested that psychopathic personality is associated with a greater ability to recall traits of vulnerability, such as sadness, lower socio-economic status, and a female gender, indicating that psychopathic victimisation may often be targeted at vulnerable members of society (Wilson, Demetrioff, & Porter, 2008). The findings from studies have significant implications for the justice system and decision-making regarding

risk management. The process by which offenders manage their image and adjust this to the criminal justice system for their own personal benefit is poorly understood and in need of greater appreciation and research (Häkkänen-Nyholm & Hare, 2009).

Wheeler, Book and Costello (2009) investigated whether higher levels of psychopathic traits were associated with accurate victim selection. The authors contended that due to people with psychopathic characteristics readily victimising others, psychopathic individuals should possess the skills to perceive cues of vulnerability, such as basic emotional states in others (Wheeler et al., 2009). The authors employed a methodology that video taped participants walking down a hallway, then asked the participant through a demographic questionnaire whether they had previously been victimized and on how many occasions. Victimisation was defined as being equal to or greater than bullying behaviour (Wheeler et al., 2009). A total of 12 video clips (eight females and four males) were used for participants to determine vulnerability, and of these, four women and two men identified past victimisation. Psychopathy was assessed by the SPR-III (Paulhus et al., in press). The study required the 47 male students to rate targets in the video clips based on their vulnerability to victimisation. Results of the study found a significant correlation between subjects' body language and previous victimisation, suggesting that targets who reported past victimisation had noticeable difference in their walking gait. A significant positive relationship was found between total psychopathy scores and accuracy at identifying victims. Notably, a significant positive relationship was observed between factor one of the SRP-III and accurate identification of victims, however, a non-significant relationship between factor two of the SRP-III and victim identification was found. These findings were consistent with Wilson et al. (2008) who found that participants with higher levels of psychopathy had a near perfect recall for sad unsuccessful female characters based on a social information processing experiment. The current thesis intends to investigate psychopathy and social information processing, specifically findings pertaining to observing vulnerability in others.

Despite a number of findings suggesting that individuals with psychopathic characteristics have strong impression management skills, are manipulative, deceptive, and capable of detecting and exploiting vulnerability, some researchers disagree over the ability of individuals with psychopathy to process and understand emotions (Wheeler et al., 2009). For example, in a study that investigated the relationship between psychopathy and recognition of facial affect, psychopathic traits were negatively related to affect recognition, most notably for expressions of sadness (Hastings, Tangney, & Stuewig, 2008). A similar finding was

noted by Long and Titone (2007), with participants who scored higher on a self-report measure of psychopathy less efficient at processing the negative emotional states of sadness and fear in comparison to other emotional states. However, Glass and Newman (2006) and Book, Quinsey, and Langford (2007) both found results suggesting that people with psychopathic traits were able to recognise facial expressions of emotion and did not have deficits in their ability to recognise facial expressions. In a study conducted by Blair, Jones, Clark, and Smith (1997), participants with high levels of psychopathic traits were found to have reduced arousal responses to distress cues. However, participants with higher levels of psychopathy were not found to have a complete deficit in perceiving distress cues. The authors concluded that this finding was due to a deficient emotional response to distress (lower physiological reaction) in people with psychopathic traits rather than a deficiency in the perception of distress (Blair et al., 1997).

Another explanation for the discrepancy in findings pertains to the methodology employed by the researcher/s when examining the relationship between psychopathic traits and ability to recognise emotion. Differentiating psychopathy based on factor one and factor two traits may account for varied findings across studies. Book et al. (2007) found that factor one traits were positively related to accurate identification of emotional intensity judgments. Similarly, in another study, total psychopathy scores on the PCL-R were found to be negativity related to the accurate identification of facial expressions of emotions, but, factor one scores were positively related to accuracy in identifying facial emotions (Habel, Kühn, Salloum, Devos, & Schneider, 2002). This suggests that individuals with psychopathic characteristics may in fact have intact emotional recognition capabilities, however, this may vary as a function of the clustering of psychopathic traits and/or the specific type or subtype of psychopathy. The present research aimed to provide further clarification pertaining to psychopathy and emotional and social capabilities.

Grandiosity, Entitlement and Charm

Psychopathy is characterised by feelings of omnipotence, perceiving the self as superior to all others (Horney, 1945; Schurman-Kauflin, 2000). The grandiosity associated with psychopathy results in an enormous sense of entitlement and superiority, with people with psychopathic characteristics believing that they can live by their own rules and standards (Hare, 1999a). Psychopathic individuals are motivated to dominate and control others, seeking to boost the self above others regardless of the costs. Traits of grandiosity, glibness

and entitlement are common characteristics associated with both psychopathy and narcissism. Notable similarities between the two constructs include, a general lack of empathy, aggression and exploitation in relationships (Falkenbach, Howe, & Falki, 2013; Jonason, Li, & Teicher, 2010). Narcissistic Personality Disorder is a widely recognised pervasive personality pattern that is characterized by entitlement, grandiosity, self-importance and self-attention (APA; 2013). At the core of a narcissistic personality is a distinct pattern of grandiosity and vulnerability, often characterised by inordinate self-love that is not supported by internalised cognitive beliefs (Bushman & Baumeister, 1998; Schoenleber, Sadeh, & Verona, 2011). Despite psychopathy and narcissism converging at the trait level, individuals with narcissistic personality traits are prone to emotional vulnerability and easily provoked when perceiving that their ego is threatened (Jones & Paulhus, 2010). Although secondary psychopathy has been associated with emotional reactivity (Lykken, 1957, 1995), people with primary psychopathy are unlikely to be easily emotionally impacted, due to their level of autonomic under-arousal (Hare, 2003; Lykken, 1995; Paulhus & Williams, 2002).

Kajonius, Persson, and Jonason (2015) examined the desire for power and dominance in psychopathic and narcissistic individuals. The authors (2015) investigated the relationship between social values and psychopathy, narcissism, and machiavellianism. The study utilised separate American (n = 261) and Swedish (n = 124) university samples with the aim of comparing social values across the two cultures. The authors employed a series of self-report measures to assess the research constructs, including the Portrait Value Questionnaire (Schwartz et al., 2001) to examine participant values. The measure examined self-enhancing, self-transcending and openness to change values. Using a hierarchical multiple regression to test the findings, the dark triad traits accounted for 20% of the variance in self-enhancing values, 10% of self-transcending values and 5% of the variance with openness to change values. Psychopathy was significantly associated with values of power and hedonism, while narcissism was significantly related to achievement and power. Machiavellianism was found to be significantly related to a number of values including achievement, power, universalism and benevolence. The research found significant differences between the American and Swedish samples, with the Swedish sample scoring significantly higher on dark triad traits. The authors concluded that the primary values of those with higher levels of the dark triad traits were hedonism, achievement, power and stimulation. Those higher on these traits held more self-enhancing values and appeared to value self-enhancement and the exclusion of others (Kajonius et al., 2015). The finding that those higher on psychopathy valued power and

hedonism (desire for pleasure) suggests that psychopathic individuals are likely to have interpersonal styles that are entitled, exploitative and seek to optimize self-gain (Kajonius et al., 2015). The cross-cultural study conducted by the authors provided support for the theories concerning successful and corporate psychopathy (Babiak & Hare, 2006), suggesting that psychopathy is associated with a desire for self gain and power, traits commonly achieved through money and status (Boddy, 2011; Dutton, 2012; Hare, 1999a).

ten Brinke, Black, Porter, and Carney (2015) examined the ability of individuals with psychopathic traits to work with others and negotiate outcomes. The authors investigated the competitive behaviours associated with psychopathy in two negotiation simulation studies. The researchers sought to explore the social and cognitive biases held by those with psychopathic traits. The first study consisted of a community sample (n = 149) and the second study involved a student sample (n = 126). In the first study, participants completed three tasks to examine social motivations and cognitive biases in relation to competition. The first task was a false consensus task (Ross, Greene, & House, 1977) that presented participants with vignette-based scenarios. This task sought to assess the beliefs of participants in relation to others holding goals and perspectives different to their own. The second task was comprised of a zero sum questionnaire (Crocker & Canevello, 2008) consisting of six items, which examined the degree to which participants agreed with a series of statements in relation to success and working with others. Participants then completed the social value orientation task (van Lange, De Bruin, Otten, & Joireman, 1997), which required participants to allocate points to other parties. Participants were presented with the option of allocating points evenly, maximizing points for their self with fewer being allocated to an unknown partner, or maximizing their advantage over their partner. Psychopathy was assessed based on the Dirty Dozen self-report questionnaire (Jonason & Webster, 2010) measuring traits of psychopathy, narcissism and machiavellianism. Results of the study found that those higher on psychopathic traits estimated that fewer people would agree with their decisions compared to individuals with lower levels of psychopathic traits, perceiving that others were invested with their own goals and beliefs. Participants with higher levels of psychopathic traits were more likely to allocate points towards the self and strived to maximize their own benefits, despite that cost it had for others.

In the second study conducted by ten Brinke et al. (2015), participants completed a hypothetical negotiation task in which they were assigned the role of a buyer or seller. The research did not find a significant relationship between levels of psychopathic traits and

economic gain in a negotiation task. The findings of the research suggest that higher levels of psychopathic traits lead to selfish and competitive behaviour. ten Brink et al. concluded that due to the competitive nature of individuals with psychopathic traits, these individuals were just as likely to fail as to excel at bargaining tasks. The desire of those with psychopathy to maximize personal achievement and self-gain at the cost of others was likely to become a liability in tasks where co-operation was required. The research findings have important implications for individuals with psychopathic traits that manage to reach positions of professional status, suggesting that these people are entitled, selfish, and ineffective at working with others. The findings challenge the notion of successful psychopathy and the likelihood of psychopathic individuals being capable of maintaining a position of corporate stature.

The charming and superficial traits associated with psychopathy may allow individuals with psychopathic characteristics to exploit these traits for self-gain. Proyer, Flisch, Tschupp, Platt, and Rush (2012) examined the witty, charismatic and superficial traits associated with psychopathy, specifically the use of humour and laughter. The authors utilised a series of self-report measures to assess humour, the fear of being laughed at, and psychopathy, in 90 male and 143 female university students. Participants with higher levels of psychopathic traits reported greater enjoyment in laughing at others and were less likely to experience fear of being laughed at, suggesting that individuals with psychopathic characteristics may use laughter as a means of controlling and manipulating others, rather than as a shared joy with others (Proyer et al., 2012). Although the research utilised a student sample, the findings by Proyer et al. have implications for psychopathy in the community and professional contexts. The ability to use humour to achieve a purpose and build rapport may explain why some individuals with psychopathy are considered successful and others unsuccessful, due to the ability to adapt and apply social skills to a given situation (Babiak & Hare, 2006).

The charismatic nature of people with psychopathic traits assists in creating positive impressions and allows for manipulation and control of social situations (Babiak & Hare, 2006). Individuals with psychopathic traits are resilient and not easily emotionally deterred by criticism or setbacks, resembling qualities of psychological hardiness (Dutton, 2012; Sandvik, Hansen, Hystad, Johnsen, & Bartone, 2015). The ability to charm another person, and remain confident and socially poised in social situations, may explain why some psychopathic individuals are able to reach positions of higher career and social status, and why not all

people with psychopathic traits end up in jail, instead able to function in the community (Dutton, 2012; Hare, 1999a, 2003). The current thesis sought to identify psychopathic traits in a business sample, aiming to extend of the understanding of noncriminal psychopathy.

Noncriminal Psychopathy

Evidence suggesting that psychopathy is found in members of the community who work in high functioning and demanding careers was initially addressed by Hervey Cleckley (1941, 1976) in his writings on psychopathy. Cleckley documented case studies from his work with patients at a Georgia Hospital where he practiced that were diagnosed with psychopathy and employed in careers that included businessmen, scientists, doctors, and psychiatrists. Researchers contend that some people with psychopathic characteristics are able to functioning within the community, in positions such as the military, business sector and even as doctors (Babiak et al., 2010; Boddy, 2011; Dutton, 2012; Mullins-Sweatt, Glover, Derefinko, Miller, & Widiger, 2010). Despite research suggesting that psychopathy is prevalent in the community and the professional business sector, the majority of research investigating psychopathy has been conducted on samples of incarcerated male offenders (Hall & Benning, 2006).

Hall and Benning (2006) revised the work of Cleckley (1941, 1976) and proposed that psychopathy in the community could be considered as noncriminal psychopathy. The authors postulated that noncriminal psychopathy was distinguished by three common themes. The first theme by Hall and Benning was “noncriminal psychopathy as a subclinical manifestation of the disorder” (p. 462). This theme suggested that noncriminal psychopathy was characterised by less extreme examples of psychopathy. These individuals were believed to have the same etiological processes as incarcerated individuals with psychopathic traits, but at a reduced severity (Hall & Benning, 2006).

The second theme of noncriminal psychopathy proposed by Hall and Benning (2006) was “noncriminal psychopathy as a moderated expression of the full disorder” (p. 463). The authors suggested that criminal and noncriminal psychopathy was based on a common etiology, however, the manifestation of traits was moderated by compensatory factors such as education, intelligence and socio-economic status. Therefore, intelligent and educated individuals with psychopathic characteristics may recognise the consequences of antisocial behaviour and instead use socially sanctioned outlets, including business, athletics and politics, as means to express psychopathic desires (Fowles & Dindo, 2009; Hall & Benning,

2006). The moderated pathway suggests that psychopathic traits may be shaped by environmental factors. Researchers proposed that environmental factors may play a greater role in the development of secondary rather than primary psychopathy (Mealey, 1995, Porter, 1996), which is viewed as primarily innate, consistent with the dual process pathway (Skeem et al., 2011).

The third conceptualisation of noncriminal psychopathy proposed by Hall and Benning was "noncriminal psychopathy from a dual-process perspective" (p. 463). This third perspective contends that the interpersonal-affective features of psychopathy are etiologically different from the antisocial behaviour tendencies. The authors contend that the interpersonal-affective features of psychopathy, or alternatively boldness and meanness as defined by the triarchic model (Patrick et al., 2009), are distinctively unique, associated with emotional stability, stress immunity and adaptive behaviour (Blonigen et al., 2005; Hall & Benning, 2006; Skeem et al., 2011). While criminal psychopathy is still marked by interpersonal-affective features, the interpersonal style and level of antisocial behaviour may vary compared to noncriminal psychopathy. The temperamental process underpinning the disinhibition and antisocial component of psychopathy reflects an externalising-propensity, suggestive of impulse control problems (Patrick et al., 2005; Skeem et al., 2011). Research on offenders with psychopathic personality has identified that interpersonal and affective features are commonly marked by dominant and hostile interpersonal styles (Benjamin, 1993; Blackburn, 1998, 2006; Leary, 1957). Leary (1957) proposed the *interpersonal circle* (IPC) to explain the role of interpersonal dominance in personality disorders. The IPC centres on the two dimensions of power and control (dominance versus submission) and affiliation (hostile versus friendly and nurturing) (Leary 1957; Blackburn, 2000, 2006). These dimensions provide an understanding of motives in social interactions. For example, aggression is representative of hostility and dominance, while trust may reflect submission and friendliness (Blackburn, 2000). In offenders interpersonal dominance is often coupled with aggression to establish control (Benjamin, 1993; Leary, 1957). Subsequently, differences in the expression of power and control may be evident between people high on interpersonal-affective features compared to antisocial traits. This may suggest that antisocial tendencies contribute to a greater likelihood of incarceration, while interpersonal and affective traits contribute to increased self-centered behaviour (Daffern, Day, & Cookson, 2012; Fowles & Dindo, 2009; Skeem et al., 2011).

The theories proposed by Hall and Benning (2006) provide useful theoretical approaches for research investigating psychopathy in non-incarcerated populations. The theories provide an account as to how psychopathic personality may vary based on basic traits, characteristic adaption and environmental factors (Skeem et al., Costa & McCrae, 2003). Hall and Benning's work provides a conceptualisation of psychopathy in noncriminals and offers a theoretical framework for understanding the personality construct outside of the research conducted on incarcerated individuals with psychopathic traits. The basic premise made by authors, is that individuals with high psychopathy scores, appear to significantly differ from one another in emotional stability and possibly some etiological factors (Skeem et al., 2011). One foundation for determining the dual process and moderated pathways is to examine distinctive correlates of psychopathic personality (Skeem et al., 2011). For example, previous research has found that after controlling for the relationship between the PCL-R factors, interpersonal-affective traits shared a significant inverse relationship with negative affectivity, while antisocial features were significantly related to negative affectivity (Fowles & Dindo, 2009; Frick, Lilienfeld, Ellis, Loney, & Silverthorn, 1999; Hicks & Patrick, 2006). The current research will seek to extend on the theoretical positions of Hall and Benning, exploring the relationship between psychopathic traits, emotional stability and adaptive behaviour across samples. The present research aims to extend on the understanding of psychopathy in noncriminal populations.

Many researchers have proposed that people with psychopathic characteristics that manage to avoid incarceration and function in the community are considered as being successful psychopaths (Babiak & Hare, 2006; Dutton, 2012; Hall & Benning, 2006; Mullins-Sweatt et al., 2010). The concept of successful psychopathy has emerged after several leading experts have identified that people with psychopathic traits have managed to survive and thrive in the community and workplace (Babaik & Hare, 2006; Dutton, 2012; Fritzon et al., 2016). Research on successful psychopathy to date has centred on the assumption that successful psychopaths are individuals that avoid conviction and punishment (Skeem et al., 2011). Ullrich, Farrington, and Coid (2008) investigated the relationship between psychopathic personality traits and life success. The authors aimed to examine whether features of psychopathy were related to life success in a large community sample of males all aged 48 years old. The sample was collected for a longitudinal study (n = 411), which commenced in 1961 by Farrington and West (1990) in England when participants were aged eight years old and was focused on delinquent development in males. The PCL:SV (Hart,

Cox, & Hare, 1995) was used to assess levels of psychopathy, while an interview was utilised to assess life success across a number of areas including: wealth and status, contribution to society, personal and professional fulfilment, family and relationships, and security.

The study by Ullrich et al. (2008) found no significant relationship between the categories of life success and psychopathy. Results demonstrated that the interpersonal facet of psychopathy was not associated with life success, while the affective facet was found to have a negative relationship with status, wealth, and successful intimate relationships (Ullrich et al., 2008). The authors concluded that psychopathic traits did not lead to greater success in life and therefore raised doubts pertaining to theories of successful psychopathy. The study by Ullrich et al. provided an overview of the relationship between psychopathy and factors associated with life success. A challenge in research assessing psychopathy is determining appropriate markers whereby to measure success. One limitation of the research was that of the sample of 304 men, only two participants met the cut off score on the PCL:SV for a diagnosis of psychopathy, potentially limiting the sensitivity of the research due to only two participants having a high number of psychopathic characteristics.

Mullins-Sweatt et al. (2010) examined the relationship between psychopathy and success, sampling clinical psychology professors (n = 58), psychologists (n = 118) and attorneys (n = 31). Each profession was provided with a description of a psychopathic individual and asked whether they knew anyone fitting this description, and if that person had been successful in their endeavours. If participants knew an individual matching that description, they were required to describe in their own words why the person was successful. Participants were required to rate this individual on the five factor rating form, which corresponded to the five factor model of personality (NEO-PI-R; Costa & McCrae, 1992), and complete a psychopathy rating form about the individual. The narratives provided by the participants across the three professions were significantly related, and described a person with successful psychopathy as being exploitative, dishonest, arrogant, shallow, lacking remorse and minimizing self-blame. The profile of a successful individual with psychopathic characteristics was found to have a number of significant relationships with prototypic personality disorders as measured by the five factor rating form. This included a significant negative relationship with obsessive-compulsive personality disorder and a significant positive relationship with narcissistic and antisocial personality disorders. Indicators of success provided by participants to depict successful psychopathy included:

> a top notch detective and a hero, dean from a major university, successful retail business, made a large sum of money and was mayor for three years, managerial position in government organization, full professor of two major universities, and an endowed professor with numerous federal grants (Mullins-Sweatt et al., 2010, p. 556).

The authors contended that successful psychopathy may be distinguished from unsuccessful or protypical psychopathy based on levels of adaptive traits, particularly conscientiousness. Typical characteristics of an unsuccessful psychopathic individual are marked by impulsivity, irresponsibility and negligence, often reflecting poor awareness and lower levels of conscientiousness. However, a successful psychopathic person presents as controlled, aware and deliberate, exhibiting a greater or higher degree of conscientiousness (Mullins-Sweatt et al.). One notable issue with this form of methodology is that relying on professionals to provide opinions on psychopathy may lead to reifying what is already known about the construct. The process of having professionals provide information on psychopathy is a valid and informative research process, however, the downfall of this method is that it may reinforce established opinions on a construct.

Until recently, the notion of psychopathy in the workplace was primarily the stuff of clinical lore (Smith & Lilienfeld, 2013), however, research has begun to emerge examining the psychopathic personality in the corporate setting. Board and Fritzon (2005) compared personality traits across a series of samples, with the aim of investigating personality patterns associated with the psychopathic personality. The authors utilised a sample of 317 forensic patients, 768 mentally ill patients and 39 senior business managers. The business sample was comprised of chief executives and senior business managers from British companies. The forensic and mentally ill sample was comprised from 1085 current and former clients from Broadmoor Special Hospital in England. Forensic patients were differentiated based on a diagnosis of psychopathic personality disorder, while the mentally ill sample consisted of participants diagnosed with a mental illness. All participants were assessed on the Minnesota Multiphasic Personality Inventory Scales (MMPI-PD; Morey, Waugh, & Blashfield, 1985), which was developed based on DSM-III personality disorders.

Board and Fritzon (2005) found that the sample of senior business managers had significantly higher levels of histrionic personality patterns than both the mentally ill and psychiatric samples. Senior business managers had greater levels of narcissistic and obsessive-compulsive personality traits in relation to all comparison groups, although this finding was not statistically significant. The authors attributed the higher levels of histrionic,

narcissistic and obsessive-compulsive personality patterns to resembling the factor one, interpersonal-affective features of psychopathy. The findings indicated that senior business managers displayed greater levels of grandiosity, superficial charm, egocentricity, lack of empathy, rigidness, exploitation, and manipulation, than the forensic sample. In addition, the senior business sample was found to have lower levels of antisocial personality disorder, suggesting a pro-social orientation and ability to function within a demanding social setting (Board & Fritzon, 2005). The finding provides support for the dual-processes theory of noncriminal psychopathy proposed by Hall and Benning (2006), suggesting that individuals higher on psychopathic traits in the community may have elevated levels of interpersonal-affective traits, and less antisocial tendencies. A limitation of the research by Broad and Fritzon was that the authors concluded that participants displayed psychopathic characteristics without specifically assessing for psychopathy using a validated assessment measure of the personality construct (Skeem et al., 2011). Furthermore, although the forensic patients used in the sample were diagnosed with psychopathy, this diagnosis was made under the United Kingdom Mental Health Act (Government of the United Kingdom, 2007) to legally detain patients, and does not directly indicate that a patient necessarily suffers from or meets the criteria of psychopathic personality.

Similar findings were reported by Babiak et al. (2010) in a study of 203 corporate professionals in the United States. The authors found approximately four percent of the sample met the diagnostic criteria for psychopathy (score of 30 or higher on the PCL-R: Hare, 2003). This prevalence rate suggested a higher prevalence of psychopathy in the business domain, in comparison to community prevalence rates of psychopathy; reported to be between approximately one percent and 0.6% (Coid, Yang, Ullrich, Roberts, & Hare, 2009; Hare, 1999a, 2003). The study found that some individuals holding positions in companies, including titles of vice-president, supervisor or director, could be considered as having high levels of psychopathic traits.

Recently, Fritzon et al. (2016) examined the presence of psychopathic traits in the supply chain management industry, an area of business typically of a buying and selling nature. The sample consisted of 261 participants working in the industry with an overall mode value of a $50 million budget for pricing negotiations. The study utilised self-report measures including: the Paulhus Deception Scales (PDS; Paulhus, 1998), PPI-R (Lilienfeld & Widows, 2005), and the Corporate Personality Inventory (Fritzon, Croom, Brooks, & Bailey, 2013). Results of the study found the supply chain professionals obtained higher mean scores on the

PPI-R, compared to the normative offender and community samples for the PPI-R. The study further found that based on the recommended clinical cut-off score (*T*-Score of 65), 55 individuals (approximately 21%) in the sample were found to have clinically significant levels of psychopathic traits. The results suggested that the elevated levels of psychopathic traits found in the sample of supply chain professionals shared similarities to the prevalence rates of psychopathy in criminal populations (Fritzon et al., 2016; Hart & Hare, 1996). Although this research reports extremely high rates of psychopathic traits and has yet to be replicated in other studies of supply chain professions or varying workplace contexts, the findings provide preliminary support for psychopathic traits being prominently found in individuals managing to hold down positions of corporate status. The high rate of psychopathy in this sample does not appear to have a clear explanation at present; however, a limitation of the study was that it failed to obtain criminal records from participants in the sample, potentially a confounding factor of the research.

Lilienfeld et al. (2012) conducted a notable study that investigated fearless dominance and psychopathic traits amongst past presidents of the United States of America. The authors utilised historical experts on the 42 USA presidents up to and including George W. Bush, to rate each president's personality, leadership and presidential performance. The 121 expert raters recruited by Rubenzer and Fashingbauer (2004) completed a 596-item questionnaire comprised of a series of measures to evaluate their respective president's personality and behaviour. Part of the measure was comprised of the revised NEO Personality Inventory Form R (NEO-PI-R; Costa & McCrae, 1992), an observer version of the NEO-PI for rating personality. Using the five factor model (FFM) underlying the NEO-PI, the authors mapped the 30 facets of the FFM onto the two factors of the PCL-R (Lilienfeld et al., 2012) to assess psychopathic traits. Based on the facets of the FFM indicative of fearless dominance, Theodore Roosevelt, John F. Kennedy and Franklin Roosevelt were found to be the most fearless and boldest American presidents. Fearless dominance was also related to greater ratings of presidential leadership, performance, persuasiveness and crisis management. The findings suggested that, while presidents of America were not considered to be psychopathic, they were found to display traits associated with psychopathy that contributed to primarily positive, although at times negative, performance during their periods as president.

A common misperception about psychopathy is that the personality construct is equated with criminality and violence, often leading to misinformation and misunderstanding (Babiak et al., 2010). It is evident from the preliminary research on noncriminal psychopathy

that psychopathic traits are prevalent in community and business samples. The research suggests that psychopathy in the noncriminal population may be characterised by different traits manifestations and possible gender differences (Boddy, 2011; Dutton, 2012; Fritzon et al., 2016; Lilienfeld et al., 2012). Initial research on noncriminal psychopathy has proposed that boldness, fearless dominance and interpersonal-affective traits appear more strongly associated with noncriminal psychopathy, rather than antisocial features (Hall & Benning, 2006; Lilienfeld et al., 2012). The findings by both Babiak et al. and Fritzon et al. suggest that significant elevated levels of psychopathic traits are found in people of both high corporate status and in positions of responsibility. The challenge of understanding psychopathy in noncriminal settings is vast and varied (Skeem et al., 2011). In attempting to understand psychopathy in society, the corporate world presents as valuable empirical base wherein to conduct and evaluate research on psychopathic personality (Babiak et al., 2010). Although research investigating psychopathy in the corporate domain is limited (Babiak et al., 2010), a body of literature exits on the role of psychopathy in violations of trust, malfeasance, corruption, and fraud (see Bailey, 2015; Blickle, Schlegel, Fassbender, & Klein, 2006; Harrison, Summers, & Mennecke, 2016; Jones, 2014; Perri, 2011; Walker & Jackson, 2017). The findings from early research on psychopathy in business may indicate that successful psychopathy is uniquely distinct from noncriminal psychopathy; however, it is unclear if specific psychopathic traits are associated with greater levels of success. Previous research has challenged the notion that psychopathy is related to life success (Ullrich et al., 2008). If psychopathic traits are not found to be associated with success, then the argument for successful psychopathy may be void. Subsequently, markers of success may need to be refined to assist in understanding the relationship between psychopathy and successful functioning. Psychopathic personality in the corporate domain is an area of research need (Babiak et al., 2010). Relatively little is known about the relationship between psychopathic traits and corporate status and performance (Babiak et al., 2010). Further research is required to understand the prevalence, manifestation, utility and implications of psychopathy in the corporate sector. Without further research examining psychopathic personality in the corporate world, our understanding will be based on speculation, anecdotes and limited empirical data (Babiak et al., 2010; Boddy, 2011; Fritzon et al., 2016).

Psychopathy Subtypes and Gender Differences

Early theories identified that individuals displayed differing types of psychopathy features, some with controlled and calculated characteristics, while others displayed hostility

and reactivity (Cleckley, 1941, 1976; Karpman, 1941, 1948). Cleckley (1941, 1976) and Karpman (1941, 1948) proposed that psychopathy was categorised by a primary psychopath and a neurotic or dissocial psychopath. Karpman (1948) believed that both forms of psychopathy appeared behaviourally similar and almost clinically undistinguishable, but differed dramatically in terms of the motivation that drove behaviour and personality functioning. Karpman (1948) considered that the secondary or symptomatic type of psychopathy was virtually neurotic in nature, sufficiently in denial and prone to experiencing hostility. On the other hand, the primary or idiopathic type of psychopathy was characterised by a personality structure fundamentally immoral and ego oriented.

The early theoretical underpinnings of Karpman (1941, 1948) were later tested by Lykken (1957), who hypothesised that psychopathic individuals would be characterised by low levels of anxiety. Three distinct groups were formed for the study influenced by Karpman's psychopathy subtypes. Lykken found that anxiety was able to distinguish the primary and neurotic groups, however, primary psychopathy did not differ from the control group based on the Welsh and Taylor anxiety scale. Lykken concluded that primary psychopathy was characterised by little manifested anxiety, while the neurotic/dissocial psychopathy was associated with anxiety symptoms.

Several years later, Lykken (1995) postulated that variants of psychopathy were distinguishable based on deficits in the neurobiological system. Lykken believed that primary psychopathy was characterised by a diminished or reduced sensitivity to punishment or threat. Conversely, secondary psychopathy, although manifesting similar traits to primary psychopathy on the surface, was associated with normal response to fear cues. Secondary psychopathy was believed to be characterised by poor internal restraints and elevated appetitive drives or desires (Lykken, 1995; Poythress et al., 2008). Lykken's theory extended on the work of Fowles (1980) who, like Lykken, considered that based on the reinforcement sensitivity theory of personality (RST), which was originally devised from the work of Gray (1982, 1987), psychopathy variants had significantly distinguishable motivational patterns.

Newman et al. (2005) investigated the relationship between primary and secondary psychopathy with the BIS and BAS constructs. The authors utilised a large sample of over 500 male inmates residing in a number of Wisconsin prisons. To determine primary and secondary psychopathy, the authors diagnosed psychopathy by a score of 30 or greater on the PCL-R. From these scores, psychopathy was split into primary and secondary based on the

association between high or low anxiety as measured by the Welsh Anxiety Scales (Welsh, 1956). To analyse the BIS and BAS, Carver and White's (1994) BIS/BAS scales were used, as well as the Sensitivity to Reward and Sensitivity to Punishment Questionnaire (SRSPQ; Torrubia, Ávila, Moltó, & Caseras, 2001).

Results of the study found support for primary psychopathy, with high PCL-R scores and low anxiety scores associated with a weak BIS (behavioural inhibition system) and a normal BAS (behavioural approach system). This suggested that primary psychopathy was characterised by low anxiety, fearlessness, weak anticipation of punishment, and average levels of emotional reactivity (Cleckley, 1941; Lykken, 1995; Newman et al., 2005). In regards to secondary psychopathy, the study found that high PCL-R scores and high anxiety scores were related to an elevated BAS. The authors concluded that secondary psychopathy was characterised by high anxiety, an elevated/sensitive response to reward cues and inflexibility (Cleckley, 1941; Lykken, 1995; Newman et al., 2005). However, the authors hypothesised that secondary psychopathy would be associated with normal BIS functioning. Only partial support was found for this hypothesis, which Newman et al. attributed to the high levels of negative emotionality associated with secondary psychopathy, possibly elevating BIS activation and functioning. The findings by Newman et al. provided support for Lykken's (1995) theoretical position on psychopathy; however, the research only focused on male offenders with psychopathic traits. It was also noted by Poythress et al. (2008) that methodological issues existed with the work of Newman et al, arguing that Carver and White's (1994) BIS/BAS scales were not an appropriate instrument of choice. Poythress et al. contended that the BIS related more to general anxiety and worry, and had a limited/restricted measurement of fear; therefore, failing to capture the behavioural inhibition functioning.

Hicks, Vaidyanathan, and Patrick (2010) investigated the relationship between psychopathy subtypes in (n = 226) female criminal offenders. The authors investigated a number of factors including, psychopathy, personality, substance abuse, trauma, criminality, mental health history, social background, intelligence, prison conduct, and interpersonal violence. The PCL-R was used to assess for psychopathy. The authors used a diagnostic cut-off score of 25 on the PCL-R, instead of the recommended cut-off score of 30 (see Hare, 2003). Based on this cut-off score, 70 offenders were identified as having higher levels of psychopathic characteristics. Offenders who did not have elevated scores on the PCL-R were used as a non-psychopathic control group. Personality traits were assessed using the

Multidimensional Personality Questionnaire Brief Form (MPQ-BF; Patrick, Curtin, & Tellegen, 2002), which consisted of 11 scales examining personality traits.

Model based cluster analysis was used to examine the 70 offenders identified as having high levels of psychopathic traits. The Bayesian Information Criteria (Raftery, 1995) was used to determine the best-fit statistics to identify subtypes of psychopathy. The assumption of cluster analysis is that "each participant will have a high probability of being a member of one cluster and a low probability of being a member of all other clusters" (p. 45; Hicks et al., 2010). Offenders' scores on the MPQ-BF as well as the PCL-R were used to interpret the clusters in the analysis. The cluster analysis revealed two clusters, with 31 offenders assigned to cluster one (primary psychopathy) and 39 to the second cluster (secondary psychopathy). The authors also conducted two additional cluster analyses using the cut-off scores of 27 and 30 on the PCL-R, however, no significant differences to cluster assignment were observed. The primary psychopathy cluster group was characterised by distinguishable personality features based on the MPQ-BF scores. The group had characteristics of low stress reaction, adult onset of criminal and antisocial behaviour, psychological resiliency and moderate substance use. The secondary psychopathy group was characterised by lower levels of conscientiousness, negative affect, externalisation of behaviour, greater criminal and antisocial behaviour, mental health problems, PTSD symptoms and a strong association with substance abuse. The authors concluded that the female structure of primary psychopathy was similar to that of male primary psychopathy, however, was not indicative of either good or poor adjustment to social contexts. The female structure of secondary psychopathy evidenced more traits of psychological maladjustment than associated with male secondary psychopathy. Hicks et al. contended that female primary psychopathy was not as strongly related to low stress reaction, in comparison to male primary psychopathy, and that female secondary psychopathy had lower aggression, yet poorer behavioural constraint in comparison to male secondary psychopathy. The use of a personality assessment provided support for the subtypes, suggesting that findings are not solely reliant on measures of neuroticism to determine subtype differences.

The majority of research investigating psychopathy has been conducted on samples of incarcerated male offenders (Hall & Benning, 2006), subsequently, little is known concerning the etiological processes of females with psychopathic characteristics (Verona & Vitale, 2006). Research examining psychopathy among samples of incarcerated females suggests varying prevalence rates, ranging from 9% to 31%, sharing similarities with the rate of

psychopathy in samples of incarcerated male (Hare, 2003; Loucks, 1995; Neary, 1990, Salekin, Rogers, & Sewell, 1997; Strachan, 1993; Tien, Lamb, Bond, Gillstron, & Paris, 1993; Warren et al., 2003). Due to the lack of research examining psychopathy in females, prevalence rates in the community and professional sector are unknown.

Vitale, Smith, Brinkley, and Newman (2002) investigated psychopathy in a large sample of 528 female offenders. The authors assessed psychopathy using the PCL-R and used the recommended cut-off score of 30 to determine high levels of psychopathic characteristics. Based on the PCL-R, 49 (9%) female offenders were found to have psychopathic personalities, lower than samples of incarcerated males (see Hare, 1996; Hart & Hare, 1996). The authors reported that the findings provided evidence for the use of the PCL-R with females, however, they raised caution regarding the use of the PCL-R to diagnose psychopathy due to the limited understanding of etiology and psychopathic trait manifestation in females (Vitale et al., 2012). The researchers suggested that lower intelligence, anxiety, and negative affect may impact PCL-R scores and may lead to the misclassification of secondary psychopathy in females. Vitale et al. concluded that further research was required to determine the relationship between women, negative emotionality and psychopathy.

Warren et al. (2003) investigated psychopathy in a maximum-security sample (N = 138) of incarcerated female offenders. Based on the PCL-R score of 30, 17.4% of the sample had high levels of psychopathic traits, comparable with rates of psychopathy in male offenders. The researchers found that by utilising a more sensitive cut-off score of 25, approximately 46.4% of the sample had elevated psychopathy scores. The authors noted comorbidity between psychopathy and other personality disorders, suggesting that psychopathy is characterised by features of narcissistic, histrionic, antisocial, paranoid and schizotypal personality disorders in females (Warren et al., 2013). The research concluded that psychopathy in females was evident based on an antisocial personality orientation, characterised by a lack of concern for others, grandiosity, suspiciousness and a tendency to be guarded and protective from danger. The findings provided important empirical understanding of psychopathy in females, however, the research did not address whether psychopathy in females was adaptive or related to non-criminality.

Noncriminal psychopathy in females has received limited empirical investigation. In the aforementioned research by Fritzon et al. (2016), a number of females working in the supply chain management industry were found to have psychopathic characteristics. The

authors identified that 55 participants scored above the clinical cut-off score ($T = 65$) on the PPI-R, of which 22 females were found to have scores of equal to or greater than $T \geq 70$. The eleven highest scorers in the sample were female with scores ranging between $T = 74$-97. This suggested that females with clinically high levels of psychopathic characteristics were working in professional positions and maintaining that employment. The findings have important implications for understanding psychopathic traits in females, particularly as only 38% of the sample consisted of females (Fritzon et al., 2016). The research suggests that psychopathy in females may have greater adaptive and successful utility than in males. Further research examining psychopathy in females is required to support the results and to establish a relationship between female psychopathy and professional success.

Research has demonstrated that psychopathy in males and females, while similar, may result from different etiological processes and life trajectories (Fritzon et al., 2016; Hare, 2003; Hicks et al., 2010; Vitale et al., 2002; Warren et al., 2003). Research findings have demonstrated that primary and secondary psychopathy is evident in both males and females (Hicks et al., 2010). Research suggests that primary psychopathy is related to greater social skills and calculated use of behaviour. Individuals with primary psychopathy may be more likely to experience a level of success (Hall & Benning, 2006; Lykken, 1995). In contrast, secondary psychopathy is characterized by antisocial and erratic lifestyle features, often marked by aggression, emotional reactivity and impulsivity, subsequently causing apparent behavioural and interpersonal difficulties (Hall & Benning, 2006; Hare, 2003; Lykken, 1995). The notable difference in the expression of the psychopathy subtypes in females is that primary psychopathy is associated with the experience of stress in females, and secondary psychopathy is related to reduced aggression, but poorer behavioural restraint (Hicks et al., 2010). Differences have also been identified between males and females in the use of the PCL-R, with criminal versatility, juvenile delinquency, revocation on conditional release and failure to accept responsibility less applicable to females, while promiscuity has been found to strongly predict psychopathy (Dolan & Völlm, 2009). The research on primary and secondary psychopathy, shares similarities with the dual process and moderated pathways theories of psychopathy, with temperament and environmental contributions suggested to influence the development and expression of psychopathic traits (Fowles & Dindo, 2009; Hall & Benning, 2006). A large body of literature exists on primary and secondary psychopathy, with support found for psychopathy subtypes (Hicks et al., 2010; Karpman, 1941, 1948; Lykken, 1957, 1995; Newman et al., 2005). Primary psychopathy is suggested to be associated with

calmness under pressure, social dominance and a level of success (Morrison & Gilbert, 2001), yet it is unknown if this subtype of psychopathy is more prominently observed in noncriminal or criminal settings. Similarly, secondary psychopathy has been observed in offender samples (Hicks et al., 2010; Newman et al., 2005) due to elevated levels of emotional reactivity and hostility, although it is also unclear whether this subtype of psychopathy impedes functioning in the community. Research suggests that psychopathic personality shares both a positive and inverse relationship with negative emotionality, reflective of both primary and secondary subgroups (Morrison & Gilbert, 2001; Newman et al., 2005). The present research aimed to examine the distinctive relationship between psychopathic personality and negative emotionality. The current study sought to explore the implications of both primary and secondary psychopathy on criminal and noncriminal samples.

Directions of the Current Research

Research supports the global construct of psychopathy, which has largely been established around Cleckley's early work (1941, 1976) and since refined by Hare (1999a, 2003). A distinction of psychopathy subtypes, or variants based on traits constellation is evident (Hall & Benning, 2006; Karpman, 1941, 1948; Skeem et al., 2011) and has in recent years received empirical validation (Board & Fritzon, 2005; Lykken, 1995; Hicks et al., 2010). The current research aimed to find support for psychopathy subtypes through investigating the relationship between psychopathic personality and negative emotionality. The relatedness between these two constructs was explored across the samples, aiming to expand on the empirical research of primary and secondary psychopathy in noncriminal and criminal populations. The distinction of psychopathy based on subtypes is partially consistent with the explanatory theories of noncriminal psychopathy by Hall and Benning (2006). Noncriminal psychopathy refers to individuals with psychopathic traits who manage to reside in the community without a period of incarceration (Mullins-Sweatt et al., 2010; Skeem et al., 2011). A challenge with research on noncriminal psychopathy is determining the appropriate standards to define a noncriminal sample. For example, it is not clear whether participants need to be offence free or incarceration free. It is evident that some past research has failed to control for the role of criminal behaviour in noncriminal samples and it is unclear to the extent in which this leads to sample contamination (Gao & Raine, 2010). It cannot be assumed that undergraduate students with elevated psychopathic traits are noncriminal or have not had dealings with law enforcement (Fix & Fix, 2015; Gao & Raine, 2010).

Research on noncriminal psychopathy has found that such individuals may still be exploitative, commit ethical and moral violations, or even criminal acts; however, manage to avoid incarceration (Babiak & Hare, 2006; Cleckley, 1976; Dutton, 2012; Skeem et al., 2011). Successful psychopathy has typically been viewed under the guise of a psychopathic individual able to live in the community and avoid detection or arrest (Skeem et al., 2011). The terms noncriminal and successful psychopathy have often been used interchangeably and research has failed to make distinctions between the two constructs. Preliminary research findings suggest that successful psychopathy may be etiologically distinct from noncriminal psychopathy, characterised by reaching positions of corporate status and competence (Babiak et al., 2010; Babiak & Hare, 2006; Fritzon et al., 2016). Research has indicated that psychopathy in criminal, successful and noncriminal populations may be distinguished by different trait manifestation (Board & Fritzon, 2005; Dutton, 2012; Fix & Fix, 2015; Fritzon et al., 2016; Skeem et al., 2011). Lilienfeld et al. (2012), in their review of American presidents, found that fearless dominance and interpersonal-affective features were associated with achievement and corporate success, suggesting that variations in psychopathy traits, characteristic adaption (e.g., attitudes, habits, and skills) and environmental factors may differentiate constructs of successful, noncriminal and criminal (Blonigen et al., 2005; Skeem et al., 2011).

The current study sought to investigate psychopathy traits and correlates across different populations. To date, little is known regarding psychopathic people who have managed to avoid involvement with the criminal justice system (Ullrich et al., 2008). To assist in addressing this issue, a broader community and business sample was utilised to expand on the understanding of the construct in different domains (Boddy, 2011; Broad & Fritzon, 2005; Watt & Brooks, 2012). Relatively little is known about the relationship between psychopathic traits and functioning in the community and business sector (Babiak et al., 2010). It is evident that greater research is needed to investigate noncriminal psychopathy, including addressing the notion of successful psychopathy. Without further research examining psychopathic personality in noncriminal settings, our understanding will be based on speculation, anecdotes and scarce empirical findings (Babiak et al., 2010; Boddy, 2011; Fritzon et al., 2016; Gao & Raine, 2010). The current research sought to investigate the intrapersonal and interpersonal features of psychopathic personality, specifically emotional and social skills. The thesis intended to examine the manifestation of psychopathic traits in different sample populations, seeking to identify whether unique variations in psychopathy

traits were evident based on a given population sample. The present research aimed to replicate findings that psychopathy was characterised by empathy deficits (Decety et al., 2013; Hare, 1999a, 2003), and investigated whether psychopathic individuals displayed features of emotional intelligence. Mixed results have been found regarding psychopathy and emotional intelligence, with negative, no association and positive relationships identified (Ali et al., 2009; Brook & Kosson, 2013; Fix & Fix, 2015; Grieve & Panebianco, 2013; Nagler et al., 2014). The current studies sought to further investigate the relationships between the two constructs, including whether this relationship varied based on the population being assessed. Häkkänen-Nyholm and Hare (2009) and Porter et al. (2009) suggested that psychopathic individuals were capable of presenting positive impressions and manipulating the justice system. Further research has identified that psychopathy is associated with a greater ability to identify vulnerability (Wheeler et al., 2009; Wilson et al., 2008). Porter et al. indicated that a general lack of awareness was evident when understanding psychopathic manipulation and impression management. To overcome this issue both Porter et al. and Häkkänen-Nyholm and Hare believed that there was a need for further research to understand the emotional and social skills associated with the psychopathic personality. The current research will examine the association between psychopathy, emotional recognition, mimicry behaviour and social information processing.

To investigate psychopathy and social and emotional processing, the present research employs a quasi-experimental methodology to examine emotional recognition and mimicry, and social information processing. The thesis sought to explore the relationship between psychopathy and mimicry behaviour, aiming to investigate whether psychopathic participants demonstrated the ability to recognise emotions and displayed behaviours consistent with emotional contagion. Emotional contagion research suggests that people have an unconscious tendency to mimic the behaviours of others (Hatfield et al., 1994), with higher levels of emotional synchronicity associated with greater levels of empathy (Chartrand & Bargh, 1999). The research by Fecteau et al. (2008) suggested that psychopathy was associated with the ability to observe and understand emotional states, yet was marked by potential impairments in empathic concern for others. The present research intended to expand on this theoretical position, aiming to observe a relationship between psychopathy and mimicry when detecting facial expressions of emotion. To further understand the role of interpersonal manipulation and victim selection, social information processing was examined in the research. The current research aimed to extend on the findings of past studies, which have

investigated psychopathy and the perception of vulnerability (Book et al., 2007; Wheeler et al., 2009; Wilson et al., 2008). Research has demonstrated that psychopathy is associated with the ability to observe features of vulnerability in others such as walking gait and submissiveness. Wilson et al. demonstrated that in a character based recognition task, psychopathy was associated with recall of the most vulnerable character. The thesis sought to test this finding, including exploring whether psychopathy in different samples contributed to greater or poorer emotional and social information processing.

The dual process, moderated expression, and subclinical models of psychopathic personality provide theoretical explanations for understanding noncriminal psychopathy (Fowles & Dindo, 2009; Hall & Benning, 2006; Patrick, 2001; Skeem et al., 2011). The dual process model suggests that the interpersonal-affective features of psychopathy are etiologically distinct from the antisocial-behavioural aspects, accounting for the successful functioning of some psychopathic people in the community (Fowles & Dindo, 2009; Hall & Benning, 2009). This suggests that boldness and to a lesser extent, meanness, may be associated with weakness in emotional reactivity, particularly defensive and fear reactivity, while in contrast disinhibition may be characterised by an externalising-propensity, reflective of impulse control problems (Patrick et al., 2005; Skeem et al., 2011). The moderated expression pathway of psychopathy proposes that etiological and environmental factors may shape the expression of psychopathy, resulting in noncriminal psychopathy. The moderated pathway suggests that psychopathic traits may be modified based on learnt and environmental influences, such as emotional stability and adaptive behaviours (Hall & Benning, 2006; Mealey, 1995, Porter, 1996; Skeem et al., 2011). Finally, the subclinical model argues that noncriminal psychopathy is characterised by individuals with less extreme forms of psychopathy, having incomplete manifestations of the disorder (Hall & Benning, 2006). The current research aimed to explore the three theories of noncriminal psychopathy proposed by Hall and Benning. Although the present research did not investigate etiological causes of psychopathy due to the methodological challenges, the thesis sought to provide support for these theories based on the manifestation of psychopathy traits across the samples. Support for these theories was explored based on distinctive correlates with psychopathic personality and the pattern of psychopathic traits across the samples (Skeem et al., 2011). The research employed the PPI-R (Lilienfeld & Widows, 2005) to assess psychopathy in the research. Although self-report measures of personality have received criticism, research has indicated strong convergence between self and informant report psychopathy scores (Miller, Jones, &

Lynam, 2011) and suggested that response bias is unlikely to influence findings on self-report psychopathy (Watts et al., 2015). The triarchic model of psychopathy provides an important theoretical understanding of the personality construct and assists in conceptualising the findings of individual assessment instruments. The present research contrasted the findings of the PPI-R with the three discrete theoretical constructs of the triarchic model, allowing for greater comparison of the results with other research on psychopathy that has employed different assessment methodology. The triarchic model has been demonstrated to share empirical overlap with the PPI-R (Hall et al., 2014; Sellbom et al., 2015b; Skeem et al., 2011).

The current thesis conducted three separate studies designed to expand on the understanding of psychopathy across different samples by focusing on the manifestation of psychopathic traits in specific populations. It was hypothesised that the findings of these three studies would have important implications for understanding more precisely the nature and variants of psychopathic personality. The first two studies investigated the relationship between psychopathy, emotional and social capabilities, negative emotionality, gender and age. These two studies aimed to examine correlates with psychopathic personality in three separate sample populations. Study one investigated psychopathy in a community based noncriminal sample. Study two employed the same methodology as study one and aimed to replicate the findings in both criminal and successful samples. The two studies specifically examined, psychopathy, empathy, emotional intelligence, emotion recognition, mimicry, social information processing, and negative emotionality.

The third study of the research sought to specifically investigate the manifestation of psychopathic traits in the specific samples, examining differences in the factors levels of psychopathy. The study extended on the emotional and social factors previously examined in the first two studies and analysed the additional contribution of interpersonal factors such as assertiveness, locus of control and impression management in explaining psychopathy across samples. Psychopathy traits from the PPI-R were contrasted with the triarchic model of psychopathy and the implications of the findings were compared with the dual process and moderated expression models of noncriminal psychopathy.

Chapter 2

Study 1: Noncriminal Psychopathy

The depth of literature pertaining to psychopathy in offender samples has assisted in establishing the current understanding of the construct. Despite the number of studies conducted on criminal psychopathy, a dearth of research is apparent for noncriminal psychopathy, particularly psychopathy in the community. Researchers have suggested that some people with psychopathic traits evade police detection, avoid incarceration, and manage to function successfully in the community (Babiak & Hare, 2006; Dutton, 2012; Hall & Benning, 2006). Documented case studies over several decades have identified psychopathic traits in businessmen, military personnel, doctors, scientists, and psychiatrists (Babiak et al., 2010; Babiak & Hare, 2006; Cleckley, 1941, 1976; Dutton, 2012). Prevalence estimates suggest that between one and 0.6 percent of people in the community meet the assessment cut off scores to be considered psychopathic (Coid et al., 2009; Hare, 1999a, 2003). Psychopathy in the community is a poorly understood phenomenon and due to the methodological challenges of assessing the construct in the community, reliable prevalence rates are unknown. For example, Hare (1999a) speculated that approximately two million people could be considered as psychopathic in North America yet this has never been empirically tested. .

Preliminary research on psychopathy in the community contends that the interpersonal-affective features of the construct may be related to adaptive utility in the community, while antisocial behaviour traits may be associated with a greater likelihood of incarceration (Fowles & Dindo, 2009; Hall & Benning, 2006). Differences in psychopathy have previously been found in research that has investigated primary and secondary psychopathy. Studies have found that primary psychopathy which is associated with a greater propensity of interpersonal and affective traits and fewer lifestyle and antisocial traits, is associated with greater dominance, success, manipulation and social achievement (Coyne & Thomas, 2008; Morrison & Gilbert, 2001; Newman et al., 2005). In contrast secondary psychopathy, which is characterised by a lesser number of interpersonal and affective traits yet a greater constellation of lifestyle and antisocial characteristics, has been found to be related to frequent altercations, negative emotionality, poor social success and emotional outburst (Coyne & Thomas, 2008; Morrison & Gilbert, 2001; Newman et al., 2005).

Psychopathy, Emotional and Social Factors

Research investigating psychopathic personality has linked psychopathy with impaired empathic responding and emotional deficits in criminal and noncriminal samples. The findings pertaining to these deficits have included: impaired response to fear stimuli (Hare & Quinn, 1971), limited anticipation of unpleasant or painful events (Levenston, Patrick, Bradley, & Lang, 2000; Lykken, 1995; Newman & Wallace, 1993), difficulty distinguishing between neutral and emotional words (Williamson, Harpur, & Hare, 1991), reduced emotional arousal to distressing images (Blair et al., 1997), and abnormalities in the amygdala and orbitofrontal cortex when recognising and processing emotions (Birbaumer et al., 2005; Blair et al., 2005). The large array of literature suggests that psychopathy is characterised by impaired emotional processing. Despite the emotional deficits, psychopathy has been found to be associated with goal driven behaviour, immunity to stress, social boldness, and impairments in understanding behavioural consequences (Babiak & Hare, 2006; Dutton, 2012; Hare, 2003; Skeem et al., 2011). The present study sought to extend on the understanding of the emotional and social processing abilities associated with psychopathy.

A core characteristic of psychopathy is the profound lack of empathy associated with the construct (Hare, 2003). Empathic concern is the ability to infer internal states of others, read others' internal states and imagine oneself in the other person's experience (Baron-Cohen, 2011; Baston, 2011). The noted empathy deficits associated with psychopathy was initially theorised in early writings (Cleckley, 1941, 1976; Karpman, 1941, 1948) and has been observed in research (Benning et al., 2005; Dolan & Fullam, 2004; Jonason, Lyons, Bethell, & Ross, 2013; Mullins-Nelson et al., 2006; Watt & Brooks, 2012).

Brook and Kosson (2013) investigated empathy and empathic accuracy in a sample of 103 adult male offenders. The PCL-R (Hare, 2003) was used to assess psychopathy, classifying offenders as either psychopathic or non-psychopathic. Participants viewed video vignettes of targets describing an emotional event and were required to rank the emotions experienced by the target. Participants were required to rate their perception of their own accuracy and also complete the IRI (Davis, 1983, 1994), a self-report measure of empathy. The researchers found a negative relationship between psychopathy, empathy and empathic accuracy, identifying significant differences between psychopathic offenders and non-psychopathic offenders for empathic accuracy scores. The research provided support for empathy deficits in psychopathic individuals, particularly in the custodial environment (Hare,

2003), but employed a male only sample. It is unclear as to whether empathy deficits are found in females with psychopathic traits, and in noncriminal populations.

The relationship between psychopathy and empathy has often been addressed in offender samples and has not received adequate research in noncriminal samples (Hall & Benning, 2006). The association between psychopathy and emotional processing capabilities was investigated in 44 male and 130 female undergraduate students (Mullins-Nelson et al., 2006). An abridged version of the PPI (Lilienfeld & Andrews, 1996) that consisted of 56 items was used to examine psychopathy, and empathy was assessed using the IRI (Davis, 1983, 1994). The study examined recognition of non-verbal cues (Nowicki & Duke, 1994), perspective talking and empathic concern (Tangney et al., 1989). A significant negative relationship was found between total psychopathy scores, perspective taking and affective empathy. However, a non-significant relationship between psychopathy, empathy and gender was found. The results suggested a partial negative relationship between facets of empathy and psychopathy, however, did not provide support for a deficit for total empathy scores. The research was limited due to being correlational and not employing multivariate methods to analyse the unique contribution of empathy and perspective taking in predicting psychopathy.

Watt and Brooks (2012) examined the relationship between psychopathy and empathy in an Australian community sample of 327 participants. The authors measured empathy using the IRI (Davis, 1983, 1994) and psychopathy was assessed using the SRP-III (Paulhus et al., in press). The researchers examined the relationship between the subscales of the SRP-III (interpersonal manipulation, callous-affect, erratic lifestyle and criminal tendencies) and the subscales of the IRI (perspective taking, empathic concern, fantasy and personal distress). The results indicated that participants with higher levels of callous-affect had significant deficits in empathy, particularly for empathic concern, in comparison to participants with lower levels of callous-affect. The interpersonal manipulation subscale of the SRP-III was found to have a significant negative relationship with both empathic concern and perspective taking. The research provided an important understanding of the relationship between psychopathy and empathy in a noncriminal sample, however, due to 47% of the sample having a university education, the sample may not have represented a broad community sample.

An association between psychopathy and a lack of empathy is evident, although also unclear. The ability of those with psychopathy to socialise with others and survive in their environment suggests a level of awareness of the self and others in a social context.

Individuals with psychopathy lack the ability to empathise with others and understand another's emotional state, yet are highly capable of managing their interaction with the immediate environment (Baron-Cohen, 2011; Hare, 2003). This has led researchers to investigate whether factors other than emotional empathy contribute to the apparent success of people with psychopathy to navigate social situations. Fecteau et al. (2008) tested the relationship between psychopathy, empathy and the unconscious ability to observe and mirror the emotional state of another. The research examined mirror neurons through motor evoked potentials, which were activated through transcranial magnetic stimulation. Neural activation was measured through electromyographic signals recorded on a PowerLab system (Fecteau et al., 2008). The authors hypothesised that psychopathy would be negatively associated with mirror neuron activation and empathic concern in response to four sets of videos pertaining to needles penetrating various objects (e.g., hand, fruit). Total psychopathy scores (as measured by the PPI; Lilienfeld & Andrews, 1996) were found to have a non-significant relationship with neural activation during observation of the painful video-imagery condition (Fecteau et al., 2008). A significant positive relationship was found between the cold-heartedness (callous affect) subscale of the PPI and motor evoked potentials (mirror neuron activation) in response to observing the painful stimuli (Fecteau et al., 2008). The cold-heartedness subscale was also found to have a significant negative relationship with empathy, suggesting a relationship between lower levels of empathy and mirror neuron activation in response to the stimuli. Although cold-heartedness does not solely indicate psychopathy, this result is notable given the significant contribution of this trait to psychopathic personality. Cold-heartedness is one component of psychopathic personality and a deficit in this area alone does not indicate psychopathy. The findings by Fecteau et al. are suggestive of a need for greater research on psychopathy and mimicry/mirror neuron activation, as the relationship between psychopathic personality and unconscious mimicry has received limited empirical investigation and therefore is poorly understood. The study by Fecteau et al., while limited due to the small sample size (n =18) of college students, provides important findings regarding psychopathy, empathy and mirror neurons. Based on the findings, the authors questioned whether psychopathy may be positively associated with sensory aspects of the empathy construct (ability to observe and understand the affective/emotional state of an individual), yet negatively related to emotional, state or trait empathy (Fecteau et al., 2008).

An area that has received limited empirical investigation in regard to psychopathy is mimicry and the theory of emotional contagion. Emotional contagion refers to the tendency of

humans to converge emotionally, as well as mimic vocalisations, postures and movements (Hatfield et al., 1994). It is proposed that individuals with higher levels of psychopathy could be considered as performing a role that has been developed through observation and the mirroring of others actions (Babiak & Hare, 2006; Hare, 1999). Two notable studies that examined non-conscious mimicry have been conducted by Chartrand and Bargh (1999) and Niedenthal et al. (2001). Although neither study examined personality, or specifically psychopathy, the research suggested a pattern of mimicry behaviour, consistent with the emotional contagion theory and new research examining mirror neurons (De Waal, 2009; Iacoboni, 2008).

Chartrand & Bargh (1999) conducted a series of studies that examined the indirect association between empathy and mimicry behaviour. The study examined the chameleon effect; a non-conscious instinctual drive to imitate and/or mimic the actions of others (Iacoboni, 2008). The authors tested the relationship between imitating others and one's ability to empathise. The study found that participants mimicked actions (face rubbing and foot shaking) of a confederate, and that higher levels of mimicry were associated with a greater interaction and liking of the confederate by the participant. The findings also demonstrated that higher levels of mimicry were associated with higher levels of empathy as measured by Davis's IRI (1983, 1994). These findings demonstrated support for the indirect measurement of mimicry behaviour and its relationship to empathy (Chartrand & Bargh, 1999).

Niedenthal et al. (2001) investigated the relationship between unconscious mimicry and the understanding of emotional states. The research analysed the mirroring of facial expressions, presenting participants with images of changing facial expressions. The study divided participants into two groups, the first group was required to identify facial expressions of people, while the second group was required to look at the image and detect the changing facial expression while holding a pencil between their teeth (Niedenthal et al., 2001). Results of the study demonstrated that participants who held a pencil between their teeth were less effective and had a slower response time when correctly identifying facial expressions. The authors attributed this finding to the participants being unable to smile, frown or engage in any facial movement (Iacoboni, 2008; Niedenthal et al., 2001). As a consequence of this, participants who held a pencil between their teeth were unable to mirror/mimic the facial expression displayed in the image. The authors proposed that this act of mirroring/mimicking was a key process in both verbal and nonverbal communication and was fundamental in

perceiving others' expressions and subsequent emotions (Iacoboni, 2008; Niedenthal et al., 2001).

The findings regarding the mirroring/mimicry of human behaviour and the association between recognising, understanding, and empathising with others appears to have a number of important implications with regard to psychopathy. This is particularly relevant given the propensity of individuals with psychopathy to create positive impressions and manipulate others. Surprisingly, limited research has been conducted on psychopathy in relation to mimicry behaviour. This may be partially due to the majority of research on psychopathy having been conducted on incarcerated samples (Del Gaizo & Falkenbach, 2008; Hall & Benning, 2006; Hare, 2003; Mahmut, Homewood, & Stevenson, 2008) and having methodological restrictions due to the custodial environement.

The research by Fecteau et al. (2008) contends that psychopathic individuals are capable of self awareness and awareness of others in social interactions, and potentially able to adapt behaviour to a given situation. This result may account for the mixed research findings in regard to psychopathy and emotional intelligence. According to Goleman (1995) the following attributes can be considered to be pivotal to emotional intelligence: being able to motivate one's self, managing to persist despite frustration, empathy, hope, mood regulation, distress management, preventing thinking from being overridden by emotion, and, controlling impulses and management/delay of gratification. It is evident from Goleman's list of traits associated with emotional intelligence that psychopathy is marked by some inconsistencies with these traits, in particular lacking empathy (Hare, 1999a, 2003). Variations in emotional intelligence may also be influenced by the clustering of psychopathic traits in an individual, with primary psychopathy likely to be associated with greater emotional regulation (see Chapter 1 for discussion of primary and secondary psychopathy) than secondary psychopathy (Fix & Fix, 2015; Grieve & Panebianco, 2013; Lykken, 1995).

Ali et al. (2009) investigated the relationship between primary and secondary psychopathy and trait emotional intelligence and empathy. The authors analysed psychopathic characteristics in an undergraduate student sample using the Levenson Self-Report Psychopathy Scale (LSRP; Levenson et al., 1995). Results of the study found a negative relationship between primary psychopathy and anxiety, and a significant positive relationship between secondary psychopathy and anxiety, supporting seminal theories by Karpman (1941, 1948) and Lykken (1957, 1995). A negative relationship was found between empathic

responding for both primary and secondary psychopathy. Interestingly, no association was found between primary psychopathy and trait emotional intelligence, however, a negative relationship was found between secondary psychopathy and trait emotional intelligence. The authors concluded that secondary psychopathy, which is associated with aggression and impulsivity, would inhibit emotional intelligence (Ali et al., 2009).

Malterer, Glass, and Newman (2008) obtained similar findings to the work of Ali et al. (2009). The authors utilised the PCL-R and the Trait-Meta Mood Scale (Salovey, Mayer, Goldman, Turvey, & Palfai, 1995), to examine a large sample of Caucasian male inmates for psychopathy and emotional intelligence. Using scores on factor one (interpersonal/affective traits) and factor two (antisocial/lifestyle traits) of the PCL-R, the authors examined the relationship between primary and secondary psychopathy and a measure of anxiety. The results of the study demonstrated that primary psychopathy was associated with a reduced ability to attend to emotional cues and shift an experienced emotional state. Secondary psychopathy was found to be associated with poorer ability to regulate and repair emotional states. The authors concluded that people with primary psychopathy may struggle to shift their attention to adopt an alternative perspective in regards to their behaviour, however, this reduced capacity may be better accounted for by a lack of motivation, rather than a lack of ability. The findings were partially consistent with Copestake, Gray, and Snowden (2013) who found no significant association between total PCL-R scores and the Trait-Meta Mood Scale of emotional intelligence in an offender sample. Interestingly, the study observed a positive relationship between total PPI-R scores and overall emotional intelligence.

Research that has examined the emotional and social processing abilities associated with psychopathy has often found mixed and inconsistent results. Despite, an emergence of recent literature pertaining to psychopathy and emotional capabilities (Dutton, 2012; Fecteau et al., 2008; Fix & Fix, 2015), further empirical analysis is needed. For example, Hastings et al. (2008) found that psychopathic traits were negatively related to affect recognition, most notably for expressions of sadness. Long and Titone (2007) also discovered that participants who scored higher on a self-report psychopathy scale were less effective at processing negative emotional states of sadness and fear in comparison to other emotional states. Similarly, Dolan and Fullam (2006) found that individuals with higher levels of psychopathy had a lower accuracy at identifying sad faces in comparison to a control group. Kosson, Suchy, Mayer, and Libby (2002) also observed that people with psychopathic traits were less accurate at identifying facial expressions of disgust in comparison to non-psychopathic

participants. In two separate studies by Glass and Newman (2006) and Book et al. (2007) no emotional processing deficits were found to be associated with psychopathy. In both studies the results suggested that people with psychopathic traits were able to recognise facial expressions of emotion and with no deficits observed. Dolan and Fullam (2004) found similar results in an incarcerated sample of psychopathic offenders. Offenders high on psychopathy were found to perform slightly better than a control group at tasks of complex emotional recognition (Dolan & Fullam, 2004; Richell et al., 2003). An explanation for the different results across the literature may be due to the varied methodologies that have been employed by each study, with experimental designs, quasi-experimental designs and self-report methods employed. Wilson, Juodis, and Porter (2011) identified that methodology variance may provide a possible explanation for the mixed findings on psychopathy and emotion/affect recognition. The authors conducted a meta-analysis of 22 studies; finding that across the studies psychopathy was associated with a very small deficit in emotion/affect recognition. The authors noted that results varied depending on the directions given by researchers, with some directions, such as look at the eyes (Dadds et al., 2006), serving to increase accuracy (Wilson et al., 2011). Alternatively, the mixed findings may be attributed to psychopathy being associated with a partial deficit in perceiving distress cues (Blair et al., 1997). Psychopathy may be marked by a deficient emotional response to distress (lower physiological reaction) rather than in the perception of distress (Blair et al., 1997), suggesting an understanding of the emotional state, yet a deficit in the accompanying physiological symptoms/response (Johns & Quays, 1962).

The relationship between psychopathy and emotional and social processing may provide an explanation for the findings by Wilson et al. (2008). The authors examined the ability of individuals with psychopathic traits to assess for vulnerability based on the biographical details, success and emotional state of characters. The research consisted of 44 participants from a Canadian undergraduate sample. A combination of facial expressions conveying either a happy or sad emotional state, along with specific character details, were used by the authors to create four separate character conditions; happy and successful, happy and unsuccessful, sad and successful, and, sad and unsuccessful. To investigate the relationship between psychopathy and the four character conditions, psychopathy scores were median split into high and low psychopathy (Wilson et al., 2008).

The findings suggested a similar ability between both the high and low psychopathy groups for recognition of character faces (72% vs. 74%), as well as happy and successful

males (90% vs. 95%). The high psychopathy group was found to have a significantly lower recognition of sad and successful females and happy and successful females in comparison to the low psychopathy group. The most notable difference between high and low psychopathy, however, was found for the sad and unsuccessful female characters. Results found that those in the high psychopathy group had a near perfect recall of this character type (90%) compared to the low psychopathy group (68%), suggesting an unconscious predisposition towards recognizing the most vulnerable character/person (Wilson et al., 2008). The findings of the study provided a preliminary understanding of the relationship between psychopathy and social information processing, however, due to the limited sample size and student population, results of the study require further replication to address sampling limitations.

The ability of psychopathic individuals to identify vulnerability and present a positive impression partially explains the results of a study conducted by Porter et al. (2009). The authors (2009) examined psychopathy in a Canadian male Federal inmate sample of male sexual and non-sexual offenders. History of violent behaviour, probability of being granted a conditional release and performance while on a conditional release order were also analysed. Psychopathy was found to be associated with a greater number of violent and non-violent offences, but not sexual offences. Notably, offenders high on psychopathy were found to be two and a half times more likely to receive conditional release than non-psychopathic offenders. Porter et al. concluded that despite the prolific criminal histories of those with psychopathy, psychopathic individuals had a greater proficiency in persuading parole boards to release them back into society. The results provide support for the findings of the research conducted by Wilson et al. (2008) and suggest that psychopathy is associated with the ability to detect weakness and vulnerability, as well as persuasive interpersonal skills (Babiak & Hare, 2006; Dutton, 2012; Hare, 1999a).

Directions of the Present Study

The present study sought to extend on the understanding of the emotional and social processing abilities associated with psychopathic personality. The relationship between psychopathy and empathy has received considerable empirical investigation in offender samples (see Blair et al., 1997; Brook & Kosson, 2013; Williamson et al., 1991), however, has not received adequate research in noncriminal samples (Hall & Benning, 2006). A lack of empirical analysis is evident in relation to psychopathy and other facets of emotional understanding, including emotional intelligence and emotionality. Previous research has

found support for a positive relationship between primary psychopathy and emotional intelligence (Fix & Fix, 2015; Grieve & Panebianco, 2013) and a negative relationship has been found between secondary psychopathy and emotional intelligence (Ali et al., 2009). Studies have found support for primary and secondary types of psychopathy based on levels of anxiety and negative emotionality (Coyne & Thomas, 2008; Lykken 1995; Morrison & Gilbert, 2001). Primary psychopathy has been found to be associated with low anxiety and secondary psychopathy with high anxiety (Lykken, 1995; Karpman, 1941; Newman et al., 2005). The present study examined psychopathy in relation to emotional intelligence, as well as negative emotionality, including depression, stress and anxiety. Evidence supporting primary and secondary types of psychopathy was also investigated.

Past research has found mixed and inconsistent results pertaining to the relationship between psychopathy and emotional recognition, while research into the emotional contagion theory (Hatfield et al., 1994), mimicry behaviour, and psychopathy has been limited. Inconsistencies in results have primarily pertained to the capacity of individuals with psychopathy to detect emotional states, with studies finding both positive and negative relationships between psychopathy and emotional recognition (Book et al., 2007; Glass & Newman, 2006; Hastings et al., 2008; Long & Titone, 2007). To partially address the inconsistencies in the literature, the present study employed previous methodologies modelled on Niedenthal et al. (2001) and Wilson et al. (2008), aiming to replicate past results and extend on findings. The study by Fecteau et al. (2008) suggested that individuals with higher levels of cold-heartedness demonstrated unconscious mirror neuron activation, suggestive of normal mimicry and emotional contagion functioning. The present study sought to extend on the methodology utilised by Niedenthal et al. to investigate the relationship between psychopathy and mimicry behaviour. Previously this methodology has only been employed to investigate emotional recognition and mimicry. The relationship between psychopathy and emotional recognition was examined through a control condition where mimicry of facial expressions was able to occur and an experimental condition where the mimicry process was restricted. The aim of utilising this methodology was to examine whether people with psychopathic traits have a similar pattern of responding to those with low levels of psychopathic traits, expanding on the findings of both Fecteau et al. (2008) and Niedenthal et al. (2001). A further aim was to extend on the empirical evidence in regard to the ability of psychopathic individuals to accurately detect facial expressions of emotion.

The research sought to investigate the social information processing abilities of psychopathic people. Studies have suggested that psychopathy has been associated with a greater ability to detect vulnerability and submissiveness in others (Book et el., 2007; Wheeler et al., 2009). The present study utilised the methodology of Wilson et al. (2008) and aimed to replicate the findings of the research. The purpose of utilising the methodology developed by Wilson et al. was to establish consistency in the empirical findings and overcome the sample size limitations of the study through the use of a larger community sample. The use of an Australian community sample allowed for cross cultural comparisons between Australia and Canada.

A community sample of males and females was utilised to examine noncriminal psychopathy, addressing the lack of research on psychopathy outside of the custodial setting (Hall & Benning, 2006; Skeem et al., 2011). The PPI-R was used to assess psychopathy and has been cited as one of the leading assessment tools (Lilienfeld & Widows, 2005; Skeem et al., 2011) in examining criminal and noncriminal psychopathy. The PPI-R has also been found to share empirical overlap with the PCL-R, CAPP concept map and the triarchic theory of psychopathy (Cook et al., 2013; Lilienfeld & Widows, 2005; Polaschek, 2015; Skeem et al., 2011). Psychopathy was examined as a dimensional construct for the purpose of the research, consistent with Edens et al. (2006).

1. To examine psychopathy, mimicry and emotional recognition, it was hypothesised that a significant positive effect would be found for psychopathy on emotional recognition when mimicry occurred (control condition), and a significant negative effect of psychopathy on emotional recognition (deficit) when mimicry was restricted (experimental condition).
2. It was hypothesised that psychopathy would be a significant positive predictor of overall emotional recognition, specifically that higher levels of psychopathy would be associated higher levels of emotional recognition compared to lower levels of psychopathy.
3. To investigate psychopathy and social information processing, it was hypothesised that higher levels of psychopathy would be significantly associated with greater recall and recognition of the sad unsuccessful female character compared to lower levels of psychopathy, consistent with Wilson et al. (2008).
4. It was hypothesised that total psychopathy scores would be a significant positive predictor of emotional intelligence. It was also hypothesised that an interaction would

be found between higher levels of psychopathy and higher and lower levels of negative emotionality, supporting primary and secondary types of psychopathy. It was expected that high levels of psychopathy and low levels of negative emotionality would positively predict emotional intelligence and that high levels of psychopathy and high levels of negative emotionality would negatively predict emotional intelligence (Karpman, 1941; Lykken, 1995; Newman et al., 2005).

5. Finally, it was hypothesised that a significant negative relationship would be found between total psychopathy scores and empathy. It was hypothesised that an interaction would be found between high levels of psychopathy and higher and lower levels of negative emotionality. The hypothesised interaction was that higher levels of psychopathy and low levels of negative emotionality would negatively predict empathy and that high levels of psychopathy and high levels of negative emotionality also would negatively predict empathy (Karpman, 1941; Lykken, 1995; Newman et al., 2005).

Method

Participants

A total of 122 participants were recruited for the study. Due to missing data, seven participants were excluded from the sample, leaving a final sample size of 115 participants. The sample consisted of 64 females (M_{age} = 38.02; *SD* = 16.77) and 48 males (M_{age} = 55.06; *SD* = 16.52) with an age range from 18 to 75 years of age (M_{age} = 36.58; *SD* = 16.67). Participants most commonly reported identifying with a Christian religion and the most frequent occupation for the sample was professionals. Table 1 shows the frequency and percentage values for identified religions, while Table 2 displays the frequency and percentage of occupation for the sample. The most common income reported by the sample was $500 to $599 per week and the most frequent form of education was a TAFE Diploma/and or Certificate. Table 3 depicts the distribution of income and Table 4 shows the frequency and percentages for education for the sample.

Table 1
Frequency and Percentage of Religion

Religion	Frequency (Percentage %)
Christian	54 (47%)
Atheist	25 (21.2%)
Agnostic	12 (10.4%)
Buddhism	8 (7%)
Hinduism	1 (0.9%)
Other	14 (12.2%)

Note. One (0.9%) participant did not disclose religion.

Table 2
Frequency and Percentage of Occupations

Occupation	Frequency (Percentage %)
Professionals	21 (18.3%)
Sales workers	16 (13.9%)
Community and personal service workers	14 (12.2%)
Student	12 (10.4%)
Technicians and trades workers	11 (9.6%)
Managers	8 (7%)
Retired	7 (6%)
Labourers	6 (5.2%)
Unemployed	5 (4.3%)
Clerical and administrative workers	4 (3.5%)
Machinery operators and drivers	1 (0.9%)
Other	8 (7.1%)

Note. Two (1.7%) participants did not report occupation.

Table 3
Frequency and Percentages for Income Distribution Per Week

Income	Frequency (Percentage %)
$500 to $599	14 (12.2%)
$1000 to $1499	13 (11.3%)
Nil Income	12 (10.5%)
$600 to $699	11 (9.6%)
$400 to $499	11 (9.6%)
$1500 or more	8 (7%)
$800 to $899	8 (7%)
$200 to $299	8 (7%)
$700 to $799	6 (5.2%)
$300 to $399	5 (4.3%)
$40 to $79	5 (4.3%)
$120 to $159	4 (3.5%)
$160 to $199	4 (3.5%)
$1 to $39	3 (2.6%)
$80 to $119	2 (1.7%)
Other	8 (7.1%)

Note. One (0.9%) participant did not report income.

Table 4
Frequency and Percentage of Education

Education	Frequency (Percentage %)
TAFE diploma and/or certificate	29 (25.2%)
Bachelors degree	26 (22.6%)
Grade 12	25 (21.7%)
Grade 10	9 (7.8%)
Postgraduate degree	7 (6.1%)
Master degree	6 (5.2%)
Grade 11	5 (4.3%)
Grade 9	5 (4.3%)
Grade 8 or below	1 (0.9%)
Other	1 (0.9%)

Note. One (0.9%) participant did not report education.

Approximately 19.10% of the sample reported having previously been arrested, with 1.70% missing information for this item. Nine respondents (7.80%) reported having a criminal record and six participants (5.20%) reported either currently or previously being on a

criminal justice order. Three respondents reported having been charged for drug offences, two reported a violent offence and one reported a motor vehicle offence.

Materials

The research assessment package comprised of eight questionnaires and two computer tasks. The assessment measures consisted of: the Psychopathic Personality Inventory-Revised (PPI-R; Lilienfeld, & Widows, 2005), the Interpersonal Reactivity Index (IRI; Davis, 1980, 1983), the Depression, Anxiety and Stress Scale-21 (DASS-21; Lovibond, & Lovibond, 1995), the Paulhus Deception Scales (PDS; Paulhus, 1998), Assessing Emotions Scale (AES; Schutte, Malouff, & Bhullar, 2009), Social Response Inventory (SRI; Keltner, Marshall, & Marshall, 1980) and, Locus of Control Scale (LC; Nowicki & Duke, 1974). A brief demographic questionnaire was utilised that examined gender, age, religion, occupation, income, education, arrest record, criminal record, and history of offending behaviour (see Appendix A for complete copies of self-report questionnaires). Due to the specific hypotheses of the present study only a selection of these measures were used, these included: two computer tasks, the demographic questionnaire, IRI, PPI, AES and DASS-21.

Both computer tasks were comprised of images from the Pictures of Facial Affect series (POFA; Ekman & Friesen, 1976). POFA series consisted of 110 black and white images of six different facial emotional expressions. The six emotional expressions include: happiness, sadness, anger, surprise, disgust and fear. Each image was developed through actors receiving instructional training on which muscles to contract and which to relax to form a given facial expression (Ekman & Friesen, 1976). Based on hundreds of images, a sample of American college students were exposed to each image for approximately 10 seconds and required to identify each emotion portrayed in the image. Inter-rater reliability was developed by the authors through observer ratings for each image to determine the percentage of correctly identified emotions. Ratings for images used ranged between 92% and 100% (Ekman & Friesen, 1976).

Emotional recognition task. The first computer task focused on emotional recognition. The task consisted of two trials, both trial one and trial two were each comprised of nine facial emotional expressions. All images utilised in the task had been examined for inter-rater accuracy, with all images ranging between 92% and 100%. For example, the happiness image utilised in trial one (image EM4-7) received an inter-rater accuracy rating of 100% (Ekman & Friesen, 1976). In total 18 facial emotional expressions were used across the

two trials, with three emotions used for happiness, sadness, anger, surprise, disgust, and fear. Trial one consisted of: happiness, disgust, fear, surprise, disgust, sadness, fear, surprise, and anger. The facial expressions in trial two were: happiness, disgust, surprise, happiness, sadness, anger, fear, sadness, and anger. The different emotions were randomly spaced out over the two trials, with each trial containing at least one image of each emotional state. Each image was displayed for 10 seconds and the participant had 15 seconds to rate each emotion. The 10 seconds exposure to the image was designed to keep the emotional recognition task consistent with the normative methodology employed by Ekman and Friesen in the development of the POFA.

The trial order did not change at any stage of the research, however, an experimental methodology was employed to create an experimental and control viewing condition. For the experimental condition, participants were required to hold a paddle pop stick between their teeth. For the control condition, participants were able to view the facial expressions of emotion normally and without restriction. The ordering of the experiment and control conditions was randomly varied throughout the research. For some participants, the experimental condition occurred first, followed by the control condition over the two trials. Other participants received the control condition first, and then completed the experimental condition across the two trials. This methodology was influenced by the research conducted by Niedenthal et al. (2001). The authors examined the ability of participants to detect changing images of facial expression of emotion while holding a pencil between their teeth. The current research sought to extend on the findings by Niedenthal et al, examining distinct experimental and control conditions and their effect on participants' correct identification of fixed facial expressions of emotion.

A response form was created for participants to rate each emotion displayed in the image (see Appendix B for response for and examples of images used in the emotional recognition task). The response form was modeled on the initial rating scale used in the POFA image series to rate emotional expressions (Ekman & Friesen, 1976). For each emotion participants had seven choices to select from, these included the six emotional states and the option of neutral or no emotion. Participants were required to select which of the seven emotions most resembled the emotional state expressed in the image. For each of the nine images in a trial, participants received a score of *1* if able to correctly identify the emotion, or a score of *0* if incorrectly identified. Each participant was required to view two trials of nine images and rate the emotions in each.

Recall of character information task. The recall of character information task consisted of two trials. The methodology of this study was adapted from Wilson et al. (2008). The first trial contained eight images. Each image included a character in either a happy or sad emotional state and also included their name, occupation and a like and dislike. Character names were selected from the top Australian baby names of 2011, obtained from www.babycenter.com.au/pregnancy/naming/top-baby-names-2011/. Occupations for the characters included, doctor, lawyer, shop assistant, cleaner, taxi driver, veterinarian, waiter, and accountant. Successful occupations were considered as being a doctor, accountant, lawyer and veterinarian. Unsuccessful occupations were being a taxi driver, cleaner, shop assistant and a waiter. Occupations were created from a list titled 'Australia's Most Trusted Professions 2011', obtained from www.readersdigest.com.au/australias-most-trusted-professionals-2011. Character likes included, painting, smoking, running, watching television, documentaries, dancing, surfing, and skydiving. Character dislikes included, cooking, video games, alcohol, vegetables, coffee, cats, going to movies, and exercise. The process of selecting character names, likes, dislikes and occupations was modeled on the methodological steps employed by Wilson et al. (2008). Each image was displayed for 30 seconds, with the trial taking approximately 240 seconds.

The second trial was administered approximately sixty seconds after the first trial. The second trial presented the image of the character, however, no information about the character was displayed. Participants were required to determine whether they recognised the character from the first trial and to recall any of the information about that character. This trial included a total of 14 images, the original eight images from first trial and six distractor images. The distractor images were all of a neutral facial expression. Participants were provided with up to 60 seconds to respond to each image, however, participants were able to proceed to the next image at a quicker rate if requested. Character recognition was scored as either *correct* or *incorrect* recognition of the character, while recall was scored based on the number of correct character details the participant was able to recall. Character recall scores ranged from *0* to *4* for each of the eight characters (see Appendix C for response form and examples of images used in the character information task).

The psychopathic personality inventory-revised (PPI-R). The PPI-R was originally developed by Lilienfeld and Andrews (1996) and revised by Lilienfeld and Widows (2005). The PPI-R is comprised of 154 self-report items designed to measure the construct of psychopathy. Respondents rate each item on a four-point scale ranging from: *false* (1), *mostly*

false, *mostly true* and *true* (4). Example items include, *if I really want to I can persuade most people of almost anything* and *I don't get nervous under pressure*. The PPI-R consists of eight content scale and three validity scales. The total score of the PPI-R is calculated through summing the total scores of the eight content scales. In addition to the total score, the eight content scales form three separate factors: self-centred impulsivity, fearless dominance and coldheartedness. Higher scores on the PPI-R are indicative of a greater level of psychopathic traits. Scores can be interpreted as either raw scores or standardised scores. Standardised scores and base rates for the PPI-R are based on *T* scores, consisting of a mean score of 50 and a standard deviation of 10. Raw scores and standardised scores are based on normative data that consists of a community/college sample of 985 participants and a correctional sample comprising of 154 offenders (Lilienfeld & Widows, 2005). The measure provides clinical cut off levels for the PPI-R for total, factor and content scores, indicating that a *T* score of 65 or above is considered to represent clinically significant levels of psychopathic traits (Lilienfeld & Andrews, 1996; Lilienfeld & Widows, 2005).

The PPI-R demonstrates good internal consistency with reliability for the PPI-R total scores (.86 to .93) as well as content scale scores all ranging above .70 (Lilienfeld & Widows, 2005). Construct validity has been demonstrated for the PPI with convergent and discriminant validity found between the Antisocial Personality Disorder Scale (.53), CPI Socialization Scale (-.59), MMPI-2 Antisocial Practices Content Scale (.56 and .58) (Lilienfeld & Andrews, 1996; Lilienfeld & Widows, 2005). The PPI has been found to moderately correlate with the PCL-R (.54), while moderate correlations have also been found between the PPI total score and factor one (.54) and factor two (40) of the PCL-R (Poythress, Edens, & Lilienfeld, 1998).

The interpersonal reactivity index (IRI). The IRI is a 28 item self-report instrument designed to measure empathy (Davis, 1980, 1983). The measure consists of four seven item subscales, which include: perspective taking, empathic concern, personal distress and fantasy. Scores on the measure are summed to create subscale and overall scores. Higher scores on the IRI for the subscales and overall total indicate greater levels of empathy. Respondents are required to rate items on a five-point scale ranging from, *does not describe me* (0) to *describe me very well* (4). Example items include: "I often have tender, concerned feelings for people less fortunate than me" and "When I see someone get hurt, I tend to remain calm." The IRI demonstrates adequate reliability through internal consistency, with Cronbach's alpha coefficients ranging from .70 to .78 (Davis, 1994). Convergent validity has been established for the IRI with moderate correlations with the Interpersonal Emotional Intelligence Scale

(.30; Charbonneau & Nicol, 2002). Discriminant validity has also been demonstrated with the Self Report Psychopathy Scale-II (-.30; Zagon & Jackson, 1994).

Depression anxiety and stress scale 21 (DASS-21). The DASS-21 is a short form self-report measure consisting of three scales designed to measure negative emotional states (Henry & Crawford, 2005; Lovibond & Lovibond, 1995). The measure is a screening instrument for the three states of depression, anxiety and stress. The depression scale consists of items that measure symptoms associated with dysphoric mood, such as hopelessness and devaluation of life. The anxiety scale includes items related to physical arousal, panic attacks and fear. The stress scale comprises of items that measure tension, irritability and tendency to overreact to stressful events. Higher scores on the DASS-21 for the subscales indicate greater levels of depression, anxiety and stress, while higher total scores on the measure represent greater levels of general negative emotionality. The DASS-21 has been found to be a reliable and valid psychometric instrument (Henry & Crawford, 2005). Internal consistency yields a Cronbach's alpha reliability coefficient of at least .93 for the total scale (Henry & Crawford, 2005). The measure has also been found to demonstrate strong discriminative and convergent validity with the Hospital Anxiety and Depression Scale and the Personal Disturbance Scale (Crawford & Henry, 2003).

Assessing emotions scale (AES). The AES was developed based on Salovey and Mayer's (1990) original model of emotional intelligence. The measure is comprised of 33 self-report items and is designed to assess the trait emotional intelligence. Respondents rated items on a five-point scale, ranging from *strongly disagree* (1) to *strongly agree* (5). Example items include, *I know when to speak about my personal problems to others* and *other people find it easy to confide in me*. The measure examines global emotional intelligence as well as comprising of four subscales. These include: perception of emotion, managing own emotions, managing others' emotions and utilization of emotion. Items are summed to create scores for the subscales and an overall total score for the measure. Higher scores on the AES indicate greater levels of emotional intelligence. The AES scale demonstrates a high level of reliability based on internal consistency ($\alpha = .90$; Schutte et al., 1998), as well as good test retest reliability (.78) over a two week period for total scores. The measure has been found to demonstrate convergent validity with the other measures of emotional intelligence including the Emotional Quotient Inventory and the MSCEIT (Brackett & Mayer, 2003). Support for the divergent validity of the AES has been found with the Marlowe-Crowne Social Desirability Scale and the Big Five Factors (Kirk, Schutte, & Hine, 2008; Schutte et al., 2009).

Design

To investigate hypothesis one pertaining to psychopathy and mimicry, a mixed factorial design was employed. The variables for the analysis were psychopathy (high and low), trial order (trial one and trial two) and the condition (experimental and control). The experimental condition occurred when participants viewed images of facial expressions of emotion while holding a paddle pop stick between there teeth, while the control condition allowed participants to view the image normally. The analysis investigated the effect of the condition, psychopathy and trial order on the dependent variable of emotional recognition. Condition (experimental and control) was the repeated measures variable and psychopathy and trial order were the between subjects variables for the analysis.

To examine hypothesis three, regarding psychopathy and character recognition and recall, a mixed factorial design was employed. The analysis examined the effects of psychopathy (high and low), success (successful and unsuccessful), gender (male and female) and emotion (happy and sad) on the dependent variable of character recognition. The within subjects variables for the analysis were success, gender and emotion and the between subjects variable was psychopathy. The same design was employed to examine the recall of character information. The analysis investigated the effects of psychopathy (high and low), success (successful and unsuccessful), gender (male and female) and emotion (happy and sad) on the dependent variable of character recall. The same within subjects variables for the analysis were utilised as for character recognition; these were success, gender and emotion. The between subjects variable for the analysis was psychopathy. The remainder of the hypotheses (hypotheses two, four and five) were examined through correlational design.

Procedure

The sample was recruited from two shopping centres in South East Queensland over a two-week period. All participants were required to be 18 years of age to participate in the study. To assist with the recruitment of participants, each participant received $20 as an incentive for participating in the research. Testing took place in the two shopping centres in an allocated stall space. The testing space comprised of a desk and three seats. All participants viewed the computer tasks on a 15-inch laptop computer screen. Computer tasks were developed through PowerPoint and included specified time intervals for slides.

Participants were informed about the purpose of the research in the explanatory statement of the questionnaire. The explanatory statement informed participants that the

survey and computer tasks would take approximately 60 minutes to complete, although there were no strict time limits, and questions could be completed at the participant's leisure (see Appendix D for a copy of the explanatory statement used in the study). The order in which participants completed the computer tasks and questionnaires varied, however, a minimum time gap of twenty minutes between computer task one and computer task two was employed. This was implemented due to an overlap between some of the images in both computer tasks and to avoid confusion or false recognition.

The emotional recognition computer task required participants to view two separate PowerPoint slideshows. Each image was displayed for 10 seconds on the computer screen, followed by a 15 second interval in which the participant was required to record their response to the image. For the experimental condition, participants were required to view the nine images and identify the emotion displayed in the picture while holding a paddle pop stick clenched between their teeth. For the control condition, participants viewed another nine images, this time without the paddle pop stick. The trial order of images remained the same throughout testing, however, the experiment and control conditions were varied across the testing, with some participants receiving the experimental condition followed by the control, and other participants received the control condition first followed by the experiment.

The character information computer task consisted of two components. The first part of the test contained eight images. Each image included a character in either a happy or sad emotional state and also included their name, occupation and a like and dislike. Each of the images was displayed for 30 seconds, with the trial taking approximately 240 seconds. The second part of the test was administered approximately sixty seconds afterwards. The second trial presented the image of the character, however, no character information was displayed. The 14 images contained in the second trial included the original eight images from the first test and six distractor images. Participants were provided with up to 60 seconds to respond to each image and were able to proceed to the next image at a quicker rate if requested.

All ethical requirements were met and the study was approved by the Bond University Human Research Ethics Committee (BUHREC). Upon completion of the surveys, data was collected, entered and analysed using the computer program "Statistical Package for Social Science" (SPSS Version 20.0).

Results

Prior to analysis the data was screened for any errors, missing values or incorrectly entered scores, and corrected. Little's Missing Completely at Random Test was conducted on the sample to examine for the presence of missing data. The results of Little's MCAR test was found to be non significant, $\chi^2 = 42.874$, $p = 1.00$, indicating that data was missing completely at random (Little, 1988). Before replacing values using the Little's MCAR test, seven participants were removed from the data set due to missing more than 8% of the responses on the AES. After removal of these cases missing data was replaced using Little's MCAR test based on expectation-maximisation.

Reliability analysis (inter-item consistency) was conducted to assess the reliability of the scales used in the study. Cronbach's Alpha demonstrated adequate internal consistency for all measures used: PPI-R ($\alpha = .91$), PDS ($\alpha = .81$), IRI ($\alpha = .77$), AES ($\alpha = .93$), LC ($\alpha = .76$), DASS ($\alpha = .93$) and SRQ ($\alpha = .75$), consistent with previous research.

Initial Data Screening, Assumption Testing and Descriptive Statistics

An initial assessment for normality and outliers was conducted using histograms, box plots and standardised measures of skew and kurtosis for continuous variables in the study, with a cut off value of $z = 2.58$, $p = .01$. Normality assumptions were met for the PPI-R and IRI scale composite scores. However, age, the AES and the DASS-21 composite scores had violations to normality and contained outlier values. Visual inspection and assessment of standardised skew values showed significant positive skew and violation of normality for age. Upon closer inspection, skew could be seen to be attributed to the majority of the sample being younger in age, with a smaller proportion of older participants. Therefore the variable of age was retained without data manipulation.

Both the AES and the DASS-21 showed significant positive skew. Transformations were attempted to reduce the impact of influential scores, however no significant changes to normality occurred. Both transformed and un-transformed data did not significantly change any results of the analysis, therefore no transformed data was used in the analysis. In order to determine that the extreme values identified within the dataset were not disruptive/influential, means of each continuous variable and the 5% trimmed means were compared for all variables used.

Table 5 shows the mean values and 5% trimmed means for each of the continuous variables within the dataset. As can be seen, the differing scores are negligible, therefore indicating that the outliers can be left in the dataset (Tabachnick & Fidell, 2007). The frequency and percentage rates for correct identification of emotional recognition for the experimental and control condition tasks are displayed in Tables 6 and 7. The two trials were composed of two image sets. The image sets were in fixed order, however, the experimental condition was varied over both sets of images. Table 6 shows the frequency and percentages for the first image set for the experimental and control condition. Table 7 displays the frequency and percentages for the second image set for the experimental and control condition.

Table 5
Descriptive Statistics for the Continuous Variables in the Community Sample

	Means	5% Trimmed Means	Standard Deviation	Minimum	Maximum
Age	36.58	35.63	16.67	18	75
PPI-R	294.72	294.06	38.45	212	413
IRI	62.95	63.13	12.35	34	96
AES	128.81	129.90	18.17	50	162
DASS-21	13.61	12.53	11.22	0	57

Note. PPI-R = Psychopathic Personality Inventory-Revised; IRI = Interpersonal Reactivity Index; AES = Assessing Emotions Scale; = Depression, Anxiety and Stress Subscales-21.

Table 6
Frequency and Percentages of Correctly Identified Emotions for First Image Set of Trials for the Community Sample

Emotion	Exp. First Image Set Correct	Exp. First Image Set Incorrect	Control First Image Set Correct	Exp. Control First Image Incorrect
Happy	43 (87.8%)	6 (12.2%)	64 (97%)	2 (3%)
Disgust	33 (67.3%)	16 (32.7%)	55 (83.3%)	11 (16.7%)
Fear	17 (34.7%)	32 (65.3%)	36 (54.5%)	30 (45.5%)
Surprise	47 (95.9%)	2 (4.1%)	64 (97%)	2 (3%)
Disgust	40 (81.6%)	9 (18.4%)	54 (81.8%)	12 (18.2%)
Sad	31 (63.3%)	18 (36.7%)	39 (59.1%)	27 (40.9%)
Fear	26 (53.1%)	23 (46.9%)	32 (48.5%)	34 (51.5%)
Surprise	39 (79.6%)	10 (20.4%)	56 (84.8%)	10 (15.2%)
Anger	37 (75.5%)	12 (24.5%)	57 (86.4%)	9 (13.6%)

Note. Exp. = Experimental Condition, $n = 49$. Control Condition, $n = 66$.

Table 7
Frequency and Percentages of Correctly Identified Emotions for Second Image Set of Trials for the Community Sample

Emotion	Exp. Second Image Set Correct	Exp. Second Image Set Incorrect	Control Second Image Set Correct	Control Second Image Set Incorrect
Happy	63 (95.5%)	3 (4.5%)	45 (91.8%)	4 (8.2%)
Disgust	61 (92.4%)	5 (7.6%)	44 (89.8%)	5 (10.2%)
Surprise	64 (97%)	2 (3%)	48 (98%)	1 (2%)
Happy	60 (90.9%)	6 (9.1%)	42 (85.7%)	7 (14.3%)
Sad	61 (92.4%)	5 (7.6%)	46 (93.9%)	3 (6.1%)
Anger	60 (90.9%)	6 (9.1%)	42 (85.7%)	7 (14.3%)
Fear	54 (81.8%)	12 (18.2%)	39 (79.6%)	10 (20.4%)
Sad	46 (69.7%)	20 (30.3%)	31 (63.3%)	18 (36.7%)
Anger	61 (92.4%)	5 (7.6%)	42 (85.7%)	7 (14.3%)

Note. Exp. = Experimental Condition, $n = 66$. Control Condition, $n = 49$.

To investigate the differences in mean psychopathy scores and to test for potential sample variance, independent samples t-tests were performed to examine the difference between participants with and without a criminal record. No significant difference was found between participants with and without a criminal record for overall psychopathy levels, $t(112) = 1.67$, $p = .099$, self-centred impulsivity, $t(112) = 1.88$, $p = .063$, fearless dominance, $t(112) = 0.64$, $p = .520$, and coldheartedness, $t(112) = 0.21$, $p = .831$. As participants with a criminal record were not found to significantly differ in psychopathy scores, they were maintained in the community sample. Participants with elevated levels of psychopathic traits on the PPI-R were considered to score one and a half standard deviations above the mean score for the college/community normative data (Lilienfeld & Widows, 2005). The frequency analysis of the PPI-R revealed that 21 (18.3%) participants were found to have clinically elevated levels of psychopathy, while 94 (81.7%) participants did not have clinically elevated traits. Eleven female (17.19%) and 10 male (20.83%) participants were identified as having clinically elevated levels of psychopathy. A series of independent samples *t*-tests were conducted to compare the differences in psychopathy scores for males and females. Males were found to have significantly higher total psychopathy scores that females indicating a significant difference between gender and overall levels of psychopathy, $t(110) = 4.99$, $p < .001$. Significant differences were further found at the subscale level for self-centred

impulsivity, t (110) = 3.59, $p < .001$, fearless dominance, t (110) = 3.58, $p = .001$, and coldheartedness, t (110) = 3.10, $p = .002$, with males found to score higher on all of these psychopathy facets compared to females. A further independent samples t-test was conducted to examine the difference between females and males based on normative data standardised T scores, which revealed no significant gender difference t (110) = 0.99, $p = .327$ between the current sample and the normative sample. Figure 2 details the mean score differences between females and males for the total PPI-R and PPI-R subscales.

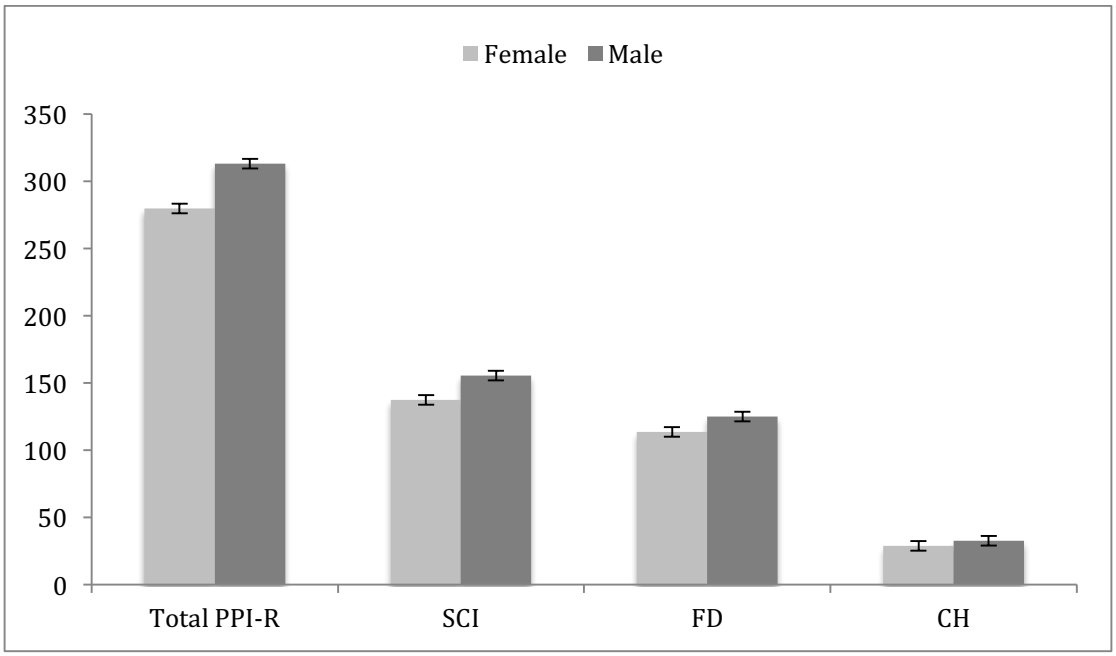

Figure 2. The mean scores for females and males for the PPI-R total score, self-centred impulsivity subscale, fearless dominance subscale and coldheartedness subscale for the community sample. Standard errors are represented in the figure by error bars attached to the columns.

Data Screening for Multivariate Analyses

To investigate the effect of condition, psychopathy, and trial order on the dependent variable of emotional recognition, a 2 x 2 x 2 mixed design ANOVA was conducted. An initial assessment for normality and outliers was conducted using histograms, box plots and standardised measures of skew and kurtosis on the dependent variable for each condition. Visual inspection and assessment of standardised skew values showed significant negative skew and violation of normality for both the experimental condition and control condition. Upon closer inspection, skew could be seen to be attributed to the majority of the sample recording higher scores on the task and demonstrating a ceiling effect. Reflected square root

and log10 data transformation were attempted; although these methods reduced skewness, the distribution still remained skewed and no significant changes occurred to normality. One notable outlier was identified for the control condition, with a significantly low score on the task (more than three standard deviations from the mean score). The analysis was run with this participant in the data set and also when removed. No significant differences were found therefore removal could not be justified. Therefore, as there was little impact on the analysis and for ease of interpretation the analysis was conducted without data manipulation and to retain statistical power.

To test the hypothesis of predicting emotional recognition, a hierarchical multiple regression was employed to establish the relative contribution of the independent variables to explain emotional recognition. Prior to the regression analyses the data was inspected for violations of assumptions and problematic scores using scatterplots, partial regression plots, standardised residual plots, along with residual statistics. Residual plots showed the assumptions of homoscedasticity, linearity and independence of observations appeared to be met with the exception of one potentially problematic score. Cook's distance and leverage did not identify any problematic scores. However, inspection of Mahalanobis distance revealed a significant multivariate outlier, above the recommended significant chi-square cut off at an alpha of $p < .001$ for six independent variables. When this score was removed significant change occurred to R^2, error estimates and regression coefficients, therefore there was justification for removal. No problems with multicollinearity were found. Two participants were removed from the analysis due to having missing data for both gender and age.

To test the hypothesis pertaining to character recognition and recall, two separate 2 x 2 x 2 x 2 mixed design factorial ANOVAs were conducted. An initial assessment for normality and outliers was conducted using histograms, box plots and standardised measures of skew and kurtosis on the dependent variable for each condition. Although some minor violations to assumptions were detected, none of these had any significant impact on the results of the analyses; therefore, both analyses were conducted without data manipulation.

To investigate the hypotheses pertaining to the prediction of emotional intelligence and empathy, two separate hierarchical regressions were conducted. An initial assessment for normality and outliers was conducted, moderate significant skew and a violation of normality was found for the dependent variable of emotional intelligence. A significant outlier was

identified for emotional intelligence, due to a low score, and was removed from the analysis. The removal of this variable improved skew and normality, however, square root and log10 data transformation were also preformed to detect for significant changes to skew and normality. Although these methods reduced skewness, no significant changes to normality were found. For the prediction of empathy, no significant skew or violation of normality was found for the dependent variable of empathy. A significant outlier was found for the predictor variable of emotional intelligence, due to a low score, and was removed from the analysis. The data for both analyses was inspected for violations of assumptions and problematic scores using scatterplots, partial regression plots, standardised residual plots, along with residual statistics. Residual plots showed the assumptions of homoscedasticity, linearity and independence of observations appeared to be met with the exception of two potentially problematic scores. Cook's distance and leverage did not identify any problematic scores. Two significant multivariate outliers were found based on Mahalanobis distance for both analyses, above the recommended significant chi-square cut off at an alpha of $p < .001$ for six independent variables. These scores were removed due to causing significant changes to R^2, error estimates and regression coefficients. No problems with multicollinearity were found. Two participants were removed in each regression due to having missing data for both gender and age.

Hypothesis One: Mimicry and Emotional Recognition

To test hypothesis one pertaining to mimicry and emotional recognition, a 2 x 2 x 2 mixed design ANOVA was conducted to investigate the effect of condition, psychopathy and trial order on the dependent variable of emotional recognition. Psychopathy was median split into high ($M = 324.36$, $SD = 24.24$) and low groups ($M = 264.56$, $SD = 24.01$). This technique has previously been utilised in past studies to dichotomise psychopathy into high and low groups (see Dadds et al., 2006; Gordon, Baird, & End, 2004; Wilson et al., 2008).

Maulchy's Test of Sphericity was met for the within-subject variable, based on the Greenhouse-Geisser statistic with the epsilon value, $\varepsilon = 1.00$. The assumption of homogeneity of variance was partially met for the between subjects variable based on Levene's Test of Error Variance. The experimental condition was found to be significant, $F(3, 111) = 3.13$, $p = .028$, indicating a violation to homogeneity of variance. However, Hartley's test (Fmax) showed that the ratio between the largest and smallest variances was well under two indicating that the

violation was not problematic (Field, 2009). The control condition was not statistically significant F (3, 111) = 1.79, p = .152, meeting the requirements of the assumption.

Examination of the within subject effects revealed a non-significant main effect of condition, F (1, 111) = 0.47, p = .494, η^2 = .004, 1 − β = .105. This indicated no statistically significant difference was found between the experimental (M = 7.23, SE = 0.13) and control condition (M = 7.31, SE = .14). A non-significant main effect was found for the between subjects effects for trial order, F (1, 111) = 2.24, p = .139, η^2 = .020, 1 − β = .315, and for psychopathy, F (1, 111) = 3.70, p = .057, η^2 = .032, 1 − β = .479. A significant condition x trial interaction was found, F (1, 111) = 72.12, p < .001, η^2 = .394, 1 − β = 1.00, indicating a significant difference between levels of the repeated measures variable and levels of the dependent variable. Figure 3 displays the estimated marginal means for the interaction between condition and trial. A non-significant two way interaction between psychopathy and condition was found, F (1, 111) = 0.92, p = .762, η^2 = .001, 1 − β = .060, and also between psychopathy and trial order F (1, 111) = 0.00, p = .990, η^2 = .000, 1 − β = .050. A non-significant three way interaction between psychopathy, trial and condition was also found, F (1, 111) = 0.67, p = .416, η^2 = .006, 1 − β = .128.

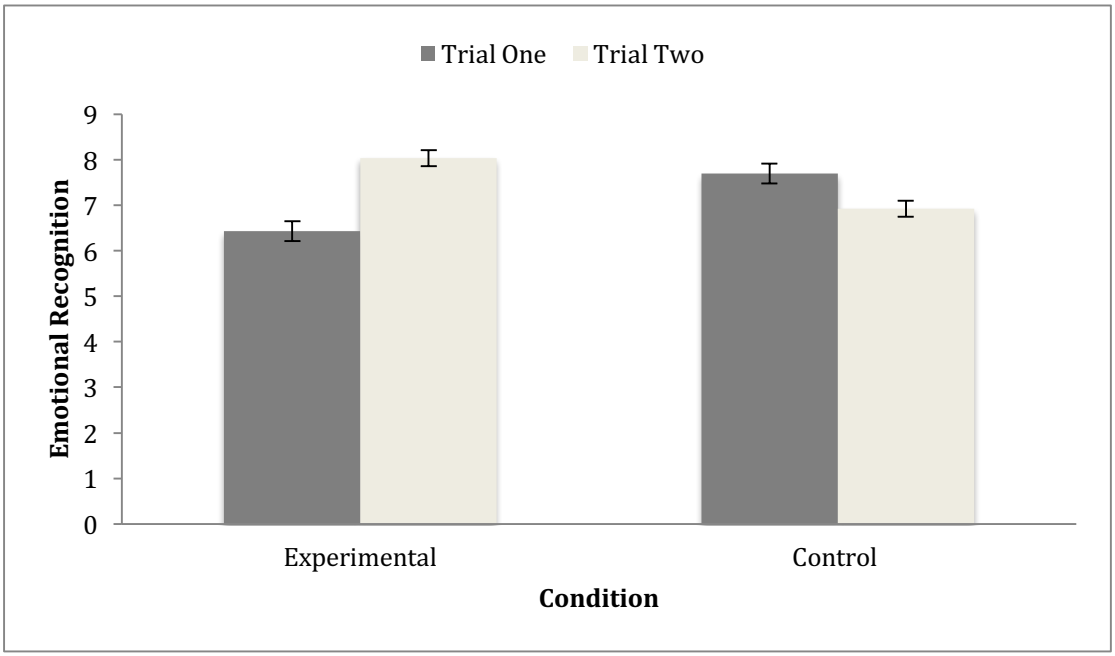

Figure 3. The estimated marginal means for the interaction between the condition and trial order for the community sample. Standard errors are represented in the figure by error bars attached to the columns.

Follow up analysis was conducted to investigate the significant interaction between condition x trial, examining the simple effects at each level of both the condition and trial.

The simple effects of trial was firstly examined at each level of the condition. A significant difference was found between the experiment and control condition for trial one F (1, 48) = 34.37, $p < .001$, and also for trial two, F (1, 65) = 40.92, $p < .001$. Results indicated that for trial one, participants in the experimental condition had lower mean scores for emotional recognition than the control condition. For trial two, participants in the experimental condition had higher mean scores for emotional recognition than the condition. Further simple effects examined the effect of the condition at each level of the trial. A significant difference was found for the experimental condition, F (1, 113) = 37.41, $p < .001$, at both trial one and trial two. Those in the experimental condition were found to perform significantly better on trial two than trial one. A significant difference was also found for the control condition, F (1, 113) = 7.75, $p = .006$, at both trial one and trial two. This difference indicated that participants in the control condition had significantly higher scores on trial one than trial two. The results did not support the first hypothesis pertaining to psychopathy and mimicry.

Hypothesis Two: Emotional Recognition

To test the hypothesis of predicting emotional recognition, a hierarchical multiple regression was employed to establish the relative contribution of the independent variables to explain emotional recognition. It was hypothesised that psychopathy would be significant positive predictor of overall emotional recognition. For the regression analysis, psychopathy was entered at the last stage of the regression equation, after other predictor variables had been entered. The method of entering psychopathy as the last predictor variable was to examine the unique contribution of psychopathy in predicting emotional recognition above and beyond that of the other predictors. Due to the findings of the repeated measures analysis, which indicated significance variation between conditions and trial ordering, the experimental and control condition were combined to create a total score for emotional recognition.

The multiple regression was entered in three steps in an hierarchical order. Gender and age were entered first to control for variance from these variables, followed by the IRI, AES and DASS-21 at step 2. The PPI was entered at step three. At step one, a significant amount of variance in emotional recognition (8.10%) was explained by gender and age, R^2 = .10, adjusted R^2 = .08, $F\Delta$ (2,108) = 5.86 p = .004. At step two, significant additional variance (15.30%) was explained by the IRI, AES and DASS-21, $R^2\Delta$ = 15.3, $F\Delta$ (3, 105) = 7.17, $p < .001$. The addition of psychopathy at step three did not significantly add to the prediction of emotional recognition, $R^2\Delta$ = .01, $F\Delta$ (1, 104) = 1.55, p = .216. Overall the

independent variables explained 26.20% of the variance in emotional recognition, $R^2 = .26$, adjusted $R^2 = .22$, F (6, 104) = 6.16, $p < .001$.

Table 8 shows the unstandardised regression coefficients (B), and the standardised regression coefficients (β) for the completed three step model of entry for the independent variables. At the final stage of the model at step three, the IRI and DASS-21 were significant predictors of emotional recognition. Age, Gender, the AES and the PPI-R were not found to be significant predictors of emotional recognition at the final step of the model. The positive beta weights for the IRI measure indicate that higher scores on empathy are significantly related to higher scores on emotional recognition, supporting the validity of the IRI. Negative beta weights for the DASS-21 indicated that higher scores on the DASS-21 were associated with significantly lower scores of emotional recognition. Further investigation of squared semi partial correlations showed that strongest unique contribution to emotional recognition was by the IRI, which explained 8.94% of the variance. Examination of the IRI at the subscale level revealed that empathic concern ($r = .321$, $p = .001$) and perspective taking ($r = .353$, $p = .001$) were found to significantly correlate with emotional recognition, while no significant relationship was found for fantasy ($r = 172$, $p = .071$) or personal distress ($r = .131$, $p = .167$). The DASS-21 uniquely explained 3.00% of the variance in emotional recognition. Support was not found for hypothesis two of the study.

Table 8
The Regression Coefficients for the Final Step of the Regression Predicting Emotional Recognition for the Community Sample

	Unstandardised Coefficients		Standardized Coefficients	Zero-Order Correlations
	B	Standard Error	Beta	
Age	.01	.01	.04	.01
Gender	-.83	.47	-.17	-.31
IRI	.08	.02	.37***	.39
AES	-.02	.02	-.10	.14
DASS-21	-.04	.02	-.19*	-.21
PPI-R	-.01	.01	-.13	-.33

Note. IRI = Interpersonal Reactivity Index; AES = Assessing Emotions Scale; DASS = Depression, Anxiety and Stress Subscales; PPI-R = Psychopathic Personality Inventory-Revised.
*p<.05, *** p<.001

Hypothesis Three: Social Information Processing

A 2 x 2 x 2 x 2 mixed design factorial ANOVA was conducted to investigate hypothesis three. The effects of psychopathy (high and low), success (successful and unsuccessful), gender (male and female) and emotion (happy and sad) on the dependent variable of character recognition was examined. Success, gender and emotion were the within-subjects variables and psychopathy was the between subjects variable for the analysis. Psychopathy was median split into high and low groups for the analysis. Character recognition was determined based on whether or not participants recognised the character.

Maulchy's Test of Sphericity was met for each of the within-subject variables, based on the Greenhouse-Geisser statistic with the epsilon value, $\varepsilon = 1.00$. The assumption of homogeneity of variance was partially met for the between subjects variable based on Levene's Test of Error Variance. The assumption was met for happy and successful male, F (1, 113) = 0.88, p = .348, happy and unsuccessful female, F (1, 113) = 1.60, p = .208, sad and successful male, F (1, 113) = 2.01, p = .159, sad and successful female, F (1, 113) = 2.03, p = .159, sad and unsuccessful male, F (1, 113) = 2.53, p = .114, and sad an unsuccessful female, F (1, 113) = 0.90, p = .344. The happy and successful female, F (1, 113) = 11.88, p = .001, and happy and unsuccessful male conditions, F (1, 113) = 8.92, p = .003, were found to be significant. The violation for these two variables indicated a violation to homogeneity of variance. However, Hartley's test (Fmax) showed that the ratio between the largest and smallest variances was well under three indicating that the violation was not problematic (Conlon, 2010; Field, 2009).

Examination of the within subject effects revealed a non-significant main effect of emotion, F (1, 113) = 1.90, p = .171, η^2 = .017, $1 - \beta$ = .277. A significant main effect was found for success, F (1, 113) = 11.83, p = .001, η^2 = .095, $1 - \beta$ = .927, indicating a significant difference between recognition of successful and unsuccessful characters. While recognition was high for both groups, results showed that the unsuccessful characters were recognised at a rate of 91% in comparison to the successful characters 84%. A statistically non-significant main effect of gender was found, F (1, 113) = 1.04, p = .311, η^2 = .009, $1 - \beta$ = .172, while a non-significant main effect was found for the between subjects variable of psychopathy, F (1, 113) = 1.15, p = .278, η^2 = .010, $1 - \beta$ = .186, indicating no difference between the high and low psychopathy groups for recognition.

A significant emotion x success interaction was found, F (1, 113) = 8.18, p = .005, η^2 = .068, 1 − β = .809, indicating a significant difference between levels of emotion and levels of success. The interaction represented a medium effect size. Figure 4 displays the estimated marginal means for the interaction between emotion and success. A significant success x gender interaction was also found, F (1, 113) = 15.88, p < .001, η^2 = .123, 1 − β = .977 suggesting a significant difference between levels of success for male and female characters. Figure 5 displays the estimated marginal means for the interaction between success and gender. Statistically non-significant interactions were found in relation to psychopathy, including emotion x psychopathy, F (1, 113) = 2.54, p = .113, η^2 = .022, 1 − β = .353, success x psychopathy, F (1, 113) = 2.01, p = .159, η^2 = .017, 1 − β = .290, and gender x psychopathy, F (1, 113) = 0.62, p = .433, η^2 = .005, 1 − β = .122. A non-significant interaction was also found between emotion x gender, F (1, 113) = 2.66, p = .106, η^2 = .023, 1 − β = .366. Four non-significant three way interactions were found, with no significant interaction effect observed for emotion x gender x psychopathy, F (1, 113) = 0.01, p = .925, η^2 = .000, 1 − β = .051, success x gender x psychopathy, F (1, 113) = 0.66, p = .418, η^2 = .006, 1 − β = .127, emotion x success x psychopathy, F (1, 113) = 0.35, p = .522, η^2 = .003, 1 − β = .091, or, emotion x success x gender F (1, 113) = 3.51, p = .064, η^2 = .030, 1 − β = .459. A non-significant four way interaction was also found between emotion x success x gender x psychopathy, F (1, 113) = 1.01, p = .318, η^2 = .009, 1 − β = .169.

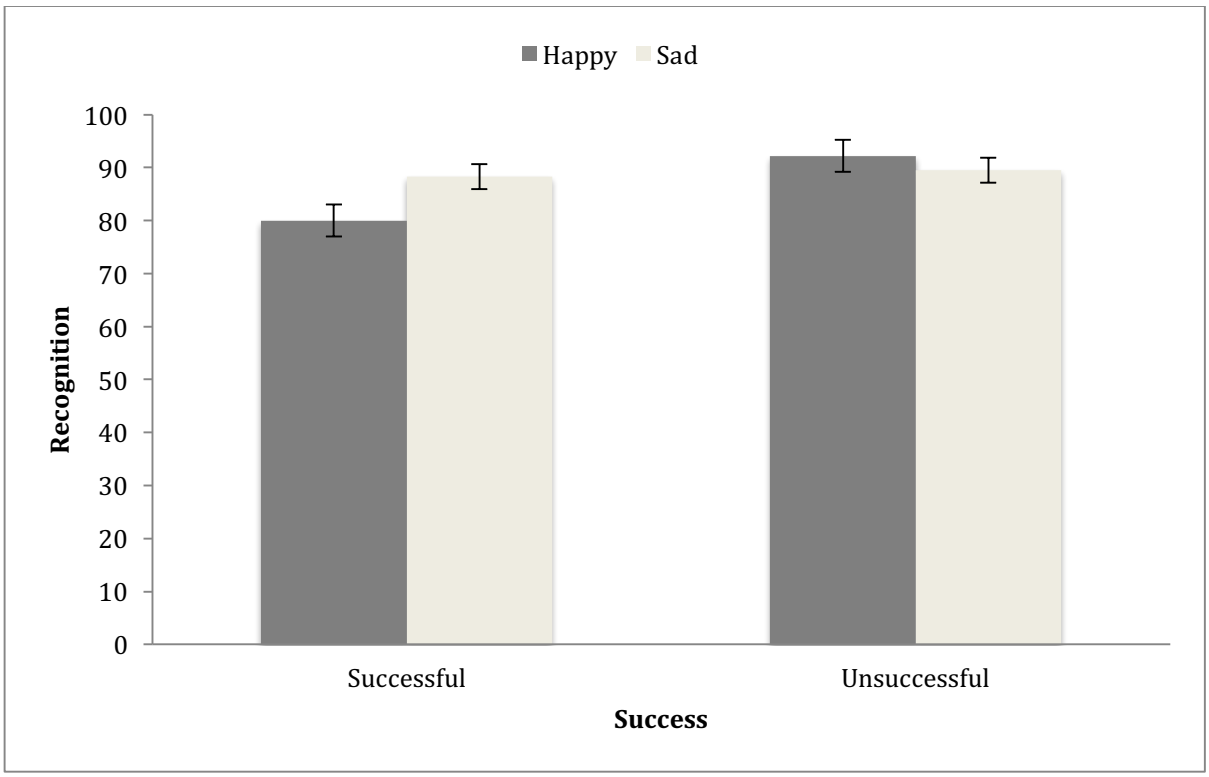

Figure 4. The estimated marginal means for the interaction effect between emotion and success on correct character recognition for the community sample. Standard errors are represented in the figure by error bars.

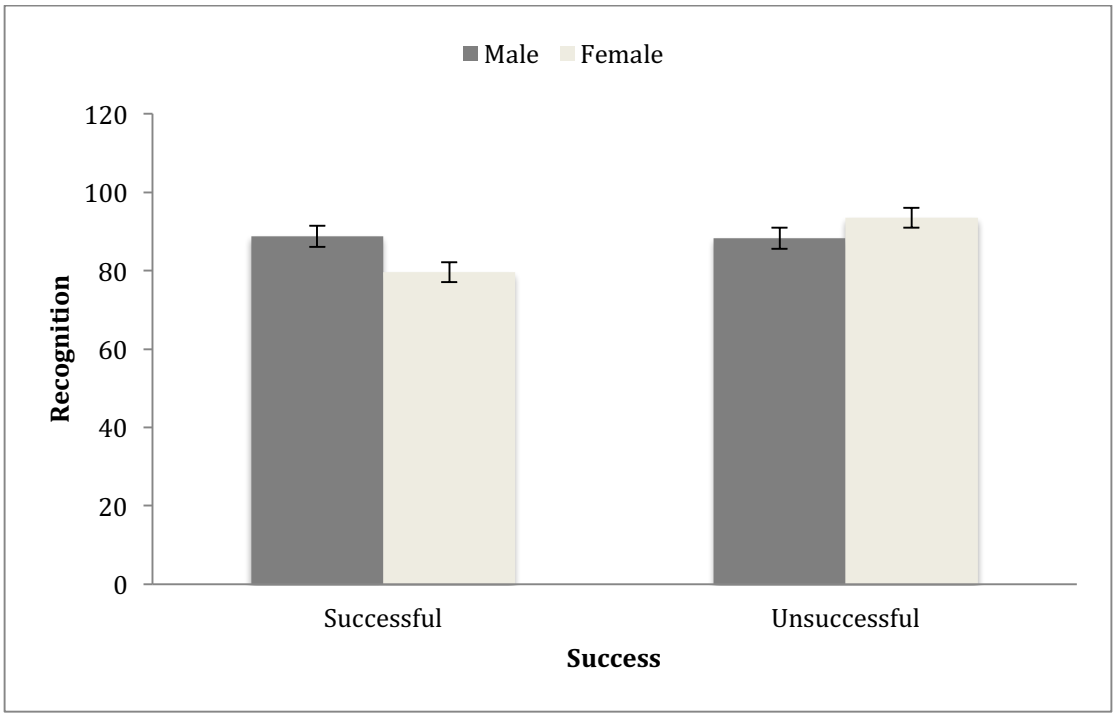

Figure 5. The estimated marginal means for the interaction effect between success and gender on correct character recognition for the community sample. Standard errors are represented in the figure by error bars.

Follow up analysis was conducted to investigate the significant interaction between emotion x success. The simple effects analysis revealed a significant difference for successful characters, with a significant difference found between happy and sad characters, $p = .010$. For unsuccessful characters, no significant difference was observed between happy and sad characters, $p = .263$. Happy characters were recognised more when unsuccessful compared to successful, $p < .001$. In contrast, no significant difference was found for sad characters, with a similar comparison rate found for successful and unsuccessful characters, $p = .599$.

A follow up analysis was also conducted to examine the significant interaction between success x gender. Simple effects analysis revealed that for the successful characters a significant difference was found in the recognition of male characters compared to females, $p = .003$, with males recognised significantly more frequently than females. A significant difference was also found for unsuccessful characters, $p = .018$, with females recognized at a greater rate than males, $p = .018$. The effect of success on recognition was only found for females, $p < .001$, however, not for males, $p = .867$. The significant difference for females was most notable for the unsuccessful female character (93.50%), recognised at a greater rate than the successful female character (79.60%), consistent with the hypothesis.

To test the hypothesis pertaining to recall, a 2 x 2 x 2 x 2 mixed design factorial ANOVA was conducted to investigate the effects of psychopathy (high and low), success (successful and unsuccessful), gender (male and female) and emotion (happy and sad) on the dependent variable of character recall. Success, gender and emotion were the within-subjects variables and psychopathy was the between subjects variable for the analysis. Recall was measured based on the number of correct details that participants were able to recall pertaining to the character, these details were: name, occupation, likes and dislikes.

Maulchy's Test of Sphericity was met for each of the within-subject variables, based on the Greenhouse-Geisser statistic with the epsilon value, $\varepsilon = 1.00$. The assumption of homogeneity of variance was partially met for the between subjects variable based on Levene's Test of Error Variance. The assumption was met for happy and successful male, $F(1, 113) = 0.57$, $p = .812$, happy and successful female, $F(1, 113) = 0.66$, $p = .418$, happy and unsuccessful male $F(1, 113) = 3.71$, $p = .057$, happy and unsuccessful female, $F(1, 113) = 0.28$, $p = .627$, sad and successful male, $F(1, 113) = 0.74$, $p = .393$, sad and successful female, $F(1, 113) = 0.50$, $p = .482$, and sad an unsuccessful female, $F(1, 113) = 0.06$, $p = .810$. The sad and unsuccessful male condition, $F(1, 113) = 9.61$, $p = .002$, was found to be

significant. The violation for these this variables indicated a violation to homogeneity of variance. Hartley's test (Fmax) showed that the ratio between the largest and smallest variances was well under three indicating that the violation was not problematic (Conlon, 2010; Field, 2009).

Examination of the within subject effects revealed a non-significant main effect of emotion, F (1, 113) = 2.11, p = .149, η^2 = .018, 1 − β = .302. A main effect was found for success, F (1, 113) = 8.62, p = .004, η^2 = .071, 1 − β = .829, indicating a statistically significant difference between recall of successful (22.28%) and unsuccessful (26.92%) character information. A significant main effect of gender was found, F (1, 113) = 12.68, p = .001, η^2 = .101, 1 − β = .942. This difference indicated greater recall was found for female (27.92%) characters compared to males (21.28%). A non-significant main effect was found for the between subjects variable of psychopathy, F (1, 113) = 1.43, p = .235, η^2 = .012, 1 − β = .220, indicating no statistical difference between the high and low psychopathy groups for recall.

A significant success x psychopathy interaction was found, F (1, 113) = 7.07, p = .009, η^2 = .059, 1 − β = .750. Figure 6 displays the estimated marginal means for the interaction between success and psychopathy. A significant success x gender interaction was also found, F (1, 113) = 55.79, p < .001, η^2 = .331, 1 − β = 1.00. Figure 7 displays the estimated marginal means for the interaction between success and gender. The results revealed a significant three way interaction between emotion x success x gender, F (1, 113) = 25.91, p < .001, η^2 = .187, 1 − β = .999. Non-significant interactions were found in the analysis, including emotion x psychopathy, F (1, 113) = 2.11, p = .149, η^2 = .018, 1 − β = .302, gender x psychopathy, F (1, 113) = 0.62, p = .432, η^2 = .005, 1 − β = .122, emotion x success, F (1, 113) = 3.42, p = .068, η^2 = .029, 1 − β = .448, and, emotion x gender, F (1, 113) = 1.48, p = .226, η^2 = .013, 1 − β = .227. Similar to the findings associated with recognition, three non-significant three way interactions were found. No significant interaction effect was observed for emotion x gender x psychopathy, F (1, 113) = 0.05, p = .945, η^2 = .000, 1 − β = .051, success x gender x psychopathy, F (1, 113) = 0.28, p = .868, η^2 = .000, 1 − β = .053, or, emotion x success x psychopathy, F (1, 113) = 0.78, p = .381, η^2 = .007, 1 − β = .141. A non-significant four way interaction was also found between emotion x success x gender x psychopathy, F (1, 113) = 1.65, p = .202, η^2 = .014, 1 − β = .247.

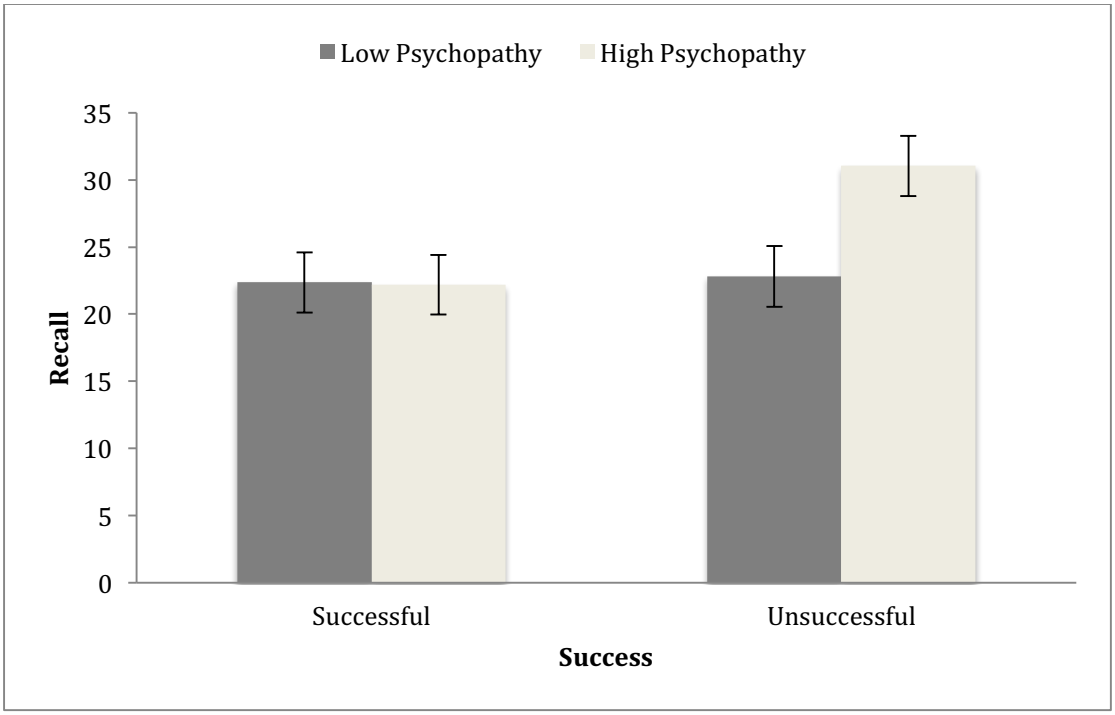

Figure 6. The estimated marginal means for the interaction effect between psychopathy and success on correct character recall for the community sample. Standard errors are represented in the figure by error bars.

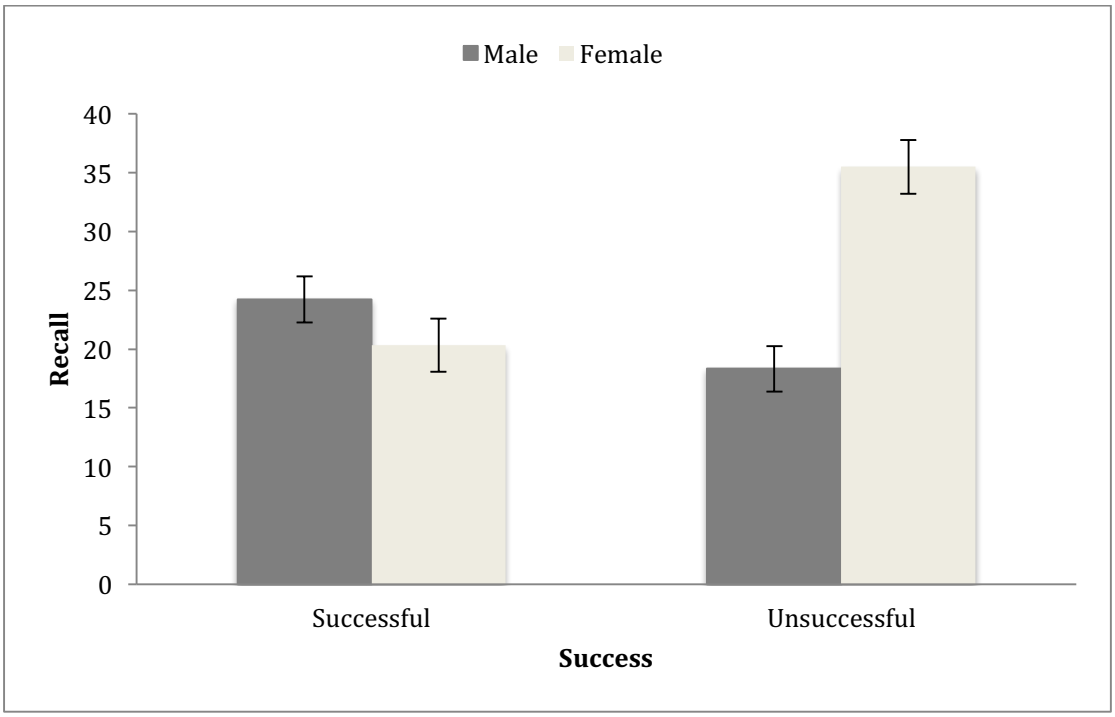

Figure 7. The estimated marginal means for the interaction effect between success and gender on correct character recall for the community sample. Standard errors are represented in the figure by error bars.

Follow up analysis was conducted to investigate the significant interaction between psychopathy and success. The simple effects analysis revealed that for the successful characters, no significant difference was found between lower and higher levels of psychopathy, $p = .961$. A significant difference was found for recall of the unsuccessful character, with participants with higher levels of psychopathy having greater recall than those with lower levels of psychopathy, $p = .041$. A significant difference was also found for higher levels of psychopathy, with recall greater for unsuccessful characters compared to successful characters, $p < .001$. Lower levels of psychopathy were found to have no effect of recall for successful or unsuccessful characters, $p = .845$. The findings pertaining to psychopathy and character recall provided partial support for hypothesis three.

Follow up simple effects were conducted to investigate the significant interaction between success and gender. The simple effects analysis revealed that no statistically significant difference was found for recall of successful characters that were male and female, $p = .115$, however, a significant difference was found for unsuccessful characters, $p < .001$, with females recalled at a greater rate than males. Male characters were significantly recalled at greater rates, $p = .003$, if they were successful compared to unsuccessful, while female characters were recalled at a higher rate, $p < .001$, if they were unsuccessful compared to successful.

Simple effects analysis was also conducted to follow the three way interaction between success, gender and emotion. To analyse the three way interaction, two separate success x gender interactions were run separately for happy and sad emotions. For the happy state, no significant differences was found for recall based on success and gender, $F(1, 113) = 1.54$, $p = .217$. Figure 8 displays the estimated marginal means for the interaction between happy state, success and gender. A significant disordinal interaction was found for the sad state for recall based on success and gender, $F(1, 114) = 77.70$, $p < .001$. This suggested that the two way interaction between gender and success was effected by emotional state. For the sad character, successful males were found to be recalled at higher rates than females, and unsuccessful females were recalled at higher rates than unsuccessful males. Sad male characters were recalled at greater rates if successful, rather than unsuccessful, while sad females characters were recalled more frequently if unsuccessful rather than successful. Figure 9 displays the estimated marginal means for the interaction between sad state, success and gender.

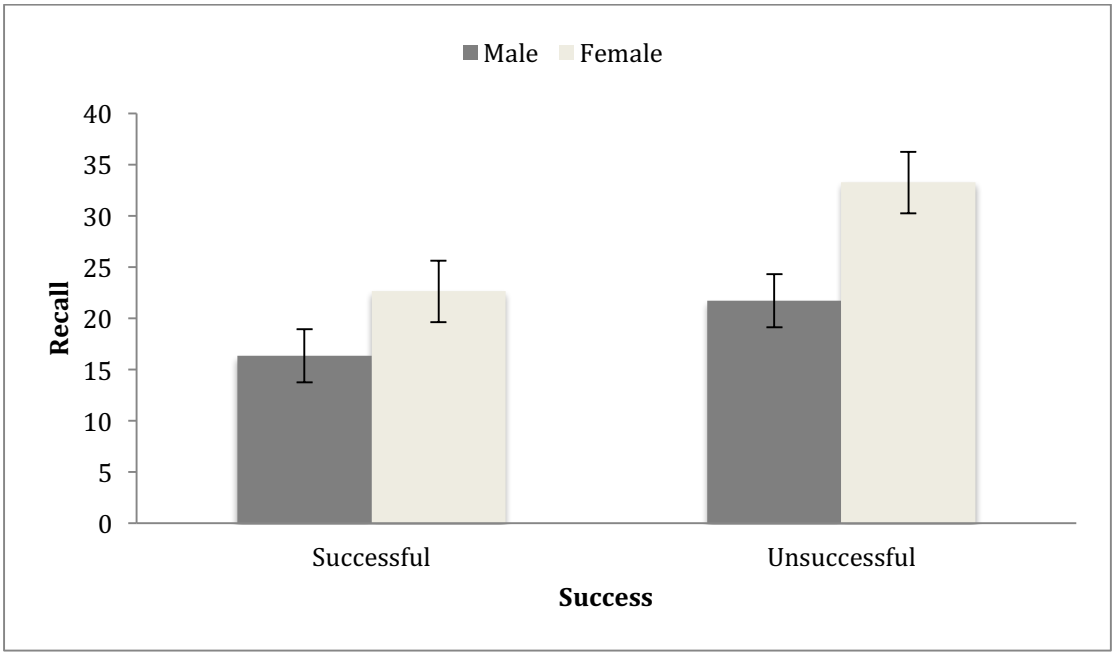

Figure 8. The estimated marginal means for the interaction effect between happy state, success, and gender on correct character recall for the community sample. Standard errors are represented in the figure by error bars.

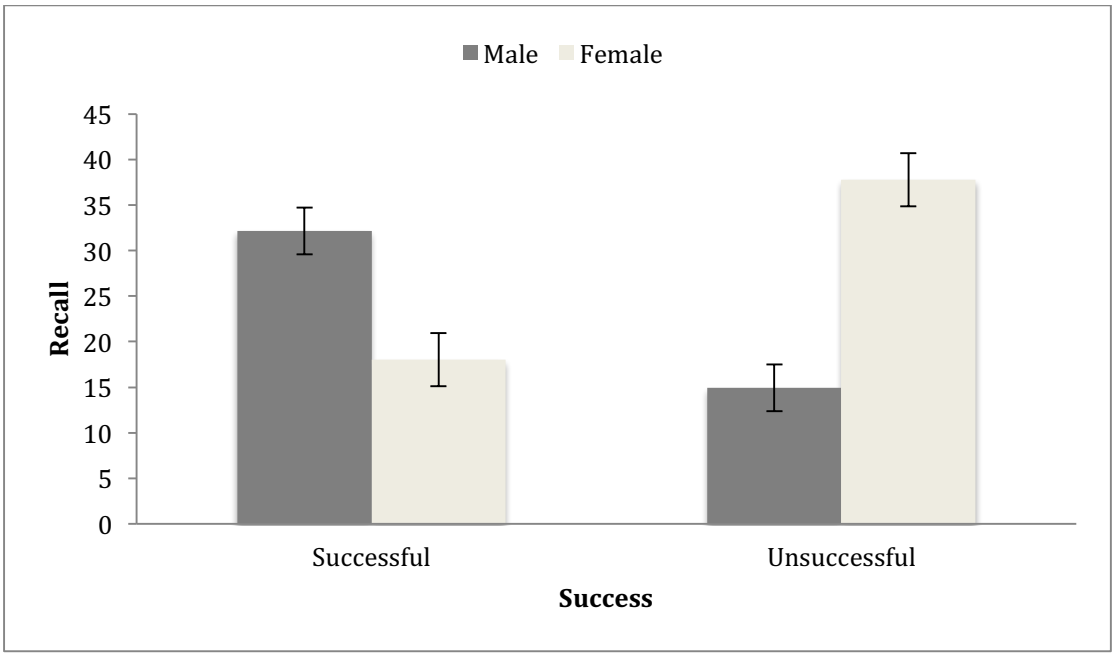

Figure 9. The estimated marginal means for the interaction effect between sad state, success, and gender on correct character recall for the community sample. Standard errors are represented in the figure by error bars.

Hypothesis Four: Emotional Intelligence and Emotionality

To test the hypothesis that total psychopathy scores would be a significant positive predictor of emotional intelligence, a hierarchical multiple regression was employed to establish the relative contribution of the independent variables to explain emotional intelligence as measured by the AES. It was also hypothesised that an interaction would be found between high levels of psychopathy and higher and lower levels of negative emotionality, supporting primary and secondary psychopathy types. A centred interaction term was created between psychopathy (PPI-R) and negative emotionality (DASS-21) to explore for a relationship between psychopathy and negative emotionality. The predictor variables of psychopathy and negative emotionality were mean centred for entry into the regression equation and these two centred variables were used to create the interaction term for the analysis.

The multiple regression was conducted in three steps in a hierarchical order. Gender and age were entered first to control for variance from these variables, followed by the IRI, PPI-R and DASS-21 at step two. The centred interaction term of psychopathy and negative emotionality was entered last at step three, consistent with statistical analytical methods for hierarchical regression (Cohen & Cohen, 1983). At step one, gender and age were not found to be significant predictors of emotional intelligence, $R^2 = .01$, adjusted $R^2 = -.01$, $F\Delta$ (2,107) = 0.28, $p = .756$. At step two, significant additional variance (23.20%) was explained by the IRI, PPI-R and DASS-21, $R^2\Delta = .24$, $F\Delta$ (3, 104) = 10.55, $p < .001$. The addition of the interaction term of psychopathy and negative emotionality at step three (B = .00, SE = 00, β = .04) did not significantly add to the prediction of emotional intelligence, $R^2\Delta = .00$, $F\Delta$ (1, 103) = 0.18, $p = .672$. Overall the independent variables explained 23.90% of the variance in emotional intelligence, $R^2 = .24$, adjusted $R^2 = .20$, F (6, 103) = 5.40, $p < .001$.

Table 9 shows the unstandardised regression coefficients (B), and the standardised regression coefficients (β) for the two step model of entry for the independent variables. At step two, the IRI and DASS-21 were significant predictors of emotional intelligence. Gender, age, and the PPI-R and were not found to be significant predictors of emotional intelligence at the second step of the model, failing to support hypothesis four. The positive beta weights for the IRI and indicated that higher scores of empathy were significantly related to higher scores on emotional intelligence. The negative beta weight found for the DASS-21 indicated that higher levels of negative emotionality were significantly associated with lower levels of emotional intelligence. Investigation of squared semi partial correlations showed that the IRI

was strongest unique predictor of emotional intelligence, explaining 16.24% of the variance. The DASS-21 was found to uniquely explain 6.45% of the variance in emotional intelligence.

Table 9
The Regression Coefficients for Step Two of the Regression Predicting Emotional Intelligence for the Community Sample

	Unstandardised Coefficients		Standardized Coefficients	Zero-Order Correlations
	B	Standard Error	Beta	
Age	.11	.10	.10	-.02
Gender	1.85	3.52	.05	-.07
DASS-21	-.46	.16	-.26**	-.26
PPI-R	.01	.05	.01	-.14
IRI	.66	.14	.44***	.41

Note. PPI-R = Psychopathic Personality Inventory-Revised; DASS-21 = Depression, Anxiety and Stress Subscales-21; IRI = Interpersonal Reactivity Index.
p<.01, * *p*<.001.

Hypothesis Five: Empathy and Emotionality

To test the hypothesis that psychopathy would be a significant negative predictor of empathy, a hierarchical multiple regression was employed to establish the relative contribution of the independent variables to explain empathy as measured by the IRI. To examine for an interaction effect, the predictor variables of psychopathy and negative emotionality were mean centred for entry into the regression equation and these two centred variables were used to create the interaction term for the analysis.

The multiple regression was entered in three steps in a hierarchical order. Gender and age were entered first to control for variance from these variables, followed by the AES, PPI-R and DASS-21 at step two. The centred interaction term of psychopathy and negative emotionality was entered at step three. At step one, gender and age were found to be significant predictors of empathy, $R^2 = .10$, adjusted $R^2 = .09$, $F\Delta\ (2,107) = 6.13$, $p = .003$. Age and gender were found to account for 10.30% of the variance in empathy at the initial stage of the analysis. At step two, significant additional variance (19.50%) was explained by the AES, PPI-R and DASS-21, $R^2\Delta = .30$, $F\Delta\ (3, 104) = 9.62$, $p < .001$. The addition of the interaction term of psychopathy and negative emotionality at step three (B = -.01, SE = 00, β

= -.14) did not significantly add to the prediction of empathy, $R^2\Delta = .02$, $F\Delta\ (1, 103) = 2.48$, $p = .119$. Overall the independent variables explained 31.40% of the variance in empathy, $R^2 = .31$, adjusted $R^2 = .27$, $F\ (6, 103) = 7.87$, $p < .001$.

Table 10 shows the unstandardised regression coefficients (B), and the standardised regression coefficients (β) for the two step model of entry for the independent variables. At step two, age, PPI-R, and AES were significant predictors of empathy. Gender and the DASS-21 were not found to be significant predictor of empathy. The positive beta weight for the AES indicated that higher scores of emotional intelligence were significantly related to higher scores on empathy. A negative beta weight was found for age, indicating that younger age was significantly associated with higher levels of empathy. A negative Beta weight was also found for the PPI-R indicating that higher psychopathy scores were associated with lower levels of empathy, supporting hypothesis five. Further investigation of squared semi partial correlations showed that strongest unique contribution to empathy was by the AES which explained 15.00% of the variance, followed by age (7.73%), and the PPI-R (3.20%).

Table 10
The Regression Coefficients for the Final Step of the Regression Predicting Empathy

	Unstandardised Coefficients		Standardized Coefficients	Zero-Order Correlations
	B	Standard Error	Beta	
Age	-.21	.06	-.29**	-.23
Gender	-3.30	2.22	-.13	-.21
DASS-21	.19	.10	.16	.01
PPI-R	-.07	.03	-.21*	-.21
AES	.27	.06	.40***	.41

Note. PPI-R = Psychopathic Personality Inventory-Revised; DASS-21 = Depression, Anxiety and Stress Subscales-21; AES = Assessing Emotions Scale.
* p<.05, **p<.01, *** *p*<.001.

Discussion

The current study aimed to expand on the understanding of the relationship between psychopathy, negative emotionality and emotional and social features. A community sample was employed to address the lack of research examining psychopathic personality traits in noncriminal samples (Hall & Benning, 2006). The study examined the relationship between psychopathic traits, emotional and social processing abilities through an experimental design and self-report measures. The research aimed to replicate the findings of Wilson et al. (2008) who observed that psychopathy was associated with greater ability to recall a vulnerable sad unsuccessful female character. The research also employed a methodology influenced by Niedenthal et al. (2001) to examine the relationship between psychopathy and emotional mimicry. In a study examining facial expressions, Niedenthal et al. found evidence that participants holding a pencil between their teeth had poorer emotional recognition.

The first hypothesis pertained to psychopathy, mimicry and emotional recognition. It was hypothesised that a significant positive effect would be found for psychopathy on emotional recognition when mimicry occurred (control condition), and a significant negative effect of psychopathy on emotional recognition (deficit) when mimicry was restricted (experimental condition). The findings of the study did not support the hypothesis and found inconsistencies in the expected results, failing to support similar past research on mimicry (Neidenthal et al., 2001). No effect of psychopathy on the condition or trial order was found in the analysis, indicating that psychopathy scores did not effect emotional recognition in either the control or experimental conditions. This result may be partially explained by the community sample employed in the current study, with the threshold of psychopathic traits lower compared to offender samples. Subsequently, the application of this research protocol in an offender sample may assist in further examining the utility of this methodology. The relationship between psychopathy and mimicry has received limited empirical investigation, particularly in offender samples. The results were exploratory in nature, due to the limited research previously conducted on psychopathy and mimicry behaviour. The findings did not support Niedenthal et al.'s work on mimicry or Fecteau et al.'s (2008) observed results with psychopathy and mirror neuron activation.

The second hypothesis of the study was that psychopathy would be a significant positive predictor of overall emotional recognition. The results did not support this hypothesis with no significant difference found between levels of psychopathy and the prediction of emotional recognition. This suggested that higher levels of psychopathy were not associated

with a greater ability to detect facial expressions of emotion. The findings failed to provide further understanding pertaining to the relationship between psychopathy and emotional recognition, adding to the body of research that has found mixed and inconclusive findings. Studies have reported that a negative relationship is evident between psychopathy and the identification of facial expressions of emotions (Dolan & Fullam, 2006; Hastings et al., 2008; Long & Titone, 2007), yet other research has indicated a positive relationship between the two constructs (Book et al., 2007; Glass & Newman, 2006).

The third hypothesis investigated psychopathy and social information processing, seeking to replicate the finding of Wilson et al. (2008). It was hypothesised that higher levels of psychopathy would be significantly associated with greater recall and recognition of the sad unsuccessful female character compared to lower levels of psychopathy. The current study found partial support of the hypothesis with higher levels of psychopathy found to be significantly associated with greater recall of the unsuccessful character in comparison to participants with lower levels of psychopathy, supporting the findings by Wilson et al. (2008). The significant effect was not found for the emotional state or gender of the character, with no significant relationship between psychopathy and recall of the sad female character. Psychopathy was not found to have a significant effect on recognition of the character. The result provides preliminary evidence of an association between psychopathy and observing vulnerability (Book et al., 2007; Wheeler et al., 2009), however, further replication of this finding is required to conclude observable relationships between the constructs. Interestingly, a three way interaction between emotion, success and gender was found, indicating that for the sad character, successful males were recalled at higher rates than females, while unsuccessful females were recalled at higher rates than unsuccessful males. Further, sad male characters were recalled more frequently if successful, rather than unsuccessful. Sad females characters were recalled more frequently if unsuccessful rather than successful. The results suggested that recall may be influenced by participants' attitudes concerning gender roles and success (Huddy & Terkildsen, 1993; Plous & Neptune, 1997).

The fourth hypothesis was that total psychopathy scores would be a significant positive predictor of emotional intelligence. The study also sought to investigate the relationship between psychopathy and levels of negative emotionality. The results indicated that psychopathy was not a significant predictor of emotional intelligence, failing to support the hypothesis. A significant interaction between psychopathy and negative emotionality was not found. The findings suggested that higher levels of psychopathy were not found to predict

higher levels of emotional intelligence in the community. The results reflected similarities with Brook and Kosson (2013) who found no significant association between psychopathy and emotional intelligence in offenders, and Ali et al. (2009) who observed no relationship between primary psychopathy and emotional intelligence in a community sample. Other research has found partial relationship with facets of psychopathy and features of emotional intelligence (Fix & Fix, 2015; Grieve & Panebianco, 2013; Nagler et al., 2014); however, support for a relationship between the overall global constructs is limited. This may suggest that the relationship between psychopathy and emotional intelligence is influenced by the manifestations of psychopathy traits. For example, although no relationship was found between primary psychopathy and emotional intelligence, Ali et al. (2009) observed a significant negative relationship between secondary psychopathy and emotional intelligence. This may indicate that a greater propensity of lifestyle and antisocial traits may serve to impede emotional intelligence. This position is consistent with the CAPP concept map (Cooke et al., 2012) and the dual and moderated pathways of psychopathy (Hall & Benning, 2006), with these theories indicating that trait variation may be associated with different etiology, characteristic adaptions, behaviours and environmental factors (Cooke et al., 2012; Costa & McCrae, 2003; Hall & Benning, 2006; Skeem et al., 2011).

Finally, it was hypothesised that a significant negative relationship would be found between total psychopathy scores and empathy. It was further hypothesised that an interaction would be found between higher levels of psychopathy and higher and lower levels of negative emotionality. Psychopathy was found to be a significant negative predictor of empathy indicating support for the hypothesis and that higher levels of psychopathy were significantly related to lower levels of empathy. This finding was consistent with theories and past research on psychopathy and empathy (Brook & Kosson, 2013; Cleckley, 1976; Decety et al., 2013; Hare, 1999a, 2003), providing support for a relationship between psychopathic traits and lower levels of empathy in a noncriminal sample. No significant interaction was found between psychopathy and negative emotionality for the prediction of empathy, failing to support theories pertaining to primary and secondary psychopathy (Lykken, 1995; Morrison & Gilbert, 2001; Newman et al., 2005).

The results of the current study were partially consistent with literature on psychopathy. Despite psychopathy being analysed as a dimensional construct for the study, consistent with past research (Edens et al., 2006; Skeem et al., 2011), 21 participants were identified as having significantly elevated levels of psychopathy as indicated by the PPI-R

normative data (Lilienfeld & Widows, 2005). This suggested that these participants had clinically elevated levels of psychopathic traits. The results of the current study are consistent with past criminal and noncriminal research that has found a relationship between psychopathy and lower levels of empathy (Brook & Kosson, 2013; Hare, 1999a, 2003; Watt & Brooks, 2012). The relationship between psychopathy and recall of the unsuccessful character provided support for the findings by Wilson et al. (2008) and adds to the literature on psychopathy and social information processing abilities. A number of non-significant findings were found in the current study and did not support hypotheses in regard to the psychopathy construct. The failure to find support for primary and secondary psychopathy may be reflective of the community sample, with a community based sample possibly lower in levels of negative emotionality compared to offender samples which psychopathy research has primarily been conducted on (Hall & Benning, 2006). Further investigation of the relationship between psychopathy and negative emotionality is required to determine whether this relationship is influence by sampled populations. Support was not found for a relationship between psychopathy and mimicry, emotional recognition, character recognition, negative emotionality and emotional intelligence.

A notable limitation was found in regard to the experimental methodology employed to examine mimicry and emotional recognition. The results suggested a poor experimental effect and possible issues with trial ordering due to recognition varying based on the trial order. The findings suggest a need for further replication to determine the effectiveness of the experimental approach and to exclude any methodological confounds. Due to the study utilising a community sample and with prevalence rates of psychopathy theorised to be low in the community, it is possible that the study only sampled individuals with psychopathic traits that are high functioning, in the sense of being noncriminal and living in the community, rather than incarcerated. However, consistent with this notion, noncriminal psychopathy may be associated with adaptive features of psychopathy which are not theorised to impede emotional processing (Miller et al., 2016). Further research using the current methodology across differing samples where psychopathy has been detected at higher prevalence rates and in different contexts would assist in expanding on the present findings. This would also assist in expanding on the limited findings pertaining to primary and secondary psychopathy in the study. Understanding psychopathy in noncriminal settings remains a challenge, due to the lack of standards or guiding criteria to determine samples. Previous research specifies that non-criminal psychopathy is captured by an absence of offending. Although the community

sample in the current study comprised of participants that had perpetrated crime, statistical analysis released that no significant differences were observed in psychopathic traits between offenders with and without a criminal history. Research examining psychopathy in a criminal and business sample would allow for expansion of the current results. The present sample of community participants assists in proving a baseline comparison of psychopathy for additional samples such as criminal and business.

Chapter 3

Study 2: Criminal and Successful Psychopathy

The present chapter describes study two, which was concerned with exploring criminal and successful psychopathy, specifically examining psychopathic traits in offenders and individuals in the business sector. In study one, psychopathy was a significant negative predictor of empathy in a noncriminal community sample. Based on an experimental paradigm, psychopathy was associated with greater social information recall of unsuccessful characters. Support was not found for a relationship between psychopathy and emotional recognition, emotional intelligence, negative emotionality or emotional mimicry. Accordingly, in study two, specific populations were targeted where higher prevalence rates psychopathic traits have been postulated (Babiak et al., 2010; Boddy, 2011; Dutton, 2012; Fritzon et al., 2016; Hare, 2003). Fifteen to 25 percent of custodial inmates are considered to be psychopathic (Hart & Hare, 1996), while research in the business sector has found large variance in estimates of psychopathic traits, ranging between 4% and 20% (Babiak et al., 2010; Fritzon et al., 2016; Howe et al., 2014). In contrast, Hare (1999a) speculates that approximately one percent of the general community are recognised as psychopathic, suggesting lower rates of psychopathy and possibly construct correlates (Hare, 1999a). The current study utilised the methodology from study one to expand on the understanding of the emotional and social characteristics of criminal and successful psychopathy (Hall & Benning, 2006; Skeem et al., 2011). The investigation of psychopathic traits in offenders and individuals in the business sector assisted in testing hypotheses in relation to theories pertaining to successful and unsuccessful psychopathy.

Criminal and Noncriminal Psychopathy

Research investigating the contrast between criminal and noncriminal psychopathy is still in its infancy and to date has provided limited empirical findings, offering instead predominately commentary on the phenomenon (Brooks & Fritzon, 2016; Croom, Fritzon, & Brooks, in press; Hall & Benning, 2006). Psychopathy has been identified as vital to diagnosis, risk assessment and treatment planning, and cited as a primary predictor of recidivism in offender populations (Häkkänen-Nyholm & Hare, 2009; Hare, 2003; Harris, Skilling, & Rice, 2001; Porter et al., 2009). The relationship between psychopathy and criminal behaviour indicates a personality type characterised by antisocial and criminal

tendencies (Hare, 2003). Despite support for a relationship between psychopathy and crime, recent empirical research suggests that psychopathic traits are also found in noncriminal populations (Babiak et al., 2010; Brooks, Fritzon, Croom, Bailey, & Dellar, in press; Fritzon et al., 2016). Many terms have been coined to refer to psychopathy in the community, including noncriminal psychopathy (Hall & Benning, 2006; Hare, 2003), successful psychopathy (Dutton, 2012; McNab & Dutton, 2014) and hidden psychopathy (Adams, 2005). Due to the difficulties of conceptualising successful and hidden psychopathy, psychopathy outside of the correctional setting has traditionally been referred to as noncriminal psychopathy (Gao & Raine, 2010; Hall & Benning, 2006). The most common requirement for consideration of noncriminal psychopathy is that an individual reside in the community and be absent of criminal behaviour (Gao & Raine, 2010). When studying psychopathic traits in a community population, a vast variation in presentations is possible, including high performing executives to unemployed people. Therefore, research investigating psychopathy in certain sectors of the community may allow for identification of specific subgroups of psychopathy, for example, successful or corporate psychopathy may describe individuals with high levels of education and personality traits that have allowed them to achieve corporate status (Boddy, 2011; Gao & Raine, 2010).

Psychopathy, regardless of whether criminal or noncriminal manifestation, is a pervasive psychological disorder characterised by a lack of conscience (Cleckley, 1941, 1976; Hare, 1999a). Psychopathic criminals are typically described as cunning and manipulative, calculated, violent and reckless in nature, callous, and prone to heinous and repetitive acts of crime (Hare, 1999a, 2003; Stone, 2009). In contrast, individuals with psychopathic traits residing in the community are considered successful and capable of functioning in society, despite being ruthless, immoral, manipulative, charming, grandiose and lacking concern for others (Babiak & Hare, 2006; Boddy, 2011; Dutton, 2012; McNab & Dutton, 2014). While similarities between criminal and noncriminal psychopathy are evident, including both forms of psychopathy being associated with dysfunction and disinhibition, developmental pathways may explain construct differences (Hall & Benning, 2006; Skeem et al., 2011). For example, an individual raised in a supportive family and receiving a high level of education, may express psychopathic traits differently and/or more pro-socially rather than a person raised in an abusive family with limited education and psychopathic characteristics. According to Hall and Benning, the developmental pathways of psychopathy may explain why one person operates on the moral fringes in the community, causing harm, yet avoiding criminal

conviction, and another individual develops to become a violent offender. The role of developmental pathways provides an explanation as to why psychopathic personality is found in both criminal and noncriminal settings, however, Hare (1999a) believes that regardless of the context or setting, psychopathic individuals all share a general lack of conscience and moral disregard.

Criminal Psychopathy

Research that has examined psychopathy in offender populations has found that psychopathy is associated with several factors related to criminality (Cornell et al., 1996; Hare, 1999a, 2003; Hare & McPherson, 1984). The desire to control and dominate another has been identified as a central trait of psychopathic personality, often engaging in threats, bullying, verbal intimidation, manipulation, and physical aggression to achieve such outcomes (Benjamin, 1993; Blackburn, 1998; Hickey, 2010; Hare, 1999a). Individuals with psychopathic traits in comparison to non-psychopathic offenders, have been found to utilise greater levels of violence and aggression, use a weapon or commit a violent assault, engage in aggressive behaviour in the custodial setting (Hare & McPherson, 1984), perpetrate planned and instrumental acts of violence (Cornell et al., 1996; Woodworth & Porter, 2002), possess cognitions supporting violence and aggression (Watt & Brooks, 2012), and engage in behaviours that threaten and challenge those perceived to be blocking the pursuit of goals (Morrison & Gilbert, 2001). The drive to dominate others and obtain self-indulgent goals, even when at a cost to another, is the cornerstone of psychopathy (Blackburn, 2006; Meloy, 2005; Meloy & Shiva, 2007).

The ruthless and aggressive behaviour associated with psychopathy has been partially attributed to empathy and emotional deficits (Blair et al., 2005; Hare & Quinn, 1971; Williamson et al., 1991). Early literature on psychopathy focused on the study of criminal samples and identified that offenders with high levels of psychopathy demonstrated a profound lack of empathic concern for others, as well as difficulties recognising and responding to emotions (Blair et al., 1997; Cleckley, 1941, 1976; Hare & Quinn, 1971; Johns & Quays, 1962; Lykken, 1957; Williamson et al., 1991). However, research and theories that have attempted to explain empathy deficits in psychopathy are often not well understood, with inconsistencies in findings pertaining to facets of empathy, such as cognitive, emotional concern and perspective taking (Mullins-Nelson et al., 2006; Watt & Brooks, 2012).

In a study of 103 adult male offenders, Brook and Kosson (2013) examined cognitive empathy and empathic capabilities of psychopathic offenders. The PCL-R (Hare, 2003), IRI (Davis, 1983, 1994), and Trait Meta Mood Scale (Salovey et al., 1995) was utilised, as well as empathic accuracy through a video vignette. A negative relationship was found between psychopathy and cognitive empathic accuracy, identifying significant differences between high psychopathy and low psychopathy groups for empathic accuracy scores. A significant negative relationship was found between factor two of the PCL-R and empathic accuracy, however, a significant relationship was not found for factor one. Significant negative correlations were found between both factor one and factor two with the perspective taking subscale of the IRI, while no significant correlations were found between the PCL-R factors and emotional intelligence. Psychopathic offenders were found to have lower levels of empathic accuracy in comparison to non-psychopathic offenders after controlling for intelligence, reading ability and perceived emotional intelligence (Brook & Kosson, 2013). The research suggested that cognitive empathy deficits were most notable for the antisocial/behavioural and lifestyle features of psychopathy, however, as the relationship between the PCL-R factors and the subscales of the IRI were not reported in the research, other than perspective taking, it is unclear as to whether factor one of the PCL-R was found to be associated with other empathy deficits, such as emotional empathy. The findings in the research by Brook and Kosson provided an important analysis of psychopathy and empathic accuracy. The PCL-R item, lack of empathy, focuses specially on affective empathy deficits and does not consider cognitive empathic ability (Cooke et al., 2012; Sellbom et al., 2015a). Subsequently, research on cognitive empathy and psychopathy is needed to expand on the limitations of the PCL-R's focus on affective empathy.

Decety et al. (2013) extended on the understanding of psychopathy and empathy by investigating whether perspective taking ability elicited an emotional response in psychopathic individuals. The authors used the PCL-R and MRI evaluations to examine psychopathy and neurological responses in 121 offenders. Offenders were required to view stimuli of body injuries and requested to adopt imagine-self and imagine-other perspectives (Decety et al., 2013). When presented with stimuli and adopting an imagine-self perspective, the high psychopathic group demonstrated typical neurological patterns of response for the brain regions involved in empathy for pain, however, an atypical pattern of brain activation was observed for the psychopathic group when adopting the imagine-other perspective (Decety et al., 2013). The atypical pattern of neural activation for the imagine-other

perspective was significantly different for offenders with elevated scores on factor one of the PCL-R, indicating a reduced arousal to others' pain or concerns (Hare, 2003; Hare & Quinn, 1971). Elevated scores on factor one were found to be associated with an increase in activity in the ventral striatum, suggesting pleasure in observing the distress of others. This pattern of activation in the ventral striatum, which is typically activated during reward anticipation (Diekhof, Kaps, Falkai, & Gruber, 2012), was only found for factor one, and not factor two. The findings of the research suggested that offenders with high levels of psychopathy were capable of imagine-self perspective taking abilities, however, were characterised by marked deficits in imagine-other perspective taking (Decety et al., 2013). The research provided an important understanding of the perspective taking element of empathy in offenders, although it is unclear whether a similar pattern of perspective taking is found in noncriminal or successful psychopathy. A study of a noncriminal sample that was partially consistent with Decety et al. (2013), found that perspective taking did not significantly predict psychopathy in the community, however, total empathy scores and empathic concern were both significant negative predictors of psychopathy (Mullins-Nelson et al., 2006). Although the subscales of the IRI were not examined in study one of the current research, the results were consistent with Decety et al. and Mullins-Nelson et al., with psychopathy found to be a significant negative predictor of total empathy scores in a noncriminal community sample.

A partial perspective taking ability may account for the findings by Domes et al. (2013) who found that higher psychopathy scores in an offender sample were not significantly related to emotional or cognitive empathy. Domes et al. hypothesised that psychopathy would be associated with impairments in emotional empathy, but not cognitive empathy. The sample consisted of 90 offenders and 28 noncriminal participants. The authors used a tercile split to categorise offenders into high, medium and low psychopathy groups based on the total PCL-R scores. The researchers found that while offenders in the sample had generally lower levels of emotional and cognitive empathy as measured by the IRI (Davis, 1983, 1994) and Empathy Quotient (EQ; Baron-Cohen & Wheelwright, 2004), the high psychopathy group was not found to have significant empathy deficits for the IRI or EQ in comparisons to the medium and low offender group and noncriminal group. While the non-significant difference between psychopathy and the perspective taking subscale of the IRI may accurately reflect the relationship between the two constructs, the associations between psychopathy and the remainder of the IRI subscales is inconsistent with previous research (Watt & Brooks, 2012). A reason for the findings may be due to the low cut off score of 21 on the PCL-R used by the

authors to determine the high psychopathy group, possibly reflecting a low prevalence of high levels of psychopathic traits in the sample.

An explanation for the varied findings pertaining to psychopathy and empathy in criminal samples may be due to the distribution of characteristics on the PCL-R factors. The finding by Decety et al. (2013) suggested that factor one of the PCL-R was associated with perspective taking deficits, however, high scores on factor two may not lead to lower levels of perspective taking. Mullins-Nelson et al. (2006) contend that the relationship between psychopathy and empathy depends largely on the type of psychopathy evaluated (e.g., factor or total score), gender of the individual, as well at the population being examined. The role of assessment instruments in assessing psychopathy is also important, for example, low empathy based on the PCL-R, only suggests affective empathy deficits rather than cognitive empathy deficits (Cooke et al., 2012; Sellbom et al., 2015a). Further, the distribution of psychopathy traits can influence the relationship between psychopathy and empathy. Higher overall scores on the PCL-R for some offenders may be largely due to a greater propensity of lifestyle and antisocial traits, rather than interpersonal and affective features, therefore, resulting in an elevated PCL-R score. Consequently, the interpersonal and affective traits, often identified as the core personality characteristics of psychopathy (Brook & Kosson, 2013), may not be as prominently found in criminal samples, but rather noncriminal samples where lifestyle and antisocial traits may be less common (Hall & Benning, 2006; Mullins-Nelson et al., 2006). Subsequently, differences between psychopathy and associated factors such as empathy may be evident at the subscale level of assessments, with global scores lacking in appropriate sensitivity to identify underlying relationships or deficits (Miller et al., 2016; Watt & Brooks, 2012; Witt et al., 2010).

Despite empathy deficits and aggressive behaviour being associated with criminal psychopathy, evidence has been found to suggest that offenders with higher levels of psychopathy engage in successful manipulation of the criminal justice system (Dutton, 2012; Häkkänen-Nyholm & Hare, 2009; Hare, 2003; Porter et al., 2009). As discussed in study one, Porter et al. (2009) found that psychopathic offenders, while having a greater history of criminal offending, were two and half times more likely to be granted conditional release than non-psychopathic offenders. Similar findings were reported by Häkkänen-Nyholm and Hare (2009) in a study of 546 Finnish homicide offenders. The authors examined psychopathy and post offence behaviour for homicide cases. The researchers conducted a case file review and assessed psychopathy retrospectively on the PCL-R. Eighteen percent of the sample was

identified as having a score of 30 or more on the PCL-R. Notably, one third of offenders sampled achieved the maximum score on the PCL-R item pathological lying (Häkkänen-Nyholm & Hare, 2009). Due to the seriousness of their offence, individuals with higher levels of psychopathy were referred to higher levels of court, however, were more likely to be convicted of a lesser offence. High levels of psychopathic traits were also related to reduced levels of remorse, placing blame on external factors for the offence, and denial of responsibility for actions.

The research by Porter et al. (2009) and Häkkänen-Nyholm and Hare (2009) has important implications for understanding the emotional and social characteristics of psychopathy, particularly manipulation, social information processing, and emotional intelligence. The process by which offenders manage their impression and adjust this to the criminal justice system for their own personal benefit is poorly understood and in need of greater appreciation and research (Häkkänen-Nyholm & Hare, 2009). The emotional and social skills of psychopathic individuals is not only of significance in the custodial setting, but has important implications for understanding noncriminal psychopathy (Hall & Benning, 2006). It is unclear whether psychopathic offenders have comparable social and emotional skills to psychopathic individuals in the community, or are characterised by deficits. Although the studies conducted by both Porter et al., and Häkkänen-Nyholm and Hare were conducted on offender samples, the findings provide an explanation as to why psychopathic traits are found in individuals in positions of higher corporate status, due to the social poise and manipulative traits associated with the construct (Babiak & Hare, 2006; Boddy, 2011; Brooks & Fritzon, 2016; Dutton, 2012; Hare, 1999a).

Successful and Corporate Psychopathy

It is an unusual phenomenon that a personality type found to be associated with destructive and criminal behaviour is also related to levels of success and achievement (Babiak & Hare, 2005; Boddy, 2011; Brooks & Fritzon, 2016). While there are several determinants of success and achievement, functioning in a corporate profession is a vast contrast to the custodial environment. These roles commonly require social and interpersonal skills, responsibility, education, and performance standards (Boddy, 2011; Croom et al., in press). Yet, despite skill and educational demands, research has identified several individuals that have elevated levels of psychopathic traits in positions of status (Babiak et al., 2010; Croom et al., in press; Fritzon et al., 2016). These include, USA presidents (Lilienfeld et al.,

2012), high court justices, city mayors, and academic deans (Mullins-Sweatt et al., 2010; Stevens, Deuling, & Armenakis, 2012), corporate executives and directors (Babiak et al., 2010), a leading neuroscientist (Fallon, 2014), and a decorated special forces officer (Dutton, 2012; McNab & Dutton, 2014).

Ishikawa, Raine, Lencz, Bihrle, and LaCasse (2001) examined the concept of successful and unsuccessful psychopathy. The authors examined psychopathy in the community and determined success based on whether participants had ever been convicted of a crime. Psychopathy was assessed on the PCL-R and participants completed the Wisconsin Card Sorting Test (WCST) and the Weschler Memory Scale-Revised (WMS-R). The successful psychopathy group comprised of 13 participants (never convicted of a crime), unsuccessful psychopathy group of 16 participants (convicted of a crime) and the control comparison group of 26 non-psychopathic (low scoring psychopathy and never convicted of a crime) participants. Results revealed that successful psychopathy was associated with greater executive functioning on the WCST and an elevated heart rate for stress reactivity in comparison to unsuccessful psychopathy and control groups (Ishikawa et al., 2001). The unsuccessful psychopathy group were found to have a lower heart rate and reduced executive functioning compared to the successful psychopathy and non-psychopathy group. No difference was found between the two psychopathy groups for intelligence. The authors concluded that the elevated autonomic responding and greater executive functioning displayed by the successful psychopathy group served to protect from detection and arrest in the community (Ishikawa et al., 2001). The research provided an important comparison of criminal and noncriminal psychopathy for stress reactivity and executive functioning, however, the study did not include a comparison group of unsuccessful non-psychopathy participants, or account for social and emotional skills which may further serve to protect from detection and arrest.

A similar study investigating intelligence, executive functioning, empathy and psychopathy was conducted by Mahmut et al. (2008). The study comprised of 27 males and 74 females recruited from a university sample. The measures used in the research included, the SRP-III (Paulhus et al., in press), Iowa Gambling Task (IGT; Bechara, Damásio, Damásio, & Anderson, 1994), the Emotional Empathy Questionnaire (EEQ; Mehrabian & Epstein, 1972), National Adult Reading Test (NART; Nelson, 1991), and Trail-Making Test-Part B (TMT-B; Reitan, 1992). The authors dichotomised the data into high and low psychopathy groups based on the highest 30% and lowest 30% of scores on the SRP-III. The

SPR-III subscale of criminal tendencies was excluded from the analyses to avoid conflating psychopathy with antisocial behaviour (Mahmut et al., 2008). Results found that the high psychopathy group performed significantly poorer on the IGT in comparison to the low psychopathy group, making riskier choices and concluding the game with less money. A significant deficit in emotional empathy was found for the high psychopathy group, although the deficit in emotional empathy was not observed for the low psychopathy group. No significant difference was found between the psychopathy groups for IQ or executive functioning based on the NART and TMT-B.

Mahmut et al. (2008) compared the results to a previous study (Mitchell, Colledge, Leonard, & Blair, 2002) that had employed the IGT with a criminal sample, concluding that findings from the two studies were similar and that criminal and noncriminal psychopathy are qualitatively similar, sharing psychophysiological and neurophysiological characteristics. The researchers contended that the manifestation of interpersonal and affective traits, as well as the extent to which individuals engaged in antisocial behaviours, may be the only differentiating features between criminal and noncriminal psychopathy (Mahmut et al., 2008). The findings provided support for Hall and Benning's (2006) moderated pathway of psychopathy, with moderating factors one explanation for the difference in the expression of antisocial tendencies between criminal and noncriminal psychopathy. Due to the challenges of contrasting psychopathy across populations, the authors recommended that future research employ the same measurement protocols across populations to control for measurement variance and to allow for consistent comparison. Limitations of the research were that the study comprised predominately of females and that the authors dichotomised psychopathy rather than examined the construct on a continuum, excluding a large percentage of the sample from the analyses.

Another study examining noncriminal psychopathy, emotional intelligence, and criminal thinking was conducted by Fix and Fix (2015) utilising a sample of 111 university students. The authors employed the PPI-R (Lilienfeld & Widows, 2005) to examine psychopathy, Bar-On EQ-i (EQ-i; Bar-On, 2008) to measure emotional intelligence, Inventory of Callous-Unemotional Traits-Youth Version (ICU; Frick, 2006) to assess callousness, Texas Christian University Criminal Thinking Scales (TCU; Knight, Garner, Simpson, Morey, & Flynn, 2006), and Illegal Behaviours Checklist (IBC; McCoy et al., 2006). Despite the sample being community based, psychopathy was found to be a significant predictor of violent offending, property offending and illegal behaviour. Regression analyses

showed that psychopathy was predicted by lower interpersonal and mood scores, and higher scores on stress management and interpersonal relationships. Higher scores on the uncaring subscale of the ICU also significantly predicted psychopathy. Fix and Fix (2015) contended that the results provided a portrait of successful psychopathy, characterised by interpersonal skills, but lacking in empathy and social responsibility, displaying little concern for others, troubled by understanding emotions and holding a pessimistic emotional outlook, although fluid in managing levels of stress (Fix & Fix, 2015). The findings by the authors demonstrated that psychopathy was characterised by positive adaptive features such as stress management, yet also significantly predicted criminal behaviour, supporting research on psychopathy and stress immunity (Fowles & Dindo, 2009; Lilienfeld & Widows, 2005; Lykken, 1995; Patrick et al., 2009) and suggesting that successful psychopathy may be associated with avoiding detection.

Howe et al. (2014) investigated the relationship between psychopathic personality traits, emotional intelligence and success in 55 participants working in the financial industry in New York. The authors used the PPI-R, the Mayer-Salovey-Caruso Emotional Intelligence Test (MSCEIT; Mayer, Salovey & Caruso, 2002) and a series of demographic questions to assess income and position within the company. The results of the study revealed that 7.3% of the sample were found to score two standard deviations above the normative mean score for the PPI-R. Significant elevations above the clinical cut off *T* score were observed for fearless dominance (12.7%) and coldheartedness (9.1%); however, no notable elevated levels of self-centred impulsivity were found in the sample. Total PPI-R scores were negatively related to overall emotional intelligence as well as subscales of the MSCEIT. A significant negative relationship was found for self-centred impulsivity and total MSCEIT scores, although no significant associations were found between fearless dominance and total or subscale MSCEIT scores. Statistical analysis of income groups revealed that significant differences were only identified for fearless dominance, with no differences found for total PPI-R scores or remaining subscales. Fearless dominance was found to significantly predict the income bracket of $100,000 to $200,000, with higher scores found for this level of income compared to the less than 100,000 and over $200,000 groups (Howe et al., 2014). No significant differences were observed for total psychopathy or subscales for corporate rank. The authors postulated that the interpersonal-affective features of psychopathy may help an individual to obtain a moderate level of occupational and financial success, however, they

suggested that an optimal level of psychopathic traits may exist and that exceeding this level could have a detrimental effect on career success.

Directions for Study 2

The second study sought to extend on the findings from study one, further examining the emotional and social processing abilities associated with psychopathy. Understanding the differences between criminal and noncriminal psychopathy, specifically successful or corporate psychopathy, is important for several reasons. First, the empirical understanding of criminal psychopathy may not be generalisable to noncriminal psychopathy (Gao & Raine, 2010; Hall & Benning, 2006; Mullins-Nelson et al., 2006). By relying on research conducted on offender samples, etiological distinctions between criminal and noncriminal psychopathy may be missed. It is possible that noncriminal psychopathy may in the long term be more destructive and problematic for society (Croom et al., in press; Gao & Raine, 2010). Second, studying noncriminal psychopathy allows researchers to focus specifically on the attributes and etiologies of successful psychopathy (Hall & Benning, 2006; Skeem et al., 2011), rather than examining the relationship between psychopathy, criminality and antisocial behaviour (Cooke et al., 2012; Gao & Raine, 2010). Finally, through understanding the traits and etiology of noncriminal psychopathy, it may be possible to identify protective factors that prevent successful and noncriminal psychopathic individuals from engaging in a criminal lifestyle (Gao & Raine, 2010; Hall & Benning, 2006; Mullins-Nelson et al., 2006).

The second study employed the same methodology used in study one which was conducted on a community sample and investigated the relationship between social and emotional processes in both a criminal and business sample. The present study sought to expand on the understanding of the relationship between psychopathy, empathy and emotional intelligence, aiming to develop a greater understanding of how the constructs coexist across different populations (Mullins-Nelson et al., 2006). The emotional features of psychopathic individuals in the community are of significance for operationally defining successful and corporate psychopathy (Decety et al., 2013; Mullins-Nelson et al., 2006). The methodology by Wilson et al. (2008) discussed in study one was used to examine the social information processing ability of psychopathic individuals, investigating whether specific patterns of observing vulnerability were evident in criminal and business/corporate psychopathy. The research by Porter et al. (2009) and Häkkänen-Nyholm and Hare (2009) found that psychopathic offenders were able to exploit the criminal justice system, obtaining

reduced sentences or early release form custody. The authors identified that the ability to detect social cues and exploit vulnerability in criminal psychopathy was poorly understood (Häkkänen-Nyholm & Hare, 2009). The present study sought to provide further understanding on the emotional and social information processing skills of psychopathic individuals in specific sample populations.

1. It was hypothesised that for the business sample that a significant positive effect would be found for psychopathy on emotional recognition when mimicry occurred (control condition), and a significant negative effect of psychopathy on emotional recognition when mimicry was restricted (experimental condition). For the criminal sample it was hypothesised that a significant negative effect would be found for psychopathy on emotional recognition when mimicry occurred (control condition), and a significant negative effect of psychopathy on emotional recognition (deficit) when mimicry was restricted (experimental condition).
2. It was hypothesised that for the business sample, that psychopathy would be a significant positive predictor of overall emotional recognition, specifically that higher levels of psychopathy would be associated with higher levels of emotional recognition. It was hypothesised that for the criminal sample that psychopathy would be a significant negative predictor of overall emotional recognition, specifically that higher levels of psychopathy would be associated lower levels of emotional recognition.
3. To investigate psychopathy and social information processing, it was hypothesised that for both the criminal and business samples that higher levels of psychopathy would be significantly associated with greater recognition and recall of the sad unsuccessful female character compared to lower levels of psychopathy, consistent with Wilson et al. (2008).
4. It was hypothesised that higher total psychopathy scores would be a significant positive predictor of emotional intelligence in the business sample and a significant negative predictor of emotional intelligence in the criminal sample. It was also hypothesised for both samples that an interaction would be found between higher levels of psychopathy and levels of negative emotionality. For the business sample, it was hypothesised that higher levels of psychopathy and lower levels of negative emotionality would positively predict emotional intelligence and that higher levels of psychopathy and higher levels of negative emotionality would negatively predict

emotional intelligence. For the criminal sample, it was hypothesised that higher levels of psychopathy and lower levels of negative emotionality would negatively predict emotional intelligence and that higher levels of psychopathy and higher levels of negative emotionality would also negatively predict emotional intelligence; supporting primary and secondary psychopathy types (Karpman, 1941; Lykken, 1995; Newman et al., 2005).

5. Finally, it was hypothesised that for both samples that a significant negative relationship would be found between total psychopathy scores and empathy. It was hypothesised that an interaction would be found between higher levels of psychopathy and higher and lower levels of negative emotionality. It was predicted that higher levels of psychopathy and lower levels of negative emotionality would negatively predict empathy and that higher levels of psychopathy and higher levels of negative emotionality would also negatively predict empathy (Karpman, 1941; Lykken, 1995; Newman et al., 2005).

Method

Participants

A total of 60 participants were recruited for the successful/business sample. Due to missing data, seven participants were excluded from some sections of the analyses, leaving a final sample size of 53 participants. The business sample consisted of 39 males (M_{age} = 38.98; *SD* = 9.43) and 21 females (M_{age} = 36.30; *SD* = 9.16) with an age range from 24 to 56 years of age (M_{age} = 38.03; *SD* = 9.35). The business sample was comprised of three subgroups that were combined to form the overall sample. This included 33 Australian participants completing a Master of Business Administration Degree (MBA) (M_{age} = 38.33; *SD* = 7.40; *range* = 24 - 50 years), 15 American participants also completing a MBA (M_{age} = 28.87; *SD* = 4.52; *range* = 24 - 43 years), and 12 professionals working in the New Zealand corporate sector (M_{age} = 48.67; *SD* = 6.72; *range* = 39 - 56 years).

The criminal sample comprised of 46 participants, with two participants excluded due to missing data, leaving a final sample size of 44 participants. The two missing participants had each only completed two of the questionnaires. The criminal sample consisted of four females (M_{age} = 44.25; *SD* = 14.73) and 40 males (M_{age} = 38.60; *SD* = 14.92) with an age range from 18 to 69 years of age (M_{age} = 39.11; *SD* = 14.83).

Participants in the business sample most commonly reported identifying with a Christian religion and managers was most frequent occupation for the sample. Christianity was also the most frequent religion reported by the criminal sample and labourer was the most common occupation. Table 11 shows the frequency and percentage values for identified religions for both samples, while Table 12 display the frequencies and percentages of occupation for each samples. For the business sample, the most frequent number of years worked in business was 8 years (10%), followed by two (8.3%) and three (6.7%) years (M = 7.43, SD = 5.40). The number of years worked in business ranged from one to 22 years. A wide array of position titles were reported for the business sample, with 16 (26.7%) participants having managerial titles, followed by 14 (23.3%) directors, four (6.7%) supervisors and co-ordinators, and two (3.3%) officers. Eight (13.3%) participants in the sample reported having other varied titles, while 16 (26.7%) participants did not report a position title.

Table 11
Frequency and Percentages of Religion for the Business and Criminal Samples

Religion	Frequency (Percentage %)	
	Successful	Criminal
Christian	22 (36.7%)	23 (52.3%)
Atheist	16 (26.7%)	11 (25.0%)
Agnostic	7 (11.7%)	3 (6.8%)
Hinduism	4 (6.7%)	0 (0%)
Buddhism	3 (5.0%)	1 (2.3%)
Islam	3 (5.0%)	1 (2.3%)
Other	4 (6.7%)	2 (4.5%)

Note. One (1.7%) participant was missing or did not disclose religion for the business sample and three (6.8%) participants were missing or did not disclose religion for the criminal sample.

Table 12
Frequency and Percentages of Occupations for the Business and Criminal Samples

Occupation	Frequency (Percentage %)	
	Successful	Criminal
Managers	32 (53.3%)	1 (2.3%)
Professionals	21 (35.0%)	4 (9.1%)
Clerical and administrative workers	2 (3.3%)	0 (0%)
Community and personnel service workers	12 (10.4%)	2 (4.5%%)
Labourer	0 (0%)	11 (25.0%)
Unemployed	0 (0%)	9 (20.5%)
Technicians and trades workers	0 (0%)	3 (6.8%)
Machinery operators and drivers	0 (0%)	3 (6.8%)
Sales Workers	0 (0%)	2 (4.5%)
Student	0 (0%)	2 (4.5%)
Disability services	0 (0%)	2 (4.5%)
Pension	0 (0%)	1 (2.3%)
Other	3 (5.0%)	2 (4.5%)

Note. One (1.7%) participant was missing or did not report occupation for the business sample and two (4.5%) participants were missing data or did not report occupation for the criminal sample.

The most common weekly income reported by the business sample was $1500 or more, while the most frequent income for the criminal sample was $300 to $399. For the business sample the most frequent form of education was a bachelor degree and for the criminal sample the most common level of education was TAFE diploma and/or certificate. Table 13 depicts the distribution of income for the two samples, while Table 14 shows the frequencies and percentages of education for both samples.

Table 13
Frequency and Percentages for Income Distribution Per Week for the Business and Criminal Samples

Income	Frequency (Percentage %)	
	Successful	Criminal
$1500 or more	29 (48.3%)	0 (0%)
$1000 to $1499	8 (13.3%)	3 (6.8%)
$800 to $899	1 (1.7%)	3 (6.8%)
$700 to $799	2 (3.3%)	0 (0%)
$600 to $699	2 (3.3%)	5 (11.4%)
$500 to $599	2 (3.3%)	2 (4.5%)
$400 to $499	3 (5.0%)	5 (11.4%)
$300 to $399	0 (0%)	8 (18.2%)
$200 to $299	0 (0%)	7 (15.9%)
$160 to $199	2 (3.3%)	1 (2.3%)
$40 to $79	0 (0%)	1 (2.3%)
$1 to $39	1(1.7%)	0 (0%)
Nil Income	8 (13.3%)	5 (11.4%)

Note. One (1.7%) participant was missing data or did not report income for the business sample and five (11.4%) participants were missing data or did not report income for the criminal sample.

Table 14
Frequency and Percentage of Education for the Business and Criminal Samples

Education	Frequency (Percentage %)	
	Successful	Criminal
Grade 8 or below	0 (0%)	3 (6.8%)
Grade 9	0 (0%)	2 (4.5%)
Grade 10	2 (3.3%)	11 (25.0%)
Grade 12	5 (8.3%)	9 (20.5%)
TAFE diploma and/or certificate	10 (16.7%)	15 (34.1%)
Bachelors degree	30 (50.0%)	2 (4.5%)
Postgraduate degree	3 (5.0%)	0 (0%)
Master degree	10 (16.7%)	1 (2.3%)

Note. One (2.3%) participant was missing data or did not report education for the criminal sample.

For the business sample, six (10%) respondents reported having previously been arrested, however, zero participants reported having had a criminal record or having currently or previously been on a criminal justice order. All of the respondents in the criminal sample had previously been arrested, had a criminal record and were currently or had previously been

on a criminal justice order. The only exception was one participant (2.3%) who had missing data for the criminal justice order item. The most common offence type for the criminal sample was sexual offending, with 26 (60%) respondents reporting these charges, followed by seven drug offences (15.90%), five violent offences (11.36%), four fraudulent offences (9.10%), four motor vehicle offences, (9.10%) two property offences (4.55%) and two alcohol offences (4.55%).

Materials

The research assessment package comprised of eight questionnaires and two computer tasks. The present study utilised only a selection of these measures, including the two computer tasks, the demographic questionnaire, Interpersonal Reactivity Index (IRI; Davis, 1980, 1983), Psychopathic Personality Inventory-Revised (PPI-R; Lilienfeld & Widows, 2005), Assessing Emotions Scale (AES; Schutte et al., 2009) and Depression, Anxiety and Stress Scale-21 (DASS-21; Lovibond, & Lovibond, 1995). See study one for a complete description of materials.

Design

The design employed to examine the business and criminal samples in study two was the same design procedure used in study one. The same statistical analyses and methods were employed in the current study and applied to the two samples. See study one for the detailed design procedure.

Procedure

The business sample was recruited from two universities and one commercial business. Master of Business Administration (MBA) and Executive-MBA students were recruited from Bond University, Australia, and MBA students were recruited from the University of San Diego, United States of America. A sample of professionals working in the business sector were recruited from Auckland Regional Facilities, New Zealand. The two university samples were collected through a flyer and verbal explanation of the study. Contact details of students willing to participate in the study were obtained and a time was organised to undertake testing. The Bond University students received a coffee voucher as an incentive for participating in the research and the University of San Diego students received a $10 voucher to the campus book store at the University. Testing for both university samples took place on each of the respective campuses. The professional sample was recruited through

emailing a flyer to Auckland Regional Facilities and eliciting interest in the research. Once interest was obtained in participating in the study, testing times were scheduled and took place at Auckland Regional Facilities. No incentives were offered for the professional sample. The three samples were then pooled together to form the business sample for the present study.

The criminal sample was recruited from two psychology practices in Brisbane, Queensland, and two psychology practices on the Gold Coast, Queensland. Participants were recruited through a flyer that detailed the research and asked that they contact the researcher to organise a time to conduct the testing. Flyers were placed in the offices of psychologists and reception areas. Due to the methodology of placing flyers in psychology practices it is unclear how many offenders may have viewed the flyer. To meet the criteria to be considered as part of the criminal sample, participants were required to currently have offences in the criminal justice system. All participants were required to be a minimum of 18 years of age to participate in the study. To assist with recruitment, each participant received a $20 cash incentive. Testing took place at the private practice the participant was attending. Participants were primarily on probation and parole orders, while a selection of participants were offenders placed on the Dangerous Prisoners Sexual Offender Act (Queensland Government, 2003) in Queensland.

All participants viewed the computer tasks on a 15-inch laptop computer screen. Computer tasks were developed through PowerPoint and included specified time intervals for slides. Participants were informed about the purpose of the research in the explanatory statement of the questionnaire (see Appendix E for a copy of the explanatory statements used for the business and criminal samples). The explanatory statement informed participants that the survey and computer tasks would take approximately 60 minutes to complete, although there were no strict time limits, and questions could be completed at the participant's leisure. The sample of working professionals recruited in Auckland completed an informed consent form that obtained consented approval to complete the study (see Appendix F). The order in which participants completed the computer tasks and questionnaires varied, however, a minimum time gap of twenty minutes between computer task one and computer task two was employed. This was implemented due to an overlap between some of the images in both computer tasks and to avoid confusion or false recognition. See study one for a detailed description of the two computer tasks used in the research.

All ethical requirements were met and the study was approved by the Bond University Human Research Ethics Committee (BUHREC). Upon completion of the surveys, data was collected, entered and analysed using the computer program "Statistical Package for Social Science" (SPSS Version 20.0).

Results

Prior to analysis both samples were screened for any errors, missing values or incorrectly entered sores and corrected. Little's Missing Completely at Random Test was conducted on the sample to examine for the presence of missing data. The results of Little's MCAR test for both the business and criminal samples was found to be non-significant, indicating that data for both samples was missing completely at random. Reliability analysis (inter-item consistency) was conducted to assess the reliability of the scales used in the study. Cronbach's Alpha for the business sample demonstrated adequate internal consistency for all measures used: PPI-R (α = .89), IRI (α = .83), AES (α = .92), and DASS-21 (α = .91), consistent with previous research. Similarly, adequate internal consistency was found for all measures for the criminal sample: PPI-R (α = .93), IRI (α = .73), AES (α = .95), and DASS-21 (α = .94).

Initial Data Screening, Assumption Testing and Descriptive Statistics

For the business sample, normality assumptions were met for age, the PPI-R and IRI scale composite scores. However, the AES and the DASS-21 composite scores had violations to normality and contained outlier values. Visual inspection and assessment of standardised skew values showed significant positive skew and violation of normality for the DASS-21, with several participants reporting low levels of symptomology. Significant negative skew was identified for the AES, with a pattern of higher scores evident. Transformations were attempted to reduce the impact of influential scores, however no significant changes to normality occurred. Both transformed and un-transformed data did not significantly change any results of the analysis, therefore no transformed data was used in the analysis.

Assessment of normality and outliers was also conducted for the criminal sample. No significant violations to normality were found for age, IRI, AES and DASS-21. A significant outlier was detected for the PPI-R with a notable low score on the measure. Although removal improved that normality of the distribution, no significant changes were observed for

univariate and multivariate analyses, therefore the score was retained in the data set. No transformations or changes were made to the data.

Table 15 and 16 show the mean values and 5% trimmed means for each of the continuous variables within both samples. As can be seen, the differing scores are negligible, indicating that the outliers were able to be retained in the dataset (Tabachnick & Fidell, 2007). For the business sample, preliminary comparison results were conducted to explore differences between the subgroups that comprised the sample. A Kruskal-Wallis non-parametric test was conducted to examine the differences between nationality and the variables used in the study. No significant differences for nationality were found for the target research variable of psychopathy in the study, χ^2 (2, 60) = 2.28, p = .330. No statistically significant difference was found for emotional intelligence, χ^2 (2, 60) = 2.01, p = .365, however, significant score differences were observed for negative emotionality, χ^2 (2, 53) = 10.93, p = .004, and empathy, χ^2 (2, 60) = 7.82, p = .020. Follow up pairwise comparisons for negative emotionality based on a Bonferroni correction alpha level of .017 (Pallant, 2007), revealed that the American sample had significantly higher rank scores of negative emotionality compared to the Australian (p = .003) and New Zealand samples (p = .005). For empathy, the Australian sample was found to have significantly lower rank scores of empathy compared to the American sample, p = .005. No other significant differences were observed for empathy. A review of subgroup sample sizes and standard errors for each subgroup revealed that disparities could be attributed to the variance in subgroup sample sizes rather than observed mean score differences (Conlon, 2010; Howell, 2002). This was evidenced with the American and New Zealand samples smaller than the Australian sample. These differences were deemed minimal and subsequently the analyses were conducted without data manipulation of the participants in the business sample (Tabachnick & Fidell, 2007).

Table 15
Descriptive Statistics for the Continuous Variables in the Business Sample

	Mean	5% Trimmed Mean	Standard Deviation	Minimum	Maximum
Age	38.03	37.85	9.35	24	56
PPI-R	288.80	288.67	30.52	231	347
IRI	60.75	60.96	13.01	30	89
AES	132.45	134.04	16.63	54	162
DASS-21	11.59	10.74	8.84	1	40

Note. PPI-R = Psychopathic Personality Inventory-Revised; IRI = Interpersonal Reactivity Index; AES = Assessing Emotions Scale; = Depression, Anxiety and Stress Subscales-21.

Table 16
Descriptive Statistics for the Continuous Variables in the Criminal Sample

	Mean	5% Trimmed Mean	Standard Deviation	Minimum	Maximum
Age	39.11	38.77	14.83	18	69
PPI-R	287.36	287.54	41.98	167	398
IRI	60.72	61.45	11.10	22	81
AES	119.01	119.33	21.51	74	159
DASS-21	19.91	19.45	11.40	1	47

Note. PPI-R = Psychopathic Personality Inventory-Revised; IRI = Interpersonal Reactivity Index; AES = Assessing Emotions Scale; = Depression, Anxiety and Stress Subscales-21.

The frequency and percentage rates for correct identification of emotional recognition for the experimental and control condition tasks are as displayed in Tables 17 and 18 for the business sample and Tables 19 and 20 for the criminal sample. The two trials were composed of two image sets. The image sets were in fixed order, however, the experimental condition was varied over both sets of images. Tables 17 and 19 show the frequency and percentages for the first image set for the experimental and control condition for each sample. Tables 18 and 20 display the frequency and percentages for the second image set for the experiment and condition for each sample.

Table 17
Frequency and Percentages of Correctly Identified Emotions for First Image Set of Trials for the Business Sample

Emotion	Exp. First Image Set Correct	Exp. First Image Set Incorrect	Control First Image Set Correct	Exp. Control First Image Incorrect
Happy	36 (100%)	0 (0%)	23 (95.8%)	1 (4.2%)
Disgust	26 (72.2%)	10 (27.8%)	22 (91.7%)	2 (8.3%)
Fear	18 (50%)	18 (50%)	14 (58.3%)	10 (41.7%)
Surprise	36 (100%)	0 (100%)	24 (100%)	0 (0%)
Disgust	32 (88.9%)	4 (6.7%)	20 (83.3%)	4 (16.7%)
Sad	26 (72.2%)	10 (27.8%)	17 (70.8%)	7 (29.2%)
Fear	22 (61.1%)	14 (38.9%)	20 (83.3%)	4 (16.7%)
Surprise	30 (83.3%)	6 (16.7%)	21(87.5%)	3 (12.5%)
Anger	33 (91.7%)	3 (8.3%)	24 (100%)	0 (0%)

Note. Exp. = Experimental Condition, n = 36. Control Condition, n = 24.

Table 18
Frequency and Percentages of Correctly Identified Emotions for Second Image Set of Trials for the Business Sample

Emotion	Exp. Second Image Set Correct	Exp. Second Image Set Incorrect	Control Second Image Set Correct	Control Second Image Set Incorrect
Happy	22 (91.7%)	2 (8.3%)	36 (100%)	0 (0%)
Disgust	22 (91.7%)	2 (8.3%)	29 (80.6%)	7 (19.4%)
Surprise	23 (95.8%)	1 (4.2%)	34 (94.4%)	2 (5.6%)
Happy	22 (91.7%)	2 (3.3%)	31 (86.1%)	5 (13.9%)
Sad	22 (91.7%)	2 (91.7%)	35 (97.2%)	1 (2.8%)
Anger	24 (100%)	0 (0%)	35 (97.2%)	1 (2.8%)
Fear	20 (83.3%)	4 (6.7%)	35 (97.2%)	1 (2.8%)
Sad	15 (62.5%)	9 (37.5%)	31 (86.1%)	5 (13.9%)
Anger	21 (87.5%)	3 (12.5%)	33 (91.7%)	3 (8.3%)

Note. Exp. = Experimental Condition, n = 24. Control Condition, n = 36.

Table 19
Frequency and Percentages of Correctly Identified Emotions for First Image Set of Trials for the Criminal Sample

Emotion	Exp. First Image Set Correct	Exp. First Image Set Incorrect	Control First Image Set Correct	Exp. Control First Image Incorrect
Happy	20 (87%)	3 (13%)	19 (90.5%)	2 (9.5%)
Disgust	16 (69.6%)	7 (30.4%)	17 (81%)	4 (19%)
Fear	9 (39.1%)	14 (60.9%)	7 (33.3%)	14 (66.7%)
Surprise	21 (91.3%)	2 (8.7%)	20 (95.2%)	1 (4.8%)
Disgust	16 (69.6%)	7 (30.4%)	17 (81%)	4 (19%)
Sad	15 (65.2%)	8 (34.8%)	16 (76.2%)	5 (23.8%)
Fear	8 (34.8%)	15 (65.2%)	8 (38.1%)	13 (61.9%)
Surprise	21 (91.3%)	2 (8.7%)	13 (61.9%)	8 (38.1%)
Anger	21 (91.3%)	2 (8.7%)	20 (95.2%)	1 (4.8%)

Note. Exp. = Experimental Condition, n = 23. Control Condition, n = 21.

Table 20
Frequency and Percentages of Correctly Identified Emotions for Second Image Set of Trials for the Criminal Sample

Emotion	Exp. Second Image Set Correct	Exp. Second Image Set Incorrect	Control Second Image Set Correct	Control Second Image Set Incorrect
Happy	21 (100%)	0 (0%)	23 (100%)	0 (0%)
Disgust	20 (95.2%)	1 (4.8%)	22 (95.7%)	1 (4.3%)
Surprise	20 (95.2%)	1 (4.8%)	22 (95.7%)	1 (4.3%)
Happy	20 (95.2%)	1 (4.8%)	22 (95.7%)	1 (4.3%)
Sad	20 (95.2%)	1 (4.8%)	21 (91.3%)	2 (8.7%)
Anger	19 (90.5%)	2 (9.5%)	23 (100%)	0 (0%)
Fear	13 (61.9%)	8 (38.1%)	21 (91.3%)	2 (8.7%)
Sad	15 (71.4%)	6 (28.6%)	14 (60.9%)	9 (39.1%)
Anger	19 (90.5%)	2 (9.5%)	20 (87%)	3 (13%)

Note. Exp. = Experimental Condition, n = 21. Control Condition, n = 23.

The frequency analysis of the PPI-R revealed that 7 (11.67%) participants in the business sample were found to have clinically elevated levels of psychopathy, while 53 participants did not have clinically elevated traits. Participants with elevated levels of psychopathic traits were considered to score one and a half standard deviations above the mean score for the college/community normative data (Lilienfeld & Widows, 2005). Four males (10.25%) and three females (14.30%) were found to have clinical levels of psychopathy. Independent samples *t*-tests were conducted to examine gender differences for

total psychopathy and psychopathy facets. Males (M = 296.52, SD = 28.38) were found to have higher overall psychopathy scores compared to females (M = 274.47, SD = 29.77), t (58) = 2.82, p = .007. Males (M = 130.33, SD = 15.04) were also found to have statistically higher scores of fearless dominance compared to females (M = 116.28, SD = 16.60), t (58) = 3.33, p = .002. A difference was further observed for coldheartedness with higher scores found for males (M = 33.28, SD = 6.63) rather than females (M = 29.15, SD = 6.04), t (58) = 2.38, p = .021. No gender difference was found for scores of self-centred impulsivity.

For the criminal sample, four participants (9.1%) were found to have clinically elevated levels of psychopathy, while 40 participants did not have clinically elevated levels. Although the distribution of gender for the criminal sample was significantly unequal (40 males and four females), no significant difference was found between males (M = 288.85, SD = 42.72) and females (M = 272.41, SD = 34.85) for overall psychopathy scores, t (42) = 0.74, p = .462. Figure 10 displays the percentage of clinically elevated psychopathy traits for the business, criminal and community samples.

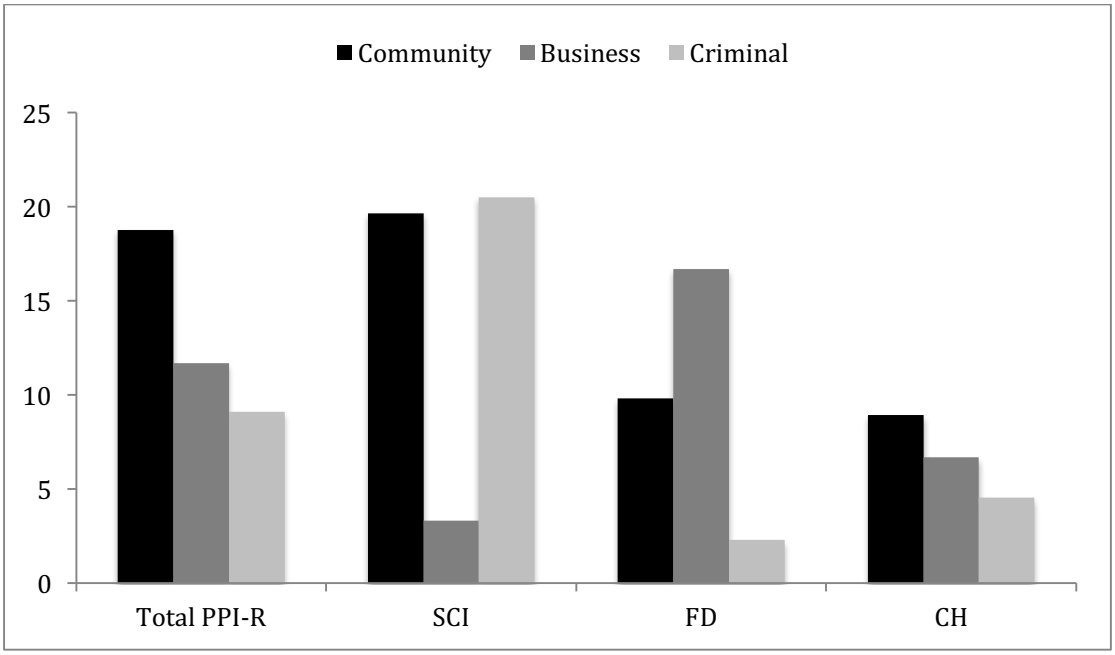

Figure 10. The percentage of clinically elevated levels of the total psychopathy, self-centred impulsivity, fearless dominance and coldheartedness in the community, business and criminal samples.

Data Screening for Multivariate Analyses

To investigate the effect of condition, psychopathy, and trial order on the dependent variable of emotional recognition, a 2 x 2 x 2 mixed design ANOVA was conducted. An initial assessment for normality and outliers was conducted using histograms, box plots and

standardised measures of skew and kurtosis on the dependent variable for each condition. For the business sample, mild significant negative skew and violation of normality was detected for both the experimental condition and control condition. Mild significant negative skew was also detected for the control condition in the criminal sample, as well as moderate significant negative skew for the experimental condition. Negative skewness for both samples was revealed to be due to the majority of participants recording higher scores on the tasks. Reflected square root and log10 data transformation were attempted for each sample; although these methods reduced skewness, no significant changes occurred to multivariate results. As the violations had no significant impact on the analyses and for ease of interpretation, the analyses for both samples was conducted without data manipulation.

Due to the sample size of 60 participants in the business sample and 44 participants in the criminal sample, the statistical tests used to determine the probability of results in the samples were limited. Miller and Kunce (1973) recommended that for a regression analysis a minimum of 10 participants were required per predictor variable for sufficient hypothesis testing. The regression analyses used in both samples to predict emotional recognition, emotional intelligence and empathy each comprised of five predictors, plus the addition of an interaction term at a third step. For the regression analyses predicting emotional recognition, five predictor variables were used in the analyses. Unlike in study one, the DASS-21 was not included in the regression analysis predicting emotional recognition in the business or criminal sample, due to the smaller sample size and being of less empirical concern to the research hypotheses. Conducting regression analyses on smaller sample sizes has been found to increase the likelihood of strong statistical relationships appearing insignificant (Conlon, 2010; Howell, 2002). Therefore, consideration was given to not only probability values but also observed power and effect sizes to identify potential relationships in the data that may warrant further investigation with a larger sample size (Wilkinson, 1999).

To test the hypothesis of predicting emotional recognition for both samples, a hierarchical multiple regression was employed to establish the relative contribution of the independent variables to explain emotional recognition. Prior to the regression analyses the data was inspected for violations of assumptions and problematic scores using scatterplots, partial regression plots, standardised residual plots, along with residual statistics. For the business sample, a significant outlier was found for the predictor variable of emotional intelligence and was removed from the analysis. No significant multivariate outliers were detected for the criminal sample. Residual plots showed the assumptions of homoscedasticity,

linearity and independence of observations appeared to be met, with the exception of one potentially problematic score for the business sample. Mahalanobis distance, Cook's distance and leverage did not identify any problematic scores. No problems with multicollinearity were found.

To test the hypothesis pertaining to character recognition and recall, two separate 2 x 2 x 2 x 2 Mixed Design Factorial ANOVA were conducted for each sample. An initial assessment for normality and outliers was conducted using histograms, box plots and standardised measures of skew and kurtosis on the dependent variable for each condition. For both samples, minor violations to the assumptions were detected for each of the analyses pertaining to recognition and recall, however, none of these were found to have any significant impact on the multivariate results; therefore, the analyses for both samples was performed without data manipulation.

To investigate the hypotheses pertaining to the prediction of emotional intelligence and empathy, separate hierarchical regressions were conducted for each sample. For the business sample, moderate significant negative skew was found for the dependent variable of emotional intelligence. A significant outlier was found for emotional intelligence due to a low score. The removal of this outlier improved skew and normality. Square root and log10 data transformation were preformed to detect for significant changes to skew and normality. Although these methods reduced skewness, no significant changes to normality were found. For the prediction of empathy, no significant skew or violation of normality was found for the dependent variable of empathy. A significant outlier was found for the predictor variable of emotional intelligence and the case was removed from the analysis. For the criminal sample, an outlier was detected for the PPI-R for both regression analyses due to a low score on the measure, however, the score was not found to be a significant multivariate outlier and did not cause significant changes to R^2, error estimates and regression coefficients, therefore it was retained in the data set. The data for each of the regression analyses for both samples was inspected for violations of assumptions and problematic scores using scatterplots, partial regression plots, standardised residual plots, along with residual statistics. Residual plots showed the assumptions of homoscedasticity, linearity and independence of observations appeared to be met with the exception of two potentially problematic scores in the successful sample, while no problematic scores were detected for the criminal sample. One significant multivariate outlier was found based on Mahalanobis distance for both regression analyses of the business sample, above the recommended significant chi-square cut off at an alpha of $p <$

.001 for six independent variables. The case was removed due to causing significant changes to R^2, error estimates and regression coefficients. No problems with multicollinearity were found for the business or criminal sample.

Hypothesis One and Two: Mimicry and Emotional Recognition

Two 2 x 2 x 2 Mixed Design ANOVA were conducted to investigate the effect of condition, psychopathy and trial order on the dependent variable of emotional recognition for the business and criminal sample. For the business sample it was hypothesised that a significant positive effect would be found for psychopathy on emotional recognition when mimicry occurred (control condition), while for the criminal sample a significant negative effect was expected. For both sample it was hypothesised for a significant negative effect of psychopathy on emotional recognition (deficit) when mimicry was restricted (experimental condition). Condition (experimental and control) was the repeated measures variable and trial order (trial one and trial two) and psychopathy were the between subjects variables for the analysis. Psychopathy was median split into high (M = 313.37, SD = 19.37) and low groups (M = 264.24, SD = 16.49) for the business sample and also into high (M = 319.77, SD = 25.37) and low (M = 254.94, SD = 27.64) groups for the criminal sample as per methodology of Dadds et al. (2006), Gordon et al. (2004), and Wilson et al. (2008).

To further investigate the relationship between psychopathy and emotional recognition, a hierarchical regression analysis was also conducted for each sample. For the business sample, it was hypothesised that psychopathy would be significant positive predictor of overall emotional recognition. It was hypothesised that for the criminal sample, psychopathy would be significant negative predictor of overall emotional recognition.

Business sample. Maulchy's Test of Sphericity was met for the within-subject variable, based on the Greenhouse-Geisser statistic with the epsilon value, $\varepsilon = 1.00$. The assumption of homogeneity of variance was partially met for the between subjects variable based on Levene's Test of Error Variance. The experimental condition was found to be significant, F (3, 56) = 2.89, p = .043, indicating a violation to homogeneity of variance. A review of Hartley's test (Fmax) showed that the ratio between the largest and smallest variances was under three indicating that the violation was not problematic (Field, 2009). The control condition was not statistically significant F (3, 56) = 0.62, p = .608, meeting the requirements of the assumption.

Examination of the within subject effects revealed a significant main effect of condition, F (1, 56) = 5.55, p = .022, η^2 = .090, 1 − β = .639. This indicated a statistically significant difference was found between the experimental (M = 7.55, SE = 0.17) and control condition (M = 7.99, SE = 0.13), with higher scores of emotional recognition found in the control condition. A non-significant main effect was found for the between subjects effects for trial order, F (1, 56) = 0.13, p = .718, η^2 = .002, 1 − β = .065, and for psychopathy, F (1, 56) = 0.01, p = .759, η^2 = .002, 1 − β = .061. A significant condition x trial interaction was found, F (1, 56) = 14.38, p < .001, η^2 = .204, 1 − β = .961, indicating a large effect and significant difference between levels of the repeated measures variable and levels of the dependent variable. The estimated marginal means for the interaction between condition and trial are displayed in Figure 11. A non-significant two way interaction between psychopathy and condition was found, F (1, 56) = 0.81, p = .371, η^2 = .014, 1 − β = .144, and also between psychopathy and trial order F (1, 56) = 0.47, p = .492, η^2 = .008, 1 − β = .104. A non-significant three way interaction between psychopathy, trial and condition was also found, F (1, 56) = 0.05, p = .825, η^2 = .001, 1 − β = 055.

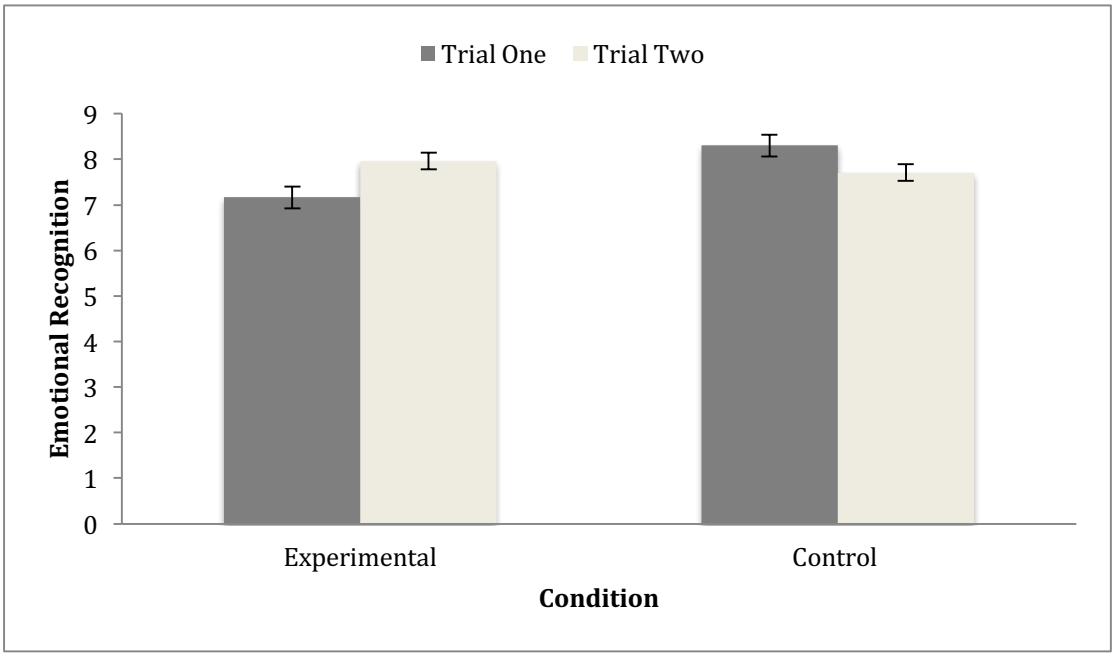

Figure 11. The estimated marginal means for the interaction between the condition and trial order for the business sample. Standard errors are represented in the figure by error bars attached to the columns.

Follow up analysis was conducted to investigate the significant interaction between condition x trial, examining the simple effects at each level of both the condition and trial. The simple effects of trial was firstly examined at each level of the condition. A significant

difference was found between the experiment and control condition for trial one F (1, 35) = 20.86, $p < .001$, however, no significant difference was found for trial two, F (1, 23) = 0.94, p = .341. The significant difference for trial one indicated that participants in the experimental condition had lower mean scores for emotional recognition than the control condition. Further simple effects examined the effect of the condition at each level of the trial. A significant difference was found for the experimental condition, F (1, 58) = 5.95, p = .018, at both trial one and trial two. Those in the experimental condition were found to perform significantly better on trial two than trial one. A statistically significant difference was also found for the control condition, F (1, 58) = 5.16, p = .021, at both trial one and trial two. This difference indicated that participants in the control condition had significantly higher scores on trial one than trial two.

To test the hypothesis of predicting emotional recognition, a hierarchical multiple regression was employed to establish the relative contribution of the independent variables to explain emotional recognition. Due to the findings of the repeated measures analysis, which indicated significance variance between conditions and trial ordering, the experimental and control condition were combined to create a total score for emotional recognition. The multiple regression was entered in three steps in a hierarchical order. Gender and age were entered first to control for variance from these variables, followed by the IRI and AES at step two. The PPI-R was entered at step three. At step one, a non-significant amount of variance in emotional recognition was explained by gender and age, R^2 = .10, adjusted R^2 = .06, $F\Delta$ (2, 56) = 2.96, p = . 060. At step two, no significant additional variance was explained by the IRI and AES, $R^2\Delta$ = .09, $F\Delta$ (2, 54) = 2.97, p = .061. The addition of psychopathy at step three, did not significantly add to the prediction of emotional recognition ($R^2\Delta$ = .02, $F\Delta$ (1, 53) = 1.55, p = .219). Overall the independent variables were found to significantly predict emotion recognition, explaining 20.80% of the variance, R^2 = .21, adjusted R^2 = .13, F (5, 53) = 2.79, p = .026.

Table 21 shows the unstandardised regression coefficients (B), and the standardised regression coefficients (β) for the completed three step model of entry for the independent variables. At the final stage of the model at step three, the IRI was the only significant predictors of emotional recognition. Age, gender, AES, and PPI-R were not found to be significant predictors of emotional recognition at the final step of the model. The positive beta weights for the IRI measure indicated that higher scores on empathy were significantly related to higher scores on emotional recognition, supporting the validity of the IRI. Investigation of

squared semi partial correlations showed that the IRI uniquely explained 7.13% of the variance in emotional recognition indicating a medium to large effect size.

Table 21
The Regression Coefficients for the Final Step of the Regression Predicting Emotional Recognition for the Business Sample

	Unstandardised Coefficients		Standardized Coefficients	Zero-Order Correlations
	B	Standard Error	Beta	
Age	.01	.02	.03	-.10
Gender	-.66	.50	-.19	-.31
IRI	.04	.02	.33*	.40
AES	.01	.02	.10	.26
PPI-R	.01	.01	.20	.00

Note. IRI = Interpersonal Reactivity Index; AES = Assessing Emotions Scale; PPI-R = Psychopathic Personality Inventory-Revised.
*$p<.05$

Criminal sample. Maulchy's Test of Sphericity was met for the within-subject variable, based on the Greenhouse-Geisser statistic with the epsilon value, $\varepsilon = 1.00$. The assumption of homogeneity of variance was partially met for the between subjects variable based on Levene's Test of Error Variance. The control condition was not statistically significant F (3, 40) = 0.83, p = .486, meeting the requirements of the assumption, however, the experimental condition was found to be significant, F (3, 40) = 4.26, p = .011, indicating a violation to homogeneity of variance. Hartley's test (Fmax) showed that the ratio between the largest and smallest variances was 5.75, suggesting that this violation was slightly above the cut off of three, although the largest variance was in the largest group indicating that this violation was not severe and unlikely to impact on the analysis (Conlon, 2010; Field, 2009).

Examination of the within subject effects revealed a statistically non-significant main effect of condition, F (1, 40) = 0.93, p = .341, η^2 = .023, $1 - \beta$ = .156. This indicated that no statistical difference was found between the experimental (M = 7.12, SE = 0.19) and control condition (M = 7.35, SE = 0.18). A non-significant main effect was found for the between subjects effects for trial order, F (1, 40) = 0.01, p = .903, η^2 = .000, $1 - \beta$ = .052. A significant main effect was found for the between subject variable of psychopathy, F (1, 40) = 4.25, p = .046, η^2 = .096, $1 - \beta$ = .521, indicating that greater emotional recognition was found for the lower psychopathy group (M = 7.54, SE = 0.21) compared to the higher psychopathy group (M = 6.94, SE = 0.21). A significant condition x trial interaction was found, F (1, 40) = 46.35,

$p < .001$, $\eta^2 = .537$, $1 - \beta = 1.00$, indicating a large effect and significant difference between levels of the repeated measures variable and levels of the dependent variable. The estimated marginal means for the interaction between condition and trial are displayed in Figure 12. A non-significant two way interaction was found between psychopathy and condition, F (1, 40) = 0.89, $p = .350$, $\eta^2 = .022$, $1 - \beta = .152$, as well as psychopathy and trial order F (1, 40) = 1.34, $p = .253$, $\eta^2 = .033$, $1 - \beta = .205$. A non-significant three way interaction between psychopathy, trial and condition was also found, F (1, 40) = 2.88, $p = .097$, $\eta^2 = .067$, $1 - \beta = .381$.

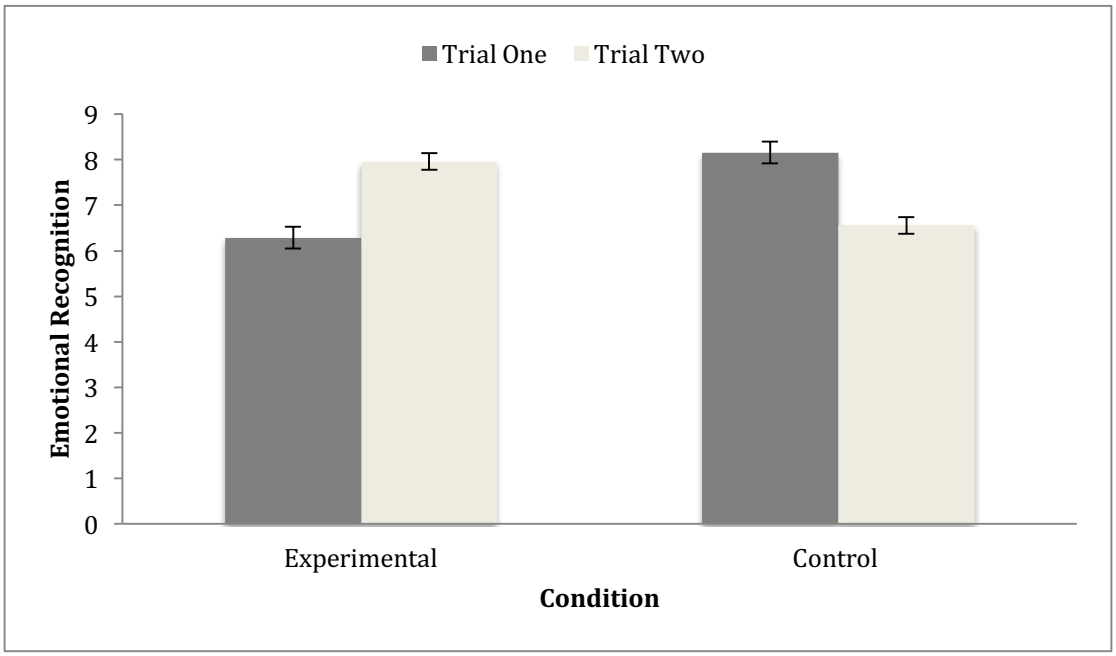

Figure 12. The estimated marginal means for the interaction between the condition and trial order for the criminal sample. Standard errors are represented in the figure by error bars attached to the columns.

To investigate the significant interaction between condition x trial, the simple effects at each level of both the condition and trial were examined. The simple effects of trial at each level of the condition revealed that a significant difference was found between the experimental and control condition for trial one F (1, 22) = 20.12, $p < .001$, and also for trial two, F (1, 20) = 29.41, $p < .001$. The significant difference for trial one indicated that participants in the experimental condition had lower mean scores for emotional recognition than the control condition. For trial two, participants were found to have higher scores on the experimental condition than the control condition. Further simple effects examined the effect of the condition at each level of the trial. A significant difference was found for the experimental condition, F (1, 42) = 14.33, $p < .001$, at both trial one and trial two. Those in

the experimental condition were found to perform significantly better on trial two rather than trial one. A statistically significant difference was also found for the control condition, F (1, 42) = 20.74, $p < .001$, at both trial one and trial two. This difference indicated that participants in the control condition had significantly higher scores on trial one compared to trial two.

To test the hypothesis of predicting emotional recognition, a Hierarchical Multiple Regression was conducted to establish the relative contribution of the independent variables to explain emotional recognition. The experimental and control condition were combined to create a total score for emotional recognition due to the variance between the conditions and trial ordering. The multiple regression was entered in three steps in a hierarchical order. Gender and age were entered first to control for variance from these variables, followed by the IRI and AES at step two, and PPI-R at step three. At step one, a non-significant amount of variance in emotional recognition was explained by gender and age, $R^2 = .00$, adjusted $R^2 = -.04$, $F\Delta$ (2, 41) = 0.12, $p =$. 885. At step two, the addition of IRI and AES did not significantly add to the regression equation, $R^2\Delta = .04$, $F\Delta$ (2, 39) = 0.74, $p = .486$. The addition of psychopathy at step three, did not significantly add to the prediction of emotional recognition ($R^2\Delta = .02$, $F\Delta$ (1, 38) = 0.71, $p = .406$). Overall the independent variables explained 6% of the variance in the regression model, with none of these variables found to statistically predict emotional recognition at the final step of the model, $R^2 = .24$, adjusted $R^2 = -.06$, F (5, 38) = 0.48, $p = .788$. Although the predictor variables were not found to significantly predict emotional recognition at the final step, the AES had a positive relationship and accounted 2.2% of the unique variance in emotional recognition indicating a small effect (Cohen, 1992). Although non-significant, the PPI-R had a negative correlation with emotional recognition. Table 22 shows the unstandardised regression coefficients (B), and the standardised regression coefficients (β) for the completed three step model of entry for the independent variables.

Table 22
The Regression Coefficients for the final step of the Regression Predicting Emotional Recognition for the Criminal Sample

	Unstandardised Coefficients		Standardized Coefficients	Zero-Order Correlations
	B	Standard Error	Beta	
Age	-.01	.02	-.06	-.06
Gender	-.34	1.10	-.05	.08
IRI	.00	.03	.01	.10
AES	.01	.02	.15	.18
PPI-R	-.01	.01	-.16	-.18

Note. IRI = Interpersonal Reactivity Index; AES = Assessing Emotions Scale; PPI-R = Psychopathic Personality Inventory-Revised.

Hypothesis Three: Social Information Processing

Two 2 x 2 x 2 x 2 Mixed Design Factorial ANOVAs were conducted for each sample to investigate the effects of psychopathy (high and low), success (successful and unsuccessful), gender (male and female) and emotion (happy and sad) on the dependent variable of character recognition and character recall. For both the business and criminal sample, it was hypothesised that higher levels of psychopathy would be significantly associated with greater recognition and recall of the sad unsuccessful female character compared to lower levels of psychopathy, consistent with Wilson et al. (2008). Success, gender and emotion were the within-subjects variables and psychopathy was the between subjects variable for the analysis. Psychopathy was median split into high (M = 313.37, SD = 19.37) and low groups (M = 264.24, SD = 16.49) for the business sample and also into high (M = 319.77, SD = 25.37) and low (M = 254.94, SD = 27.64) groups for the criminal sample for the analysis. Character recognition was determined based on whether or not participants recognised the character. Character recall was measured based on the number of correct details that participants were able to recall pertaining to the character, these details were: name, occupation, likes and dislikes.

Business sample. Maulchy's Test of Sphericity was met for each of the within-subject variables, based on the Greenhouse-Geisser statistic with the epsilon value, ε = 1.00. The assumption of homogeneity of variance was partially met for the between subjects variable based on Levene's Test of Error Variance. The assumption was met for happy and successful male, F (1, 58) = 3.03, p = .087, happy and successful female, F (1, 58) = 0.63, p = .430,

happy and unsuccessful male, F (1, 58) = 0.00, p = 1.00, sad and successful female, F (1, 58) = 3.03, p = .087. The happy and unsuccessful male, F (1, 58) = 4.30, p = .043, sad and successful male, F (1, 58) = 4.30, p =. 043, and sad and unsuccessful male conditions, F (1, 58) = 4.52, p = .038, were found to be significant. The violation for these three variables indicated a violation to homogeneity of variance. However, Hartley's test (Fmax) showed that the ratio between the largest and smallest variances were under three indicating that the violation was not problematic (Field, 2009).

Examination of the within subject effects revealed a non-significant main effect of emotion, F (1, 58) = 0.98, p = .325, η^2 = .017, 1 − β = .164. A significant main effect was found for success, F (1, 58) = 6.28, p = .015, η^2 = .098, 1 − β = .693, indicating a difference between recognition of successful (M = 91.70, SE = 0.02) and unsuccessful (M = 97.10, SE = 0.01) characters. While recognition was high for both groups, results show that the unsuccessful characters were recognised at a rate of 97% in comparison to the successful characters 92%. A statistically non-significant main effect of gender was found, F (1, 58) = 0.27, p = .606, η^2 = .005, 1 − β = .080, while a non-significant main effect was found for the between subjects variable of psychopathy, F (1, 58) = 0.03, p = .855 η^2 = .001, 1 − β = .054, indicating no difference between the high and low psychopathy groups for recognition.

A significant emotion x success x gender interaction was found, F (1, 58) = 6.98, p = .011, η^2 = .107, 1 − β = .738. The interaction represented a medium effect size. The remaining two way and three way interactions between the variables were found to be statistically non-significant. A statically non-significant four-way interaction between emotion x success x gender x psychopathy was also found, F (1, 58) = 2.15, p = .148, η^2 = .036, 1 − β = .303. The hypothesis pertaining to psychopathy predicting the recognition of the sad unsuccessful female character was not supported for the business sample.

Follow up analysis was conducted to investigate the significant three-way interaction between emotion x success x gender. To investigate the three way interaction, two separate success x gender interactions were run separately for happy and sad emotions. For the happy state, no significant differences was found for recall based on success and gender, F (1, 59) = 0.00, p = 1.00, η^2 = .000. Figure 13 displays the estimated marginal means for the interaction between happy state, success and gender. A significant interaction was found for the sad state for recall based on success and gender, F (1, 59) = 8.25, p = .006, η^2 = .123. For the sad character, no significant difference in recognition (p = .058) was found between successful

males and females, however, unsuccessful females (100%) were recalled at significantly higher rates (p = .032) than unsuccessful males. No significant difference was found for recognition of sad successful males and sad and unsuccessful males. A significant difference was found for females (p = .013), with sad unsuccessful females recognised a higher rates than sad successful females. Figure 14 displays the estimated marginal means for the interaction between sad state, success and gender.

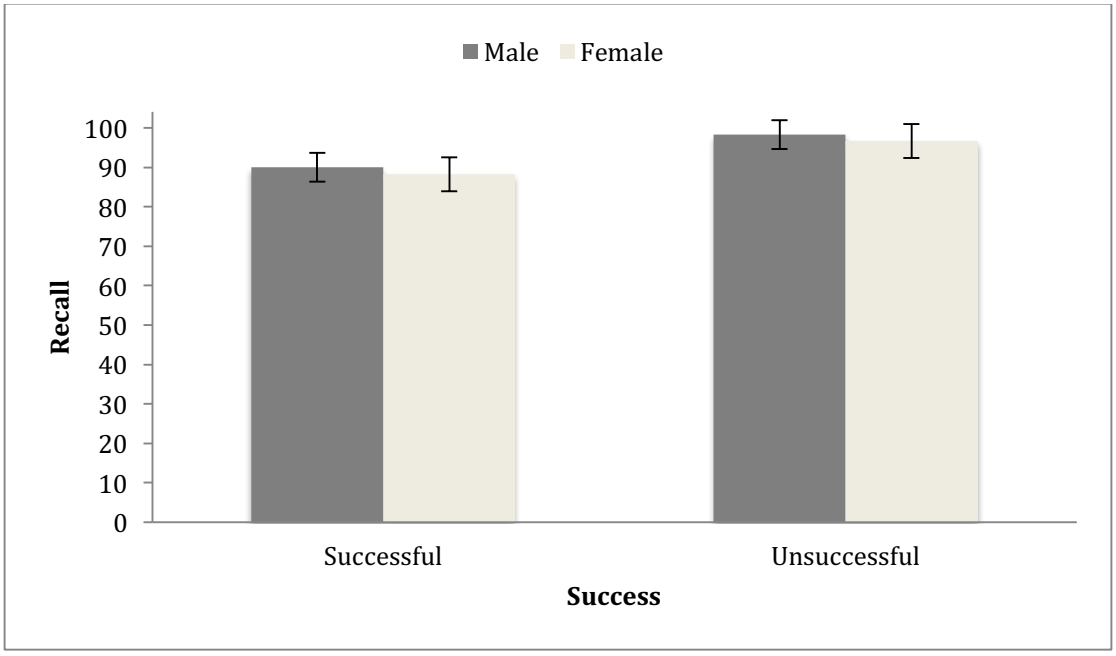

Figure 13. The estimated marginal means for the interaction effect between happy state, success, and gender on correct character recognition for the business sample. Standard errors are represented in the figure by error bars.

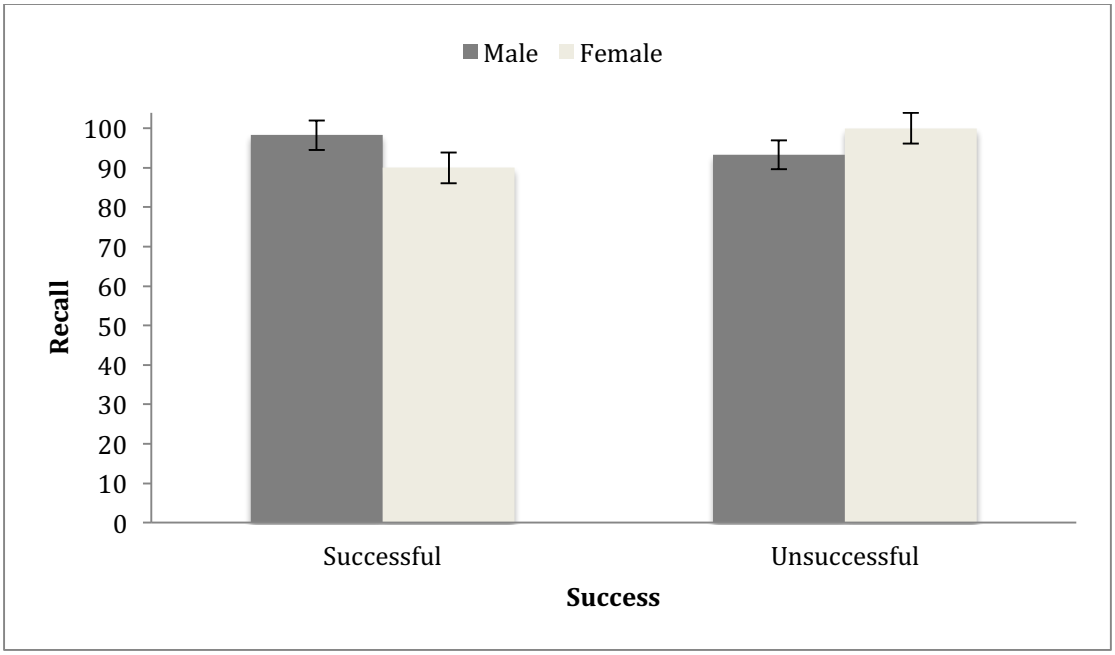

Figure 14. The estimated marginal means for the interaction effect between sad state, success, and gender on correct character recognition for the business sample. Standard errors are represented in the figure by error bars.

To test the hypothesis pertaining to recall, a 2 x 2 x 2 x 2 mixed design factorial ANOVA was conducted to investigate the effects of psychopathy (high and low), success (successful and unsuccessful), gender (male and female) and emotion (happy and sad) on the dependent variable of character recall. Maulchy's Test of Sphericity was met for each of the within-subject variables, based on the Greenhouse-Geisser statistic with the epsilon value, $\varepsilon = 1.00$. The assumption of homogeneity of variance was partially met for the between subjects variable based on Levene's Test of Error Variance. The assumption was met for happy and successful male, $F\ (1, 58) = 0.53$, $p = .470$, happy and unsuccessful male, $F\ (1, 58) = 1.24$, $p = .271$, happy and unsuccessful female, $F\ (1, 58) = 0.21$, $p = .885$, sad and successful male, $F\ (1, 58) = 0.60$, $p = .444$, sad and successful female, $F\ (1, 58) = 2.09$, $p = .154$, sad and unsuccessful male, $F\ (1, 58) = 3.77$, $p = .057$, and, sad an unsuccessful female, $F\ (1, 58) = 1.21$, $p = .276$. The happy and successful female condition was found to be significant, $F\ (1, 58) = 4.70$, $p = .034$, indicating a violation to homogeneity of variance, however, Hartley's test (Fmax) showed that the ratio between the largest and smallest variance was not problematic (Field, 2009).

Examination of the within subject effects revealed a non-significant main effect of emotion, $F\ (1, 58) = 0.50$, $p = .481$, $\eta^2 = .009$, $1 - \beta = .107$, and non-significant main effect for success, $F\ (1, 58) = 2.36$, $p = .130$, $\eta^2 = .039$, $1 - \beta = .327$. A significant large main effect

of gender was found, F (1, 58) = 18.50, $p < .001$, $\eta^2 = .242$, $1 - \beta = .988$, indicating a difference in recall of male (M = 27.08, SE = 2.55) and female (M = 38.54, SE = 2.85) characters. Results showed that the female characters were recognised at a rate of 39% in comparison to the male characters 27%. A non-significant main effect was found for the between subjects variable of psychopathy, F (1, 58) = 0.28, $p = .597$, $\eta^2 = .005$, $1 - \beta = .082$, indicating no difference between the high and low psychopathy groups for recall.

A significant gender x psychopathy interaction was found, F (1, 58) = 5.50, $p = .022$, $\eta^2 = .087$, $1 - \beta = .636$. Figure 15 displays the estimated marginal means for the interaction between gender and psychopathy. A significant success x emotion interaction was also found, F (1, 58) = 16.50, $p < .001$, $\eta^2 = .221$, $1 - \beta = .979$. This interaction was of a large effect size. Figure 16 displays the estimated marginal means for the interaction between success and emotion. A significant interaction and large effect was further found between success x gender, F (1, 58) = 13.73, $p < .001$, $\eta^2 = .191$, $1 - \beta = .954$. The estimated marginal means for the interaction between success and gender are displayed in Figure 17. The results revealed a significant three way interaction between emotion x success x gender, F (1, 53) = 6.40, $p = .014$, $\eta^2 = .099$, $1 - \beta = .701$. The remaining two way, three way and four way interactions were not found to be statistically significant.

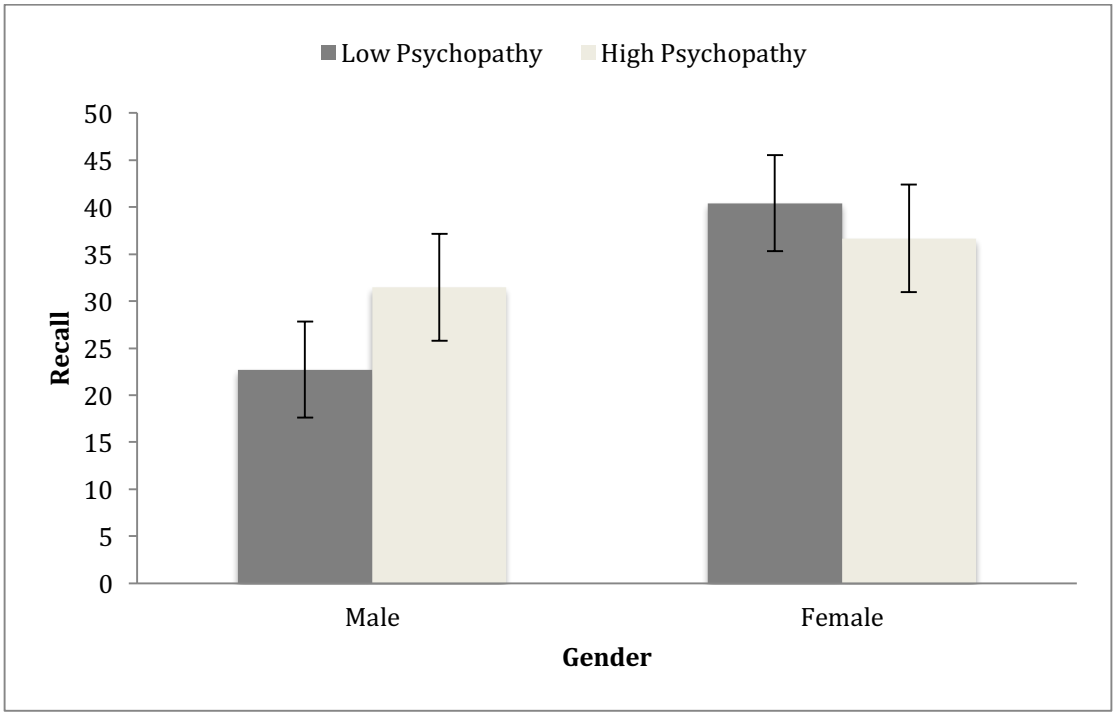

Figure 15. The estimated marginal means for the interaction effect between psychopathy and gender on correct character recall for the business sample. Standard errors are represented in the figure by error bars.

Figure 16. The estimated marginal means for the interaction effect between emotion and success on correct character recall for the business sample. Standard errors are represented in the figure by error bars.

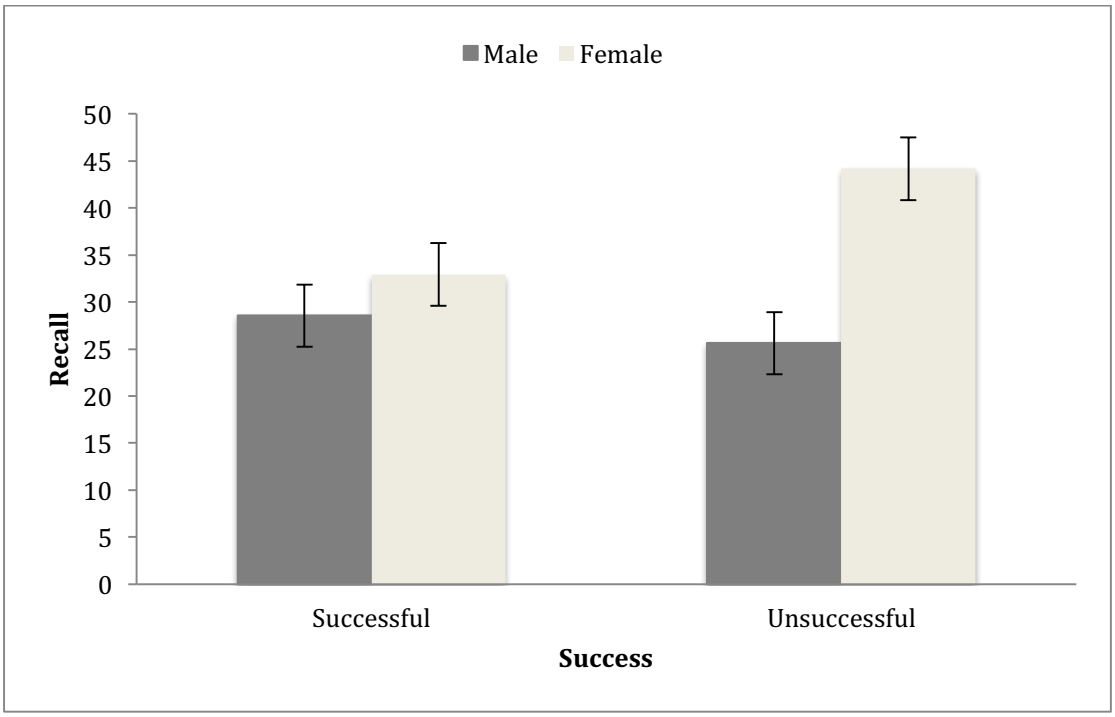

Figure 17. The estimated marginal means for the interaction effect between success and gender on correct character recall for the business sample. Standard errors are represented in the figure by error bars.

Follow up analysis was conducted to investigate the significant interaction between psychopathy and gender. The simple effects analysis revealed that for the male characters, no significant difference was found between lower and higher levels of psychopathy, $p = .091$. No statistically significant difference was found either for recall of the female characters for higher and lower levels of psychopathy, $p = .513$. A significant difference was found for lower levels of psychopathy, with recall greater for female characters compared to male characters, $p < .001$. Higher levels of psychopathy were found to have no effect of recall for male or female characters, $p = .172$.

Follow up simple effects analysis investigating the significant interaction between success x emotion, revealed a significant difference for successful characters, with sad characters recalled at greater rates than happy characters, $p = .005$. For unsuccessful characters, a significant difference was observed between happy and sad characters, $p = .023$. Happy characters were recalled more when unsuccessful (38.54%) compared to successful (25.21%), $p < .001$. In contrast, no significant difference was found for sad characters, with a similar comparison rate found for successful and unsuccessful characters, $p = .185$.

Follow up simple effects were further conducted to investigate the significant interaction between success x gender. The simple effects analysis revealed that no significant difference was found for recall of successful characters that were male or female, $p = .170$, however, a significant difference was found for unsuccessful characters, $p < .001$, with females recalled at a greater rate than males. Female characters were significantly recalled at greater rates, $p = .001$, if they were unsuccessful compared to successful, while no significant difference was found for males characters based on levels of success, $p = .380$.

To analyse the three way interaction between success x gender x emotion simple effects analysis was conducted. Two separate success x gender interactions were run separately for happy and sad emotions. For the happy state, no significant differences was found for recall based on success and gender, $F(1, 59) = 0.24$, $p = .624$, $\eta^2 = .004$. The estimated marginal means for the interaction between happy state, success and gender are displayed in Figure 18. For the sad state, a significant interaction and large effect was found for recall based on success and gender, $F(1, 59) = 14.77$, $p < .001$, $\eta^2 = .200$. The analysis revealed no statistically significant difference for the recall of sad successful males or females, $p = .281$. A significant difference was found for the sad unsuccessful character, $p < .001$, with females recalled at a greater rate than males. Sad male characters were significantly recalled at greater rates if

successful, rather than unsuccessful, $p < .001$. No significant difference was found for sad female characters and levels of success, $p = .140$. The estimated marginal means for the interaction between sad state, success and gender are displayed in Figure 19.

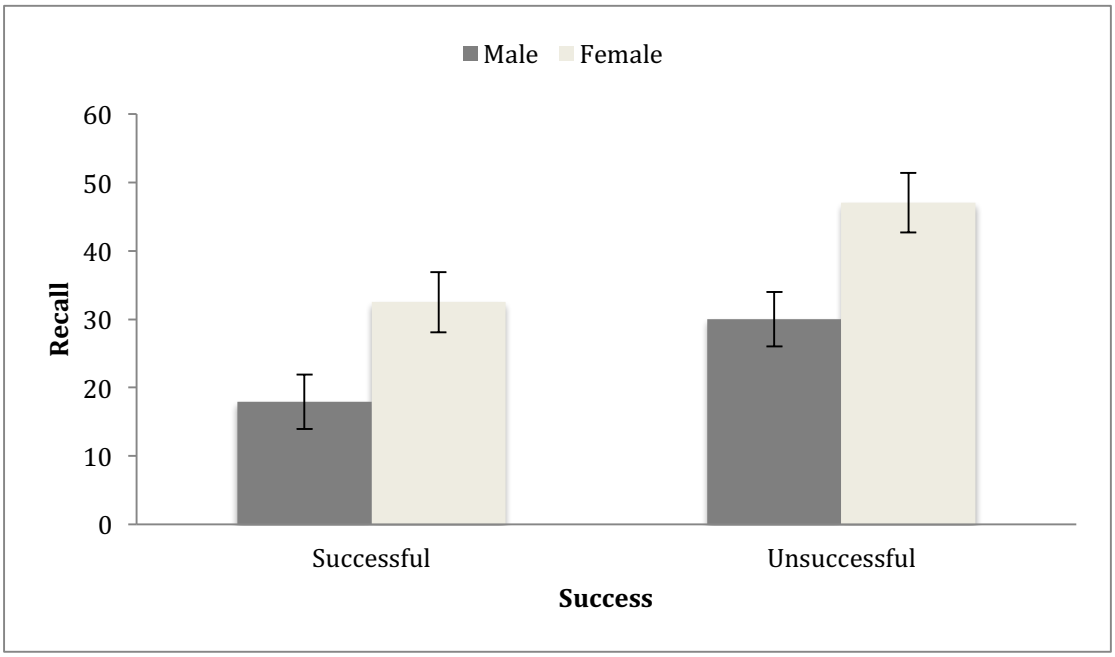

Figure 18. The estimated marginal means for the interaction effect between happy state, success, and gender on correct character recall for the business sample. Standard errors are represented in the figure by error bars.

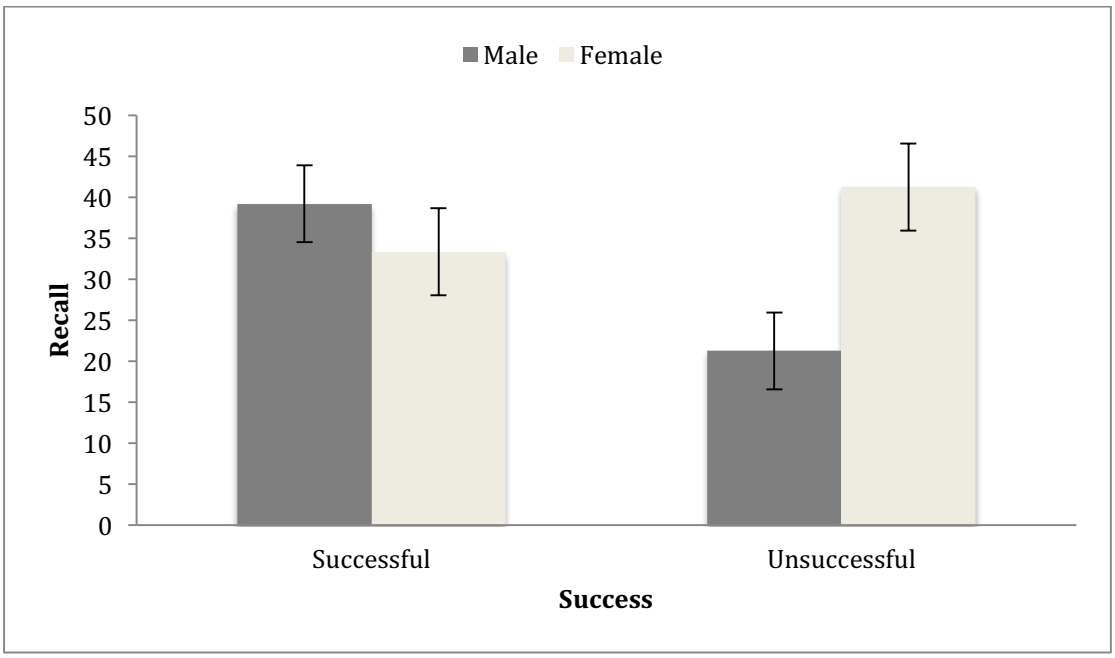

Figure 19. The estimated marginal means for the interaction effect between sad state, success, and gender on correct character recall for the business sample. Standard errors are represented in the figure by error bars.

Criminal sample. Maulchy's Test of Sphericity was met for each of the within-subject variables, based on the Greenhouse-Geisser statistic with the epsilon value, $\varepsilon = 1.00$, for the 2 x 2 x 2 x 2 mixed design Factorial ANOVA testing character recognition. The assumption of homogeneity of variance was partially met for the between subjects variable based on Levene's Test of Error Variance. The assumption was met for happy and successful male, F (1, 42) = 2.45, p = .125, happy and unsuccessful male, F (1, 42) = 0.00, p = 1.00, happy and unsuccessful female, F (1, 42) = 2.04, p = .161, sad and successful male, F (1, 42) = 1.42, p = .240, sad and successful female, F (1, 42) = 0.88, p = .353, sad and unsuccessful male, F (1, 42) = 3.17, p = .082, and, sad and unsuccessful female, F (1, 42) = 0.00, p = 1.00. A minor violation to homogeneity of variance was detected for the happy and successful female, F (1, 42) = 5.28, p = .027, however, Hartley's test (Fmax) indicated that this violation was not problematic (Field, 2009).

Examination of the within subject effects revealed a statistically significant main effect of emotion, F (1, 42) = 5.84, p = .020, η^2 = .122, $1 - \beta$ = .656, indicating a difference between recognition of happy (M = 81.30, SE = 0.04) and sad states (M = 89.80, SE = 0.03). Greater recognition was found for the sad characters compared to the happy characters. The remaining statistical tests in the analyses were found to be non-significant. The non-significant results included: the main effect of success, F (1, 42) = 0.04, p = .852, η^2 = .001, $1 - \beta$ = .054, main effect of gender, F (1, 42) = 0.42, p = .520, η^2 = .010, $1 - \beta$ = .097, and main effect of the between subjects variable of psychopathy, F (1, 42) = 0.01, p = .919 η^2 = .000, $1 - \beta$ = .051. The remaining two way and three way interactions were not found to be statistically significant. Finally, a statistically non-significant four way interaction between emotion x success x gender x psychopathy was found, F (1, 42) = 0.94, p = .337, η^2 = .022, $1 - \beta$ = .158. The hypothesis pertaining to psychopathy predicting the recognition of the sad unsuccessful female character was not supported for the criminal sample.

For the 2 x 2 x 2 x 2 mixed design factorial ANOVA examining recall, Maulchy's Test of Sphericity was met based on Greenhouse-Geisser statistic ($\varepsilon = 1.00$) for the within subjects variable. The assumption of homogeneity of variance was partially met for the between subjects variable based on Levene's Test of Error Variance. The assumption was met for happy and successful male, F (1, 42) = 0.03, p = .855, happy and unsuccessful female, F (1, 42) = 0.93, p = .341, sad and successful male, F (1, 42) = 2.98, p = .092, sad and successful female, F (1, 42) = 0.18, p = .676, sad and unsuccessful male, F (1, 42) = 3.10, p = .086, and, sad an unsuccessful female, F (1, 42) = 2.55, p = .118. Violations to homogeneity

of variance were detected for the happy and successful female, F (1, 42) = 4.31, p = .044 and happy and unsuccessful male, F (1, 42) = 12.22, p = 001. The violation to the happy and successful female was not deemed problematic based on Hartley's test (Fmax), however, the variance between largest to smallest for the happy and unsuccessful male was 3.15, marginally above the cut off of three. Given the equal group sample size, the violation was not considered to be problematic (Conlon, 2010; Field, 2009).

Examination of the within subject effects revealed a statistically significant main effect of emotion, F (1, 42) = 9.71, p = .003, η^2 = .188, 1 − β = .861, indicating a difference between recall of happy (M = 15.91, SE = 2.18) and sad states (M = 23.15, SE = 2.61). A significant main effect of gender was found, F (1, 42) = 8.33, p = .006, η^2 = .165, 1 − β = .805, with differences in the recall of male (M = 15.77, SE = 2.12) and female characters (M = 23.30, SE = 7.80). The result indicated that females were recalled at greater rates than males. A non-significant main effect was found for success, F (1, 42) = 1.86, p = .180, η^2 = .042, 1 − β = .266, and for the between subjects variable of psychopathy, F (1, 42) = 2.97, p = .062, η^2 = .066, 1 − β = .391. A significant interaction and large effect was found for the three way interaction between emotion x success x gender, F (1, 42) = 11.30, p = .002, η^2 = .212, 1 − β = .907. The remaining interaction results were all found to be statistically non-significant, consequently failing to support the hypothesis that psychopathy would predict the recall of the sad unsuccessful female character.

To investigate the statistically significant three way interaction between success x gender x emotion a simple effects analysis was conducted. Two separate success x gender interactions were run separately for happy and sad emotions. For the happy state, no significant difference was found for recall based on success and gender, F (1, 42) = 2.28, p = .138, η^2 = .050. The estimated marginal means for the interaction between happy state, success and gender are displayed in Figure 20. For the sad state, a significant interaction was found for recall based on success and gender, F (1, 42) = 6.87, p = .012, η^2 = .138. No statistically significant difference was found for the recall of sad successful males or females, p = .919, however, a significant difference was found for the sad unsuccessful character, p = .002, with females recalled at a greater rate than males. Sad male characters were significantly recalled at greater rates if successful, rather than unsuccessful, p = .009. No significant difference was found for sad female characters and levels of success, p = .153. The estimated marginal means for the interaction between sad state, success and gender are displayed in Figure 21.

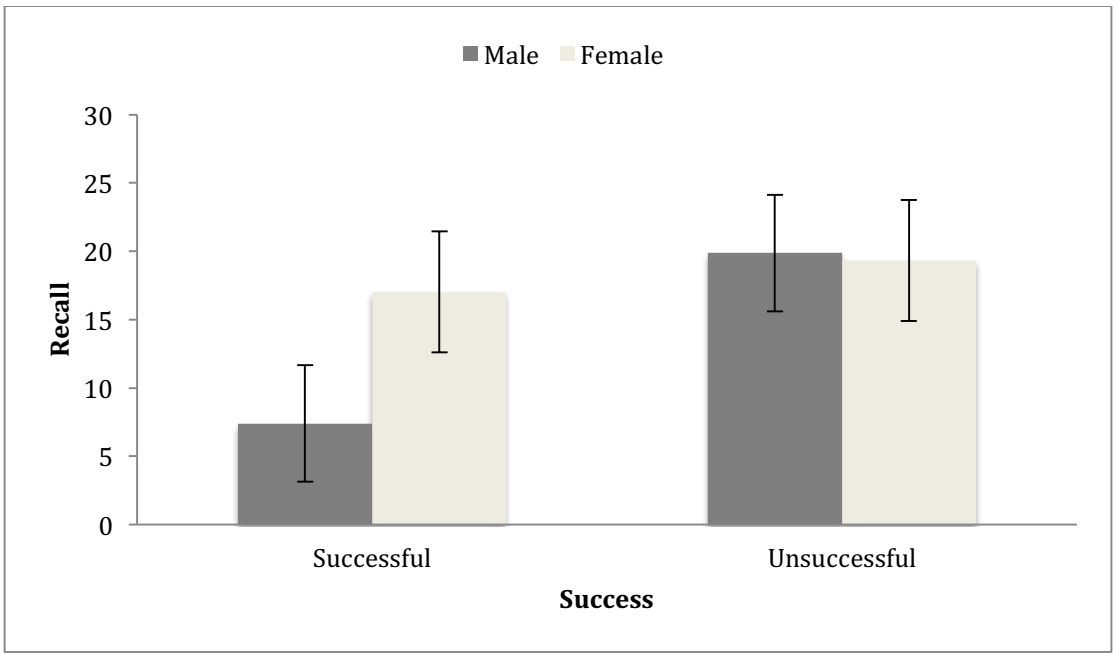

Figure 20. The estimated marginal means for the interaction effect between happy state, success, and gender on correct character recall for the criminal sample. Standard errors are represented in the figure by error bars.

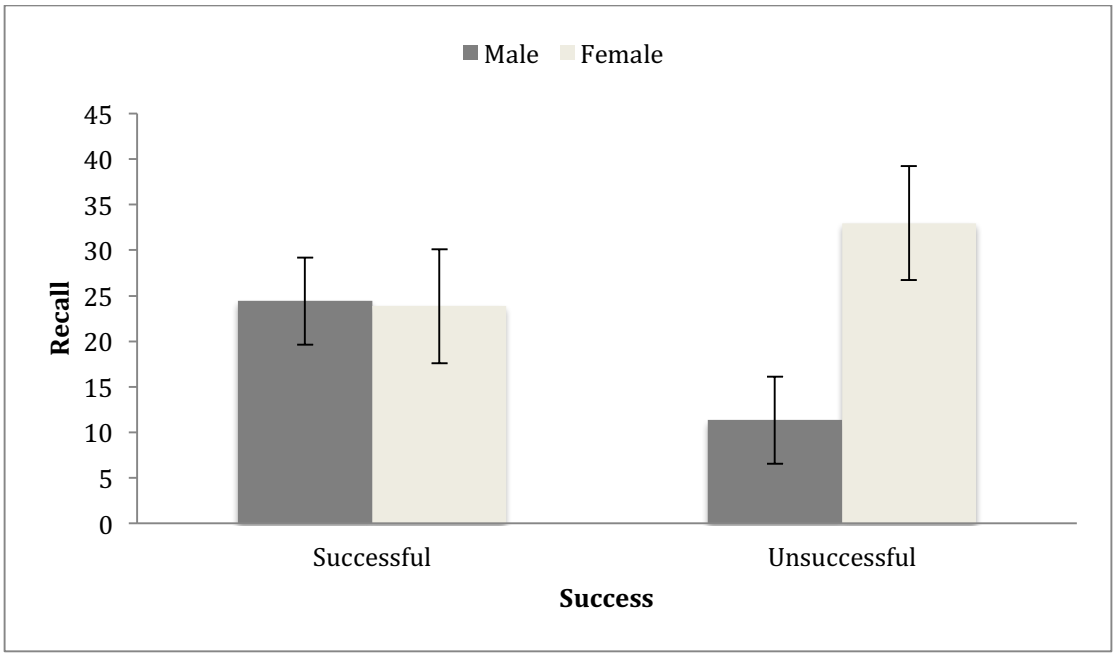

Figure 21. The estimated marginal means for the interaction effect between sad state, success, and gender on correct character recall for the criminal sample. Standard errors are represented in the figure by error bars.

Hypothesis Four: Emotional Intelligence and Emotionality

To test the hypothesis that higher total psychopathy scores would be a significant positive predictor of emotional intelligence in the business sample and a significant negative

predictor of emotional intelligence in the criminal sample, two hierarchical multiple regressions were employed to establish the relative contribution of the independent variables to explain emotional intelligence. A centred interaction term was created between psychopathy (PPI-R) and negative emotionality (DASS-21) to explore for a relationship between psychopathy and negative emotionality, consistent with past research examining primary and secondary psychopathy (Lykken, 1957, 1995; Newman et al., 2005). The predictor variables of psychopathy and negative emotionality were mean centred for entry into the regression equation and these two centred variables were used to create the interaction term for the analysis.

Business sample. The relationship between psychopathy and emotional intelligence was first examined at the correlation level for total scores and subscales of each measure. Total psychopathy scores were not found to be significantly correlated with the AES total score (r = -.223, p = .086), or the subscales of the measure with no significant correlation with perception of emotion (r = -.154, p = .241), managing own emotions (r = -.179, p = .171), managing others' emotions (r = -.194, p = .137) and utilisation of emotion (r = -.253, p = .051). Although not statistically significant, the negative correlation between total psychopathy scores and utilisation of emotion was of a small to medium effect size (Cohen 1992). For the PPI-R subscale of self-centred impulsivity, a significant negative correlation was found with the managing own emotions (r = -.277, p = .032). A non-significant relationship was found between self-centred impulsivity and total AES scores (r = -.193, p = .140), perception of emotion (r = -.113, p = .392), managing others' emotions (r = -.135, p = .305) and utilisation of emotion (r = -.135, p = .303). No significant relationships were found between the PPI-R subscale of fearless dominance and total AES scores (r = -.029, p = .823), or with perception of emotion (r = -.087, p = .508), managing own emotions (r = .120, p = .361), managing others' emotions (r = -.031, p = .816) and utilisation of emotion (r = -.102, p = .440). For the final subscale of the PPI-R, significant negative relationships were found between coldheartedness and total AES (r = -.373, p = .003), managing own emotions (r = -.299, p = .020), managing others' emotions (r = -.410, p = .001) and utilisation of emotion (r = -.501, p < .001). No significant relationship was found between coldheartedness and perception of emotion (r = -.148, p = .260).

The multiple regression was entered in three steps in a hierarchical order. Gender and age were entered first to control for variance from these variables, followed by the IRI, PPI-R and DASS-21 at step two. The centred interaction term of psychopathy and negative

emotionality was entered last at step three, consistent with statistical analytical methods for hierarchical regression (Cohen & Cohen, 1983). At step one, gender and age were found to be non-significant predictors of emotional intelligence, $R^2 = .08$, adjusted $R^2 = .04$, $F\Delta$ (2,48) = 2.13, $p = .130$. At step two, non-significant additional variance (12.30%) was explained by the IRI, PPI-R and DASS-21, $R^2\Delta = .12$, $F\Delta$ (3, 45) = 2.33, $p =$. 087. The addition of the interaction term of psychopathy and negative emotionality at step three (B = .01, SE = 01, β = .10) did not significantly add to the prediction of emotional intelligence, $R^2\Delta = .01$, $F\Delta$ (1, 44) = 0.56, $p = .457$. Overall the independent variables explained 21.50% of the variance in emotional intelligence, $R^2 = .22$, adjusted $R^2 = .11$, F (6, 44) = 2.01, $p = .085$.

Table 23 shows the unstandardised regression coefficients (B), and the standardised regression coefficients (β) for the two step model of entry for the independent variables. At step two, the IRI was the only significant predictor of emotional intelligence. Gender, age, DASS-21 and PPI-R were not found to be significant predictors of emotional intelligence at the second step of the model. The positive beta weights for the IRI and indicated that higher scores of empathy were significantly related to higher scores on emotional intelligence, accounting for a medium to large effect and uniquely explaining 11.36% of the variance in emotional intelligence. The results did not support hypothesis four pertaining to psychopathy and emotional intelligence in the business sample.

Table 23
The Regression Coefficients for Step Two of the Regression Predicting Emotional Intelligence for the Business Sample

	Unstandardised Coefficients		Standardized Coefficients	Zero-Order Correlations
	B	Standard Error	Beta	
Age	-.05	.20	-.03	-.05
Gender	-4.53	4.05	-.18	-.29
IRI	.43	.17	.44*	.38
DASS-21	-.38	.24	-.24	.03
PPI-R	.05	.06	.12	-.06

Note. PPI-R = Psychopathic Personality Inventory-Revised; DASS-21 = Depression, Anxiety and Stress Subscales-21; IRI = Interpersonal Reactivity Index.
*p<.05.

Criminal sample. To initially examine psychopathy and emotional intelligence, a correlational analysis was conducted to explore the relationship between the total scores and subscales of each measures. Total psychopathy scores were not found to be significantly

correlated with the AES total score (r = -.190, p = .216), or perception of emotion (r = -.101, p = .516), managing own emotions (r = -.206, p = .179), managing others' emotions (r = -.252, p = .098) and utilisation of emotion (r = -.121, p = .435). Self-centred impulsivity was significantly correlated with total AES (r = -.427, p = .004), perception of emotion (r = -.376, p = .012), managing own emotions (r = -.438, p = .003), and managing others' emotions (r = -.409, p = .006). No significant relationship was found between self-centred impulsivity and utilisation of emotion (r = -.135, p = .303). A non-significant positive correlation, which was close to statistical significance and of a small to moderate effect size, was found between fearless dominance and perception of emotion (r = .297, p = .050). No significant relationship was found between fearless dominance and total AES (r = .210, p = .172), or with managing own emotions (r = .176, p = .252), managing others' emotions (r = .105, p = .496) and utilisation of emotion (r = .136, p = .378). Statistically non-significant relationships were found between coldheartedness and total AES (r = -.007, p = .966), perception of emotion (r = .102, p = .510), managing own emotions (r = .015, p = .921), managing others' emotions (r = -.159, p = .302) and utilisation of emotion (r = -.008, p = .960).

The multiple regression to predict emotional intelligence was entered in three steps in a hierarchical order. Gender and age were entered first, followed by the IRI, PPI-R and DASS-21 at step two. The centred interaction term of psychopathy and negative emotionality was entered last at step three. At step one, gender and age were found to be non-significant predictors of emotional intelligence, R^2 = .04, adjusted R^2 = -.01, $F\Delta$ (2,41) = 0.82, p = .447. No significant additional variance (11.20%) was explained by the IRI, PPI-R and DASS-21, $R^2\Delta$ = .11, $F\Delta$ (3, 38) = 1.68, p =. 188, at step two. At step three, the addition of the interaction term of psychopathy and negative emotionality (B = .00, SE = 01, β = .22) did not significantly add to the prediction of emotional intelligence, $R^2\Delta$ = .05, $F\Delta$ (1, 37) = 2.07, p = .158. Overall the independent variables explained 19.60% of the variance in emotional intelligence, R^2 = .20, adjusted R^2 = .07, F (6, 37) = 1.50, p = .204.

Table 24 shows the unstandardised regression coefficients (B), and the standardised regression coefficients (β) for the two step model of entry for the independent variables. At step two, the independent variables were not found to be significant predictors of emotional intelligence. The DASS-21 was close to statistical significance (p = .051), however, did not meet the required alpha level. The unique variance indicated by the DASS-21 provided inconclusive results in that a medium effect size was present (sr^2 = 9.10%), but was not found

due to the small sample size. The hypothesis that psychopathy was a negative predictor of emotional intelligence in the criminal sample was not supported.

Table 24
The Regression Coefficients for Step Two of the Regression Predicting Emotional Intelligence for the Criminal Sample

	Unstandardised Coefficients		Standardized Coefficients	Zero-Order Correlations
	B	Standard Error	Beta	
Age	.08	.24	.05	.18
Gender	-3.35	11.35	-.04	-.09
DASS-21	-.64	.32	-.34	-.32
PPI-R	-.07	.09	-.13	-.19
IRI	.21	.36	.11	.04

Note. PPI-R = Psychopathic Personality Inventory-Revised; DASS-21 = Depression, Anxiety and Stress Subscales-21; IRI = Interpersonal Reactivity Index.

Hypothesis Five: Empathy and Emotionality

To test the hypothesis that psychopathy would be a significant negative predictor of empathy in both the business and criminal samples, two hierarchical multiple regressions were employed to establish the relative contribution of the independent variables to explain empathy.

Business sample. Preliminary analyses were first conducted to examine the relationship between psychopathy and empathy at the correlation level for total scores and subscales of each measure. Total psychopathy scores were found to be significantly correlated with the IRI total score (r = -.295 p = .022), as well as with empathic concern (r = -.399, p = .002). Non-significant relationships were found between total psychopathy scores and perspective taking (r = -.198, p = .130), fantasy (r = .000, p = .999) or personal distress (r = -.231, p = .076). Self-centred impulsivity was found to have non-significant relationships with total IRI (r = .080, p = .546), empathic concern (r = -.078, p = .555), perspective taking (r = -.243, p = .062), fantasy (r = .200, p = .126) and personal distress (r = -.202, p = .121). Fearless dominance was found to be significantly correlated with total IRI (r = -.356, p = .005), empathic concern (r = -.352, p = .006) and personal distress (r = -.541, p<.001). No significant relationship was found between fearless dominance and fantasy (r = -.034, p = .797) or perspective taking (r = .040, p = .763). Coldheartedness was found to have a

significant negative correlation with IRI total (r = -.687, p < .001), empathic concern (r = -.705, p < .001), perspective taking (r = -.282, p = .029), fantasy (r = -.508, p < .001), and personal distress (r = -.289, p = .025).

The multiple regression was entered in three steps in a hierarchical order. Gender and age were entered first to control for variance from these variables, followed by the AES, PPI-R and DASS-21 at step two. The centred interaction term of psychopathy and negative emotionality was entered at step three. At step one, gender and age were found to be significant predictors of empathy, R^2 = .25, adjusted R^2 = .22, $F\Delta$ (2,48) = 7.95, p = .001. At step two, significant additional variance (22.40%) was explained by the AES, DASS-21 and PPI-R, $R^2\Delta$ = .22, $F\Delta$ (3, 45) = 6.48, p = .001. The addition of the interaction term of psychopathy and negative emotionality at step three (B = .00, SE = 01, β = -.00) did not significantly add to the prediction of empathy ($R^2\Delta$ = .00, $F\Delta$ (1, 44) = 0.00, p = .988). Overall the independent variables explained 47.30% of the variance in empathy, R^2 = .47, adjusted R^2 = .40, F (6, 44) = 6.58, p < .001.

Table 25 shows the unstandardised regression coefficients (B), and the standardised regression coefficients (β) for the two step model of entry for the independent variables. At step two, the AES and DASS-21 were significant predictors of empathy. Gender, age and psychopathy were not found to be significant predictors of empathy. The positive beta weight for the AES and DASS-21 indicated that higher scores of emotional intelligence and negative emotionality were significantly related to higher scores on empathy. Further investigation of squared semi partial correlations showed that strongest unique contribution to empathy was by the DASS-21, which explained 13.54% of the variance, followed by the AES which accounted for 7.67% of the variance. The results did not support hypothesis five that psychopathy would be a significant negative predictor of empathy in the business sample.

Table 25
The Regression Coefficients for Step Two of the Regression Predicting Empathy for the Business Sample

	Unstandardised Coefficients		Standardized Coefficients	Zero-Order Correlations
	B	Standard Error	Beta	
Age	.08	.15	.06	-.02
Gender	-6.00	3.33	-.23	-.50
AES	.30	.12	.29*	.38
DASS-21	.63	.19	.39***	.48
PPI-R	-.08	.05	-.19	-.32

Note. PPI-R = Psychopathic Personality Inventory-Revised; DASS-21 = Depression, Anxiety and Stress Subscales-21; AES = Assessing Emotions Scale.
* p<.05, *** *p*<.001.

Criminal sample. An initial investigation of the relationship between psychopathy and empathy was first examined at the correlation level for total scores and subscales of each measure. Total psychopathy scores were found to be significantly correlated with the IRI total score (r = -.446, p = .002), as well as with the IRI subscale of empathic concern (r = -.528, p < .001) and perspective taking (r = -.497, p = .001). These correlations were all of a moderate to large effect size (Cohen, 1992). No significant relationship was found between total psychopathy scores and fantasy (r = .131, p = .397) or personal distress (r = -.129, p = .404). A significant negative correlation was found between self-centred impulsivity and empathic concern (r = -.428, p = .004) and perspective taking (r = -.541, p < .001). No significant relationship was found between self-centred impulsivity and total IRI (r = -.246, p = .108), fantasy (r = .207, p = .178) or personal distress (r = .162, p = .293). A series of negative correlations were found for fearless dominance, including total IRI (r = -.432, p = .003), empathic concern (r = -.348, p = .020) and personal distress (r = -.432, p = .003). No significant relationship was found between fearless dominance and fantasy (r = .049, p = .750) or perspective taking (r = -.211, p = .170). Coldheartedness was found to have a significant negative correlation with IRI total (r = -.610, p < .001), empathic concern (r = -.562, p < .001), perspective taking (r = -.312, p = .039), and personal distress (r = -.312, p = .039). No significant relationship was found between coldheartedness and fantasy (r = -.188, p = .221).

The multiple regression to predict empathy was entered in three steps in a hierarchical order. Gender and age were entered first, followed by the AES, PPI-R and DASS-21 at step two. The centred interaction term of psychopathy and negative emotionality was entered at step three. Gender and age were found to be non-significant predictors of empathy at the first step, $R^2 = .04$, adjusted $R^2 = -.00$, $F\Delta\ (2,41) = 0.93$, $p = .404$. At step two, significant additional variance (32.60%) was explained by the AES, PPI-R and DASS-21, $R^2\Delta = .33$, $F\Delta\ (3, 38) = 6.55$, $p = .001$. The addition of the interaction term of psychopathy and negative emotionality at step three (B = -.00, SE = 00, β = .07) did not significantly add to the prediction of empathy ($R^2\Delta = .00$, $F\Delta\ (1, 37) = 0.26$, $p = .611$). Overall the independent variables significantly explained 37.40% of the variance in empathy, $R^2 = .37$, adjusted $R^2 = .27$, $F\ (6, 37) = 3.68$, $p = .006$.

Table 26 shows the unstandardised regression coefficients (B), and the standardised regression coefficients (β) for the two step model of entry for the independent variables. At step two, the PPI-R and DASS-21 were significant predictors of empathy. Gender, age and the AES were not found to be significant predictors of empathy. The positive beta weight for the DASS-21 indicated that higher scores of negative emotionality were significantly related to higher levels of empathy. A negative beta weight was found for the PPI-R indicating that higher psychopathy scores were associated with lower scores on empathy. Investigation of squared semi partial correlations showed that strongest unique contribution to empathy was by the PPI-R, accounting for a medium to large effect and explaining 17.72% of the variance in empathy, followed by the DASS-21 (10.63%). The results supported hypothesis five pertaining to psychopathy and empathy in the criminal sample.

Table 26
The Regression Coefficients for Step Two of the Regression Predicting Empathy for the Criminal Sample

	Unstandardised Coefficients		Standardized Coefficients	Zero-Order Correlations
	B	Standard Error	Beta	
Age	-.09	.11	-.12	-.09
Gender	-5.30	4.98	-1.06	-.17
DASS-21	.35	.14	.36**	.37
PPI-R	-.12	.04	-.44**	-.45
AES	.04	.07	.08	.04

Note. PPI-R = Psychopathic Personality Inventory-Revised; DASS-21 = Depression, Anxiety and Stress Subscales-21; AES = Assessing Emotions Scale.
**p<.01.

Discussion

The second study sought to extend on the findings from study one, further examining the emotional and social processing abilities associated with the psychopathy in business and criminal samples. The study aimed to develop a greater understanding of the differences between criminal and noncriminal psychopathy, and explore the notion of successful psychopathy (Dutton, 2012) in a business sample. Previous research has suggested that psychopathic traits have been identified in the corporate and business sector, proposing that psychopathy may be associated with a level of successful functioning in the community (Babiak et al., 2010; Brooks et al., in press; Fritzon et al., 2016). A business sample was collected that comprised of MBA students and professionals working in the business sector. The criminal sample consisted of offenders on correctional orders in the community, largely comprised of offenders that had perpetrated sexual offences (60%).

The first hypothesis pertained to psychopathy, mimicry and emotional recognition. It was hypothesised for the business sample that a significant positive effect would be found for psychopathy on emotional recognition when mimicry occurred (control condition), and a significant negative effect of psychopathy on when mimicry was restricted (experimental condition). For the criminal sample it was hypothesised that a significant negative effect would be found for psychopathy on emotional recognition when mimicry occurred, and a significant negative effect of psychopathy when mimicry was restricted. The findings of study two partially supported the hypothesised predictions, with a significant effect of psychopathy found on emotional recognition in the criminal sample. The result indicated that the higher

psychopathy group had poorer levels of emotional recognition in comparison to the lower psychopathy group. This finding was not replicated in the business sample. The result supported theories and research, which has proposed that criminal or unsuccessful psychopathy is characterised by deficits in emotional recognition (Blair et al., 1997; Brook & Kosson, 2013; Cleckley, 1941, 1976; Johns & Quays, 1962; Lykken, 1957; Williamson et al., 1991). A significant effect of condition was found for the business sample, indicating that participants had greater emotional recognition in the control condition compared to the experiment condition. Similar to study one, inconsistencies in the expected results were found across both samples, particularly in relation to the interaction between trial and condition. The discrepancy in findings between trial and condition did not support past research on mimicry (Niedenthal et al., 2001), indicating that the experimental manipulation was not effective with inconclusive findings across the samples, contrary to hypothesised predictions.

The second hypothesis of the study was that for the business sample psychopathy would be a significant positive predictor of overall emotional recognition. It was also predicted that for the criminal sample, psychopathy would be a significant negative predictor of overall emotional recognition. The results did not support this hypothesis, with psychopathy failing to predict emotional recognition for the business or criminal sample, although the non-significant finding was in the expected direction for the criminal sample. This suggested that higher levels of psychopathy in the business sample were not associated with a greater ability to detect facial expressions of emotion, failing to find a relationship between psychopathy, and emotional ability and success. For the criminal sample, the significant effect observed in the experimental task was not replicated in the regression analysis results. The failure of total psychopathy scores to predict emotional recognition was inconsistent with the mimicry findings. Due to the smaller sample size and reduced statistical power, possible existing statistically significant relationships may not have been identified (Conlon, 2010; Howell, 2002).

Psychopathy and social information processing was investigated for the third hypotheses, with the current study aiming to replicate the finding of Wilson et al. (2008). It was hypothesised that for both the criminal and business samples that higher levels of psychopathy would be significantly associated with greater recognition and recall of the sad unsuccessful female character compared to lower levels of psychopathy, consistent with Wilson et al. (2008). The current study did not find support for the hypothesis with higher levels of psychopathy not found to be associated with greater recognition or recall. The results

did not support the findings of study one, which found that higher levels of psychopathy were associated with a greater recall of the unsuccessful character. The findings from study one provided evidence that psychopathy was associated with greater recall of the unsuccessful character, suggesting a possible association with detecting vulnerability (Book et al., 2007; Wheeler et al., 2009; Wilson et al., 2008). This result was not replicated with the criminal and business samples, with psychopathy failing significantly effect recall or recognition of social information. Only one significant findings was observed for psychopathy, with the low psychopathy group having a greater recall of female characters compared to male characters. Study two had aimed to expand on the findings by Wilson et al. (2008), however, no significant results pertaining to psychopathy were found. A number of findings were recorded for social information processing based on gender, emotion and success. For both samples, a significant three way interaction between emotion, success and gender for character recall was found. The interaction between success and emotion indicated that differences in recall were only observed for the sad successful characters rather than happy characters. This reflected a similar pattern of findings, with the sad successful male and sad unsuccessful female the most frequently recalled characters (Huddy & Terkildsen, 1993). This suggested that participants seemed to recall conflictual details in characters, opposing the idea of a happy successful person and sad unsuccessful person (Huddy & Terkildsen, 1993; McGhee & Frueh, 1980; Plous & Neptune, 1997).

The fourth hypothesis pertained to psychopathy and emotional intelligence. It was hypothesised that higher total psychopathy scores would be a significant positive predictor of emotional intelligence in the business sample and a significant negative predictor of emotional intelligence in the criminal sample. It was also hypothesised that for both samples an interaction would be found between higher levels of psychopathy and levels of negative emotionality. The results indicated that psychopathy was not a significant predictor of emotional intelligence in either the business or criminal samples, failing to support the hypotheses and partially inconsistent with findings by Fix and Fix (2015) and Grieve and Panebianco, (2013) who identified relationships between psychopathy and emotional intelligence at the facet level. The findings were consistent with research that has found no association between psychopathy and emotional intelligence (Brook & Kosson, 2013; Copestake et al., 2013). Correlational results suggested that total psychopathy scores and the subscales of the PPI-R were found to share some significant relationships with total IRI and subscale scores, however, at the multivariate level when examined as total scores this

relationship was not statically significant. A significant interaction between psychopathy and negative emotionality was not found for either sample in predicting emotional intelligence, failing to find evidence for primary and secondary psychopathy types. The results suggested that higher levels of psychopathy were not predictive of higher levels of emotional intelligence in a business sample, or lower levels of emotional intelligence in a criminal sample.

Finally, it was hypothesised that for both samples that a significant negative relationship would be found between total psychopathy scores and empathy. It was hypothesised that an interaction would be found between higher levels of psychopathy and higher and lower levels of negative emotionality. For the criminal sample, psychopathy was found to be a significant negative predictor of empathy, however, this result was not replicated in the business sample. The finding of psychopathy predicting empathy deficits in the criminal sample partially supported the hypothesis and was consistent with previous research on the personality construct (Blair et al., 1997; Brook & Kosson, 2013; Hare, 1999a, 2003). The lack of association between total psychopathy scores and empathy in the business sample was inconsistent with the hypothesis. Results at the correlational level indicated a series of significant relationships between psychopathy and empathy features, yet this was not found at the multivariate level. Again, the research did not find support for primary and secondary psychopathy types based on levels of negative emotionality, raising questions as to whether a self report questionnaire enquiring about emotional states over a week period is an adequate measure to determine this relationship (Skeem et al., 2011).

The results of the current study were partially consistent with literature on psychopathy. Although psychopathy was predominately analysed as a dimensional construct for the study (Edens et al., 2006; Skeem et al., 2011), seven participants in the business sample and four participants in the criminal sample were identified as having clinically elevated levels of psychopathy as indicated by the PPI-R normative data (Lilienfeld & Widows, 2005). The results of the current study indicated that higher levels of psychopathy were associated with overall empathy deficits in the criminal sample (Brook & Kosson, 2013; Decety et al., 2013; Hare, 1999a, 2003; Mullins-Nelson et al., 2006; Watt & Brooks, 2012). The relationship between psychopathy and detection of vulnerability was not found in the present study across the two samples, with no effect of psychopathy on the recognition and recall of the sad unsuccessful female character. The results added to the understanding of social information processing and perception of characters based on gender, success and

emotion, yet failed to provide further evidence of psychopathy as a predictor of these factors. The mixed finding pertaining to psychopathy and emotional recognition in the criminal sample suggested a possible deficit in recognition for the high psychopathy group, consistent with previous research (Blair et al., 1997; Johns & Quays, 1962; Williamson et al., 1991; Wilson et al., 2011), however, this result was not replicated when examined in the regression analyses suggesting caution is required when interpreting this finding.

The findings indicated that the empirical understanding of criminal psychopathy may be generalisable to successful psychopathy (Hare, 2003; Mahmut et al., 2008), however, trait and emotional and social distinctions may be evident (Gao & Raine, 2010; Hall & Benning, 2006; Mullins-Nelson et al., 2006). The results concerning empathy, emotional recognition, emotional intelligence and psychopathy in the business sample were inconclusive, failing to identify statistically significant relationships between the constructs. For both samples psychopathy was not a significant predictor of emotional intelligence, suggesting the psychopathy was not associated with either higher or lower emotional abilities (Brook & Kosson, 2013). The correlational findings pertaining to psychopathy, empathy and emotional intelligence suggest that the relationship between psychopathy and the two constructs may largely depend on the psychopathic traits displayed by a person (Copestake et al., 2014; Howe et al., 2014; Mullins-Nelson et al., 2006). The lack of association between psychopathy and empathy in the business sample suggested that psychopathic traits were not related to lower levels of empathy in the business sample, raising questions pertaining to whether successful psychopathy has adaptive features or may be moderated in expression due to learning, education and skills development (Costa & McCrae, 2003; Hall & Benning, 2006). The results across the present two studies suggest different relationships between psychopathy, emotion and social features and emotionality in the three sample populations. The findings lend support for the dual process and moderate expression models of psychopathy (Fowles & Dindo, 2009; Hall & Benning, 2006; Patrick et al., 2007), which may adequately explain differences between noncriminal, criminal and successful psychopathy.

Chapter 4

Study 3: Psychopathic Traits in Criminal, Noncriminal and Successful Sample Populations

Study three examined differences in psychopathic traits across criminal, community and business samples. In study two, it was discovered that psychopathy was a significant negative predictor of empathy in the criminal sample; however, this did not predict emotional intelligence, emotional recognition, or social information processing in either the business or criminal samples. Analysis of empathy and emotional intelligence in study two revealed a different pattern of relationships in terms of self-centred impulsivity, fearless dominance and coldheartedness between the criminal and business samples. This suggested that the relationship between psychopathy traits and emotional factors could vary based on a given population and specific clustering of psychopathy traits, consistent with the dual process theory of psychopathy (Hall & Benning, 2006). The constellation of psychopathic traits in noncriminal samples is postulated to consist of similar characteristics to those found in criminal contexts (Hare, 2003), yet it is unclear as to whether successful psychopathy is captured by the same set of core traits. Hare (1999a, 2003) contends that regardless of the setting, psychopathic personality is comprised of interpersonal, affective, lifestyle, and antisocial features. Researchers suggest that differences in psychopathy typologies are due to variations in etiological pathways, temperament, motivation, and social and emotional expression (Costa & McCrae, 2003; Fowles & Dindo, 2009; Hall & Benning, 2006; Willemsen & Verhaeghe, 2012).

The recent focus on noncriminal psychopathy and difficulties conceptualizing psychopathy outside of the correctional setting has highlighted the importance of adequate theoretical models to capture the diversity of the psychopathy construct (Hall & Benning, 2006; Međedović, et al., 2015). The triarchic model developed by Patrick et al. (2009), accounts for the differences and similarities between psychopathy measures, providing an overarching conceptualisation of psychopathy. The model considers psychopathic personality is a constellation of three traits, boldness, meanness and disinhibition. The model allows for the conceptualisation of psychopathy across criminal and noncriminal contexts, overcoming the limitations of individual assessment instruments (Skeem et al., 2011). The triarchic model has been theorised to share empirical overlap with both the factor structures of the PCL-R and PPI-R (Patrick et al., 2009; Polaschek, 2015; Skeem et al., 2011). Factor one (interpersonal

and affective) of the PCL-R has been found to overlap with both boldness and meanness, while factor two (lifestyle and antisocial) is associated with disinhibition (Polaschek, 2015; Skeem et al., 2011). For the PPI-R, preliminary research suggests that fearless dominance reflects boldness, self-centred impulsivity is associated with disinhibition, and coldheartedness embodies meanness (Hall et al., 2014; Patrick & Drislane, 2014; Polaschek, 2015; Skeem et al., 2011).

Research on noncriminal psychopathy suggests that interpersonal-affective features of the construct may be related to adaptive utility in the community, while antisocial behaviour traits may be associated with greater likelihood of incarceration (Dutton, 2012; Fix & Fix, 2015; Hall & Benning, 2006; Mahmut et al., 2008). While underlying similarities are evident between criminal and noncriminal psychopathy, difference in interpersonal style and behaviour expression may be partially explained by Hall and Benning (2006) theories of noncriminal psychopathy. The author's proposed that noncriminal psychopathy could be understood through three separate pathways or theories: subclinical, moderated, and dual process expressions of the disorder.

The subclinical pathway suggests that noncriminal psychopathy is characterised by less extreme forms of psychopathy, however, previous studies have found significantly elevated levels of psychopathic traits in community and business samples (Babiak et al., 2010; Boddy, 2011; Dutton, 2012; Fritzon et al., 2016; Howe et al., 2014) and therefore this theory does not appear supported. The results from study one and study two indicated that clinically elevated levels, one and a half standard deviations above the normative mean, were found for participants in all three samples. In the noncriminal sample, 18.75% of participants were found to have clinically elevated levels of psychopathy, while 11.67% of participants in the business sample and 9.1% in the criminal sample had significantly high levels. The number of participants with clinical levels of psychopathy in both the noncriminal and successful samples indicated the presence of psychopathic traits in noncriminal sample populations. Consequently, this finding raises concerns pertaining to the subclinical model as an empirical theory of noncriminal psychopathy.

The moderated expression of psychopathy suggests that differences in the construct can be explained by factors such as education, intelligence and socio-economic status. The moderated pathway of noncriminal psychopathy provides an important perspective on the environmental influences that may shape the expression of the construct, yet is limited due to

the methodological challenges of measuring and capturing factors such as childhood upbringing, family living circumstances, school performance and general life influences (Hall & Benning; Skeem et al., 2011). For example, in a sample of youths, individual psychological characteristics such as locus of control and coping strategies were found to moderate and protect from the development of conduct disorder (Marković, Srdanović-Maraš, Šobot, Ivanovic-Kovačević, & Martinović-Mitrović, 2011). Research has demonstrated a relationship between the expression of psychopathic traits and adult adjustment indicators of conscientiousness, agreeableness, assertiveness, self-focus, other-focus, identity, and mindfulness (Barlett & Barlett, 2016; Grieve, 2012; Poy, Segarra, Esteller, López, & Moltó, 2014; Voller & Long, 2010). The relationship between psychopathy and self-expression constructs such as locus of control and assertiveness may partially explain the differences between criminal and noncriminal psychopathy.

The third pathway of noncriminal psychopathy, the dual process theory, contends that reinforcing processes differentiate combinations of interpersonal and affective features; with one pathway comprising of antisocial traits, while other pathways may not consist of these traits. The interpersonal and affective traits of psychopathy are theorised to be the core features of noncriminal psychopathy according to the dual process pathway, with the behavioural characteristics of secondary importance (Fowles & Dindo, 2009). Hall and Benning (2006) suggested that an individual could have elevated interpersonal and affective psychopathy traits, yet minimal antisocial features, leading to functioning in the community. The dual process pathway of psychopathy is consistent with research related to primary and secondary psychopathy (Hall & Benning, 2006; Lykken, 1995; Skeem et al., 2011). Studies have found that primary psychopathy, which is associated with a greater propensity of interpersonal and affective traits and fewer lifestyle and antisocial traits, is associated with greater dominance, success, manipulation and social achievement compared to secondary psychopathy (Lykken, 1995; Morrison & Gilbert, 2001; Newman et al., 2005). In contrast secondary psychopathy, which is characterised by a lesser number of interpersonal and affective traits, yet a greater constellation of lifestyle and antisocial characteristics, has been found to be related to frequent altercations, negative emotionality, poor social success and emotional outburst (Lykken, 1995; Morrison & Gilbert, 2001; Newman et al., 2005). The dual process pathway suggests that noncriminal psychopathy may be a function of dominant phenotypic pattern (Hall & Benning, 2006). For example, research suggests that the interpersonal and affective features of psychopathy are negatively associated with fear and

anxiety, while the antisocial traits are positively related to fear and anxiety (Willemsen & Verhaeghe, 2012). Considering the three distinct but intersecting constructs of the triarchic model (Patrick et al., 2009), a greater unique contribution of boldness, and reduced features of disinhibition may explain noncriminal and successful psychopathy. Mahmut el at. (2008) suggested that the main distinguishing features between criminal and noncriminal psychopathy were the manifestation of interpersonal and affective traits and the extent to which individuals engage in antisocial behaviours.

The unique role of traits of fearless dominance and boldness and characteristics of self-centred impulsivity and disinhibition in distinguishing subtypes of psychopathy has been the centrepiece of much debate amongst leading experts (Hall et al., 2014; Lilienfeld et al., 2012; Poythress et al., 2010; Skeem et al., 2011). Notably, psychopathy is a paradoxical disorder, with individuals appearing high functioning and interpersonally skilled, yet marked by emotional and cognitive processing deficits (Cleckley, 1988, Lilienfeld et al., 2012; Lykken, 1995). In his pioneering work Cleckley (1941, 1976) described psychopathic people as charming, fearless and bold, interpersonally dominant, with intact intelligence and low anxiety, yet reckless and dishonest. The Cleckley depiction of psychopathy was characterised by a prominent pattern of interpersonal and affective features, with traits of disinhibition that were not necessarily marked by violence. In contrast, Hare (1999a, 2003) describes psychopathy as characterised by shared interpersonal, affective, lifestyle and antisocial features. Hare's conceptualisation of the psychopathic individual is of a callous, impulsive, egocentric, hostile, and ruthless person, characterised by self-centred behaviour, poor interpersonal relationships, destructive actions and criminality. Sharing somewhat similar views to both Cleckley and Hare, Lykken (1957, 1995) and Karpman (1941, 1948) detailed primary and secondary psychopathy, which were characterised by differences in emotionality and psychopathy trait patterns. The emergence of recent research investigating noncriminal psychopathy has proposed that psychopathy is characterised by positive adaptive features, suggesting that the right constellation of psychopathic traits could lead to success in the community (Broad & Fritzon, 2005; Dutton, 2012; Howe et al., 2014).

Cleckley (1941, 1976) and Hare's (2003) conceptualizations of psychopathy are different; yet, these differences may be a result of how their formulations of psychopathy were determined, with both experts conducting research on vastly different populations. Cleckley's assessment of psychopathy was largely determined based on his work with patients in a Georgia psychiatric facility, as well as community based patients. Although Hare

sought to operationalise Cleckley's work, Hare's research of psychopathy has been predominately based on North American offenders, with the origins of his PCL-R based on criminals. Recent work on psychopathy in the corporate and business sectors has examined the notion that psychopathy can be related to success and has adaptive features. For example, psychologist Kevin Dutton (2012, 2014) assessed former decorated SAS soldier Andy McNabb and determined him to be psychopathic. Dutton contends that certain trait qualities associated with psychopathy can lead to success and functioning in the community. Consequently, the debate regarding psychopathy traits appears to depend on who is being assessed, where the assessment is occurring, and what assessment protocol is used to measure psychopathy. Considering the vast differences in psychopathy trait manifestation, populations, and assessment protocols, support is evident for the aforementioned leading theories of psychopathy, however, the findings from study one and study two opposed the subclinical model of psychopathy.

Research has demonstrated that the facets of psychopathy share unique relationships with specific co-occurring factors, yet, these relationships are dependent on the clustering of psychopathic traits in a given setting, with probable variance between psychopathic traits and populations (Dutton, 2012, 2014; Fix & Fix, 2015; Hall & Benning, 2006; Hare, 2003; Skeem et al., 2011; Spencer & Bryne, 2016). The triarchic model provides a conceptual framework for the assessment of psychopathy across different populations, making comparisons of findings possible across studies (Polaschek, 2015). The present study sought to investigate whether the relationship between psychopathy and emotional and social skills, emotionality, and interpersonal factors, varied as a function of fearless dominance (boldness), coldheartedness (meanness) and self-centred impulsivity (disinhibition). Furthermore, the theoretical constellation of boldness, meanness and disinhibition traits may depend on the specific population, with research finding that criminal psychopathy is characterised by greater behavioural and disinhibition features, and noncriminal psychopathy by greater interpersonal/affective features and boldness (Hall & Benning, 2006; Hare, 2003; Howe et al., 2014; Lilienfeld et al., 2012; Polaschek, 2015; Skeem et al., 2011). The present study aimed to examine the differences between levels of fearless dominance, coldheartedness and self-centred impulsivity in three distinct samples. In addition to the triarchic model, the dual process and moderated expression pathways provide an understanding of the distinctions between criminal and noncriminal psychopathy. Consistent with these two pathways, the

relationship between psychopathy and co-occurring factors such as emotional and social skills likely varies as a function of the specific clustering of psychopathic traits.

The present study sought to expand on the findings from study one and study two. The first two studies examined the relationship between psychopathy, emotional and social factors, and negative emotionality. In the two studies, each sample was analysed individually and the results were not contrasted with the other samples from the research. The present study sought to compare psychopathy traits across each sample, investigating for distinctions based on a sample population. Interpersonal factors such as assertiveness, locus of control, and impression management were included in the present study, to examine support for the moderated expression pathway of psychopathy and to further differentiate psychopathy traits across the samples. Previous research has indicated that the expression of psychopathic personality traits may be partially explained through adult adjustment indicators such as locus of control, identity, mindfulness, assertiveness, agreeableness and conscientiousness (Barlett & Barlett, 2016; Grieve, 2012; Poy et al., 2014; Voller & Long, 2010). To the author's knowledge, no previous research has been conducted to investigate psychopathy using the same methodological procedure across three separate samples. The study aimed to provide a greater understanding of the differences in psychopathic traits in specific populations, aiming to address the discrepancies between Hare (1999a) and Cleckley's (1941, 1976) theories of psychopathy. The study aimed to find support for the dual process and moderated expression models of psychopathy (Hall & Benning, 2006), seeking to expand on the understanding of these theories as explanatory pathways of noncriminal psychopathy. The subscales of the PPI-R were used to examine the unique contribution of both fearless dominance and self-centred impulsivity in predicting psychopathic traits across the three samples. Psychopathy was examined as a dimensional construct for the purpose of the research.

1. It was hypothesised that sample differences would be evident between emotional and social factors, emotionality, and interpersonal factors. It was predicted that the business sample would have significantly higher levels of emotional intelligence and assertiveness compared to the community and criminal sample. Conversely, it was hypothesised that the criminal sample would be characterised by higher levels of negative emotionality and a higher score of locus of control (external) compared to the community and business samples.

2. It was hypothesised that the business and community samples would score significantly higher on fearless dominance compared to the criminal sample. It was further predicted that the criminal sample would score significantly higher on self-centred impulsivity than the business and community samples.
3. It was further hypothesised (a) that compared to the community sample, the business sample would be predicted by higher levels of fearless dominance, impression management and deception, over-assertiveness and lower levels of negative emotionality. It was also predicted that compared to the community sample, the criminal sample would be significantly predicted by higher levels of self-centred impulsivity, under-assertiveness, negative emotionality, and lower levels of empathy. It was further hypothesised (b) that in comparison to the criminal sample, the business sample would be predicted by higher levels of fearless dominance, emotional intelligence, over-assertiveness, impression management and deception, and lower levels of negative emotionality, and locus of control.

Method

Participants

A total of 115 participants comprised the community sample, while the business sample consisted of 60 participants and the criminal sample of 44 participants. The community sample consisted of 64 females (M_{age} = 38.02; *SD* = 16.77) and 48 males (M_{age} = 55.06; *SD* = 16.52) with an age range from 18 to 75 years of age (M_{age} = 36.58; *SD* = 16.67). The business sample consisted of 39 males (M_{age} = 38.98; *SD* = 9.43) and 21 females (M_{age} = 36.30; *SD* = 9.16) with an age range from 24 to 56 years of age (M_{age} = 38.03; *SD* = 9.35). The criminal sample consisted of four females (M_{age} = 44.25; *SD* = 14.73) and 40 males (M_{age} = 38.60; *SD* = 14.92) with an age range from 18 to 69 years of age (M_{age} = 39.11; *SD* = 14.83). Study one and study two provide a detailed analysis of participant information.

Materials

The research assessment package comprised of eight questionnaires and two computer tasks. Study one and study two provide a detailed overview of the assessment instruments and computer tasks used in the study. The present study utilised only a selection of these measures, including, a demographic questionnaire, the Psychopathic Personality Inventory-Revised (PPI-R; Lilienfeld, & Widows, 2005), the Interpersonal Reactivity Index (IRI; Davis,

1980, 1983), the Depression, Anxiety and Stress Scale-21 (DASS-21; Lovibond, & Lovibond, 1995), the Paulhus Deception Scales (PDS; Paulhus, 1998), Assessing Emotions Scale (AES; Schutte et al., 2009), Social Response Inventory (SRI; Keltner et al., 1981) and, Locus of Control Scale (LC; Nowicki & Duke, 1974). Study one provides a detailed analysis of the PPI-R, IRI, DASS-21, and AES.

The paulhus deception scales (PDS). The PDS is a 40-item measure designed to examine an individual's tendency to respond in a socially desirable manner on self-report instruments (Paulhus, 1998). The measure comprises of two subscales, including: self-deceptive enhancement (SDE) and impression management (IM). The SDE consists of 20-items and examines the tendency of a person to give honest but inflated self-descriptions. The IM scale is also comprised of 20-times and examines the tendency to give inflated self-descriptions to others or audiences. Example items include: "My first impressions of people usually turn out to be right" and "I have not always been honest with myself." The measure is rated by participants on a five-point scale ranging from not true (1) to very true (5). The PDS demonstrates sound internal consistency based on Cronbach's alpha for total scores ($\alpha = .85$) and scores on the SDE ($\alpha = .75$) and IM subscales ($\alpha = .84$; Paulhus, 1998). Evidence of convergent validity is found between the PDS and the Marlow-Crowne Social Desirability Scale (Crowne & Marlow, 1960), while support for the internal structure of the PDS is demonstrated through factor analyses of the SDE and IM, with the scales loading on separate factors (Paulhus, 1998).

The locus of control scale (LC). The LC is a 40 item measure designed to examine respondents' sense of responsibility for their own fate and perception of whether events are controlled internally or externally (Nowicki & Duke, 1974). Locus of control was defined as a personality trait (Rotter, 1966), which could be distinguished as internal or external. Example items include, "Do you believe most people are just born good at sports" and "Do you think that cheering more than luck helps a team to win". Participants are required to rate items as either "Yes" or "No". The measure is summed to create total scores, with scores of 15 or above indicating an external locus of control and scores of seven or below indicating an internal locus of control. Studies have reported good internal consistency and split half reliability for the LC, ranging from .74 to .86 (Lefcourt, 1991; Nowicki & Duke, 1983; Nunally, 1978). The LC demonstrates varied test-retest reliability over a six-week period, ranging between .65 to .83 (Nowicki & Duke, 1974). Validity for the measure has been demonstrated through a positive

relationship with the Rotter locus of control scale (Rotter, 1966) (.68), Eysenck Neuroticism Scale (.32 and .26) and Taylor Manifest Anxiety scales (.34 and .40).

Social response inventory (SRI). The SRI is a self-report measure designed to examine assertive behaviour across a variety of social situations. The measure is comprised of 22 hypothetical scenarios, with each situation consisting of five alternative response options (Keltner et al., 1981). The response options are rated on a five-point scale ranging from (-2) extremely under-assertive, (-1) under assertive, (0) assertive, (+1) over-assertive, and extremely over-assertive (+2). An example scenario included: "You are in the middle of eating supper when a man comes to the door to ask you questions about television programs you watch. What would you do?". Total scores were derived for under-assertiveness, over-assertiveness and assertive by summing items endorsed by participants for each question. This was determined by whether a participant endorsed assertive, under-assertive or over-assertive behaviour in answering a given scenario. The SRI has been found to demonstrate good test-retest reliability (.80) over a seven month period (Beech, 1998). Validity for the measure has been demonstrated through correlation with the Social Fear Scale (Morgan, 1974).

Procedure

For a detailed description of the procedure used in the research please refer to study one and study two which provide an overview of the data collection methods used for the research.

Results

Reliability analyses were conducted to examine and assess the inter-item consistency of the PDS, SRI and LC scales used in the study. Cronbach's alpha demonstrated adequate internal consistency for all measures used in the research. For the criminal sample the following scale reliabilities were found: PDS (α = .79), LC (α = .76), and SRI (α = .81). The internal consistency ranges for the scales in the community sample were: PDS (α = .81), LC (α = .76), and SRI (α = .75). Finally, for the business sample scale reliabilities were: PDS (α = .79), LC (α = .53), and SRI (α = .66). Table 27 shows the mean values and 5% trimmed means for PDS, LC, SRI-A, SRI-UA and SRI-OA. Mean scores of the other variables used in the research can be seen in study one and study two.

Table 27
Descriptive Statistics for Impression Management and Deception, Locus of Control, Assertiveness, Under-Assertiveness and Over-Assertiveness in the Three Samples

	Mean	5% Trimmed Mean	Standard Deviation	Minimum	Maximum
Criminal					
PDS	9.87	9.61	5.32	1	25
LC	14.79	14.60	6.26	3.61	31
SRI-A	12.38	12.34	4.67	3	22
SRI-UA	10.81	10.61	6.21	0	27
SRI-OA	2.5	1.95	4.00	0	17
Noncriminal					
PDS	11.54	11.35	5.77	0	28
LC	12.17	12.10	5.39	1	25
SRI-A	12.50	12.55	4.46	2	22
SRI-UA	10.28	10.12	5.61	0	23
SRI-OA	2.54	1.95	4.14	0	33
Business					
PDS	12.41	12.46	5.36	1	23
LC	8.67	8.51	3.52	4	17
SRI-A	14.66	14.72	4.06	5	22
SRI-UA	7.78	7.65	4.94	0	18
SRI-OA	1.67	1.31	2.50	0	13

Note. PDS = Paulhus Deception Scales; LC = Locus of Control Scale; SRI = Social Response Inventory-Assertiveness; Social Response Inventory-Under-Assertiveness; Social Response Inventory-Over-Assertiveness.

Hypothesis One: Emotional, Social and Interpersonal Differences

To examine hypothesis one pertaining to the difference between the variables used in the study across the community, criminal and business samples, non-parametric analyses were conducted. The variables included: age, psychopathy, impression management and deception, empathy, emotional intelligence, locus of control, negative emotionality, assertiveness, under-assertiveness, and over-assertiveness. The analysis was initially conducted as a MANOVA, however, due to the variance across sample sizes, the large number of variables, and violations to assumptions including Box's M and Levene's Test, non-parametric testing was determined to be the most suitable statistical analysis (Pallant, 2007; Tabachnick & Fidell, 2007). A Kruskal-Wallis non-parametric test was employed to examine the statistical difference of each dependent variable across the three levels of sample. Statistically significant results were found for emotional intelligence, χ^2 (2, 219) = 12.66, p = .002, negative emotionality, χ^2 (2, 212) = 16.81, p < .001, assertiveness, χ^2 (2, 219) = 9.40, p = .009, under-assertiveness, χ^2 (2, 212) =

8.27, $p = .016$, and locus of control, χ^2 (2, 212) = 28.88, $p < .001$. Statistically non-significant results were found for age, χ^2 (2, 217) = 3.33, $p = .189$, psychopathy, χ^2 (2, 219) = 1.71, $p = .462$, impression management and deception, χ^2 (2, 219) = 5.44, $p = .066$, empathy, χ^2 (2, 219) = 1.00, $p = .607$, and over-assertiveness, χ^2 (2, 212) = 2.60, $p = .273$.

Follow up pairwise comparisons were conducted based on Wilcoxon's Rank Sum Test, investigating the differences between the dependent variables at each level of sample. To control for Type I errors, a Bonferroni correction alpha level of .017 was used to determine statistical significance (Pallant, 2007). Examination of the effect of emotional intelligence on sample revealed that significant differences were found between the criminal and community sample, $p = .014$, and the criminal and business sample, $p < .001$. A significant difference was not found between the community and business sample for emotional intelligence, $p = .090$. Median rank differences indicated that emotional intelligence scores were significantly lower in the criminal sample ($Md_{Rank,}$ = 83.30) compared to both the community ($Md_{Rank,}$ = 110.86) and business samples ($Md_{Rank,}$ = 127.94). The results partially supported the first hypothesis, with the business sample found to have higher levels of emotional intelligence compared to the criminal sample, however, a difference was not observed between the business and community samples.

The significant effect of negative emotionality between samples revealed a significant median rank difference between negative emotionality for the business ($Md_{Rank,}$ = 91.40) and criminal ($Md_{Rank,}$ = 139.34) samples, $p < .001$, and the community ($Md_{Rank,}$ = 100.90) and criminal samples, $p < .001$. The results indicated that symptoms of negative emotionality were highest in the criminal sample, supporting the hypothesis. No significant difference was found between the business and community sample, $p = .351$.

Sample differences for assertiveness demonstrated that significant differences were found between the criminal and business sample, $p = .013$, and community and business sample, $p = .004$. A significant difference was not found for assertiveness levels between the criminal and community samples, $p = .859$. The results indicated that the business ($Md_{Rank,}$ = 128.78) sample had greater median rank scores of assertiveness compared to the criminal ($Md_{Rank,}$ = 97.68) and community ($Md_{Rank,}$ = 99.60) samples, supporting the hypothesis. Significant differences were also found for under-assertiveness between the business and community samples, $p = .009$, and the business and criminal samples, $p = .014$. A significant difference was not found between the community and criminal sample, $p = .699$. The

statistical differences indicated that the criminal sample ($Md_{Rank,}$ = 116.45) reported higher rank levels of under-assertiveness compared to the community ($Md_{Rank,}$ = 112.26) and business ($Md_{Rank,}$ = 85.74) samples. Finally, the significant effect of locus of control on sample demonstrated significant differences between the business and community sample, $p <$ .001, and the business and criminal sample, $p <$ .001 No significant difference in locus of control scores was found between the community and criminal sample, p = .024. Median rank scores indicated that higher external locus of control scores were found for the criminal sample ($Md_{Rank,}$ = 136.11) compared to the business ($Md_{Rank,}$ = 70.98) and community ($Md_{Rank,}$ = 111.54) samples which were characterised by lower scores suggesting a tendency towards an internal locus of control. This finding supported the hypothesis that the criminal sample would have a greater external locus of control.

Hypothesis Two: Psychopathy Traits Across Samples

To examine hypothesis two, a one way between groups multivariate analysis of variance (MANOVA) was performed to investigate sample differences for the psychopathy facets used in the research. The dependent variables included, self-centred impulsivity, fearless dominance, and coldheartedness. The independent variable was sample, comprising of three levels, criminal, business and community. Prior to analysis, the three dependent variables were inspected for normality and outliers using standardized measures of skew and kurtosis, with a cut off value of z = 3.29, p = .001. No significant violations were detected for the dependent variable. While it is acknowledged that a MANOVA design can reduce statistical power (Conlon, 2010), this statistical method was employed due to being deemed most suitable to examine the multiple levels of sample with PPI-R subscales. A review of the results demonstrated adequate statistical power in the analysis. Inspection of multivariate outliers was conducted through Mahalanobis distance using the chi-square critical value (χ^2 = 9.21, p = .01) for three dependent variables (Pallant, 2007). Two significant multivariate outliers were identified, however, removal of these scores did not change the results of the analysis. As the violations had no significant impact on the analysis and for ease of interpretation, the analysis was conducted without data manipulation. The assumption of homogeneity of covariance was met (Box's M = 13.93, p = .328) demonstrating adequate equality of variance for the data, while Levene's Test of equality of error variances was met for two of the dependent variables; fearless dominance, F (2, 216) = 0.10, p = .901, and coldheartedness, F (2, 216) = 0.07, p = .935. The assumption was violated for self-centred impulsivity, F (2, 216) = 3.69, p = .027, however, comparison of smallest and largest error

variances using Hartley's Fmax test revealed that this violation was not considered to be problematic (Conlon, 2010; Field, 2009).

A statistically significant difference was found for the overall model based on the Wilks Lamba statistic with all dependent variables, F (6, 428) = 10.49, $p < .001$, $\eta^2 = .128$, 1 - $\beta = 1.00$. As three dependent variables were used in the analysis a Bonferroni correction alpha level of .017 was used to control for Type I error. Investigation of the univariate results for each dependent variable revealed two statistically significant findings. Self-centred impulsivity, F (2, 216) = 8.23, $p < .001$, $\eta^2 = .071$, 1 - $\beta = .959$, and fearless dominance, F (2, 216) = 15.86, $p < .001$, $\eta^2 = .128$, 1 - $\beta = .999$, were both found to be significant across samples, however, coldheartedness was not statistically significant, F (2, 216) = 0.72, p = .487, $\eta^2 = .007$, 1 - $\beta = .171$.

Follow up post hoc comparisons were conducted using Tukey's honestly significant difference (HSD) test to examine the statistical significance of self-centred impulsivity and fearless dominance at each level of sample. Self-centred impulsivity was found to significantly differ between the business and criminal sample, $p = .001$, and the business and community sample, $p = .002$. Higher mean scores of self-centred impulsivity were observed for the criminal ($M = 150.18$, $SE = 3.84$) and community ($M = 145.29$, $SE = 2.38$) samples compared to the business sample ($M = 131.55$, $SE = 3.29$). No significant difference was found between the community and criminal sample for self-centred impulsivity, $p = .526$. This finding supported the hypothesis with significantly higher mean scores of self-centred impulsivity found for the criminal sample. Fearless dominance scores were found to be significantly different between the business and criminal sample, $p < .001$, and community and criminal sample, $p < .001$. The finding supported the hypothesis with the highest mean score for fearless dominance found for the business sample ($M = 125.42$, $SE = 2.26$), followed by the community ($M = 118.91$, $SE = 1.63$) and criminal ($M = 105.98$, $SE = 2.64$) samples. No significant difference was found between the business and community sample, $p = .054$.

Hypothesis Three: Sample Differences

To investigate the third hypothesis, a multinomial logistical regression analysis and logistical regression analysis were conducted to determine whether psychopathy facets, emotional and social features, emotionality, and interpersonal factors could predict the samples. The models examined the likelihood of self-centred impulsivity, fearless dominance, impression management and deception, empathy, emotional intelligence, locus of control,

negative emotionality, under-assertiveness and over-assertiveness to differentiate and predict a given sample. The multinomial logistic regression compared the business and criminal samples to the community reference group. The logistical regression examined the differences between predictor variables across the business and criminal samples. The same set of predictor variables were utilised for each analysis. As coldheartedness failed to have an effect on the sample groups in the MANOVA conducted, the variable was excluded for the regression analyses, also reducing the number of predictor variables. Due to the sample size of the current study, only total scale scores were utilised for all variables, except for the two PPI-R subscales and over and under-assertiveness. This was to ensure that an appropriate statistical power, effect size and alpha level (0.05) were maintained (Tabachnick & Fidell, 2007). Subsequently, this limited the possibility of examining differences between the samples for specific facets of emotional and social factors. The multinomial and logistical regression statistical analyses were utilised due to the dichotomous nature of the sample variable and the flexibility of the statistical methods, which allows data to be analysed without rigid normality assumptions having to be met (Tabachnick & Fidell, 2007).

The multinomial logistical regression predicted samples of business and criminality in relation to the community sample. The analysis was initially run with age and gender entered as predictor variables. Age was found to be a non-significant predictor of the samples and was removed from the analysis. Gender was observed to be a non-significant predictor of the business sample, indicating no differences in gender across the business and community samples. A significant effect of gender was found for the criminal sample, with female gender less strongly associated with the criminal sample compared to the community sample. However, inspection of this finding revealed that this result was due to the gender imbalance in the criminal sample. Subsequently, the four female participants from the criminal sample were removed from the analysis and the analysis was re-run without gender included as a predictor variable.

The overall regression model was found be statistically significant, χ^2 (18) = 77.38, p < .001, indicating an adequate fit of the model based on the goodness of fit statistic, χ^2 (396) = 359.13, p = .908, accounting for 31.1% (Cox and Snell R square) and 36% (Nagelkerke R square) of the variance in the samples. Likelihood ratio tests for the overall model indicated that of the nine predictor variables, self-centred impulsivity, χ^2 (2, 208) = 9.35, p = .009, fearless dominance, χ^2 (2, 208) = 18.04, p < .001, empathy, χ^2 (2, 208) = 7.39, p = .025, and impression management and deception, χ^2 (2, 208) = 6.30, p = .044, were significant

predictors of the model. Locus of control, χ^2 (2, 208) = 5.66, p = .059, and negative emotionality, χ^2 (2, 208) = 5.56, p = .062, were close to significance, however, did not reach the required alpha level to determine statistical significance. Table 28 and Table 29 show the multinomial logistical regression coefficients for the likelihood of the predictor variables to differentiate the business and criminal samples from the community sample.

Table 28
Multinomial Logistical Regression Coefficients for the Business Sample for the Overall Model

Variables	*B*	Standard Error	Exp (B)	Lower 95% C.I	Upper 95% C.I
PPI-R-SCI	-0.04	0.01	0.96**	0.96	0.99
PPI-R-FD	0.03	0.01	1.03*	1.00	1.06
PDS	-0.08	0.05	0.93	0.85	1.01
IRI	-0.01	0.02	0.99	0.96	1.02
AES	0.01	0.01	1.01	0.98	1.03
DASS-21	0.04	0.02	1.04	1.00	1.10
SRQ-UA	-0.08	0.04	0.93*	0.86	1.00
SRQ-OA	0.03	0.07	1.04	0.90	1.19
LC	-0.08	0.05	0.92	0.84	1.01

Note. PPI-R-SCI = Psychopathic Personality Inventory-Revised-Self-Centred Impulsivity; PPI-R-FD = Psychopathic Personality Inventory-Revised-Fearless Dominance; PDS = Paulhus Deception Scales; IRI = Interpersonal Reactivity Index; AES = Assessing Emotions Scale; DASS-21 = Depression, Anxiety, and Stress Subscales-21; Social Response Inventory-Under-Assertiveness; Social Response Inventory-Over-Assertiveness; and LC = Locus of Control Scale.
Significant at $p<.05$*, $p<.01$**

Table 29
Multinomial Logistical Regression Coefficients for the Criminal Sample for the Overall Model

Variables	*B*	Standard Error	Exp (B)	Lower 95% C.I	Upper 95% C.I
PPI-R-SCI	0.00	0.01	1.00	0.98	1.03
PPI-R-FD	-0.05	0.02	0.96**	0.93	0.99
PDS	-0.10	0.05	0.91*	0.83	1.00
IRI	-0.06	0.02	0.94**	0.90	0.99
AES	0.00	0.01	1.00	0.98	1.03
DASS-21	0.04	0.02	1.04	1.00	1.09
SRQ-UA	-0.05	0.04	0.95	0.87	1.03
SRQ-OA	-0.10	0.06	0.90	0.80	1.02
LC	0.06	0.05	1.06	0.97	1.16

Note. PPI-R-SCI = Psychopathic Personality Inventory-Revised-Self-Centred Impulsivity; PPI-R-FD = Psychopathic Personality Inventory-Revised-Fearless Dominance; PDS = Paulhus Deception Scales; IRI = Interpersonal Reactivity Index; AES = Assessing Emotions Scale; DASS-21 = Depression, Anxiety, and Stress Subscales-21; Social Response Inventory-Under-Assertiveness; Social Response Inventory-Over-Assertiveness; and LC = Locus of Control Scale.
Significant at $p<.05$*, $p<.01$**

For the overall model, self-centred impulsivity, fearless dominance, and under-assertiveness were found to be statistically significant predictors of group membership for the business sample. Empathy, emotional intelligence, negative emotionality, over-assertiveness, locus of control, and impression management and deception, did not predict the business sample. The business sample was significantly more likely to have higher levels of fearless dominance, yet significantly less likely to have higher levels of self-centred impulsivity compared to the community sample. Inspection of mean scores indicated that the business sample (M = 125.41, SD = 17.71) had higher mean scores of fearless dominance the community sample (M = 118.91, SD = 17.54), while self-centred impulsivity scores were greater in the noncriminal (M = 145.28, SD = 27.36) rather than business sample (M = 131.76, SD = 20.64). Under-assertiveness was also found to be significantly lower in the business sample (M = 7.78, SD = 4.94), more likely to have lower levels of under-assertiveness than in the community sample (M = 10.28, SD = 5.62).

The results for the criminal sample indicated that fearless dominance, impression management and deception, and empathy were significant predictors of group membership for the sample. Self-centred impulsivity, emotional intelligence, negative emotionality, under-assertiveness, over-assertiveness, and locus of control, did not differentiate the samples.

Lower scores of fearless dominance were significantly more common in the criminal sample (M = 106.27, SD = 18.90) compared to the community sample (M = 118.91, SD = 17.54), indicating a difference between the two samples for fearless dominance traits. The criminal sample (M = 60.11, SD = 11.16) was also significantly less likely to have higher levels of empathy compared to the community sample (M = 62.95, SD = 12.35), suggesting that the criminal sample displayed lower empathic concern. Lower levels of impression management and deception were observed in the criminal sample, indicating that the criminal sample (M = 9.68, SD = 5.38) was significantly less likely to present a positive image and deceive others compared to the community sample (M = 11.54, SD = 5.78).

To investigate the differences between the business and criminal samples, a logistical regression analysis was conducted. Age and gender were initially entered into the analysis. Age was not found to significantly predict group membership and was removed from the analysis. Gender was found to be a statistically significant predictor, indicating that females were less likely to be associated with the criminal sample compared to the business sample. This result was again attributed to the unequal distribution of gender in the criminal sample, providing an inaccurate finding relating to gender. Subsequently, the four female participants from the criminal sample were removed from the analysis and gender was excluded from the regression. The logistic regression compared the business sample to the criminal sample reference group. Overall the predictor variables significantly differentiated the two samples, χ^2 (9, 93) = 59.68, $p < .001$. This indicated that the predictor variables adequately predicted group membership and distinguished between samples of business and criminality, accounting for 47.4% (Cox and Snell R square) and 63.6% (Nagelkerke R square) of the variance in the samples and correctly classifying 86% of cases. Table 30 shows the logistical regression coefficients for the likelihood of the predictor variables to differentiate the business and criminal samples.

Table 30
Logistical Regression Coefficients for the Likelihood of Business and Criminal Samples for the Overall Model

Variables	*B*	Standard Error	Exp (B)	Lower 95% C.I	Upper 95% C.I
PPI-R-SCI	-0.02	0.02	0.98	0.94	1.02
PPI-R-FD	0.08	0.03	1.09**	1.03	1.14
PDS	0.09	0.08	1.09	0.93	1.30
IRI	0.10	0.04	1.11**	1.03	1.20
AES	-0.00	0.02	1.00	0.96	1.04
DASS-21	-0.05	0.04	0.95	0.88	1.03
SRQ-UA	-0.02	0.07	0.99	0.87	1.12
SRQ-OA	0.16	0.12	1.18	0.94	1.50
LC	-0.20	0.08	0.82*	0.71	0.96

Note. PPI-R-SCI = Psychopathic Personality Inventory-Revised-Self-Centred Impulsivity; PPI-R-FD = Psychopathic Personality Inventory-Revised-Fearless Dominance; PDS = Paulhus Deception Scales; IRI = Interpersonal Reactivity Index; AES = Assessing Emotions Scale; DASS-21 = Depression, Anxiety, and Stress Subscales-21; Social Response Inventory-Under-Assertiveness; Social Response Inventory-Over-Assertiveness; and LC = Locus of Control Scale.
Significant at $p<.05$*, $p<.01$**

Group membership for the business sample was uniquely predicted by fearless dominance, empathy and locus of control. Self-centred impulsivity, emotional intelligence, negative emotionality, under-assertiveness, over-assertiveness, and impression management and deception, did not distinguish the samples. The business sample (M = 125.41, SD = 17.71) was significantly more likely to have higher levels of fearless dominance than the criminal sample (M = 106.27, SD = 19.90), indicating greater levels of this psychopathy facet in the business sample. Significantly higher levels of empathy were also found for the business sample (M = 61.60, SD = 13.02), more common than in the criminal sample (M = 60.11, SD = 11.16), suggesting the business sample was characterised by greater empathic concern. The business sample (M = 8.67, SD = 3.52) was significantly less likely to have higher scores for locus of control compared to the criminal sample (M = 15.04, SD = 6.49). This indicated that the business sample had greater features of an internal locus of control rather than external locus of control, which was marked by higher scores.

Discussion

The present study sought to examine psychopathic traits in criminal, community and business samples, seeking to provide a greater understanding of psychopathy in specific populations. The present research aimed to explore the triarchic model through the PPI-R

subscales, with boldness captured by fearless dominance, disinhibition by self-centred impulsivity, and meanness by coldheartedness (Polaschek, 2015; Skeem et al., 2011). The study further aimed to explore support for the dual process and moderated expression models of psychopathy (Hall & Benning, 2006), and address the discrepancies between Hare (1999a) and Cleckley's (1941, 1976) theories of psychopathy.

The first hypothesis pertained to examining emotional and social factors (empathy and emotional intelligence), emotionality (negative emotionality) and interpersonal factors (assertiveness, impression management and deception, and locus of control). It was hypothesised that the business sample would have significantly higher levels of emotional intelligence and assertiveness compared to the community and criminal sample, and that the criminal sample would be characterised by higher levels of negative emotionality and a higher score of locus of control (external) compared to the community and business samples. The findings of the study primarily supported this hypothesis with the business and community samples found to have significantly higher levels of emotional intelligence compared to the criminal sample. The findings are consistent with theories on emotional intelligence and higher functioning (Baron-Cohen, 2011; Goleman, 1995). Although emotional intelligence levels were notably lower for the criminal sample, no difference was found between the business and community sample. The samples were found to significantly differ for levels of negative emotionality, with this difference most notable for the criminal sample. Significantly higher scores of negative emotionality for the criminal sample was found in comparison to the business and community samples. No difference was found for negative emotionality scores between the business and noncriminal samples. The results indicated that the criminal sample experienced greater symptoms of depression, anxiety and stress, consistent with a relationship between criminality and negative emotionality (Eyestone & Howell, 1994; Eysenck & Gudjonsson, 1989).

The sample differences for assertiveness demonstrated that the business sample had significantly higher levels of assertiveness than the criminal and community sample. In contrast, the criminal and community samples both had higher levels of under-assertiveness than the business sample. The results pertaining to assertiveness indicated that the criminal sample was characterised by lower levels of assertiveness and a greater tendency to act in an under-assertive manner, suggesting offenders in the sample may have had deficits with problem solving and regulating behaviour, consistent with theories on criminality (Eysenck & Gudjonsson, 1989; McMurran, Fyffe, McCarthy, Duggan, Latham, 2001). Sample differences

were identified for locus of control scores, with the criminal sample having a higher locus of control score compared to the business. Although no difference was found between the criminal and community samples for locus of control, the business sample was found to have significantly lower locus of control scores compared to the community sample. This indicated that the business sample was more prone to an internal locus of control, while the criminal sample reflected an external locus of control, suggesting that an internal locus of control may be more strongly related with success or adaptive functioning (Goleman, 1995; Nowicki & Duke, 1974). It appeared that the community sample had tendencies towards both an internal and external locus, consistent with the intermediate scoring category of the LC measure (Nowicki & Duke, 1974). Interestingly, the samples did not significantly differ in levels of psychopathy, with no differences found for total psychopathy scores across the samples. The samples were also not found to differ in age and in scores of impression management and deception, over-assertiveness, and empathy.

The second hypothesis of the study was related to differences amongst the sample for the PPI-R subscales. It was hypothesised that higher scores of fearless dominance would be found in the business and community samples and that higher scores of self-centred impulsivity would be observed in the criminal sample. This hypothesis was supported, with a significant effect of fearless dominance found for the business and community sample. The results indicated that greater levels of fearless dominance were found in both samples compared to the criminal sample. The findings supported previous research suggesting that noncriminal and successful psychopathy was characterised by greater boldness and interpersonal-affective features (Hall & Benning, 2006; Howe et al., 2014; Lilienfeld et al., 2012). A significant effect of self-centred impulsivity was found for the criminal sample, indicating that greater lifestyle and behavioural psychopathy features were found in offenders in the sample compared to the business sample, consistent with research on criminal psychopathy (Hare, 1999a, 2003; Hart & Hare, 1996; Hare & McPherson, 1984). The business sample and community sample were also found to differ in self-centred impulsivity, with significantly higher scores observed for the community sample. No statistical differences were found for coldheartedness scores across the samples, indicating that coldheartedness did not differentiate the samples. The results provided evidence supportive of the dual pathways model of psychopathy, with differing traits profiles evident for specific samples. Fearless dominance/boldness, characterised the business sample, while self-centred impulsivity/disinhibition was a core psychopathy pattern for the criminal sample (Hall &

Benning, 2006; Polaschek, 2015). Interestingly, the community sample appeared to be characterised by both self-centred impulsivity and fearless dominance relevant to the other samples, suggesting that the criminal sample and business sample may have distinct psychopathy trait patterns (Boddy, 2011; Hall & Benning, 2006; Mahmut et al., 2008; Polaschek, 2015; Skeem et al., 2011). Evidence was not found to suggest that coldheartedness or meanness contributed to differentiating the samples.

The third hypothesis of the study sought to explore the dual process and moderated expression models of psychopathy. It was firstly hypothesised (a) that compared to the community sample, the business sample would be predicted by higher levels of fearless dominance, impression management and deception, over-assertiveness, and lower levels of negative emotionality, while the criminal sample would be significantly predicted by higher levels of self-centred impulsivity, under-assertiveness, negative emotionality, and lower levels of empathy. The results from the regression analysis were partially consistent with the first part of the hypothesis. Interesting findings were observed, with the business sample predicted by significantly higher levels of fearless dominance and lower levels of self-centred impulsivity compared to community sample, providing support for research that suggests noncriminal and corporate/successful psychopathy are characterised by greater interpersonal and affective features (Brooks & Fritzon, 2016; Dutton, 2012; Hall & Benning, 2006). Support was not found for impression management and deception, negative emotionality and over-assertiveness as predictors of the business sample, failing to support part of the hypothesis. The findings for the criminal sample indicated that compared to the community sample, the criminal sample was predicted by lower levels of fearless dominance, impression management and deception, and empathy. The results suggested that psychopathy traits in the business and criminal samples were significantly different from the community sample.

The second part of the third hypothesis (b) predicted that in comparison to the criminal sample, higher levels of fearless dominance, emotional intelligence, over-assertiveness, impression management and deception, and lower levels of negative emotionality, and locus of control would predict the business sample. Fearless dominance was found to be a significant predictor of the business sample, differentiating the two samples and providing partial support for the dual process model of psychopathy (Hall & Benning, 2006; Patrick et al., 2005). Higher levels of empathy and lower levels of locus of control were also predictors of the business sample. Support was not found for emotional intelligence, over-assertiveness, negative emotionality, and impression management and deception as predictors of group

membership for the business sample. The results suggested that fearless dominance was a markedly distinct characteristic of the business sample, with greater levels of the psychopathy facet found in the sample of higher functioning participants, consistent with Howe et al. (2014). This finding supports theories of successful psychopathy (Dutton, 2012; Hall & Benning, 2006; Skeem et al., 2011). The higher levels of empathy suggested that compared to the criminal sample, the business sample were capable of greater empathy towards others. The external locus of control related to the criminal sample, indicated that relevant to the business sample, with criminal sample was more likely to attribute life circumstance to external rather than internal factors.

The results of hypothesis three provided support for the dual process and moderated expression pathways as theories of noncriminal psychopathy, with the three samples distinguished by different psychopathy traits. The differences were evident for fearless dominance differentiating the business sample from both the criminal and community samples, while self-centred impulsivity distinguished the community sample from the business sample. Interestingly, there was no statistical difference in levels of self-centred impulsivity between the criminal and community samples, suggesting that characteristic adaptions and environmental factors may moderate the relationship between noncriminal and criminal psychopathy (Costa & McCrae, 2003; Hall & Benning, 2006). Empathy was found to be lower in the criminal sample compared to both the business and community samples, while under-assertiveness, impression management and deception, and locus of control were further distinguishing factors between the samples. The results suggest that successful psychopathy and noncriminal psychopathy may be similar although discrete constructs, both characterised by boldness and interpersonal-affective psychopathy features (Board & Fritzon, 2005; Boddy, 2011; Hall & Benning, 2006; Skeem et al., 2011), yet differing in antisocial features. The findings suggest that both Cleckley (1941, 1976) and Hare's (2003) theories of psychopathy adequately capture psychopathic personality, however, each theory would appear to describe psychopathy in a specific population where traits and possibly etiology are distinctly similar, yet unique. The results provide support for the concept of successful psychopathy suggesting that successful/corporate psychopathy may be characterised by core psychopathy personality features, while the moderated expression pathway may account for similarities and differences in traits of self-centred impulsivity in noncriminal and criminal psychopathy.

Chapter 5
Discussion and Conclusions

The thesis sought to investigate psychopathy across different sample populations, contrasting psychopathic traits, and emotional and social features. The research aimed to develop a greater understanding of the differences between psychopathic traits in criminal and noncriminal samples. To date, little is known concerning psychopathic individuals who have succeeded in avoiding the criminal justice system (Ullrich et al., 2008). It is important for several reasons to understand the differences between criminal and noncriminal psychopathy. First, the empirical knowledge on criminal psychopathy may not be generalisable to noncriminal psychopathy (Gao & Raine, 2010; Hall & Benning, 2006; Mullins-Nelson et al., 2006). Although not characterised by violence, it is likely that noncriminal psychopathy is harmful for society through acts such as fraud, intimidation and greed (Croom et al., in press; Gao & Raine, 2010). Second, the attributes and etiologies of noncriminal and successful psychopathy are in need of investigation due to the empirical implications such differences may have on understanding psychopathy (Hall & Benning, 2006; Skeem et al., 2011). Continuous research that examines the general relationship between psychopathy, criminality and antisocial behaviour is unlikely to identify the trait and etiological differences of noncriminal psychopathy (Cooke et al., 2012; Gao & Raine, 2010). Finally, through empirical investigation, it may be possible to identify protective or moderating factors that prevent successful and noncriminal psychopaths from engaging in a criminal lifestyle (Gao & Raine, 2010; Hall & Benning, 2006; Mullins-Nelson et al., 2006).

The dual process, moderated expression, and subclinical models of psychopathy provide theoretical explanations for understanding psychopathic traits in noncriminal populations. The dual process model suggests that the interpersonal-affective features of psychopathy are etiologically distinct from the antisocial-behavioural aspects (Fowles & Dindo, 2009; Hall & Benning, 2006; Patrick, 2001; Skeem et al., 2011), while the moderated expression pathway proposes that etiological and environmental factors modify the expression of psychopathy (Fowles & Dindo, 2009; Hall & Benning, 2006; Patrick, 2001). The subclinical model argues that noncriminal psychopathy is characterised by less extreme forms and incomplete manifestations of psychopathy (Hall & Benning, 2006). The research did not examine etiological causes of psychopathy due to the extensive methodological challenges,

but found support for the dual process and moderated theories of noncriminal psychopathy based on the manifestation of psychopathy traits across the samples.

A key reason for the dearth of research on noncriminal psychopathy has been due to the lack of appropriate assessment tools and the reliance on the PCL-R to determine psychopathy (Skeem et al., 2011). To overcome this issue, the current study used the PPI-R, which has been widely used in the assessment of psychopathy (Hall et al., 2014; Lilienfeld & Widows, 2005; Polaschek, 2015; Skeem et al., 2011). The current research contrasted the findings of the PPI-R with the triarchic model of psychopathy, aiming to explore the empirical implications of the PPI-R factors in relation to the conceptual themes of boldness, disinhibition and meanness. Previous research suggests that the triarchic model shares empirical overlap with the PPI-R (Hall et al., 2014; Skeem et al., 2011).

The current research employed a self-report and experimental methodology across the studies to examine psychopathic traits among criminal, community and business samples. The PPI-R (Lilienfeld & Widows, 2005) was used to examine psychopathy in the present paper. Study one examined psychopathy, empathy, emotional intelligence, mimicry and emotional recognition, negative emotionality, and social information processing in a community sample. The second study investigated psychopathy and the same set of variables in a community based sample of criminals and a business sample comprised of postgraduate business students and working professionals. Study three contrasted psychopathic traits across the three samples.

Mimicry and Emotional Recognition

The research investigated the relationship between psychopathy, mimicry and emotional recognition using an experimental design. A further follow up regression analyses was conducted with key predictor variables of the research to explain emotional recognition. In the experimental design, psychopathy was found to have a significant main effect on emotional recognition in the criminal sample, with the higher psychopathy group having poorer emotional recognition than the lower psychopathy group. The finding provided partial support for the hypotheses with psychopathy found to have an effect on recognition. Notably, the other findings failed to provide support for the hypotheses, as psychopathy was not found to have any further significant effect on emotional recognition in the community or business samples. Across all three samples, a significant interaction between trial order and condition was observed. Several significant differences at the levels of the interaction were found,

though implementation of the paddle pop stick did not affect performance on emotional recognition.

For the regression analyses predicting emotional recognition, significant findings were only observed for the community and business samples. The results indicated that empathy was found to be a significant positive predictor of emotional recognition in both the community and business samples, while negative emotionality (DASS-21) was found to be a significant negative predictor for the community sample. The results were not replicated in the criminal sample, with none of the variables found to significantly predict emotional recognition. Psychopathy was not found to significantly predict emotional recognition in any sample failing to provide support for the expected hypotheses.

The findings from the experimental task indicated that no significant differences were found for higher levels of psychopathy in predicting recognition of emotional states across the control and experimental condition for the community sample. These results failed to clarify the relationship between psychopathy and emotional recognition in community and business samples. The findings add to the body of research that has found mixed and inconclusive findings regarding psychopathy and recognition of emotion. The results are consistent with research that has not identified a relationship between the two constructs (Book et al., 2007), yet inconsistent with other studies that support positive or negative relationships (Glass & Newman, 2006; Hastings et al., 2008; Long & Titone, 2007). For the criminal sample, the significant effect of psychopathy on emotional recognition suggested higher psychopathy scores resulted in poorer recognition. The finding was consistent with theories that suggest that criminal or unsuccessful psychopathy is characterised by deficits in recognition of emotion (Blair et al., 1997; Brook & Kosson, 2013; Cleckley, 1941, 1976; Johns & Quays, 1962; Lykken, 1957; Williamson et al., 1991). However, in the criminal sample, psychopathy failed to predict emotional recognition in the regression analyses, suggesting that this result should be interpreted with caution. Due to the smaller sample used in the regression analysis, number of predictors in the regression equation and subsequent reduced power, the potential relationships between variables may not have reached statistical significance, reflecting Type I error (Conlon, 2010; Howell, 2002).

The findings from the experimental task raised concerns regarding the success of the planned manipulation effect on emotional recognition. Despite being unable to smile or engage in any facial movement during the experimental condition, participants still effectively

identified the facial expressions displayed in the images. In study one, when the ordering was control condition followed by experimental condition, participants were found to have greater recognition when viewing the image with the paddle pop stick between their teeth, contradictory to the findings by Niedenthal et al. (2001). A similar pattern of findings was found for study two, with significant interaction results observed for trial and condition in both the business and criminal samples. Using the methodology of employing a pencil held between the teeth while viewing images of changing facial expressions, Niedenthal et al. found a significant difference between control and experimental conditions. In the current research the results suggest that the experimental manipulation failed to affect findings, raising questions as to whether this result was due to a methodological issue in the experimental design. The current research differed from Niedenthal et al. (2001) as static facial expressions of emotion were utilised rather than changing expressions of emotion. Subsequently, it is possible that the process of holding an object between the teeth may serve to delay or reduce the correct identification of a changing emotional expression, but not a static emotional state. Future research may benefit from employing the exact methodology devised by Niedenthal et al. (2001) to determine the replicability of their initial findings. Furthermore, previous research on psychopathic personality and recognition of facial affect has suggested that experimental directions are central to research outcomes. For examples, Dadds et al. (2006) found that if participants were instructed to look at the eye region of images, recognition improved. The use of clear designated instructions may assist future studies investigating psychopathy and emotional recognition.

The results from the regression analyses predicting emotional recognition suggested that empathy was associated with a greater ability to detect and recognise facial expressions of emotion in the community and business sample. This result was consistent with research on empathy and emotional understanding (De Waal, 2009; Ekman, 2009; Iacoboni, 2008). It is unclear as to why this finding was not replicated in the criminal samples. One explanation is the smaller size of each sample, which may have reduced the likelihood of detecting statistically significant relationships, with effect sizes smaller in both the business and criminal samples (Conlon, 2010). The finding pertaining to negative emotionality in the community sample suggested that higher levels of negative emotionality were associated with poorer emotional recognition. The result suggested that negative emotionality may impact on the detection of emotion, consistent with research on nonverbal cues of emotion and behaviour (Hutto, Herschbach, & Southgate, 2011; Spaulding, 2012). Surprisingly, emotional

intelligence was not found to be a significant predictor of emotional recognition across the studies. The result between these two constructs was unexpected and inconsistent with Goleman's (1995) theory of emotional intelligence. Although a relationship between empathy and emotional intelligence was observed in further regression analyses in the current research, it is possible that a self report measure of emotional intelligence was not suitable for the current research. Participants may have overestimated their emotional abilities, therefore leading to varied findings in the results. Future research would benefit from examining emotional intelligence through scenario-based problem solving questions that require participants to apply emotional intelligence to devise correct solutions, rather than self-reporting skills, consistent with the methodology employed by Copestake et al. (2013).

Social Information Processing

The second experimental design used in study one and study two examined social information processing. The research aimed to replicate the methodology and findings of Wilson et al. (2008), hypothesising that participants with higher levels of psychopathy would have greater recall and recognition of a sad unsuccessful female character. The results were examined based on recognition and recall of the character. Recognition was based on being able to recognise a character (yes/no), while recall was based on the number of details (name, occupation, likes and dislikes) the participant could recall about a character.

Across the three samples, only two significant results were identified in regard to psychopathy. In the community sample, psychopathy had a significant interaction effect with success for predicting recall and a significant interaction effect between psychopathy and gender was identified in the business sample. The interaction between psychopathy and success in the community sample revealed that a significant difference was found for recall of the unsuccessful character. Participants with higher levels of psychopathy had greater recall of the unsuccessful character compared to those with lower levels of psychopathy. No difference was observed for the recall of success for participants with low psychopathy scores. For the business sample, the interaction between psychopathy and gender failed to provide a greater understanding on higher levels of psychopathy traits, as the significant effect of gender was found for the low psychopathy group. The lower psychopathy group was found to recall the female characters more commonly than males, inconsistent with the hypothesis.

The findings that psychopathy was associated with greater recall of the unsuccessful character in a community sample could be indicative of identifying vulnerability (Book et al.,

2007; Wheeler et al., 2009; Wilson et al., 2008), however, the results of the criminal and business samples in study two failed to replicate these findings as psychopathy did not have a statistically significant effect on recognition or recall of social information. Due to the mixed findings the results failed to provide clarity on the association between psychopathy and the detection of vulnerability. It is unclear whether psychopathic traits amongst those with successful functioning in the community are related to detecting vulnerability. It is possible that the differences in the findings across the studies reflect issues with attention bias and participant attitudes (Augoustinos, Walker, & Donaghue, 2006). The results regarding character recognition and recall may have been significantly influenced by participant attitudes towards the gender, occupation and likes and dislikes of a charter regardless of levels of psychopathy. Further research may benefit from investigating whether extraneous factors such as attitudes influence participants' processing of social information.

A number of other findings from the social information processing task were observed in the results, irrespective of psychopathy and the hypotheses of the studies. The statistically significant results of the main effect findings across the samples indicated that unsuccessful characters were recognised and recalled at a greater frequency than successful characters. The significant interactions results across the three samples indicated consistent patterns in the findings pertaining to character gender, emotion and success. Successful sad characters were recognised at a greater rate than successful happy characters. The happy character was recognised more frequently when the character was unsuccessful rather than successful. For character gender, successful males characters were recognised at a greater rate than successful female characters. In contrast, unsuccessful females were recognised more frequently than unsuccessful males. Females were recognised at a greater rate when unsuccessful compared to successful. The difference in recognition of female characters based on levels of success was pronounced.

The interaction results revealed significant differences at levels of success and gender for recall of the sad character, however, this result was not found for the happy character. The results indicated that when the sad character was successful, recall of males and females was similar, yet when unsuccessful, recall was significantly greater for females compared to males. Sad male characters were recalled most frequently when successful compared to unsuccessful, while a difference in recall of females based on levels of success was not found. The results for the social information processing task indicated that, across the studies, participants appeared to recall conflictual details in characters, contrary to the idea of a happy

successful person and sad unsuccessful person (Huddy & Terkildsen, 1993; McGhee & Frueh, 1980; Plous & Neptune, 1997). The most prominent finding in the studies was that unsuccessful females were identified at higher rates, while successful males were highly identified. The findings suggested an unconscious predisposition towards recognition and recall of males that are successful, potentially reflecting societal stereotypes, and inconsistencies with television shows that portray the image of successful males (McGhee & Frueh, 1980). In contrast, the recall and recognition of unsuccessful females may reflect a bias towards women and achievement, with male success being recognised and female success unnoticed (Huddy & Terkildsen, 1993; Plous & Neptune, 1997).

Emotional Intelligence

A central aim of the present research was to expand on the understanding of the relationship between psychopathy and emotional intelligence, seeking to uncover whether the constructs coexist across different populations (Mullins-Nelson et al., 2006). The regression analyses also examined the relationship between emotional intelligence, age, gender, empathy and negative emotionality. An interaction between psychopathy and negative emotionality was created for the regression to investigate psychopathy subtypes. For study one and study two, psychopathy was not found to predict emotional intelligence. The relationship between psychopathy and negative emotionality was further not found to be significant for either study when predicting emotional intelligence, failing to find distinctions of psychopathy based on levels of negative emotionality. In the community sample, empathy and negative emotionality were found to be predictors of emotional intelligence. The results indicated that higher levels of empathy were associated with greater emotion intelligence, consistent with research pertaining to the construct (Baron-Cohen, 2011; Ekman, 2003; Goleman, 1995). Negative emotionality had a significant negative relationship with emotional intelligence, indicating that higher levels of emotional intelligence were associated with a reduced experience of negative emotions – suggestive of greater emotional wellbeing (Goleman, 1995).

In the business sample, empathy was a significant positive predictor of emotional intelligence, however, age, gender, negative emotionality and psychopathy were not predictors. The positive association between empathy and emotional intelligence supported research on the two constructs (Baron-Cohen, 2011; Ekman, 2003; Goleman, 1995), and provided evidence for the convergent validity of both the AES and IRI. For the criminal

sample, the findings revealed that none of the predictor variables significantly explained emotional intelligence. Negative emotionality was found to have a negative relationship with emotional intelligence and was close to statistical significance, although did not reach the specified probability level (Tabachnick & Fidell, 2007).

The findings of the present research failed to support the results by Fix and Fix (2015) who found a positive association between psychopathy and features of emotional intelligence, such as interpersonal relationships and stress management in a community sample. The results also did not support the expected primary and secondary psychopathy relationship based on levels of negative emotionality. The present findings share similarities with Brook and Kosson (2013) who found no significant relationship between psychopathy and emotional intelligence. In an offender sample, Copestake et al. (2013) found no significant association between total PCL-R scores and emotional intelligence, however, notably a significant positive relationship was observed between total PPI-R scores and emotional intelligence. The variance in past research on psychopathy and emotional intelligence has led to mixed and inconclusive findings. Previous studies that have reported significant findings have typically observed significant differences at the subscale level of both the psychopathy and emotional intelligence constructs (Fix & Fix, 2015; Grieve & Panebianco, 2013; Nagler et al., 2014). In the current research, several correlational findings were observed at the subscale level for the two constructs in both the business and criminal samples. Notably, in both samples, significant correlational findings between the PPI-R and AES subscales were negatively related, failing to find positive features of emotional intelligence in the business sample. The current results suggest that the relationship between psychopathy and emotional intelligence may reside at the trait level, rather than at the global construct level (Mullins-Nelson et al., 2006). This is consistent with the findings by Copestake et al. who observed different statistical relationships between the three PPI-R factors and subscales of the Trait-Meta Mood Scale measure of emotional intelligence (Salovey et al., 1995).

Empathy

Across study one and two, it was hypothesised that higher levels of psychopathy would be associated with lower scores of empathy, with deficits in empathy expected for all samples. The results of the regression analyses supported this prediction for the criminal and community samples, with psychopathy scores sharing a significant negative relationship with levels of empathy. The findings demonstrated a pattern of empathy deficits in participants

with higher levels of psychopathy, supporting seminal theories on psychopathy and research pertaining to the construct (Ali et al., 2009; Brook & Kosson, 2013; Cleckley, 1976; Hare, 1999a, 2003; Fecteau et al., 2008). Alternatively, it cannot be excluded that these findings were partially due to the shared method and item variance between the PPI-R and IRI, as both measures are share a degree of construct overlap. Therefore, results should be interpreted with caution.

For the business sample, a significant relationship between psychopathy and empathy was not observed. Psychopathy was found to share a significant negative relationship with overall empathy and facets of the IRI at the correlational level for the business sample, but this relationship was not significant at the multivariate level. Correlational analysis also revealed that fearless dominance was significantly negatively correlated with total IRI, empathic concern and personal distress, while coldheartedness was negatively correlated with IRI total, empathic concern, perspective taking, fantasy, and personal distress. The percentage of variance accounted for in the regression model was largely explained by negative emotionality, emotional intelligence and gender, with psychopathy failing to further add to the prediction of empathy in the business sample. The failure to find a relationship between psychopathy and empathy at the multivariate level in the successful sample was inconsistent with the expected hypothesis.

The present research hypothesised that an interaction between psychopathy and negative emotionality would be found for predicting empathy, however, similar to findings on emotional intelligence, no significant interaction was found between psychopathy and negative emotionality in predicting empathy across the samples. The findings indicated a lack of support for primary and secondary types of psychopathy based on levels of negative emotionality in the prediction of empathy in community, criminal and business samples. The research also failed to find a significant positive relationship between psychopathy and perspective taking as observed in previous research (Decety et al., 2013). Although not examined at the multivariate level, the correlational findings did not indicate a positive relationship between perspective taking and psychopathy, instead suggesting marked deficits for psychopathy with empathy, including perspective taking, in the business and criminal samples. The failure to find a positive relationship between psychopathy and perspective taking may also be accounted for by the self-report measure used to assess empathy in the present study, with perceptive taking examined globally rather than differentiated into imagine-self and imagine-others as examined by Decety et al. (2013).

For the community sample, a younger age and higher levels of emotional intelligence were significantly related to greater empathy. The findings pertaining to emotional intelligence are consistent with research concerning empathy and emotional intelligence (Davis, 1994; Ekman, 2003; Goleman, 1995). Emotional intelligence and negative emotionality were found to predict empathy in the business sample. The relationship between empathy and emotional intelligence in the business sample supports the findings from study one and is consistent with research on the two constructs (Davis, 1994; Ekman, 2003; Goleman, 1995). Although consistent with past research, due to the shared method and item variance between the IRI and AES, caution should be taken in interpreting these findings. Negative emotionality was also found to be a significant positive predictor of empathy in the criminal sample. The positive relationships between negative emotionality and empathy in both studies indicated that higher levels of empathy were associated with an elevated level of negative emotions, suggesting symptoms of negative emotionality may serve to increase empathic concern (De Wall, 2009). This may be accounted for by the rumination associated with negative emotionality, leading to individuals with higher levels of negative emotions focusing to a greater extent on understanding others' thoughts (De Wall, 2009; Gilbert & Trower, 2001; Hutto et al., 2011; Tibi-Elhanany & Shamay-Tsoory, 2011).

Psychopathy Traits and Sample Differences

The third study sought to investigate psychopathic traits across samples, examining leading theories on criminal and noncriminal psychopathy. The significantly higher levels of fearless dominance in the business sample compared to the community and criminal samples, provided support for the dual pathways model of psychopathy (Hall & Benning, 2006), primary psychopathy (Lykken, 1995), and Cleckley's (1941, 1976) depiction of psychopathic personality. The results suggested theoretical overlap with the triarchic model (Patrick et al., 2009), based on conceptual similarities between fearless dominance and boldness. Although consideration must be given to the finding that fearless dominance differentiated the business sample from the criminal and community samples, elevation on this facet alone does not indicate psychopathy (Lilienfeld et al., 2012). The elevation of fearless dominance suggested that the business sample had a significant pattern of psychopathy traits and when coupled with high or moderate levels of self-centred impulsivity and coldheartedness would suggest a psychopathic individual (Board & Fritzon, 2005; Hall & Benning, 2006; Hall et al., 2014; Lilienfeld et al., 2012; Skeem et al., 2011). This result is consistent with previous research

that has identified elevated levels of fearless dominance in samples of occupational success (Howe et al., 2014; Lilienfeld et al., 2012).

For the criminal sample, the results indicated a significant elevation in self-centred impulsivity; however, elevation on this facet alone does not indicate psychopathy. The present findings provided support for Hare's (2003) research on psychopathy in offenders, as well as secondary psychopathy (Lykken, 1957; 1995). The elevation of self-centred impulsivity suggested that the criminal sample shared conceptual features of disinhibition (Patrick et al., 2009). The results suggested that criminal sample was characterised by higher levels of self-centred impulsivity and if coupled with moderate to high levels of fearless dominance and coldheartedness, psychopathy would be evident (Hall & Benning, 2006; Hare, 2003; Lilienfeld et al., 2012).

Finally, results of the community sample revealed elevated levels of both fearless dominance and self-centred impulsivity relevant to the criminal and business samples. The findings suggested that psychopathic traits in the community sample were distinct from criminal and business samples, (Fix & Fix, 2005), reflecting conceptual similarities to both boldness and disinhibition. In terms of the triarchic model (Patrick et al., 2009), the results suggested that both boldness and disinhibition could characterise noncriminal psychopathy. The levels of clinical psychopathy (*T* scores of 65 and above) in the sample supported these findings with notable elevated levels of both fearless dominance and self-centred impulsivity observed in the community sample (Lilienfeld & Widows, 2005).

The differences in psychopathy traits manifestation across the samples provided support for the dual process model (Hall & Benning, 2006; Patrick, 2001). Evidence was further found to support the moderated expression model of psychopathy with the samples varying between interpersonal factors such as locus of control, impression management and deception, and assertiveness (Hall & Benning, 2006). The present research contends that variances in psychopathic personality is best explained jointly by the dual process and moderated expression models of psychopathy. Support for the subclinical model of psychopathy as an explanatory theory was not found in the current research with clinically elevated levels of psychopathy identified in the community and business samples. Present findings suggest the psychopathy traits of boldness and disinhibition, yet not meanness, differentiate the criminal, community and business samples. When these two psychopathy factors are coupled with emotionality, empathy, locus of control, impression management,

and assertiveness, further distinctions between the samples are evident, providing additional support for the dual process and moderated expression pathways. Future research would benefit from investigating the relationship between psychopathy and outcomes such as antisocial behaviour or status of employment, exploring the role of emotional and social factors as moderators of these relationships.

The findings from the current research supported the two seminal theories of psychopathy developed by Hare (2003) and Cleckley (1941, 1976). The PPI-R manual describes fearless dominance as the perception of oneself as a risk taker, unafraid of physical danger, free of nervous habits and social anxiety, remaining cool under pressure, socially confident, charming and engaging, and verbally fluent and able to influence others (Lilienfeld & Widows, 2005). In contrast self-centred impulsivity is depicted as seeing oneself as superior, manipulative and exploitive, reckless and defiant of social norms, blaming, poor problem solving, failing to consider consequences, and failing to learn from mistakes (Lilienfeld & Widows, 2005). The Cleckley (1941, 1976) depiction of psychopathy appears to reflect a greater resemblance of fearless dominance characteristics, while Hare's psychopathy description suggests an individual with greater self-centred impulsivity features. The results of the present research indicate that both of these theories capture psychopathy, however, each theory describes psychopathy in a specific population. Hare's psychopathy reflects criminal psychopathy, with some overlap with noncriminal psychopathy, while Cleckley's conceptualisation of psychopathy typifies successful and noncriminal psychopathy. Considering that meanness, which is characterised by a general lack of empathy, guilt, and attachment, did not differentiate the samples, it is likely that this psychopathy trait shares overlap of varying degrees with both boldness and disinhibition across all populations (Patrick et al., 2009; Polaschek, 2015).

Implications

The thesis examined psychopathic personality across three samples, seeking to address a limitation of past research which has predominately focused on incarcerated samples, failing to adequately address noncriminal populations (Hall & Benning, 2006). A strength of the current research was that the same methodology was employed over three samples, which allowed for results to be contrasted and evaluated across sample populations. The findings indicated distinctions between psychopathic traits in criminal, community, and business samples (Gao & Raine, 2010; Hall & Benning, 2006; Mullins-Nelson et al., 2006). The

research found support for Cleckley (1941, 1976) and Hare's (2003) principal theories of psychopathy and contends that differences in theories and depictions of psychopathy are a result of trait constellations the may lead to success or criminality.

Psychopathy was characterised by empathy deficits in the criminal and community samples, supporting seminal theories of psychopathy (Cleckley, 1941, 1976; Hare, 2003; Karpman, 1941, 1948). The results suggest that psychopathy in these samples was marked by a general lack of concern for others; however, this finding was not replicated in the business sample. Despite the business sample not being characterised by empathy deficits, elevated levels of fearless dominance were a core feature of the sample. The community sample was characterised by both high levels of self-centred impulsivity and fearless dominance, and the criminal sample by greater self-centred impulsivity. The results from the business sample are consistent with Lilienfeld et al. (2012) who found elevated levels of fearless dominance traits in USA presidents. The authors concluded that boldness/fearless dominance, but not disinhibition or meanness, was significantly positively associated with greater presidential leadership and performance ranking. It remained unclear in the findings by Lilienfeld et al. as to whether a cut-off point existed in which traits of boldness became problematic and impeded performance. Although an elevation on boldness alone does not indicate psychopathy, the marked elevation for this facet is of relevance to understanding successful psychopathy. In the present research, 17% of participants in the business sample were identified as having clinically elevated levels of fearless dominance. Clinically elevated levels are indicative of prototypical psychopathic traits, suggesting pathological significance, and a pervasive personality style (Lilienfeld & Widows, 2005). The findings for the business sample are consistent with Howe et al. (2014) who found that 7 of 55 (12.7%) financial investors had elevated levels of fearless dominance based on two standard deviations above the standardised mean score. The authors suggested that boldness may serve as a positive adaptive psychopathy trait in moderate levels, leading to greater achievement (Dutton, 2012; Lilienfeld et al., 2012); yet in clinical levels was likely to be problematic and impair success.

The number of participants with elevated traits of boldness in the business sample has implications for business and the community. Psychopathic traits can lead to illegal and unethical business practices and have a toxic influence on colleagues and relationships (Boddy, 2011; Babiak & Hare, 2006; Spector, 1997). Fearless dominance is characterised by risk taking, immunity to physical danger, calmness, absence of nervousness, social confidence, charm, verbally fluency and the ability to influence others. These characteristics

in moderation would appear to be beneficial for business. However, it is unknown as to whether excessive fearless dominance or boldness may become problematic and contribute to immoral and harmful behaviour. In a study of white-collar crime, high hedonism, high narcissism, high conscientiousness and low self-control were found to be predictors of fraud (Blickle et al., 2006). Personality traits are best viewed on a continuum (Edens et al., 2006) and the upper echelons of fearless dominance raise several questions about the functionality of this trait. It is unclear whether significantly elevated levels of fearless dominance may become disinhibitory, such that a person fails to foresee their own limits and potential risks. Alternatively, a more serious issue may present when fearless dominance is coupled with disinhibited tendencies, resulting in disinhibited fearless dominance (Patrick, Drislane, & Strickland, 2012). The contribution of fearless dominance to psychopathy remains an area of ongoing research need, particularly research examining observational markers that may indicate impairment in an individuals personal, social and work life (APA, 2013). Research examining observational markers would be of value in the business setting to establish the functionality of this trait.

The findings relating to the community sample suggest that noncriminal psychopathy may be characterised by elevations on both boldness and disinhibition, although this elevation for boldness was not as marked as the business sample. For example, in the community sample, only 9.8% of participants were found to have elevated levels of fearless dominance. In contrast, the community sample had comparable levels of self-centred impulsivity/disinhibition (19.6%) to that of the criminal sample (20.5%). Interestingly, the community sample was able to function in general society, commonly avoiding arrest or a custodial order, suggesting that traits of disinhibition may vary based on behavioural extremities (Patrick et al., 2009; Skeem et al., 2011). The findings from the community sample shared similarities with Board and Fritzon (2005) who observed elevated levels of histrionic, narcissistic and obsessive-compulsive personality traits in a sample of senior business managers. Although the present study employed different measures to that used by Board and Fritzon, at the trait level, similarities in findings are evident. Shared trait similarity included: manipulation, social confidence, charm, superiority, exploitiveness, defiance of social norms, poor problem solving and a failure to learn from mistakes. The results suggest that despite psychopathic personality traits being found in the community, akin to the findings by Board and Fritzon, participants are able to function in society. One explanation for this may be Hall and Benning's (2006) moderated expression pathway. The community and

criminal samples were both found to have elevated levels of self-centred impulsivity, yet one sample displayed criminal behaviour and the other sample had limited criminal misdemeanours. The present study did not examine environmental contributions to the development of psychopathy, however, difference in education, employment and social support, may serve to moderate the pathway between criminal and noncriminal psychopathy (Fowles & Dindo, 2009; Hall & Benning, 2006; Skeem et al., 2011; Willemsen & Verhaeghe, 2012). One example of this in the present results was observed in the criminal sample, found to have lower levels of empathy compared to the community sample. The implications of lower empathy are varied, but may include relationship difficulties, workplace issues, callous behaviour and disregard for others (Goleman, 1995; Hare, 2003).

The findings concerning psychopathy, empathy and emotional intelligence indicated a need for further research investigating the subscales and/or factors of psychopathy. Future research would benefit from examining the unique contribution of psychopathy factors in accounting for psychopathic traits in specific populations. It is recommended that future research examine the relationship between psychopathy traits, rather than the overall construct, due research suggesting that traits may vary based on criminal and noncriminal populations (Fritzon et al., 2016; Hall & Benning, 2006; Hare, 2003; Howe et al., 2014). Important empirical understanding may be lost if psychopathy is viewed under the guise of a global construct. Although the research examined constructs associated with psychopathy, further investigation of interpersonal and environmental factors such as intelligence, lifestyle choices, social support, childhood development and employment would assist in understanding the moderated expression pathway of psychopathy. Through examining these factors, it may be possible to establish further support for the moderated pathway model of psychopathy, as these factors may modify the expression of psychopathic traits. Due to the issues with relying on self report data and the risk of shared method or item variable, it is recommended that future research studying psychopathy and emotional variables, utilise a joint approach of self report and observational data collection. The use of observational methods would also assist in gaining an accurate understanding of participant emotional abilities, as participants may overestimate levels of empathy or emotional intelligence.

The findings from the business and community samples suggest psychopathic traits are found in noncriminal populations, however, the extent to which these traits are adaptive or destructive is unknown. Similar to the findings on fearless dominance, it is unclear as to when psychopathic traits begin to become destructive, rather than adaptive. To assist in answering

this question, it is recommended that future research investigate differences in levels of psychopathy and occupational success, determining whether subclinical levels may serve as a protective factor, while clinical levels may be deemed problematic (Gao & Raine, 2010; Hall & Benning, 2006; Mullins-Nelson et al., 2006). A personality disorder is identified through behaviour that deviates from the normative expectations of a culture, characterised by inflexibility, pervasiveness and leading to distress or impairment (APA, 2013). Subsequently, due to the dimensional nature of psychopathy, outcome based measures evaluating the impact psychopathic traits have on external factors such as job performance or employment history would assist in determining both optimal and harmful levels of traits. Research would also benefit from examining the relationship between psychopathy traits and occupational success based on physiological differences in response to stress. Such research may employ stress design paradigms measuring galvanic skin response to a stimuli similar to that employed by Hare (1966) and Ogloff and Wong (1990). Research on psychopathic traits and response to stress in a sample of occupational success would provide a greater understanding as to whether psychopathic traits such as fearlessness and boldness serve as adaptive traits in the community.

The research did not find support for psychopathy types based on levels of negative emotionality, failing to support a primary and secondary dichotomy. The findings may be partially due to the methodological sampling issues of assessing negative emotionality on the DASS-21 self-report measure (Henry & Crawford, 2005; Lovibond & Lovibond, 1995). The DASS-21 requires respondents to rate symptoms over the past week, potentially failing to capture negative emotionality due to the short time period of measurement. Future research would benefit from incorporating measures that examine reinforcing sensitivity theory of personality (Corr, 2008; Gray, 1982, 1987) such as the Sensitivity to Reward and Sensitivity to Punishment Questionnaire (SRSPQ; Torrubia et al., 2001) and the Behavioural Inhibition System and Behavioural Approach System Scales (BIS/BAS; Carver & White, 1994), which have previously been used in research to demonstrate primary and secondary psychopathy types (Newman et al., 2005). Personality measures such as the MCMI-IV (Millon, Grossman, & Millon, 2015) may also serve to assist in determining primary and secondary psychopathy, including emotionality scales deemed to reflect a trait rather than a state.

The research found limited associations between age and psychopathy across the samples. A relationship was found between psychopathy and gender in the community and business samples, with males found to score significantly higher on total psychopathy scores.

This finding was consistent with research on psychopathy (Hare, 1999a, 2003). The research failed to find higher levels of psychopathy traits in females compared to males, however, females were found to have clinically elevated levels of psychopathy consistent with Fritzon et al. (2016). This has implications for understanding noncriminal and successful psychopathy, as although females did not score as high as males, elevated levels of psychopathic traits were identified for females. This suggests that psychopathic traits are found in females outside of offender populations. In contrasting sample differences of the third study, age was not found to predict membership of any of the sample, while gender differences were not observed except for the criminal sample. The gender differences in the criminal sample appeared to be a result of unequal sampling of the genders and small number of female participants (Tabachnick & Fidell, 2007).

The results pertaining to emotional recognition, social information processing and psychopathy provided inconclusive findings. Psychopathy was not found to be a significant predictor of emotional recognition, except for a partial finding for the criminal sample. A notable limitation was found in regard to the experimental methodology employed to examine mimicry and emotional recognition. The results of the study suggested possible issues pertaining to trial order and also a poor experimental effect. This concerned the inconsistencies in the findings between the experimental and control conditions and the unexpected interaction between trial order and condition. Future research may benefit from providing detailed task directions (Dadds et al., 2006) and employing the exact methodology devised by Niedenthal et al. (2001) who examined participants' abilities to detect changes in facial expressions rather than static expression of emotion. It is possible that restricting the mimicry process has greater implications for observing changes in emotional states rather than identifying static expressions of emotion.

The finding regarding higher levels of psychopathy and lower levels of emotional recognition in the criminal sample suggested possible deficits for psychopathic individuals in emotional recognition, however, this finding was not conclusive due to the non-significant regression analysis. Overall, psychopathy was not a significant predictor of emotional intelligence or emotional recognition in any sample. This suggests that the relationships between psychopathy, emotional intelligence, and emotional recognition was unclear, suggesting psychopathy was not associated with either higher or lower emotional abilities. As psychopathy was not a negative predictor of these two constructs, deficits in emotional intelligence and emotional recognition cannot be inferred, suggesting that people with

psychopathic traits may be capable emotional of awareness and recognition (Blair et al., 1997; Decety et al., 2013).

The relationship between psychopathy and social information processing was examined through a character based computer task in the present research. The results from the criminal and successful samples were inconclusive, failing to support findings by Wilson et al. (2008) who found that the higher psychopathy group had greater recognition of the sad and unsuccessful female character. The methodology developed by Wilson et al. was tested across community, criminal, and business samples in the present study, failing to replicate recognition and recall of the sad unsuccessful female. It is recommend that future research investigate the methodology by Wilson et al. (2008) in a sample of incarcerated offenders using the PPI-R or PCL-R. The use of the social information task with incarcerated offenders may provide a more thorough understanding of the utility of the methodology in examining psychopathic individuals' abilities to detect social cues and vulnerability.

The results of the social information processing task in the current study provided an understanding of recognition and recall of information about gender, emotion, and success. The findings revealed that recognition and recall of character details was strongly related to success. The interaction results reflected this pattern of findings with the sad successful males recalled at higher rates and the sad unsuccessful females also most commonly recalled. Due to inconsistencies with societal images the sad successful male character may have been recalled more frequently (Huddy & Terkildsen, 1993). The recall of the sad unsuccessful female may indicate negative beliefs pertaining to female happiness and success, with such beliefs reflecting suggestions that females are less likely to be happy and achieve career success (Plous & Neptune, 1997). The current research did not examine or control for extraneous factors such as attitudes, which may have influenced participants' recognition and recall of characters. To overcome this issue, future research may benefit from utilising an implicit association test, which is used to determine underlying beliefs and attitudes (Snowden, Gray, Smith, Morris, & MacCullough, 2004). Implicit association testing has previously been employed in research on psychopathy examining violent cognitions (see Snowden et al., 2004). This form of testing could focus on both the perception of vulnerability as well as general attitudes and biases that may influence judgment.

Limitations and Directions for Future Research

Across the three samples different statistically significant differences in psychopathic traits were observed. The highest prevalence of clinically elevated traits was found in the community sample, followed by the business and criminal samples. The business sample examined participants completing MBA programs and working in the professional field. The research sought to examine psychopathic traits in a highly educated sample of practising/soon to be practising business professionals. The level of education also provided an overarching standard to determine success. However, by using this sampling approach, the research may have failed to adequately capture psychopathic people that achieve positions in business without high levels of education. Future research may benefit from clearly defining the construct of success and incorporating both professional experience and mixed educational achievement in business samples. Understanding psychopathy in noncriminal settings also remains a challenge, due to the lack of standards or guiding criteria to determine samples. Greater guidelines are needed to establish consistency in empirical research investigating the construct in noncriminal populations.

Highest psychopathy prevalence rates have previously been found in offender samples, ranging between 15% and 25% (Hart & Hare, 1996). Support for this was not found in the current research, with a low rate of psychopathy observed in the criminal sample. This finding may be partially due to the large number of sexual offenders (60%) in the current sample. Although a percentage of these offenders were placed on the Dangerous Prisoners Sexual Offenders Act (Queensland Government, 2003) and considered to be of high risk, these offenders have served extended periods in custody and increased in age while incarcerated. Studies have found that the level of psychopathic traits may reduce with age (Hare, 1999a, 2003; Witt et al., 2010). Research has identified that psychopathy prevalence rates in sexual offenders are also varied based on offence type and may be lower in comparison to other offender groups (Porter et al., 2001). Past research indicated that psychopathy prevalence rates for rapists are typically consistent with overall criminal populations; however, psychopathy is typically lower in child sexual offenders, with prevalence estimated to be below 5% (Porter et al., 2001). Subsequently, the findings pertaining to psychopathy in the criminal sample may be limited due to lower rates of psychopathy and the sampling of offenders on community based orders and sexual offenders. Offenders on community based orders may have been of lower risk and therefore lower in psychopathy, due to receiving community, rather than custodial based orders. Future studies

using balanced samples of offenders with varied offence types would assist in overcoming this sampling issues. A further issue of the criminal sample was the limited number of female participants. The unequal gender distribution made it difficult to conduct comparisons across the three samples in relation to gender and, subsequently, the four female participants had to be removed from a section of the analyses when comparing the three samples.

A strength of the current sampling was that the community sample provided a baseline comparison relative to the criminal and business samples, however the smaller sample sizes in both samples were a limitation. Due to the sample sizes, statistical power was reduced, which limited inferences that could be made based on the data (Tabachnick & Fidell, 2007). Consequently, results may provide exploratory findings rather than scientific conclusions. A further consequence of the smaller sample sizes was that the sensitivity of findings pertaining to both the business and criminal samples may have been reduced, failing to detect significant relationships. This may have limited the findings related to the psychopathy construct, in particular differentiating primary and secondary psychopathy.

The current research found significant differences in psychopathic traits across the three samples. The results provided support for both the dual and moderated expression pathways of psychopathy based on trait manifestation. The etiological pathways of psychopathic personality were not examined in the current research due to the methodological challenges of examining etiology such as time demands, feasibility and sampling issues. Consequently, further research focusing on attributes and etiologies of noncriminal psychopathy, particularly successful psychopathy, is required. It is recommended that research investigating the etiological pathways of psychopathy employ a longitudinal design, incorporating a detailed analysis of social, psychological and environmental factors and multiple FMRI analyses at key developmental life stages. A longitudinal analysis incorporating these areas of measurement would allow for research on the developmental trajectories of psychopathic personality, including neurological and environmental contribution to psychopathy. Past longitudinal research conducted on a sample of community based mental health patients, found that over a 10-year period, traits of fearless dominance increased in manifestation, while impulsive antisocial traits decreased (Witt et al., 2010). It is unclear whether this pattern is consistent with psychopathic personality in the community and business settings. For example, the role of environmental factors in the business domain such as income, job title, and power, may serve to perpetuate traits of fearless dominance (Smith & Lilienfeld, 2013). Alternatively, these factors may moderate impulsive antisociality and/or

differentiate levels of success. Longitudinal analysis would assist in exploring these areas of research need and provide greater empirical understanding on the manifestation of psychopathic personality in the business sector. The association between psychopathy and success will require empirical analysis over time to observe the causal relationship between these factors (Ulrich et al., 2008).

A further limitation of the study was the predominance of self-report measures. The use of self-report instruments may have led to a large degree of bias and participant variability; however, Watts et al. (2015) contends that the validity of self-report psychopathy measures is not diminished by response distortion. Despite this, self-report measures have limitations and are prone to participant nuisances, biases and issues with self-understanding. While self-report measures allow for the wider investigation of psychopathy, limitations are evident when compared to a structured criterion measure such as the PCL-R, which overcomes the challenges of questionnaires. However, because of the lack of appropriate assessment tools to assess psychopathy in noncriminal contexts, which has previously restricted research into the construct (Babiak et al., 2010; Skeem et al., 2011), the survey style of research is the most suitable method at present (Lilienfeld & Widows, 2005; Skeem et al., 2011). Although the PDS was not employed for all analyses, due to issues with adequate statistical power, the use of this measure in study three controlled for potential distortion in participant responding. The results suggested that the only significant difference across the samples on the PDS was for the criminal sample compared to the community sample. This finding suggested that the criminal sample reported significantly lower scores on the measure compared to the community sample. As no significant difference was observed between the business and community samples, nor the business and criminal samples, the result from the criminal sample was not interpreted as reflecting distorted responding in the community sample. A further issue with studying psychopathy outside of the custodial setting is the difficulty with verifying past criminal behaviour. Criminal histories provide important information on participants and without this information it is difficult to determine a noncriminal sample (Gao & Raine, 2010). Future research would benefit from including a detailed questionnaire on past criminal offences/behaviours to control for possible sample contamination when examining noncriminal psychopathy.

Conclusion

The research sought to address a wide range of social and emotional factors associated with psychopathic personality. The research found support for the PPI-R as a measure of psychopathic personality across populations, and the shared overlap of the measure with the triarchic model assisted in conceptualising psychopathy at the global and factor level. The results suggested that differences in the manifestation of psychopathic traits were evident between the criminal, community and business samples. Notably, psychopathic traits in the business sample were found to be distinct from the community sample. The results suggest that future research should concentrate on developing empirical understanding of the pathways associated with successful psychopathy, including factors that may differentiate noncriminal and successful psychopathy. Successful psychopathy has received limited empirical research and it is possible that, similar to criminal populations where psychopathy traits often vary based on offending (Porter et al., 2001), psychopathic traits may differ based on careers. Consequently, successful psychopathy may be a broad construct, with underlying traits of individuals within this subgroup likely to vary between a surgeon, special forces officer, and financial investor (Dutton, 2012; Hall & Benning, 2006). This has further implications for understanding noncriminal psychopathy, as psychopathic traits are likely to be associated with a range of careers, including both white-collar and blue-collar professions. Initial research has suggested that fearless dominance is evident in samples of white-collar professions (Babiak et al., 2010; Blickle et al., 2006; Howe et al., 2014; Lilienfeld et al., 2012), however, it unclear as to whether this pattern of results is found in blue-collar workers. This raises a question as to the appropriate terminology used to capture psychopathy in the community. The current findings suggest that in a sample of business professionals, psychopathic traits of boldness and fearlessness separate the business sample from the community sample, while disinhibition characterises the community sample compared to the business sample. Further research is required to understand the unique role of psychopathy traits in the corporate sector, in particular the extent to which fearless dominance serves to provide positive adaptive features or in contrast become a destructive personality trait. It is also important to determine differences in traits of disinhibition that were found in both the community and criminal samples, specifically regarding behavioural expression and lifestyle features.

The current findings provided support for the dual process and moderated expression models of psychopathy. The business and community samples were characterised by greater interpersonal-affective features compared to the criminal sample, partially consistent with the

dual process model. Support for the moderated expression model was also found in the business and community samples relative to the criminal sample. The business sample was characterised by traits of boldness, yet was not marked by empathy deficits, suggesting that traits of meanness and disinhibition may have been moderated over time. For the community sample, evidence for the moderated pathway was found in the elevation of traits of disinhibition, comparable to the criminal sample. This finding suggests that participants in the community sample may act out in more pro-social means compared to those in the criminal sample, possibly a result of moderated factors such as education and social support. The thesis provided a comparison of psychopathic traits across sample populations, seeking to offer a new understanding of psychopathy outside of the research conducted on offender samples. The results indicated the presence of psychopathic traits in all three samples, and signified the importance for future research to refine the terminology, understanding, and assessment of noncriminal and successful psychopathy.

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Appendix A – Self-Report Questionnaires

Demographic Questionnaire – Community and Criminal Samples

Age: _____

Gender: ❑Male ❑Female

Religion: *Choose one option*

❑Buddhism
❑Christianity
❑Hinduism
❑Islam
❑Judaism
❑Atheist
❑Agnostic
❑Other: _____

Occupation: *Please select one category.*

❑Managers
❑Professionals
❑Technicians & trades workers
❑Community & Personal Service workers
❑Clerical & Administrative workers
❑Sales workers
❑Machinery operators & drivers
❑Labourers
❑Other: _____

Have you ever been arrested?

❑Yes
❑No

Income per week:

❑Negative/Nil Income
❑$1 – 39 ❑$40 -79
❑$80-119 ❑$120-159
❑$160-199 ❑$200-299
❑$300-399 ❑$400-499
❑$500-599 ❑$600-699
❑$700-799 ❑$800-999
❑$1, 000 – 1, 499 ❑$1, 500 or more

Level of Education Completed:

❑Year 8 or below
❑Year 9
❑Year 10
❑Year 11
❑Year 12
❑TAFE Diploma/Certificate (I, II, III, IV)
❑Bachelor's Degree
❑Postgraduate Degree
❑Masters Degree
❑Doctorate Degree/ PhD
❑Other: _____

Do you have a criminal record?

❑Yes
❑No

Are you currently on a criminal justice order or have you previously been involved with the criminal justice system for a criminal matter?

Do you have a criminal record?

❑Yes
❑No

If 'Yes' which of the below categories best describes your offence? Please tick the relevant category or categories.

1. **Violent offence**
2. **Sexual offence**
3. **Property offence**
4. **Fire-setting offence**
5. **Fraudulent offence**
6. **Alcohol offence**
7. **Drug offences**
8. **Motor Vehicle offence**
9. **Public Nuisance offence**

Demographic Questionnaire – Business Sample

Age: _____

Gender: ❑Male ❑Female

Religion: *Choose one option*

❑Buddhism
❑Christianity
❑Hinduism
❑Islam
❑Judaism
❑Atheist
❑Agnostic
❑Other: _____

Occupation: *Please select one category.*

❑Managers
❑Professionals
❑Technicians & trades workers
❑Community & Personal Service workers
❑Clerical & Administrative workers
❑Sales workers
❑Machinery operators & drivers
❑Labourers
❑Other: _____

Years in Occupation:

Occupation Position Title:

Have you ever been arrested?

❑Yes
❑No

Income per week:

❑Negative/Nil Income
❑$1 – 39 ❑$40 -79
❑$80-119 ❑$120-159
❑$160-199 ❑$200-299
❑$300-399 ❑$400-499
❑$500-599 ❑$600-699
❑$700-799 ❑$800-999
❑$1, 000 – 1, 499 ❑$1, 500 or more

Level of Education Completed:

❑Year 8 or below
❑Year 9
❑Year 10
❑Year 11
❑Year 12
❑TAFE Diploma/Certificate (I, II, III, IV)
❑Bachelor's Degree
❑Postgraduate Degree
❑Masters Degree
❑Doctorate Degree/ PhD
❑Other: _____

Do you have a criminal record?

❑Yes
❑No

Are you currently on a criminal justice order or have you previously been involved with the criminal justice system for a criminal matter?

Do you have a criminal record?

❑Yes
❑No

If 'Yes' which of the below categories best describes your offence? Please tick the relevant category or categories.

1. **Violent offence**
2. **Sexual offence**
3. **Property offence**
4. **Fire-setting offence**
5. **Fraudulent offence**
6. **Alcohol offence**
7. **Drug offences**
8. **Motor Vehicle offence**
9. **Public Nuisance offence**

Interpersonal Reactivity Index

The statements below describe how people feel and react to various situations. For each statement, please circle a number from 0 to 4 according to how well it describes you, with 0 for "Does not Describe me Well", through to 4 for "Describes me Very Well". Please answer every question as honestly as possible.

		Does Not Describe me	Describes me a little	Describes me somewhat	Describes me fairly well	Describes me very well
1.	I daydream and fantasise, with some regularity about things that might happen to me.	0	1	2	3	4
2.	I often have tender, concerned feelings for people less fortunate than me.	0	1	2	3	4
3.	I sometimes find it difficult to see things from the "other guy's" point of view.	0	1	2	3	4
4.	Sometimes I don't feel very sorry for other people when they are having problems.	0	1	2	3	4
5.	I really get involved with the feelings of the characters in a novel.	0	1	2	3	4
6.	In emergency situations, I feel apprehensive and ill-at-ease.	0	1	2	3	4

PSYCHOPATHIC PERSONALITY CHARACTERISTICS

		Does Not Describe me	Describes me a little	Describes me somewhat	Describes me fairly well	Describes me very well
7.	I am usually objective when I watch a movie or play, and I don't often get completely caught up in it.	0	1	2	3	4
8.	I try to look at everybody's side of a disagreement before I make a decision.	0	1	2	3	4
9.	When I see someone being taken advantage of, I feel kind of protective towards them.	0	1	2	3	4
10.	I sometimes feel helpless when I am in the middle of a very emotional situation.	0	1	2	3	4
11.	1 sometimes try to understand my friends better by imagining how things look from their perspective.	0	1	2	3	4
12.	Becoming extremely involved in a good book or movie is somewhat rare for me.	0	1	2	3	4
13.	When I see someone get hurt, I tend to remain calm.	0	1	2	3	4
14.	Other people's misfortunes do not usually disturb me a great deal.	0	1	2	3	4
15.	If I'm sure I'm right about something, I don't waste much time listening to other people's arguments.	0	1	2	3	4
16.	After seeing a play or movie, I have felt as though I were one of the characters.	0	1	2	3	4

PSYCHOPATHIC PERSONALITY CHARACTERISTICS

	Does Not Describe me	Describes me a little	Describes me somewhat	Describes me fairly well	Describes me very well
17. Being in a tense emotional situation scares me.	0	1	2	3	4
18. When I see someone being treated unfairly, I sometimes don't feel very much pity for them.	0	1	2	3	4
19. I am usually pretty effective in dealing with emergencies.	0	1	2	3	4
20. I am often touched by things that I see happen.	0	1	2	3	4
21. I believe that there are two sides to every person and try to look at them both.	0	1	2	3	4
22. I would describe myself as a pretty soft-hearted person.	0	1	2	3	4
23. When I watch a good movie, I can very easily put myself in the place of a leading character.	0	1	2	3	4
24. I tend to lose control during emergencies.	0	1	2	3	4
25. When I'm upset at someone, I usually try to "put myself in his shoes" for a while.	0	1	2	3	4
26. When I am reading an interesting story or novel, I imagine how I would feel if the events in the story were happening to me.	0	1	2	3	4
27. When I see someone who badly needs help in an emergency, I go to pieces.	0	1	2	3	4
28. Before criticising somebody, I try to imagine how I would feel if I were in their place.	0	1	2	3	4

PSYCHOPATHIC PERSONALITY CHARACTERISTICS

The Assessing Emotions Scale

Directions: Each of the following items asks you about your emotions or reactions associated with emotions. After deciding whether a statement is generally true for you, use the 5-point scale to respond to the statement. Please circle the "1" if you strongly disagree that this is like you, the "2" if you somewhat disagree that this is like you, "3" if you neither agree nor disagree that this is like you, the "4" if you somewhat agree that this is like you, and the "5" if you strongly agree that this is like you.

There are no right or wrong answers. Please give the response that best describes you.

1 = strongly disagree
2 = somewhat disagree
3 = neither agree nor disagree
4 = somewhat agree
5 = strongly agree

1.	I know when to speak about my personal problems to others.	1 2 3 4 5
2.	When I am faced with obstacles, I remember times I faced similar obstacles and overcame them.	1 2 3 4 5
3.	I expect that I will do well on most things I try.	1 2 3 4 5
4.	Other people find it easy to confide in me.	1 2 3 4 5
5.	I find it hard to understand the non-verbal messages of other people.	1 2 3 4 5
6.	Some of the major events of my life have led me to re-evaluate what is important and not important.	1 2 3 4 5
7.	When my mood changes, I see new possibilities.	1 2 3 4 5
8.	Emotions are one of the things that make my life worth living.	1 2 3 4 5
9.	I am aware of my emotions as I experience them.	1 2 3 4 5
10.	I expect good things to happen.	1 2 3 4 5
11.	I like to share my emotions with others.	1 2 3 4 5
12.	When I experience a positive emotion, I know how to make it last.	1 2 3 4 5
13.	I arrange events others enjoy.	1 2 3 4 5
14.	I seek out activities that make me happy.	1 2 3 4 5
15.	I am aware of the non-verbal messages I send to others.	1 2 3 4 5

16.	I present myself in a way that makes a good impression on others.	1 2 3 4 5
17.	When I am in a positive mood, solving problems is easy for me.	1 2 3 4 5
18.	By looking at their facial expressions, I recognize the emotions people are experiencing.	1 2 3 4 5
19.	I know why my emotions change.	1 2 3 4 5
20.	When I am in a positive mood, I am able to come up with new ideas.	1 2 3 4 5
21.	I have control over my emotions.	1 2 3 4 5
22.	I easily recognize my emotions as I experience them.	1 2 3 4 5
23.	I motivate myself by imagining a good outcome to tasks I take on.	1 2 3 4 5
24.	I compliment others when they have done something well.	1 2 3 4 5
25.	I am aware of the non-verbal messages other people send.	1 2 3 4 5
26.	When another person tells me about an important event in his or her life, I almost feel as though I experienced this event myself.	1 2 3 4 5
27.	When I feel a change in emotions, I tend to come up with new ideas.	1 2 3 4 5
28.	When I am faced with a challenge, I give up because I believe I will fail.	1 2 3 4 5
29.	I know what other people are feeling just by looking at them.	1 2 3 4 5
30.	I help other people feel better when they are down.	1 2 3 4 5
31.	I use good moods to help myself keep trying in the face of obstacles.	1 2 3 4 5
32.	I can tell how people are feeling by listening to the tone of their voice.	1 2 3 4 5
33.	It is difficult for me to understand why people feel the way they do.	1 2 3 4 5

Social Response Inventory

*In each of the following items a Social Situation is described, together with a number of possible responses. Please place a **X** beside the response that you think you would do. If none of the alternatives seems exactly right for you, check the one that is closest to what you believe you would actually do. Remember we are interested in what you think you actually WOULD do rather than what you think is appropriate.*

1. You are in the middle of eating supper when a man comes to the door to ask you questions about television programmes you watch. Would you.

a.	Ask him in and answer the questions while you finish eating.
b.	Answer all his questions immediately leaving your supper to get cold.
c.	Tell him, without giving any explanation that you will not answer his questions.
d.	Angrily tell him to go away and slam the door in his face.
e.	Explain that it is not a convenient time and politely tell him you will not answer the questions.

2. You would like to go out with a woman you know fairly well, but have never dated her before. Would you.

a.	Ask her for a date and be able to accept it if she refused.
b.	Find it impossible to ask her.
c.	Ask her for a date and become angry or abusive if she refused.
d.	Find it difficult to ask her.
e.	Ask her for a date and if she refused keep on asking to try to make her change her mind.

3. If a male friend, who has borrowed some money from you seemed to have forgotten about repaying it, would you:

a.	Demand the money back and threaten to hit him if he denied borrowing it.
b.	Ask him for the money back and insist that he did borrow it if he denied doing so.
c.	Say nothing to avoid possible trouble or embarrassment.
d.	Ask for the money back and become angry if he denied borrowing it.
e.	Ask if he could return the money but drop the matter if he denied borrowing it.

4. This attractive woman you work with is in the habit of not wearing a brassiere. One afternoon, when your car has broken down, she offers you a ride home. When the car stops at your place you make a pass at her and she angrily tells you to get out. Would you:

a.	Tell her to shut up and get out slamming the door behind you.
b.	Say something like: "Who the hell do you think you are, you slut?" and grab her breast before you get out.
c.	Tell her you are sorry for mistaking her intentions and apologise for upsetting her, then leave the car.
d.	Become embarrassed and jump out of the car and run inside.
e.	Embarrassedly say: "Sorry", and get out.

5. If you had arrived late for a meeting and the speaker had already begun to talk would you:-

a.	Go to an empty chair even if it meant disturbing people.
b.	Go to an empty chair provided you could do so without disrupting the meeting.
c.	Stand at the back even if there was an empty chair near the front.
d.	Go cautiously to an empty chair feeling embarrassed about disturbing the meeting.
e.	Go to an empty chair even if it meant disrupting the whole meeting.

6. If you had decided that you no longer wanted to date a woman, would you:

a.	Gently but clearly explain your changed feelings to her.
b.	Avoid telling her and go on as though nothing is wrong.
c.	Abruptly tell her you are sick of her and that you can't stand the sight of her anymore
d.	Avoid telling her but be cold and distant to her.
e.	Tell her you do not want to see her anymore but refuse to explain why.

7. If, after leaving a shop, you realise you have been short-changed by the cashier, would you:

a.	Return and ask for the correct change and, if necessary, complain to the Manager.
b.	Return and tell the cashier he/she sort-changed you and become abusive if he/she does not give you the change owing.
c.	Go back and request the correct change but drop the matter if the cashier says it is too late to do anything about it.
d.	Forget the matter rather than face possible embarrassment or trouble.
e.	Go back and demand that the cashier give you the change owing immediately and become threatening or physically violent if he/she refuses.

8. The woman who lives next-door asks you to give her a ride to work. It's a good deal out of your way and you don't want to be inconvenienced. Would you:

a.	Say you would be glad even though you are annoyed.
b.	Give her a ride but do not speak to her.
c.	Tell her you are not a free taxi service.
d.	Tell her you are sorry but it is too far out of your way.
e.	Abruptly tell her no, but offer her no explanation.

9. You are drinking in a hotel with a new girlfriend when the woman you used to go out with comes in. She is a bit drunk and comes over to sit beside you and begins to talk to you. If you wanted her to leave, would you:

a.	Introduce her to your girlfriend and then politely tell her you wish to be alone.
b.	Become embarrassed but say nothing.
c.	Tell her to go away.
d.	Tell her she is a drunken slut and to leave you alone.
e.	Become embarrassed and introduce her to your girlfriend.

10. If you lived in an apartment and the man who owned the place failed to make certain necessary repairs after promising many times to do so, would you:

a. Say nothing to avoid embarrassment or trouble.
b. Nervously ask him if he would get the repairs done.
c. Angrily demand that the repairs are done immediately.
d. Threaten to report him to the authorities if he doesn't get the repairs done immediately.
e. Firmly state that it is his responsibility to see that the repairs are carried out and insist that they be done quickly.

11. You have a few drinks at a hotel and you are dancing with this attractive woman you have just met. You are feeling horny so you press yourself against her and she pushes you away. Would you:

a. Become embarrassed and say simply "Sorry".
b. Tell her that you are sorry and you did not mean to upset her.
c. Become embarrassed and pretend nothing happened.
d. Angrily walk away and leave her on the dance floor.
e. Pull her tightly against you and tell her not to be a bitch.

12. You have spent the day at the beach with a woman you have been dating for the past month. You want her to have supper with you but she says she already has promised to see another man. Would you:

a. Tell her that if she wants to go out with someone else, she can go to hell.
b. Tell her you are disappointed but you don't say anything else.
c. Tell her that you are angry and that you will call her tomorrow.
d. Pretend that it is all right even though you are upset.
e. Tell her you are disappointed and would like to know what this means regarding your relationship.

13. If you had told a male friend something in confidence and find out that he had told it to someone else, would you:

a. Tell him you are upset.
b. Become abusive and threatening.
c. Say nothing about it and continue to be friendly to him.
d. Say nothing and be cold to your friend for a while.
e. Become verbally abusive and tell him that he is no longer your friend.

14. You are at a meeting and this woman who seems to have taken over the group asks for your opinion. Would you:

a. Tell her that she is a bossy bitch and loudly state your opinion.
b. Just say you agree with her even if you don't.
c. State your opinion calmly even if it disagrees with her.
d. State your opinion in a loud forceful voice.
e. Be too uncomfortable to say anything.

15. A male friend asks to borrow some money and you definitely do not want to lend it to him.
Would you:

a.	Lend him the money anyway.
b.	Say no, and stick to your decision even if your friend pleaded with you.
c.	Say no at first, but if he pleaded, lend him the money.
d.	Angrily tell him no and become abusive if he asks again.
e.	Abruptly tell him no, and show your annoyance if he asks again.

16. You just had intercourse with a woman and she tells you that she didn't enjoy it, would you:

a.	Become embarrassed.
b.	Tell her she is a bitch and hit her.
c.	Become embarrassed and say nothing.
d.	Tell her she is a bitch and leave immediately.
e.	Tell her that her remark hurt your feelings and insist that she explain herself.

17. If you wanted to borrow your male friend's car and were not sure how he would respond,
would you:

a.	Not ask him to avoid possible embarrassment.
b.	Ask him and become annoyed if he says no.
c.	Ask and become abusive and threatening if he says no.
d.	Ask him and accept if he says no.
e.	Nervously ask him.

18. You have been out with a woman and have bought her supper and drinks, and taken her to a dance. You had a good time and she seems to like you. She invites you to her apartment and you make sexual advances towards her. If she refuses your advances, would you:

a.	Stop your advances towards her but ask her to explain her refusal.
b.	Immediately become embarrassed and leave.
c.	Keep trying but stop if she begins to get upset.
d.	Stop your advances and say nothing.
e.	Keep trying and force her to have sex with you if she continues to refuse.

19. If you were with a group of people you did not know very well and they were discussing a topic you were interested in, would you:

a.	Have no difficulty expressing any opinion you might have and, in turn, allow other people to have their say.
b.	Tend to dominate the discussion.
c.	Nervously express your opinion only if you felt very strongly about it.
d.	Always keep your opinions to yourself however strongly you felt about the matter being discussed.
e.	Expect to be viewed as the leader and expect others to keep quiet and listen only to your point of view.

20. If a female sales assistant is trying to get you to buy a more expensive item than you want,
would you:

a.	Ask to see the cheaper item but do not insist when she continues to show you the expensive one.
b.	Tell her firmly that you are not interested in the item and have her show you something else.
c.	Tell her you don't want that and become annoyed if she persists.
d.	Tell her to shut up and threaten her if she doesn't stop bugging you.
e.	Buy the item even though you don't want it.

21. If a man made fun of you to the point where it became annoying, would you:

a.	Show your anger and be abusive to him.
b.	Say nothing to avoid a possible scene.
c.	Ask him to stop but say nothing higher if he persisted.
d.	Express your annoyance firmly and ask him to stop.
e.	Become angry and try to hit him.

22. If a woman at a party speaks to you but you don't want to talk to her, would you:

a.	Tell her to get lost and become abusive if she does not leave.
b.	Pretend to be interested rather than create a scene.
c.	Tell her politely that you wish to be alone and insist if she doesn't leave.
d.	Tell her you do not wish to speak with her and turn your back on her.
e.	Look disinterested but don't tell her you would rather be left alone.

Depression Anxiety and Stress Scales-21

DASS21

Name: *Date:*

Please read each statement and circle a number 0, 1, 2 or 3 which indicates how much the statement applied to you *over the past week*. There are no right or wrong answers. Do not spend too much time on any statement.

The rating scale is as follows:

0 Did not apply to me at all
1 Applied to me to some degree, or some of the time
2 Applied to me to a considerable degree, or a good part of time
3 Applied to me very much, or most of the time

1	I found it hard to wind down	0	1	2	3
2	I was aware of dryness of my mouth	0	1	2	3
3	I couldn't seem to experience any positive feeling at all	0	1	2	3
4	I experienced breathing difficulty (eg, excessively rapid breathing, breathlessness in the absence of physical exertion)	0	1	2	3
5	I found it difficult to work up the initiative to do things	0	1	2	3
6	I tended to over-react to situations	0	1	2	3
7	I experienced trembling (eg, in the hands)	0	1	2	3
8	I felt that I was using a lot of nervous energy	0	1	2	3
9	I was worried about situations in which I might panic and make a fool of myself	0	1	2	3
10	I felt that I had nothing to look forward to	0	1	2	3
11	I found myself getting agitated	0	1	2	3
12	I found it difficult to relax	0	1	2	3
13	I felt down-hearted and blue	0	1	2	3
14	I was intolerant of anything that kept me from getting on with what I was doing	0	1	2	3
15	I felt I was close to panic	0	1	2	3
16	I was unable to become enthusiastic about anything	0	1	2	3
17	I felt I wasn't worth much as a person	0	1	2	3
18	I felt that I was rather touchy	0	1	2	3
19	I was aware of the action of my heart in the absence of physical exertion (eg, sense of heart rate increase, heart missing a beat)	0	1	2	3
20	I felt scared without any good reason	0	1	2	3
21	I felt that life was meaningless	0	1	2	3

Locus of Control Scale

Please answer this questionnaire by circling the answer that best fits how you feel. There are no right or wrong answers. Please do not take too much time over any one question, and please answer them all.

1. Do you believe that most problems will solve themselves if you just don't fool with them? **YES/NO**
2. Do you believe that you can stop yourself from catching a cold? **YES/NO**
3. Are some people just born lucky? **YES/NO**
4. Most of the time do you feel that getting good grades at school meant a great deal to you? **YES/NO**
5. Are you often blamed for things that just aren't your fault? **YES/NO**
6. Do you believe that if somebody studies hard enough he or she can pass any subject? **YES/NO**
7. Do you feel that most of the time it doesn't pay to try hard because things never turn out right anyway? **YES/NO**
8. Do you feel that if things start out well in the morning that it's going to be a good day no matter what you do? **YES/NO**
9. Do you feel that most of the time parents listen to what their children have to say? **YES/NO**
10. Do you believe that wishing can make good things happen? **YES/NO**
11. When you get punished does it usually seem it's for no good reason at all? **YES/NO**
12. Most of the time do you find it hard to change a friend's mind or opinion? **YES/NO**
13. Do you think that cheering more than luck helps a team to win? YES/NO
14. Did you feel that was nearly impossible to change your parent's mind about anything? **YES/NO**
15. Do you believe that parents should allow children to make most of their own decisions? **YES/NO**
16. Do you feel that when you do something wrong there's very little you can do to make it right? **YES/NO**
17. Do you believe that most people your age are just born good at sports? **YES/NO**
18. Are most of the other people your age stronger than you are? **YES/NO**
19. Do you feel that one of the best ways to handle most problems is just not to think about them? **YES/NO**
20. Do you feel that you have a lot of choice in deciding who your friends are? **YES/NO**
21. If you find a four leaf clover, do you believe that it might bring you good luck? **YES/NO**
22. Did you feel that whether you did your homework had much to do with what kind of grades you got? **YES/NO**
23. Do you feel that when someone your age decides to hit you. there's little you can do to stop him or her? **YES/NO**
24. Have you ever had a good luck charm? **YES/NO**
25. Do you believe that whether or not people like you depends on how you act? **YES/NO**
26. Did your parents usually help you if you asked them? **YES/NO**
27. Have you felt that when people were mean to you it was usually for no reason at all? **YES/NO**
28. Most of the time, do you feel that you can change what might happen tomorrow by what you do today? **YES/NO**
29. Do you believe that when bad things are going to happen they are just going

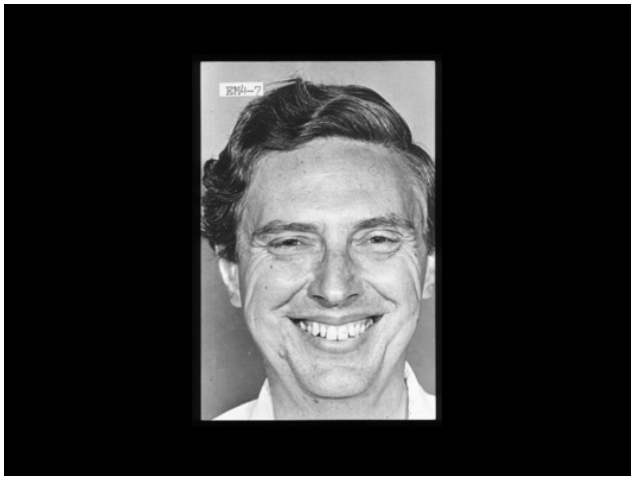
to happen no matter what you try to do to stop them? **YES/NO**

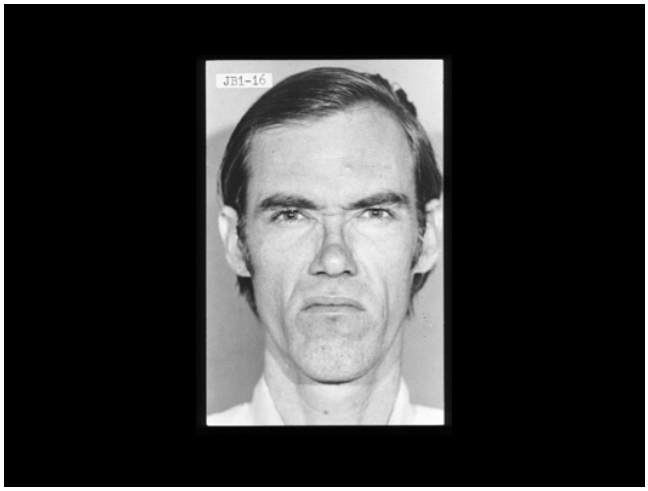
30. Do you think that people your age can get their own way if they just keep trying? **YES/NO**
31. Most of the time do you find it useless to try to get your own way at home? **YES/NO**
32. Do you feel that when good things happen, they happen because of hard work? **YES/NO**
33. Do you feel that when somebody your age wants to be your enemy there's little you can do to change matters? **YES/NO**
34. Do you feel that it's easy to get friends to do what you want them to? **YES/NO**
35. Do you usually feel that you have little to say about what you get to eat at home? **YES/NO**
36. Do you feel that when someone doesn't like you there's little you can do about it? **YES/NO**
37. Did you usually feel that it was almost useless to try in school because most other children were just more clever than you were? **YES/NO**
38. Are you the kind of person who believes that planning ahead makes things turn out better? **YES/NO**
39. Most of the time, do you feel that you have little to say about what your family decides to do? **YES/NO**
40. Do you think it's better to be clever than to be lucky? **YES/NO**

Due to copyright, the Psychopathic Personality Inventory-Revised (Lilienfeld & Widows, 2005) and Paulhus Deception Scales (Paulhus, 1998) could not be reproduced.

Appendix B – Emotional Recognition Computer Task

Examples of the images used in the emotional recognition experiment task. These three images depict a happy disgust and surprise facial expressions of emotion.





Response sheet used for Trial One and Trail Two of Emotional Recognition Task

1. Please **circle** the emotion that you believe was displayed on the face of the person in the image?

Happy Sad Disgust Surprise Fear Anger Neutral/No Emotion

2. Please **circle** the emotion that you believe was displayed on the face of the person in the image?

Happy Sad Disgust Surprise Fear Anger Neutral/No Emotion

3. Please **circle** the emotion that you believe was displayed on the face of the person in the image?

Happy Sad Disgust Surprise Fear Anger Neutral/No Emotion

4. Please **circle** the emotion that you believe was displayed on the face of the person in the image?

Happy Sad Disgust Surprise Fear Anger Neutral/No Emotion

5. Please **circle** the emotion that you believe was displayed on the face of the person in the image?

Happy Sad Disgust Surprise Fear Anger Neutral/No Emotion

6. Please **circle** the emotion that you believe was displayed on the face of the person in the image?

Happy Sad Disgust Surprise Fear Anger Neutral/No Emotion

7. Please **circle** the emotion that you believe was displayed on the face of the person in the image?

Happy Sad Disgust Surprise Fear Anger Neutral/No Emotion

8. Please **circle** the emotion that you believe was displayed on the face of the person in the image?

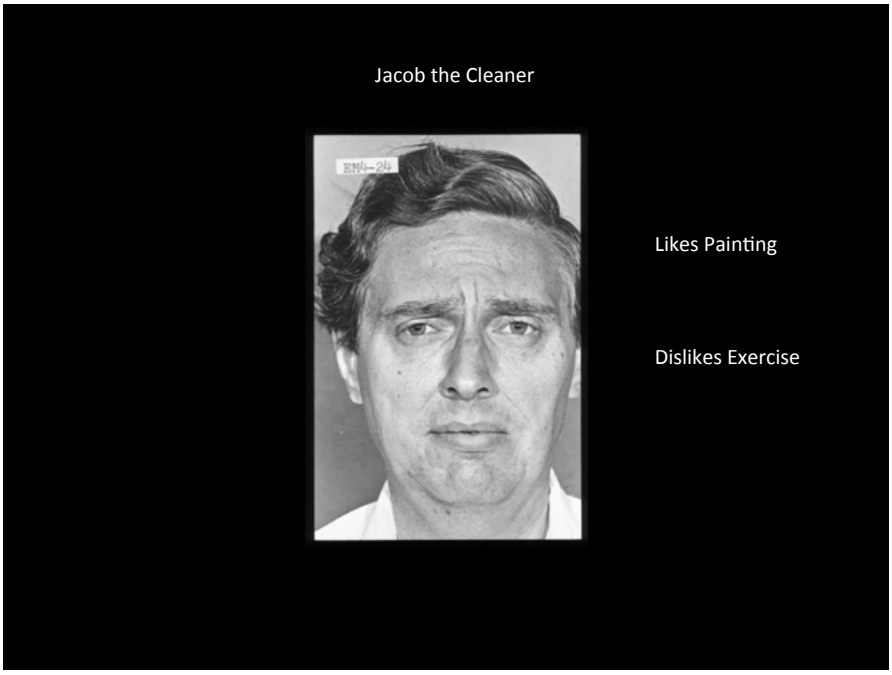
Happy Sad Disgust Surprise Fear Anger Neutral/No Emotion

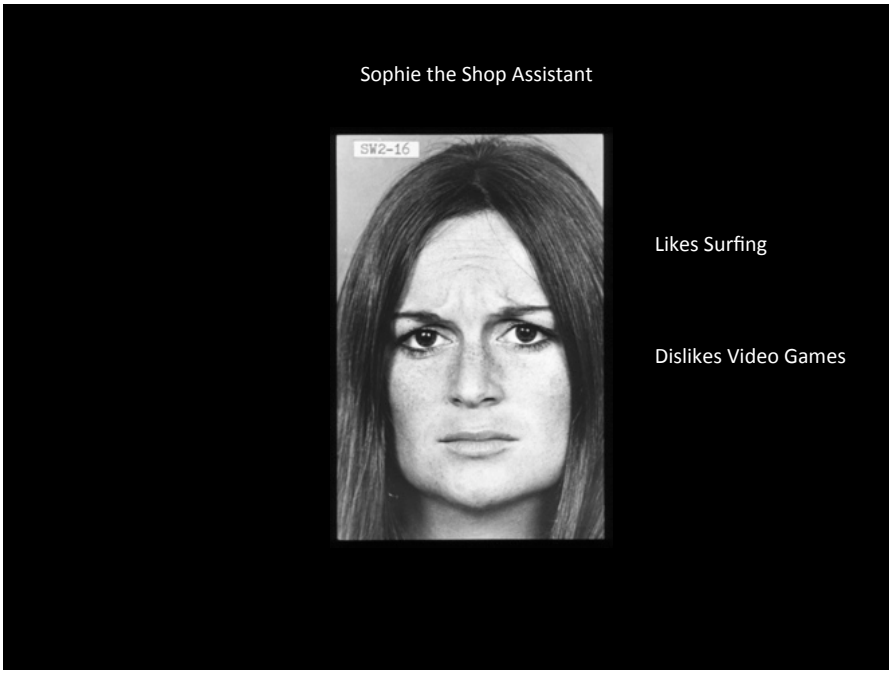
9. Please **circle** the emotion that you believe was displayed on the face of the person in the image?

Happy Sad Disgust Surprise Fear Anger Neutral/No Emotion

Appendix C – Character Information Computer Task

Examples of images displayed in the character recognition and recall computer task. Jacob the cleaner represents and sad unsuccessful male. Sophie the shop assistant portrays a sad unsuccessful female.





Response Sheet for Character Information Computer Task
(Social Information Processing Task)

1. Do you recall this character? Yes/No

   - If yes, do you recall their:
     - Name?
     - Occupation?
     - Likes?
     - Dislikes?

2. Do you recall this character? Yes/No

   - If yes, do you recall their:
     - Name?
     - Occupation?
     - Likes?
     - Dislikes?

3. Do you recall this character? Yes/No

   - If yes, do you recall their:
     - Name?
     - Occupation?
     - Likes?
     - Dislikes?

4. Do you recall this character? Yes/No

   - If yes, do you recall their:
     - Name?
     - Occupation?
     - Likes?
     - Dislikes?

5. Do you recall this character? Yes/No

   - If yes, do you recall their:
     - Name?
     - Occupation?
     - Likes?
     - Dislikes?

6. Do you recall this character? Yes/No

   - If yes, do you recall their:
     - Name?
     - Occupation?
     - Likes?
     - Dislikes?

7. Do you recall this character? Yes/No

- If yes, do you recall their:
  - Name?
  - Occupation?
  - Likes?
  - Dislikes?

8. Do you recall this character? Yes/No

- If yes, do you recall their:
  - Name?
  - Occupation?
  - Likes?
  - Dislikes?

9. Do you recall this character? Yes/No

- If yes, do you recall their:
  - Name?
  - Occupation?
  - Likes?
  - Dislikes?

10. Do you recall this character? Yes/No

- If yes, do you recall their:
  - Name?
  - Occupation?
  - Likes?
  - Dislikes?

11. Do you recall this character? Yes/No

- If yes, do you recall their:
  - Name?
  - Occupation?
  - Likes?
  - Dislikes?

12. Do you recall this character? Yes/No

- If yes, do you recall their:
  - Name?
  - Occupation?
  - Likes?
  - Dislikes?

PSYCHOPATHIC PERSONALITY CHARACTERISTICS

13. Do you recall this character? Yes/No

- If yes, do you recall their:
    - Name?
    - Occupation?
    - Likes?
    - Dislikes?

14. Do you recall this character? Yes/No

- If yes, do you recall their:
    - Name?
    - Occupation?
    - Likes?
    - Dislikes?

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Appendix D – Explanatory Statement Community Sample

17th July 2012

Project Title: Investigating Personality Characteristics, Behavioural Patterns, Emotions and Learning.

Reference Number: RO 1525

Explanatory Statement
My name is Nathan Brooks and I am currently conducting research in collaboration with Associate Professor Katarina Fritzon and Assistant Professor Bruce Watt from Bond University. We are interested in investigating personality characteristics, emotional intelligence, empathy and learning behaviour of those in the community.

The research will take place at Bond University and we would be grateful if you could email Nathan Brooks (nbrooks@bond.edu.au) to organise a time to undertake the study. The study should take up no more than 60 minutes of your time. As a token of appreciation for participation, each participant will receive $20 for their time. Participants will be required to complete a series of surveys and a set of computer tasks that involve facial recognition. All data and information will be confidential and no identifiable details will be recorded on any testing materials.

Participation in this study is **completely voluntary** and you may withdraw at any time without risking any negative consequences. If you choose to withdraw your participation in this study, the information you have provided will be immediately destroyed. All the data collected in this study will be treated in complete **confidence** and not made accessible to any person outside of the researchers working on this project. Data will be stored in a secured location at Bond University for a period of seven years in accordance with the guidelines set out by the Bond University Human Research Ethics Committee.

Whilst this is not anticipated, if you do experience distress from participation in this research, please contact
Lifeline at 13 11 14.

Should you have any complaints concerning the manner in which this research is being conducted please make contact with:

Bond University Human Research Ethics Committee,
c/o Bond University Office of Research Services.
Bond University, Gold Coast, 4229
Tel: +61 7 5595 4194 Fax: +61 7 5595 1120 Email: buhrec@bond.edu.au

We thank you for taking the time to assist us with this research.

Yours sincerely,

Dr Katarina Fritzon Dr Bruce Watt Nathan Brooks

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Appendix E – Explanatory Statements

Explanatory Statement Business Sample – Bond University

17th September 2012

Project Title: Investigating Personality Characteristics, Behavioural Patterns, Emotions and Learning.

Reference Number: RO 1525

Explanatory Statement
My name is Nathan Brooks and I am currently conducting research in collaboration with Associate Professor Katarina Fritzon and Assistant Professor Bruce Watt from Bond University. We are interested in investigating personality characteristics, emotional intelligence, empathy and learning behaviour of those in the Business Community. The project is aiming to expand on the understanding of personality traits, particularly their implications for higher-level management.

The research will take place at Bond University and we would be grateful if you could email Nathan Brooks (nbrooks@bond.edu.au) to organise a time to undertake the study. The study should take up no more than 60 minutes of your time. As a token of appreciation for participation, each participant will receive a coffee voucher for their time. Participants will be required to complete a series of surveys and a set of computer tasks that involve facial recognition. All data and information will be confidential and no identifiable details will be recorded on any testing materials.

Participation in this study is **completely voluntary** and you may withdraw at any time without risking any negative consequences. If you choose to withdraw your participation in this study, the information you have provided will be immediately destroyed. All the data collected in this study will be treated in complete **confidence** and not made accessible to any person outside of the researchers working on this project. Data will be stored in a secured location at Bond University for a period of seven years in accordance with the guidelines set out by the Bond University Human Research Ethics Committee.

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We thank you for taking the time to assist us with this research.

Yours sincerely,

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Explanatory Statement Business Sample – San Diego

27th February 2014

Project Title: Investigating Personality Characteristics, Behavioural Patterns, Emotions and Learning.

Reference Number: RO 1525

Explanatory Statement

My name is Nathan Brooks and I am currently conducting research in collaboration with Associate Professor Katarina Fritzon and Assistant Professor Bruce Watt from Bond University. We are interested in investigating personality characteristics, emotional intelligence, empathy and learning behaviour of those in the Business Community. The project is aiming to expand on the understanding of personality traits, particularly their implications for higher-level management.

The research will take place at the University of San Diego and we would be grateful if you could email Nathan Brooks (nbrooks@bond.edu.au) to organise a time to undertake the study. The study should take up no more than 60 minutes of your time. As a token of appreciation for participation, each participant will receive a $10 book voucher at the University of San Diego. Participants will be required to complete a series of surveys and a set of computer tasks that involve facial recognition. All data and information will be confidential and no identifiable details will be recorded on any testing materials.

Participation in this study is **completely voluntary** and you may withdraw at any time without risking any negative consequences. If you choose to withdraw your participation in this study, the information you have provided will be immediately destroyed. All the data collected in this study will be treated in complete **confidence** and not made accessible to any person outside of the researchers working on this project. Data will be stored in a secured location at Bond University for a period of seven years in accordance with the guidelines set out by the Bond University Human Research Ethics Committee.

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We thank you for taking the time to assist us with this research.

Yours sincerely,

Dr Katarina Fritzon Dr Bruce Watt Nathan Brooks

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01st February 2016

Project Title: Investigating Personality Characteristics, Behavioural Patterns, Emotions and Learning.

Reference Number: RO 1525

Explanatory Statement

My name is Nathan Brooks and I am currently conducting research in collaboration with Associate Professor Katarina Fritzon and Assistant Professor Bruce Watt from Bond University. We are interested in investigating personality characteristics, emotional intelligence, empathy and learning behaviour of those in the Business Community. The project is aiming to expand on the understanding of personality traits, particularly their implications for higher-level management.

The research will take place at Regional Facilities Auckland and we would be grateful if you could email Nathan Brooks (nbrooks@bond.edu.au) to organise a time to undertake the study. The study should take up no more than 60 minutes of your time. Participants will be required to complete a series of surveys and a set of computer tasks that involve facial recognition. All data and information will be confidential and no identifiable details will be recorded on any testing materials.

Participation in this study is **completely voluntary** and you may withdraw at any time without risking any negative consequences. If you choose to withdraw your participation in this study, the information you have provided will be immediately destroyed. All the data collected in this study will be treated in complete **confidence** and not made accessible to any person outside of the researchers working on this project. Data will be stored in a secured location at Bond University for a period of seven years in accordance with the guidelines set out by the Bond University Human Research Ethics Committee.

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19th March 2014

Project Title: Investigating Personality Characteristics, Behavioural Patterns, Emotions and Learning.

Reference Number: RO 1525

Explanatory Statement

My name is Nathan Brooks and I am currently conducting research in collaboration with Associate Professor Katarina Fritzon and Assistant Professor Bruce Watt from Bond University. We are interested in investigating personality characteristics, emotional intelligence, empathy and learning behaviour of those involved with the criminal justice system. The project is aiming to expand on the understanding of personality traits, particularly their implications on the criminal justice system.

The research will take place at the designated psychology practise or Bond University and we would be grateful if you could email Nathan Brooks (nbrooks@bond.edu.au) to organise a time to undertake the study. The study should take up no more than 60 minutes of your time. As a token of appreciation for participation, each participant will receive $20 for their time. Participants will be required to complete a series of surveys and a set of computer tasks that involve facial recognition. To be eligible **to participate** you must be currently involved with the **criminal justice system**. All data and information will be confidential and no identifiable details will be recorded on any testing materials.

Participation in this study is **completely voluntary** and you may withdraw at any time without risking any negative consequences. If you choose to withdraw your participation in this study, the information you have provided will be immediately destroyed. All the data collected in this study will be treated in complete **confidence** and not made accessible to any person outside of the researchers working on this project. Data will be stored in a secured location at Bond University for a period of seven years in accordance with the guidelines set out by the Bond University Human Research Ethics Committee.

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We thank you for taking the time to assist us with this research.

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Appendix F – Consent form

BOND UNIVERSITY
FACULTY OF HUMANITIES & SOCIAL SCIENCES

Notification of Informed Consent

Project Title: Investigating Personality Characteristics, Behavioural Patterns, Emotions and Learning (BUHREC Protocol Number: RO 1525)

I have read the accompanying **Explanatory Statement** for the research project, Investigating Personality Characteristics, Behavioural Patterns, Emotions and Learning. I understand that by volunteering to be a subject in this research and signing the consent below, I am agreeing to participate in a series of pen and paper questionnaires and two computer tasks examining emotions. In total the research will take approximately 60 minutes to complete.

> I give consent to participate in this research by completing the research questionnaires and computer tasks.

Additionally, I understand that:.

- My participation in this research will remain strictly confidential. I am not required to write my name on any of the questionnaires or other documentation.
- I have the right to withdraw my participation at any point without penalty.
- My participation is voluntary and I will not be rewarded or compensated for my participation in this research.
- The combined results of this project will be published in a scientific psychology journal or book.
- My de-identified information will be stored securely for a period of five years at a storage facility, after which time it will be discarded securely.
-

By signing this form I am agreeing to the aforementioned points and permit my confidential (de-identified) information to be used for the research purposes.

_____ _____
(Research participant: printed name) (Signature) (date)

_____ _____
(Witness: printed name) (Signature) (date)

Appendix G – Statistical Output from Study 1
Mixed Design Factorial ANOVA for Emotional Recognition for the Noncriminal Sample

Within-Subjects Factors

Measure: MEASURE_1

Condition	Dependent Variable
1	Experiment_Stick
2	Control_NoStick

Between-Subjects Factors

		Value Label	N
Group_Ordering	1.00	Stick First	49
	2.00	Stick Second	66
Psych_median	1.00	Low	57
	2.00	High	58

Descriptive Statistics

	Group_Ordering	Psych_median	Mean	Std. Deviation	N
Experiment_Stick	Stick First	Low	6.6500	1.84320	20
		High	6.2759	1.38607	29
		Total	6.4286	1.58114	49
	Stick Second	Low	8.2973	.96796	37
		High	7.6897	1.44181	29
		Total	8.0303	1.22750	66
	Total	Low	7.7193	1.54405	57
		High	6.9828	1.57270	58
		Total	7.3478	1.59519	115
Control_NoStick	Stick First	Low	8.0000	.97333	20
		High	7.4828	1.80517	29
		Total	7.6939	1.53031	49
	Stick Second	Low	7.0541	1.39336	37
		High	6.7586	1.45541	29
		Total	6.9242	1.41759	66
	Total	Low	7.3860	1.33302	57
		High	7.1207	1.66573	58
		Total	7.2522	1.50929	115

Box's Test of Equality of Covariance Matrices[a]

Box's M	32.974
F	3.537
df1	9
df2	71619.793
Sig.	.000

Tests of Within-Subjects Effects

Measure: MEASURE_1

Source		Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared	Noncent. Parameter	Observed Power[a]
Condition	Sphericity Assumed	.501	1	.501	.472	.494	.004	.472	.105
	Greenhouse-Geisser	.501	1.000	.501	.472	.494	.004	.472	.105
	Huynh-Feldt	.501	1.000	.501	.472	.494	.004	.472	.105
	Lower-bound	.501	1.000	.501	.472	.494	.004	.472	.105
Condition * Group_Ordering	Sphericity Assumed	76.661	1	76.661	72.119	.000	.394	72.119	1.000
	Greenhouse-Geisser	76.661	1.000	76.661	72.119	.000	.394	72.119	1.000
	Huynh-Feldt	76.661	1.000	76.661	72.119	.000	.394	72.119	1.000
	Lower-bound	76.661	1.000	76.661	72.119	.000	.394	72.119	1.000
Condition * Psych_median	Sphericity Assumed	.098	1	.098	.092	.762	.001	.092	.060
	Greenhouse-Geisser	.098	1.000	.098	.092	.762	.001	.092	.060
	Huynh-Feldt	.098	1.000	.098	.092	.762	.001	.092	.060
	Lower-bound	.098	1.000	.098	.092	.762	.001	.092	.060
Condition * Group_Ordering * Psych_median	Sphericity Assumed	.710	1	.710	.668	.416	.006	.668	.128
	Greenhouse-Geisser	.710	1.000	.710	.668	.416	.006	.668	.128

	Huynh-Feldt	.710	1.000	.710	.668	.416	.006	.668	.128
	Lower-bound	.710	1.000	.710	.668	.416	.006	.668	.128
Error(Condition)	Sphericity Assumed	117.991	111	1.063					
	Greenhouse-Geisser	117.991	111.000	1.063					
	Huynh-Feldt	117.991	111.000	1.063					
	Lower-bound	117.991	111.000	1.063					

Levene's Test of Equality of Error Variances[a]

	F	df1	df2	Sig.
Experiment_Stick	3.134	3	111	.028
Control_NoStick	1.794	3	111	.152

Tests the null hypothesis that the error variance of the dependent variable is equal across groups.

a. Design: Intercept + Group_Ordering + Psych_median + Group_Ordering * Psych_median
Within Subjects Design: Condition

Tests of Between-Subjects Effects

Measure: MEASURE_1

Transformed Variable: Average

Source	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared	Noncent. Parameter	Observed Power[a]
Intercept	11604.018	1	11604.018	3894.524	.000	.972	3894.524	1.000
Group_Ordering	6.627	1	6.627	2.224	.139	.020	2.224	.315
Psych_median	11.028	1	11.028	3.701	.057	.032	3.701	.479
Group_Ordering * Psych_median	.000	1	.000	.000	.990	.000	.000	.050
Error	330.733	111	2.980					

Mixed Design Factorial ANOVA for Social Information Processing for Noncriminal Sample – Recognition

Within-Subjects Factors

Measure: MEASURE_1

emot	succes	gend	Dependent Variable
1	1	1	Recognition_HappySuccessful_Male
		2	Recongition_HappySuccessful_Female
	2	1	Recongtion_HappyUnsuccessful_Male
		2	Recognition_HappyUnsuccessful_Female
2	1	1	Recognition_SadSuccessful_Male
		2	Recogntion_SadSuccessful_Female
	2	1	Recongition_SadUnsuccessful_Male
		2	Recognition_SadUnsuccessful_Female

Between-Subjects Factors

		Value Label	N
Psych_median	1.00	Low	57
	2.00	High	58

Descriptive Statistics

	Psych_median	Mean	Std. Deviation	N
Recognition of Happy and Successful Male	Low	.86	.350	57
	High	.83	.381	58
	Total	.84	.365	115
Recognition of Happy and Successful Female	Low	.82	.384	57
	High	.69	.467	58
	Total	.76	.431	115
Recongition of Happy and Unsuccessful Male	Low	.96	.186	57
	High	.90	.307	58
	Total	.93	.256	115
Recognition of Happy and Unsuccessful Female	Low	.93	.258	57
	High	.90	.307	58
	Total	.91	.283	115
Recognition of Sad and Successful Male	Low	.95	.225	57
	High	.91	.283	58
	Total	.93	.256	115
Recongition of Sad and Successful Female	Low	.86	.350	57
	High	.81	.395	58
	Total	.83	.373	115
Recongition of Sad and Unsuccesful Male	Low	.81	.398	57
	High	.86	.348	58
	Total	.83	.373	115
Recognition of Sad and Unsuccessful Female	Low	.94737	.225282	57
	High	.96552	.184059	58
	Total	.95652	.204824	115

Box's Test of Equality of Covariance Matrices[a]

Box's M	95.558
F	2.455
df1	36
df2	42938.320
Sig.	.000

Tests of Within-Subjects Effects

Measure: MEASURE_1

Source		Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared	Noncent. Parameter	Observed Power[a]
emot	Sphericity Assumed	.180	1	.180	1.901	.171	.017	1.901	.277
	Greenhouse-Geisser	.180	1.000	.180	1.901	.171	.017	1.901	.277
	Huynh-Feldt	.180	1.000	.180	1.901	.171	.017	1.901	.277
	Lower-bound	.180	1.000	.180	1.901	.171	.017	1.901	.277
emot * Psych_median	Sphericity Assumed	.241	1	.241	2.544	.113	.022	2.544	.353
	Greenhouse-Geisser	.241	1.000	.241	2.544	.113	.022	2.544	.353
	Huynh-Feldt	.241	1.000	.241	2.544	.113	.022	2.544	.353
	Lower-bound	.241	1.000	.241	2.544	.113	.022	2.544	.353
Error(emot)	Sphericity Assumed	10.700	113	.095					
	Greenhouse-Geisser	10.700	113.000	.095					

	Huynh-Feldt	10.700	113.000	.095					
	Lower-bound	10.700	113.000	.095					
succes	Sphericity Assumed	1.037	1	1.037	11.832	.001	.095	11.832	.927
	Greenhouse-Geisser	1.037	1.000	1.037	11.832	.001	.095	11.832	.927
	Huynh-Feldt	1.037	1.000	1.037	11.832	.001	.095	11.832	.927
	Lower-bound	1.037	1.000	1.037	11.832	.001	.095	11.832	.927
succes * Psych_median	Sphericity Assumed	.176	1	.176	2.010	.159	.017	2.010	.290
	Greenhouse-Geisser	.176	1.000	.176	2.010	.159	.017	2.010	.290
	Huynh-Feldt	.176	1.000	.176	2.010	.159	.017	2.010	.290
	Lower-bound	.176	1.000	.176	2.010	.159	.017	2.010	.290
Error(succes)	Sphericity Assumed	9.904	113	.088					
	Greenhouse-Geisser	9.904	113.000	.088					
	Huynh-Feldt	9.904	113.000	.088					
	Lower-bound	9.904	113.000	.088					
gend	Sphericity Assumed	.087	1	.087	1.035	.311	.009	1.035	.172
	Greenhouse-Geisser	.087	1.000	.087	1.035	.311	.009	1.035	.172
	Huynh-Feldt	.087	1.000	.087	1.035	.311	.009	1.035	.172
	Lower-bound	.087	1.000	.087	1.035	.311	.009	1.035	.172
gend * Psych_median	Sphericity Assumed	.052	1	.052	.620	.433	.005	.620	.122

	Greenhouse-Geisser	.052	1.000	.052	.620	.433	.005	.620	.122
	Huynh-Feldt	.052	1.000	.052	.620	.433	.005	.620	.122
	Lower-bound	.052	1.000	.052	.620	.433	.005	.620	.122
Error(gend)	Sphericity Assumed	9.485	113	.084					
	Greenhouse-Geisser	9.485	113.000	.084					
	Huynh-Feldt	9.485	113.000	.084					
	Lower-bound	9.485	113.000	.084					
emot * succes	Sphericity Assumed	.682	1	.682	8.182	.005	.068	8.182	.809
	Greenhouse-Geisser	.682	1.000	.682	8.182	.005	.068	8.182	.809
	Huynh-Feldt	.682	1.000	.682	8.182	.005	.068	8.182	.809
	Lower-bound	.682	1.000	.682	8.182	.005	.068	8.182	.809
emot * succes * Psych_median	Sphericity Assumed	.030	1	.030	.355	.552	.003	.355	.091
	Greenhouse-Geisser	.030	1.000	.030	.355	.552	.003	.355	.091
	Huynh-Feldt	.030	1.000	.030	.355	.552	.003	.355	.091
	Lower-bound	.030	1.000	.030	.355	.552	.003	.355	.091
Error(emot*succes)	Sphericity Assumed	9.416	113	.083					
	Greenhouse-Geisser	9.416	113.000	.083					
	Huynh-Feldt	9.416	113.000	.083					
	Lower-bound	9.416	113.000	.083					

emot * gend	Sphericity Assumed	.244	1	.244	2.660	.106	.023	2.660	.366
	Greenhouse-Geisser	.244	1.000	.244	2.660	.106	.023	2.660	.366
	Huynh-Feldt	.244	1.000	.244	2.660	.106	.023	2.660	.366
	Lower-bound	.244	1.000	.244	2.660	.106	.023	2.660	.366
emot * gend * Psych_median	Sphericity Assumed	.001	1	.001	.009	.925	.000	.009	.051
	Greenhouse-Geisser	.001	1.000	.001	.009	.925	.000	.009	.051
	Huynh-Feldt	.001	1.000	.001	.009	.925	.000	.009	.051
	Lower-bound	.001	1.000	.001	.009	.925	.000	.009	.051
Error(emot*gend)	Sphericity Assumed	10.380	113	.092					
	Greenhouse-Geisser	10.380	113.000	.092					
	Huynh-Feldt	10.380	113.000	.092					
	Lower-bound	10.380	113.000	.092					
succes * gend	Sphericity Assumed	1.179	1	1.179	15.881	.000	.123	15.881	.977
	Greenhouse-Geisser	1.179	1.000	1.179	15.881	.000	.123	15.881	.977
	Huynh-Feldt	1.179	1.000	1.179	15.881	.000	.123	15.881	.977
	Lower-bound	1.179	1.000	1.179	15.881	.000	.123	15.881	.977
succes * gend * Psych_median	Sphericity Assumed	.049	1	.049	.660	.418	.006	.660	.127
	Greenhouse-Geisser	.049	1.000	.049	.660	.418	.006	.660	.127

	Huynh-Feldt	.049	1.000	.049	.660	.418	.006	.660	.127
	Lower-bound	.049	1.000	.049	.660	.418	.006	.660	.127
Error(succes*gend)	Sphericity Assumed	8.392	113	.074					
	Greenhouse-Geisser	8.392	113.000	.074					
	Huynh-Feldt	8.392	113.000	.074					
	Lower-bound	8.392	113.000	.074					
emot * succes * gend	Sphericity Assumed	.317	1	.317	3.506	.064	.030	3.506	.459
	Greenhouse-Geisser	.317	1.000	.317	3.506	.064	.030	3.506	.459
	Huynh-Feldt	.317	1.000	.317	3.506	.064	.030	3.506	.459
	Lower-bound	.317	1.000	.317	3.506	.064	.030	3.506	.459
emot * succes * gend * Psych_median	Sphericity Assumed	.091	1	.091	1.006	.318	.009	1.006	.169
	Greenhouse-Geisser	.091	1.000	.091	1.006	.318	.009	1.006	.169
	Huynh-Feldt	.091	1.000	.091	1.006	.318	.009	1.006	.169
	Lower-bound	.091	1.000	.091	1.006	.318	.009	1.006	.169
Error(emot*succes*gend)	Sphericity Assumed	10.220	113	.090					
	Greenhouse-Geisser	10.220	113.000	.090					
	Huynh-Feldt	10.220	113.000	.090					
	Lower-bound	10.220	113.000	.090					

Levene's Test of Equality of Error Variances[a]

	F	df1	df2	Sig.
Recognition of Happy and Successful Male	.887	1	113	.348
Recognition of Happy and Successful Female	11.887	1	113	.001
Recongition of Happy and Unsuccessful Male	8.920	1	113	.003
Recognition of Happy and Unsuccessful Female	1.602	1	113	.208
Recognition of Sad and Successful Male	2.010	1	113	.159
Recongition of Sad and Successful Female	2.028	1	113	.157
Recongition of Sad and Unsuccesful Male	2.532	1	113	.114
Recognition of Sad and Unsuccessful Female	.903	1	113	.344

Tests the null hypothesis that the error variance of the dependent variable is equal across groups.

a. Design: Intercept + Psych_median

Within Subjects Design: emot + succes + gend + emot * succes + emot * gend + succes * gend + emot * succes * gend

Tests of Between-Subjects Effects

Source	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared	Noncent. Parameter	Observed Power[a]
Intercept	704.565	1	704.565	2898.103	.000	.962	2898.103	1.000
Psych_median	.278	1	.278	1.145	.287	.010	1.145	.186
Error	27.472	113	.243					

Mixed Design Factorial ANOVA for Social Information Processing for Noncriminal Sample – Recall

Within-Subjects Factors

Measure: MEASURE_1

emot	succes	gend	Dependent Variable
1	1	1	Recall_HappySuccessful_Male
		2	Recall_HappySuccessful_Female
	2	1	Recall_HappyUnsuccessful_Male
		2	Recall_HappyUnsuccessful_Female
2	1	1	Recall_SadSuccessful_Male
		2	Recall_SadSuccessful_Female
	2	1	Recall_SadUnsuccessful_Male
		2	Recall_SadUnsuccessful_Female

Between-Subjects Factors

		Value Label	N
Psych_median	1.00	Low	57
	2.00	High	58

Descriptive Statistics

	Psych_median	Mean	Std. Deviation	N
Recall of Happy and Successful Male	Low	18.4211	27.76106	57
	High	14.2241	25.69732	58
	Total	16.3043	26.70573	115
Recall of Happy and Successful Female	Low	24.5614	31.86580	57
	High	20.6897	28.91986	58
	Total	22.6087	30.34414	115
Recall of Happy and Unsuccessful Male	Low	16.2281	25.21834	57
	High	27.1552	31.16329	58
	Total	21.7391	28.77654	115
Recall of Happy and Unsuccessful Female	Low	31.1404	34.48625	57
	High	35.3448	33.12473	58
	Total	33.2609	33.72388	115
Recall of Sad and Successful Male	Low	28.5088	30.41330	57
	High	35.7759	32.14280	58
	Total	32.1739	31.37304	115
Recall of Sad and Successful Female	Low	17.9825	28.64281	57
	High	18.1034	25.56086	58
	Total	18.0435	27.01279	115
Recal of Sad and Unsuccessful Male	Low	10.9649	18.90858	57
	High	18.9655	27.43027	58
	Total	15.0000	23.83238	115
Recall of Sad and Unsuccessful Female	Low	32.8947	36.03009	57
	High	42.6724	35.35801	58
	Total	37.8261	35.87338	115

Box's Test of Equality of Covariance Matrices[a]

Box's M	46.583
F	1.197
df1	36
df2	42938.320
Sig.	.194

Tests of Within-Subjects Effects

Measure: MEASURE_1

Source		Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared	Noncent. Parameter	Observed Power[a]
emot	Sphericity Assumed	1177.708	1	1177.708	2.109	.149	.018	2.109	.302
	Greenhouse-Geisser	1177.708	1.000	1177.708	2.109	.149	.018	2.109	.302
	Huynh-Feldt	1177.708	1.000	1177.708	2.109	.149	.018	2.109	.302
	Lower-bound	1177.708	1.000	1177.708	2.109	.149	.018	2.109	.302
emot * Psych_median	Sphericity Assumed	1177.708	1	1177.708	2.109	.149	.018	2.109	.302
	Greenhouse-Geisser	1177.708	1.000	1177.708	2.109	.149	.018	2.109	.302
	Huynh-Feldt	1177.708	1.000	1177.708	2.109	.149	.018	2.109	.302
	Lower-bound	1177.708	1.000	1177.708	2.109	.149	.018	2.109	.302
Error(emot)	Sphericity Assumed	63092.672	113	558.342					
	Greenhouse-Geisser	63092.672	113.000	558.342					
	Huynh-Feldt	63092.672	113.000	558.342					

	Lower-bound	63092.672	113.000	558.342					
succes	Sphericity Assumed	4945.890	1	4945.890	8.621	.004	.071	8.621	.829
	Greenhouse-Geisser	4945.890	1.000	4945.890	8.621	.004	.071	8.621	.829
	Huynh-Feldt	4945.890	1.000	4945.890	8.621	.004	.071	8.621	.829
	Lower-bound	4945.890	1.000	4945.890	8.621	.004	.071	8.621	.829
succes * Psych_median	Sphericity Assumed	4054.585	1	4054.585	7.068	.009	.059	7.068	.750
	Greenhouse-Geisser	4054.585	1.000	4054.585	7.068	.009	.059	7.068	.750
	Huynh-Feldt	4054.585	1.000	4054.585	7.068	.009	.059	7.068	.750
	Lower-bound	4054.585	1.000	4054.585	7.068	.009	.059	7.068	.750
Error(succes)	Sphericity Assumed	64827.208	113	573.692					
	Greenhouse-Geisser	64827.208	113.000	573.692					
	Huynh-Feldt	64827.208	113.000	573.692					
	Lower-bound	64827.208	113.000	573.692					
gend	Sphericity Assumed	10149.692	1	10149.692	12.675	.001	.101	12.675	.942
	Greenhouse-Geisser	10149.692	1.000	10149.692	12.675	.001	.101	12.675	.942
	Huynh-Feldt	10149.692	1.000	10149.692	12.675	.001	.101	12.675	.942
	Lower-bound	10149.692	1.000	10149.692	12.675	.001	.101	12.675	.942
gend * Psych_median	Sphericity Assumed	497.518	1	497.518	.621	.432	.005	.621	.122

	Greenhouse-Geisser	497.518	1.000	497.518	.621	.432	.005	.621	.122
	Huynh-Feldt	497.518	1.000	497.518	.621	.432	.005	.621	.122
	Lower-bound	497.518	1.000	497.518	.621	.432	.005	.621	.122
Error(gend)	Sphericity Assumed	90484.819	113	800.751					
	Greenhouse-Geisser	90484.819	113.000	800.751					
	Huynh-Feldt	90484.819	113.000	800.751					
	Lower-bound	90484.819	113.000	800.751					
emot * succes	Sphericity Assumed	2589.680	1	2589.680	3.402	.068	.029	3.402	.448
	Greenhouse-Geisser	2589.680	1.000	2589.680	3.402	.068	.029	3.402	.448
	Huynh-Feldt	2589.680	1.000	2589.680	3.402	.068	.029	3.402	.448
	Lower-bound	2589.680	1.000	2589.680	3.402	.068	.029	3.402	.448
emot * succes * Psych_median	Sphericity Assumed	589.680	1	589.680	.775	.381	.007	.775	.141
	Greenhouse-Geisser	589.680	1.000	589.680	.775	.381	.007	.775	.141
	Huynh-Feldt	589.680	1.000	589.680	.775	.381	.007	.775	.141
	Lower-bound	589.680	1.000	589.680	.775	.381	.007	.775	.141
Error(emot*succes)	Sphericity Assumed	86017.657	113	761.218					
	Greenhouse-Geisser	86017.657	113.000	761.218					
	Huynh-Feldt	86017.657	113.000	761.218					
	Lower-bound	86017.657	113.000	761.218					

emot * gend	Sphericity Assumed	1199.453	1	1199.453	1.482	.226	.013	1.482	.227
	Greenhouse-Geisser	1199.453	1.000	1199.453	1.482	.226	.013	1.482	.227
	Huynh-Feldt	1199.453	1.000	1199.453	1.482	.226	.013	1.482	.227
	Lower-bound	1199.453	1.000	1199.453	1.482	.226	.013	1.482	.227
emot * gend * Psych_median	Sphericity Assumed	3.801	1	3.801	.005	.945	.000	.005	.051
	Greenhouse-Geisser	3.801	1.000	3.801	.005	.945	.000	.005	.051
	Huynh-Feldt	3.801	1.000	3.801	.005	.945	.000	.005	.051
	Lower-bound	3.801	1.000	3.801	.005	.945	.000	.005	.051
Error(emot*gend)	Sphericity Assumed	91454.080	113	809.328					
	Greenhouse-Geisser	91454.080	113.000	809.328					
	Huynh-Feldt	91454.080	113.000	809.328					
	Lower-bound	91454.080	113.000	809.328					
succes * gend	Sphericity Assumed	25556.117	1	25556.117	55.789	.000	.331	55.789	1.000
	Greenhouse-Geisser	25556.117	1.000	25556.117	55.789	.000	.331	55.789	1.000
	Huynh-Feldt	25556.117	1.000	25556.117	55.789	.000	.331	55.789	1.000
	Lower-bound	25556.117	1.000	25556.117	55.789	.000	.331	55.789	1.000
succes * gend * Psych_median	Sphericity Assumed	12.638	1	12.638	.028	.868	.000	.028	.053
	Greenhouse-Geisser	12.638	1.000	12.638	.028	.868	.000	.028	.053

	Huynh-Feldt	12.638	1.000	12.638	.028	.868	.000	.028	.053
	Lower-bound	12.638	1.000	12.638	.028	.868	.000	.028	.053
Error(succes*gend)	Sphericity Assumed	51763.177	113	458.081					
	Greenhouse-Geisser	51763.177	113.000	458.081					
	Huynh-Feldt	51763.177	113.000	458.081					
	Lower-bound	51763.177	113.000	458.081					
emot * succes * gend	Sphericity Assumed	14416.594	1	14416.594	25.906	.000	.187	25.906	.999
	Greenhouse-Geisser	14416.594	1.000	14416.594	25.906	.000	.187	25.906	.999
	Huynh-Feldt	14416.594	1.000	14416.594	25.906	.000	.187	25.906	.999
	Lower-bound	14416.594	1.000	14416.594	25.906	.000	.187	25.906	.999
emot * succes * gend * Psych_median	Sphericity Assumed	916.594	1	916.594	1.647	.202	.014	1.647	.247
	Greenhouse-Geisser	916.594	1.000	916.594	1.647	.202	.014	1.647	.247
	Huynh-Feldt	916.594	1.000	916.594	1.647	.202	.014	1.647	.247
	Lower-bound	916.594	1.000	916.594	1.647	.202	.014	1.647	.247
Error(emot*succes*gend)	Sphericity Assumed	62883.677	113	556.493					
	Greenhouse-Geisser	62883.677	113.000	556.493					
	Huynh-Feldt	62883.677	113.000	556.493					
	Lower-bound	62883.677	113.000	556.493					

Levene's Test of Equality of Error Variances[a]

	F	df1	df2	Sig.
Recall of Happy and Successful Male	.057	1	113	.812
Recall of Happy and Successful Female	.661	1	113	.418
Recall of Happy and Unsuccessful Male	3.705	1	113	.057
Recall of Happy and Unsuccessful Female	.238	1	113	.627
Recall of Sad and Successful Male	.736	1	113	.393
Recall of Sad and Successful Female	.498	1	113	.482
Recal of Sad and Unsuccessful Male	9.606	1	113	.002
Recall of Sad and Unsuccessful Female	.058	1	113	.810

Tests the null hypothesis that the error variance of the dependent variable is equal across groups.

a. Design: Intercept + Psych_median
Within Subjects Design: emot + succes + gend + emot * succes + emot * gend + succes * gend + emot * succes * gend

Tests of Between-Subjects Effects

Measure: MEASURE_1
Transformed Variable: Average

Source	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared	Noncent. Parameter	Observed Power[a]
Intercept	556797.858	1	556797.858	212.802	.000	.653	212.802	1.000
Psych_median	3732.641	1	3732.641	1.427	.235	.012	1.427	.220
Error	295665.457	113	2616.508					

Hierarchical Regression Predicting Emotional Recognition for the Noncriminal Sample

Variables Entered/Removed[a]

Model	Variables Entered	Variables Removed	Method
1	What gender are you?, What is your age? (In years)[b]	.	Enter
2	DASS_TotalScore, AES_TotalScore, IRI_TotalScore[b]	.	Enter
3	PPITotal_RawScore[b]	.	Enter

a. Dependent Variable: Combined_EmotionalRecognition
b. All requested variables entered.

Model Summary[d]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.313[a]	.098	.081	2.38257	.098	5.863	2	108	.004
2	.501[b]	.251	.216	2.20147	.153	7.167	3	105	.000
3	.512[c]	.262	.220	2.19572	.011	1.550	1	104	.216

a. Predictors: (Constant), What gender are you?, What is your age? (In years)
b. Predictors: (Constant), What gender are you?, What is your age? (In years), DASS_TotalScore, AES_TotalScore, IRI_TotalScore
c. Predictors: (Constant), What gender are you?, What is your age? (In years), DASS_TotalScore, AES_TotalScore, IRI_TotalScore, PPITotal_RawScore
d. Dependent Variable: Combined_EmotionalRecognition

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	66.561	2	33.280	5.863	.004[b]
	Residual	613.079	108	5.677		
	Total	679.640	110			
2	Regression	170.762	5	34.152	7.047	.000[c]
	Residual	508.878	105	4.846		
	Total	679.640	110			
3	Regression	178.237	6	29.706	6.162	.000[d]
	Residual	501.403	104	4.821		
	Total	679.640	110			

a. Dependent Variable: Combined_EmotionalRecognition
b. Predictors: (Constant), What gender are you?, What is your age? (In years)
c. Predictors: (Constant), What gender are you?, What is your age? (In years), DASS_TotalScore, AES_TotalScore, IRI_TotalScore
d. Predictors: (Constant), What gender are you?, What is your age? (In years), DASS_TotalScore, AES_TotalScore, IRI_TotalScore, PPITotal_RawScore

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Correlations		
		B	Std. Error	Beta			Zero-order	Partial	Part
1	(Constant)	16.876	.888		18.995	.000			
	What is your age? (In years)	-.003	.014	-.018	-.196	.845	.009	-.019	-.018
	What gender are you?	-1.568	.458	-.314	-3.423	.001	-.312	-.313	-.313
2	(Constant)	13.266	2.075		6.393	.000			
	What is your age? (In years)	.012	.013	.081	.920	.360	.009	.089	.078
	What gender are you?	-1.043	.439	-.209	-2.376	.019	-.312	-.226	-.201
	IRI_TotalScore	.082	.020	.406	4.030	.000	.387	.366	.340
	AES_TotalScore	-.017	.015	-.115	-1.169	.245	.140	-.113	-.099
	DASS_TotalScore	-.047	.019	-.212	-2.425	.017	-.208	-.230	-.205
3	(Constant)	15.753	2.877		5.476	.000			
	What is your age? (In years)	.006	.014	.040	.425	.672	.009	.042	.036
	What gender are you?	-.825	.472	-.165	-1.748	.083	-.312	-.169	-.147
	IRI_TotalScore	.075	.021	.371	3.547	.001	.387	.329	.299
	AES_TotalScore	-.015	.015	-.103	-1.047	.297	.140	-.102	-.088
	DASS_TotalScore	-.041	.020	-.185	-2.052	.043	-.208	-.197	-.173
	PPITotal_RawScore	-.008	.007	-.129	-1.245	.216	-.332	-.121	-.105

a. Dependent Variable: Combined_EmotionalRecognition

Hierarchical Regression Predicting Emotional Intelligence for the Noncriminal Sample

Variables Entered/Removed[a]

Model	Variables Entered	Variables Removed	Method
1	What gender are you?, What is your age? (In years)[b]	.	Enter
2	c_DASS, IRI_TotalScore, c_PPITotal[b]	.	Enter
3	Interaction_Psychop_Dass[b]	.	Enter

a. Dependent Variable: AES_TotalScore

Model Summary[d]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.072[a]	.005	-.013	18.54692	.005	.281	2	107	.756
2	.487[b]	.237	.201	16.47171	.232	10.553	3	104	.000
3	.489[c]	.239	.194	16.53704	.001	.180	1	103	.672

a. Predictors: (Constant), What gender are you?, What is your age? (In years)
b. Predictors: (Constant), What gender are you?, What is your age? (In years), c_DASS, IRI_TotalScore, c_PPITotal
c. Predictors: (Constant), What gender are you?, What is your age? (In years), c_DASS, IRI_TotalScore, c_PPITotal, Interaction_Psychop_Dass
d. Dependent Variable: AES_TotalScore

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	193.020	2	96.510	.281	.756[b]
	Residual	36806.733	107	343.988		
	Total	36999.753	109			
2	Regression	8782.768	5	1756.554	6.474	.000[c]
	Residual	28216.986	104	271.317		
	Total	36999.753	109			
3	Regression	8831.950	6	1471.992	5.383	.000[d]
	Residual	28167.803	103	273.474		
	Total	36999.753	109			

a. Dependent Variable: AES_TotalScore
b. Predictors: (Constant), What gender are you?, What is your age? (In years)
c. Predictors: (Constant), What gender are you?, What is your age? (In years), c_DASS, IRI_TotalScore, c_PPITotal
d. Predictors: (Constant), What gender are you?, What is your age? (In years), c_DASS, IRI_TotalScore, c_PPITotal, Interaction_Psychop_Dass

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Correlations		
		B	Std. Error	Beta			Zero-order	Partial	Part
1	(Constant)	133.274	6.911		19.283	.000			
	What is your age? (In years)	-.026	.106	-.024	-.249	.804	-.019	-.024	-.024
	What gender are you?	-2.595	3.585	-.070	-.724	.471	-.068	-.070	-.070
2	(Constant)	80.268	12.327		6.512	.000			
	What is your age? (In years)	.107	.103	.097	1.037	.302	-.019	.101	.089
	What gender are you?	1.845	3.519	.050	.524	.601	-.068	.051	.045
	c_DASS	-.464	.156	-.262	-2.966	.004	-.256	-.279	-.254
	c_PPITotal	.006	.051	.012	.118	.907	-.139	.012	.010
	IRI_TotalScore	.657	.140	.437	4.711	.000	.405	.419	.403
3	(Constant)	79.183	12.637		6.266	.000			
	What is your age? (In years)	.116	.106	.105	1.096	.276	-.019	.107	.094
	What gender are you?	1.864	3.533	.050	.527	.599	-.068	.052	.045
	c_DASS	-.481	.162	-.271	-2.965	.004	-.256	-.280	-.255
	c_PPITotal	.012	.053	.024	.225	.823	-.139	.022	.019
	IRI_TotalScore	.666	.142	.443	4.703	.000	.405	.420	.404
	Interaction_Psychop_Dass	.002	.005	.039	.424	.672	-.046	.042	.036

a. Dependent Variable: AES_TotalScore

Hierarchical Regression Predicting Empathy for Noncriminal Sample

Variables Entered/Removed[a]

Model	Variables Entered	Variables Removed	Method
1	What gender are you?, What is your age? (In years)[b]	.	Enter
2	AES_TotalScore, c_DASS, c_PPITotal[b]	.	Enter
3	Interaction_Psychop_Dass[b]	.	Enter

a. Dependent Variable: IRI_TotalScore

Model Summary[d]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.321[a]	.103	.086	11.70994	.103	6.134	2	107	.003
2	.546[b]	.298	.264	10.50872	.195	9.620	3	104	.000
3	.561[c]	.314	.274	10.43495	.016	2.476	1	103	.119

a. Predictors: (Constant), What gender are you?, What is your age? (In years)
b. Predictors: (Constant), What gender are you?, What is your age? (In years), AES_TotalScore, c_DASS, c_PPITotal
c. Predictors: (Constant), What gender are you?, What is your age? (In years), AES_TotalScore, c_DASS, c_PPITotal, Interaction_Psychop_Dass
d. Dependent Variable: IRI_TotalScore

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	1682.272	2	841.136	6.134	.003[b]
	Residual	14672.132	107	137.123		
	Total	16354.404	109			
2	Regression	4869.352	5	973.870	8.819	.000[c]
	Residual	11485.052	104	110.433		
	Total	16354.404	109			
3	Regression	5138.930	6	856.488	7.866	.000[d]
	Residual	11215.474	103	108.888		
	Total	16354.404	109			

a. Dependent Variable: IRI_TotalScore
b. Predictors: (Constant), What gender are you?, What is your age? (In years)
c. Predictors: (Constant), What gender are you?, What is your age? (In years), AES_TotalScore, c_DASS, c_PPITotal
d. Predictors: (Constant), What gender are you?, What is your age? (In years), AES_TotalScore, c_DASS, c_PPITotal, Interaction_Psychop_Dass

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Correlations		
		B	Std. Error	Beta			Zero-order	Partial	Part
1	(Constant)	77.657	4.364		17.796	.000			
	What is your age? (In years)	-.178	.067	-.243	-2.648	.009	-.226	-.248	-.242
	What gender are you?	-5.637	2.264	-.229	-2.490	.014	-.210	-.234	-.228
2	(Constant)	41.259	8.408		4.907	.000			
	What is your age? (In years)	-.213	.063	-.290	-3.382	.001	-.226	-.315	-.278
	What gender are you?	-3.295	2.225	-.134	-1.481	.142	-.210	-.144	-.122
	c_DASS	.186	.102	.158	1.815	.072	-.013	.175	.149
	c_PPITotal	-.069	.032	-.207	-2.162	.033	-.207	-.207	-.178
	AES_TotalScore	.268	.057	.402	4.711	.000	.405	.419	.387
3	(Constant)	42.479	8.385		5.066	.000			
	What is your age? (In years)	-.228	.063	-.311	-3.608	.000	-.226	-.335	-.294
	What gender are you?	-3.268	2.209	-.133	-1.479	.142	-.210	-.144	-.121
	c_DASS	.224	.104	.190	2.140	.035	-.013	.206	.175
	c_PPITotal	-.081	.033	-.244	-2.488	.014	-.207	-.238	-.203
	AES_TotalScore	.265	.056	.399	4.703	.000	.405	.420	.384
	Interaction_Psychop_Dass	-.005	.003	-.135	-1.573	.119	-.046	-.153	-.128

a. Dependent Variable: IRI_TotalScore

Appendix H – Statistical Output for Study 2

Mixed Design Factorial ANOVA for Emotional Recognition for the Business Sample

Within-Subjects Factors

Measure: MEASURE_1

Condition	Dependent Variable
1	Experiment
2	Control

Between-Subjects Factors

		Value Label	N
TrialOrder	1.00	Stick condition first	36
	2.00	Stick condition second	24
Psychopathy_MedianSplit	1.00	High	30
	2.00	Low	30

	TrialOrder	Psychopathy_MedianSplit	Mean	Std. Deviation	N
Experiment	Stick condition first	High	7.3000	1.41793	20
		Low	7.0000	1.46059	16
		Total	7.1667	1.42428	36
	Stick condition second	High	7.9000	.87560	10
		Low	8.0000	.87706	14
		Total	7.9583	.85867	24
	Total	High	7.5000	1.27982	30
		Low	7.4667	1.30604	30
		Total	7.4833	1.28210	60
Control	Stick condition first	High	8.2500	.91047	20
		Low	8.3750	.80623	16
		Total	8.3056	.85589	36
	Stick condition second	High	7.5000	1.08012	10
		Low	7.8571	1.09945	14
		Total	7.7083	1.08264	24
	Total	High	8.0000	1.01710	30
		Low	8.1333	.97320	30
		Total	8.0667	.98921	60

Box's Test of Equality of Covariance Matrices[a]

Box's M	11.440
F	1.182
df1	9
df2	14980.481
Sig.	.302

Tests of Within-Subjects Effects

Measure: MEASURE_1

Source		Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared	Noncent. Parameter	Observed Power[a]
Condition	Sphericity Assumed	5.593	1	5.593	5.553	.022	.090	5.553	.639
	Greenhouse-Geisser	5.593	1.000	5.593	5.553	.022	.090	5.553	.639
	Huynh-Feldt	5.593	1.000	5.593	5.553	.022	.090	5.553	.639
	Lower-bound	5.593	1.000	5.593	5.553	.022	.090	5.553	.639
Condition * TrialOrder	Sphericity Assumed	14.484	1	14.484	14.379	.000	.204	14.379	.961
	Greenhouse-Geisser	14.484	1.000	14.484	14.379	.000	.204	14.379	.961
	Huynh-Feldt	14.484	1.000	14.484	14.379	.000	.204	14.379	.961
	Lower-bound	14.484	1.000	14.484	14.379	.000	.204	14.379	.961
Condition * Psychopathy_MedianSplit	Sphericity Assumed	.819	1	.819	.814	.371	.014	.814	.144
	Greenhouse-Geisser	.819	1.000	.819	.814	.371	.014	.814	.144
	Huynh-Feldt	.819	1.000	.819	.814	.371	.014	.814	.144
	Lower-bound	.819	1.000	.819	.814	.371	.014	.814	.144
Condition * TrialOrder * Psychopathy_MedianSplit	Sphericity Assumed	.050	1	.050	.049	.825	.001	.049	.055
	Greenhouse-Geisser	.050	1.000	.050	.049	.825	.001	.049	.055

	Huynh-Feldt	.050	1.000	.050	.049	.825	.001	.049	.055
	Lower-bound	.050	1.000	.050	.049	.825	.001	.049	.055
Error(Condition)	Sphericity Assumed	56.407	56	1.007					
	Greenhouse-Geisser	56.407	56.000	1.007					
	Huynh-Feldt	56.407	56.000	1.007					
	Lower-bound	56.407	56.000	1.007					

a. Computed using alpha =

Levene's Test of Equality of Error Variances[a]

	F	df1	df2	Sig.
Experiment	2.891	3	56	.043
Control	.615	3	56	.608

Tests the null hypothesis that the error variance of the dependent variable is equal across groups.

a. Design: Intercept + TrialOrder + Psychopathy_MedianSplit + TrialOrder * Psychopathy_MedianSplit
Within Subjects Design: Condition

Tests of Between-Subjects Effects

Source	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared	Noncent. Parameter	Observed Power[a]
Intercept	6809.140	1	6809.140	4627.170	.000	.988	4627.170	1.000
TrialOrder	.194	1	.194	.132	.718	.002	.132	.065
Psychopathy_MedianSplit	.140	1	.140	.095	.759	.002	.095	.061
TrialOrder * Psychopathy_MedianSplit	.704	1	.704	.478	.492	.008	.478	.104
Error	82.407	56	1.472					

a. Computed using alpha =

Mixed Design Factorial ANOVA for Social Information Processing for Business Sample - Recognition

Within-Subjects Factors

Measure: MEASURE_1

Emot	Succ	Gend	Dependent Variable
1	1	1	Recognition_HappySuccessful_Male
		2	Recongition_HappySuccessful_Female
	2	1	Recongtion_HappyUnsuccessful_Male
		2	Recognition_HappyUnsuccessful_Female
2	1	1	Recognition_SadSuccessful_Male
		2	Recogntion_SadSuccessful_Female
	2	1	Recongition_SadUnsuccessful_Male
		2	Recognition_SadUnsuccessful_Female

Between-Subjects Factors

		Value Label	N
Psychopathy_MedianSplit	1.00	High	30
	2.00	Low	30

Descriptive Statistics

	Psychopathy_MedianSplit	Mean	Std. Deviation	N
Recognition of Happy and Successful Male	High	.93	.254	30
	Low	.87	.346	30
	Total	.90	.303	60
Recognition of Happy and Successful Female	High	.87	.346	30
	Low	.90	.305	30
	Total	.88	.324	60
Recongition of Happy and Unsuccessful Male	High	.97	.183	30
	Low	1.00	.000	30
	Total	.98	.129	60
Recognition of Happy and Unsuccessful Female	High	.97	.183	30
	Low	.97	.183	30
	Total	.97	.181	60
Recognition of Sad and Successful Male	High	.97	.183	30
	Low	1.00	.000	30
	Total	.98	.129	60
Recongition of Sad and Successful Female	High	.87	.346	30
	Low	.93	.254	30
	Total	.90	.303	60
Recongition of Sad and Unsuccesful Male	High	.97	.183	30
	Low	.90	.305	30
	Total	.93	.252	60
Recognition of Sad and Unsuccessful Female	High	1.00	.000	30
	Low	1.00	.000	30
	Total	1.00	.000	60

Tests of Within-Subjects Effects

Source		Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared	Noncent. Parameter	Observed Power[a]
Emot	Sphericity Assumed	.052	1	.052	.984	.325	.017	.984	.164
	Greenhouse-Geisser	.052	1.000	.052	.984	.325	.017	.984	.164
	Huynh-Feldt	.052	1.000	.052	.984	.325	.017	.984	.164
	Lower-bound	.052	1.000	.052	.984	.325	.017	.984	.164
Emot * Psychopathy_MedianSplit	Sphericity Assumed	.002	1	.002	.039	.843	.001	.039	.054
	Greenhouse-Geisser	.002	1.000	.002	.039	.843	.001	.039	.054
	Huynh-Feldt	.002	1.000	.002	.039	.843	.001	.039	.054
	Lower-bound	.002	1.000	.002	.039	.843	.001	.039	.054
Error(Emot)	Sphericity Assumed	3.071	58	.053					
	Greenhouse-Geisser	3.071	58.000	.053					
	Huynh-Feldt	3.071	58.000	.053					
	Lower-bound	3.071	58.000	.053					
Succ	Sphericity Assumed	.352	1	.352	6.275	.015	.098	6.275	.693

	Greenhouse-Geisser	.352	1.000	.352	6.275	.015	.098	6.275	.693
	Huynh-Feldt	.352	1.000	.352	6.275	.015	.098	6.275	.693
	Lower-bound	.352	1.000	.352	6.275	.015	.098	6.275	.693
Succ * Psychopathy_MedianSplit	Sphericity Assumed	.019	1	.019	.334	.565	.006	.334	.088
	Greenhouse-Geisser	.019	1.000	.019	.334	.565	.006	.334	.088
	Huynh-Feldt	.019	1.000	.019	.334	.565	.006	.334	.088
	Lower-bound	.019	1.000	.019	.334	.565	.006	.334	.088
Error(Succ)	Sphericity Assumed	3.254	58	.056					
	Greenhouse-Geisser	3.254	58.000	.056					
	Huynh-Feldt	3.254	58.000	.056					
	Lower-bound	3.254	58.000	.056					
Gend	Sphericity Assumed	.019	1	.019	.268	.606	.005	.268	.080
	Greenhouse-Geisser	.019	1.000	.019	.268	.606	.005	.268	.080
	Huynh-Feldt	.019	1.000	.019	.268	.606	.005	.268	.080
	Lower-bound	.019	1.000	.019	.268	.606	.005	.268	.080
Gend * Psychopathy_MedianSplit	Sphericity Assumed	.052	1	.052	.745	.392	.013	.745	.136
	Greenhouse-Geisser	.052	1.000	.052	.745	.392	.013	.745	.136
	Huynh-Feldt	.052	1.000	.052	.745	.392	.013	.745	.136
	Lower-bound	.052	1.000	.052	.745	.392	.013	.745	.136

Error(Gend)	Sphericity Assumed	4.054	58	.070					
	Greenhouse-Geisser	4.054	58.000	.070					
	Huynh-Feldt	4.054	58.000	.070					
	Lower-bound	4.054	58.000	.070					
Emot * Succ	Sphericity Assumed	.102	1	.102	2.446	.123	.040	2.446	.337
	Greenhouse-Geisser	.102	1.000	.102	2.446	.123	.040	2.446	.337
	Huynh-Feldt	.102	1.000	.102	2.446	.123	.040	2.446	.337
	Lower-bound	.102	1.000	.102	2.446	.123	.040	2.446	.337
Emot * Succ * Psychopathy_MedianSplit	Sphericity Assumed	.102	1	.102	2.446	.123	.040	2.446	.337
	Greenhouse-Geisser	.102	1.000	.102	2.446	.123	.040	2.446	.337
	Huynh-Feldt	.102	1.000	.102	2.446	.123	.040	2.446	.337
	Lower-bound	.102	1.000	.102	2.446	.123	.040	2.446	.337
Error(Emot*Succ)	Sphericity Assumed	2.421	58	.042					
	Greenhouse-Geisser	2.421	58.000	.042					
	Huynh-Feldt	2.421	58.000	.042					
	Lower-bound	2.421	58.000	.042					
Emot * Gend	Sphericity Assumed	.002	1	.002	.039	.845	.001	.039	.054
	Greenhouse-Geisser	.002	1.000	.002	.039	.845	.001	.039	.054

	Huynh-Feldt	.002	1.000	.002	.039	.845	.001	.039	.054
	Lower-bound	.002	1.000	.002	.039	.845	.001	.039	.054
Emot * Gend * Psychopathy_MedianSplit	Sphericity Assumed	.002	1	.002	.039	.845	.001	.039	.054
	Greenhouse-Geisser	.002	1.000	.002	.039	.845	.001	.039	.054
	Huynh-Feldt	.002	1.000	.002	.039	.845	.001	.039	.054
	Lower-bound	.002	1.000	.002	.039	.845	.001	.039	.054
Error(Emot*Gend)	Sphericity Assumed	3.121	58	.054					
	Greenhouse-Geisser	3.121	58.000	.054					
	Huynh-Feldt	3.121	58.000	.054					
	Lower-bound	3.121	58.000	.054					
Succ * Gend	Sphericity Assumed	.169	1	.169	2.847	.097	.047	2.847	.382
	Greenhouse-Geisser	.169	1.000	.169	2.847	.097	.047	2.847	.382
	Huynh-Feldt	.169	1.000	.169	2.847	.097	.047	2.847	.382
	Lower-bound	.169	1.000	.169	2.847	.097	.047	2.847	.382
Succ * Gend * Psychopathy_MedianSplit	Sphericity Assumed	.019	1	.019	.316	.576	.005	.316	.086
	Greenhouse-Geisser	.019	1.000	.019	.316	.576	.005	.316	.086
	Huynh-Feldt	.019	1.000	.019	.316	.576	.005	.316	.086
	Lower-bound	.019	1.000	.019	.316	.576	.005	.316	.086
Error(Succ*Gend)	Sphericity Assumed	3.438	58	.059					

	Greenhouse-Geisser	3.438	58.000	.059					
	Huynh-Feldt	3.438	58.000	.059					
	Lower-bound	3.438	58.000	.059					
Emot * Succ * Gend	Sphericity Assumed	.169	1	.169	6.970	.011	.107	6.970	.738
	Greenhouse-Geisser	.169	1.000	.169	6.970	.011	.107	6.970	.738
	Huynh-Feldt	.169	1.000	.169	6.970	.011	.107	6.970	.738
	Lower-bound	.169	1.000	.169	6.970	.011	.107	6.970	.738
Emot * Succ * Gend * Psychopathy_MedianSplit	Sphericity Assumed	.052	1	.052	2.151	.148	.036	2.151	.303
	Greenhouse-Geisser	.052	1.000	.052	2.151	.148	.036	2.151	.303
	Huynh-Feldt	.052	1.000	.052	2.151	.148	.036	2.151	.303
	Lower-bound	.052	1.000	.052	2.151	.148	.036	2.151	.303
Error(Emot*Succ*Gend)	Sphericity Assumed	1.404	58	.024					
	Greenhouse-Geisser	1.404	58.000	.024					
	Huynh-Feldt	1.404	58.000	.024					
	Lower-bound	1.404	58.000	.024					

Levene's Test of Equality of Error Variances[a]

	F	df1	df2	Sig.
Recognition of Happy and Successful Male	3.030	1	58	.087
Recognition of Happy and Successful Female	.633	1	58	.430
Recongition of Happy and Unsuccessful Male	4.291	1	58	.043
Recognition of Happy and Unsuccessful Female	.000	1	58	1.000
Recognition of Sad and Successful Male	4.291	1	58	.043
Recongition of Sad and Successful Female	3.030	1	58	.087
Recongition of Sad and Unsuccesful Male	4.520	1	58	.038
Recognition of Sad and Unsuccessful Female	.	1	58	.

Tests the null hypothesis that the error variance of the dependent variable is equal across groups.

a. Design: Intercept + Psychopathy_MedianSplit
Within Subjects Design: Emot + Succ + Gend + Emot * Succ + Emot * Gend + Succ * Gend + Emot * Succ * Gend

Tests of Between-Subjects Effects

Measure: MEASURE_1
Transformed Variable: Average

Source	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared	Noncent. Parameter	Observed Power[a]
Intercept	427.519	1	427.519	6879.839	.000	.992	6879.839	1.000
Psychopathy_MedianSplit	.002	1	.002	.034	.855	.001	.034	.054
Error	3.604	58	.062					

Mixed Design Factorial ANOVA for Social Information Processing for Business Sample – Recall

Within-Subjects Factors

Emot	Succ	Gend	Dependent Variable
1	1	1	Recall_HappySuccessful_Male
		2	Recall_HappySuccessful_Female
	2	1	Recall_HappyUnsuccessful_Male
		2	Recall_HappyUnsuccessful_Female
2	1	1	Recall_SadSuccessful_Male
		2	Recall_SadSuccessful_Female
	2	1	Recall_SadUnsuccessful_Male
		2	Recall_SadUnsuccessful_Female

Descriptive Statistics

	Psychopathy_MedianSplit	Mean	Std. Deviation	N
Recall of Happy and Successful Male	High	19.1667	20.43000	30
	Low	16.6667	23.05665	30
	Total	17.9167	21.63432	60
Recall of Happy and Successful Female	High	24.1667	25.83380	30
	Low	40.8333	33.14241	30
	Total	32.5000	30.63592	60
Recall of Happy and Unsuccessful Male	High	34.1667	27.45163	30
	Low	25.8333	31.81529	30
	Total	30.0000	29.75892	60
Recall of Happy and Unsuccessful Female	High	45.0000	36.19869	30
	Low	49.1667	35.64875	30
	Total	47.0833	35.68093	60
Recall of Sad and Successful Male	High	45.0000	34.36618	30
	Low	33.3333	31.02650	30
	Total	39.1667	32.98904	60
Recall of Sad and Successful Female	High	33.3333	29.60467	30
	Low	33.3333	36.15897	30
	Total	33.3333	32.76349	60
Recal of Sad and Unsuccessful Male	High	27.5000	33.70127	30
	Low	15.0000	25.08606	30
	Total	21.2500	30.12158	60
Recall of Sad and Unsuccessful Female	High	44.1667	35.76946	30
	Low	38.3333	31.30312	30
	Total	41.2500	33.45405	60

Box's Test of Equality of Covariance Matrices[a]

Box's M	43.781
F	1.036
df1	36
df2	11319.368
Sig.	.409

Tests of Within-Subjects Effects

Measure: MEASURE_1

Source		Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared	Noncent. Parameter	Observed Power[a]
Emot	Sphericity Assumed	421.875	1	421.875	.503	.481	.009	.503	.107
	Greenhouse-Geisser	421.875	1.000	421.875	.503	.481	.009	.503	.107
	Huynh-Feldt	421.875	1.000	421.875	.503	.481	.009	.503	.107
	Lower-bound	421.875	1.000	421.875	.503	.481	.009	.503	.107
Emot * Psychopathy_MedianSplit	Sphericity Assumed	3000.000	1	3000.000	3.580	.063	.058	3.580	.460
	Greenhouse-Geisser	3000.000	1.000	3000.000	3.580	.063	.058	3.580	.460
	Huynh-Feldt	3000.000	1.000	3000.000	3.580	.063	.058	3.580	.460
	Lower-bound	3000.000	1.000	3000.000	3.580	.063	.058	3.580	.460
Error(Emot)	Sphericity Assumed	48609.375	58	838.093					
	Greenhouse-Geisser	48609.375	58.000	838.093					
	Huynh-Feldt	48609.375	58.000	838.093					
	Lower-bound	48609.375	58.000	838.093					
Succ	Sphericity Assumed	2083.333	1	2083.333	2.357	.130	.039	2.357	.327
	Greenhouse-Geisser	2083.333	1.000	2083.333	2.357	.130	.039	2.357	.327
	Huynh-Feldt	2083.333	1.000	2083.333	2.357	.130	.039	2.357	.327

	Lower-bound	2083.333	1.000	2083.333	2.357	.130	.039	2.357	.327
	Sphericity Assumed	1171.875	1	1171.875	1.326	.254	.022	1.326	.205
Succ * Psychopathy_MedianSplit	Greenhouse-Geisser	1171.875	1.000	1171.875	1.326	.254	.022	1.326	.205
	Huynh-Feldt	1171.875	1.000	1171.875	1.326	.254	.022	1.326	.205
	Lower-bound	1171.875	1.000	1171.875	1.326	.254	.022	1.326	.205
	Sphericity Assumed	51276.042	58	884.070					
Error(Succ)	Greenhouse-Geisser	51276.042	58.000	884.070					
	Huynh-Feldt	51276.042	58.000	884.070					
	Lower-bound	51276.042	58.000	884.070					
	Sphericity Assumed	15755.208	1	15755.208	18.498	.000	.242	18.498	.988
Gend	Greenhouse-Geisser	15755.208	1.000	15755.208	18.498	.000	.242	18.498	.988
	Huynh-Feldt	15755.208	1.000	15755.208	18.498	.000	.242	18.498	.988
	Lower-bound	15755.208	1.000	15755.208	18.498	.000	.242	18.498	.988
	Sphericity Assumed	4687.500	1	4687.500	5.503	.022	.087	5.503	.636
Gend * Psychopathy_MedianSplit	Greenhouse-Geisser	4687.500	1.000	4687.500	5.503	.022	.087	5.503	.636
	Huynh-Feldt	4687.500	1.000	4687.500	5.503	.022	.087	5.503	.636
	Lower-bound	4687.500	1.000	4687.500	5.503	.022	.087	5.503	.636
	Sphericity Assumed	49401.042	58	851.742					
Error(Gend)									

	Greenhouse-Geisser	49401.042	58.000	851.742					
	Huynh-Feldt	49401.042	58.000	851.742					
	Lower-bound	49401.042	58.000	851.742					
Emot * Succ	Sphericity Assumed	10083.333	1	10083.333	16.501	.000	.221	16.501	.979
	Greenhouse-Geisser	10083.333	1.000	10083.333	16.501	.000	.221	16.501	.979
	Huynh-Feldt	10083.333	1.000	10083.333	16.501	.000	.221	16.501	.979
	Lower-bound	10083.333	1.000	10083.333	16.501	.000	.221	16.501	.979
Emot * Succ * Psychopathy_MedianSplit	Sphericity Assumed	255.208	1	255.208	.418	.521	.007	.418	.097
	Greenhouse-Geisser	255.208	1.000	255.208	.418	.521	.007	.418	.097
	Huynh-Feldt	255.208	1.000	255.208	.418	.521	.007	.418	.097
	Lower-bound	255.208	1.000	255.208	.418	.521	.007	.418	.097
Error(Emot*Succ)	Sphericity Assumed	35442.708	58	611.081					
	Greenhouse-Geisser	35442.708	58.000	611.081					
	Huynh-Feldt	35442.708	58.000	611.081					
	Lower-bound	35442.708	58.000	611.081					
Emot * Gend	Sphericity Assumed	2296.875	1	2296.875	2.898	.094	.048	2.898	.388
	Greenhouse-Geisser	2296.875	1.000	2296.875	2.898	.094	.048	2.898	.388
	Huynh-Feldt	2296.875	1.000	2296.875	2.898	.094	.048	2.898	.388
	Lower-bound	2296.875	1.000	2296.875	2.898	.094	.048	2.898	.388

Emot * Gend * Psychopathy_MedianSplit	Sphericity Assumed	333.333	1	333.333	.421	.519	.007	.421	.098
	Greenhouse-Geisser	333.333	1.000	333.333	.421	.519	.007	.421	.098
	Huynh-Feldt	333.333	1.000	333.333	.421	.519	.007	.421	.098
	Lower-bound	333.333	1.000	333.333	.421	.519	.007	.421	.098
Error(Emot*Gend)	Sphericity Assumed	45963.542	58	792.475					
	Greenhouse-Geisser	45963.542	58.000	792.475					
	Huynh-Feldt	45963.542	58.000	792.475					
	Lower-bound	45963.542	58.000	792.475					
Succ * Gend	Sphericity Assumed	6020.833	1	6020.833	13.725	.000	.191	13.725	.954
	Greenhouse-Geisser	6020.833	1.000	6020.833	13.725	.000	.191	13.725	.954
	Huynh-Feldt	6020.833	1.000	6020.833	13.725	.000	.191	13.725	.954
	Lower-bound	6020.833	1.000	6020.833	13.725	.000	.191	13.725	.954
Succ * Gend * Psychopathy_MedianSplit	Sphericity Assumed	255.208	1	255.208	.582	.449	.010	.582	.117
	Greenhouse-Geisser	255.208	1.000	255.208	.582	.449	.010	.582	.117
	Huynh-Feldt	255.208	1.000	255.208	.582	.449	.010	.582	.117
	Lower-bound	255.208	1.000	255.208	.582	.449	.010	.582	.117
Error(Succ*Gend)	Sphericity Assumed	25442.708	58	438.667					
	Greenhouse-Geisser	25442.708	58.000	438.667					

	Huynh-Feldt	25442.708	58.000	438.667					
	Lower-bound	25442.708	58.000	438.667					
Emot * Succ * Gend	Sphericity Assumed	4083.333	1	4083.333	6.400	.014	.099	6.400	.701
	Greenhouse-Geisser	4083.333	1.000	4083.333	6.400	.014	.099	6.400	.701
	Huynh-Feldt	4083.333	1.000	4083.333	6.400	.014	.099	6.400	.701
	Lower-bound	4083.333	1.000	4083.333	6.400	.014	.099	6.400	.701
Emot * Succ * Gend * Psychopathy_MedianSplit	Sphericity Assumed	5.208	1	5.208	.008	.928	.000	.008	.051
	Greenhouse-Geisser	5.208	1.000	5.208	.008	.928	.000	.008	.051
	Huynh-Feldt	5.208	1.000	5.208	.008	.928	.000	.008	.051
	Lower-bound	5.208	1.000	5.208	.008	.928	.000	.008	.051
Error(Emot*Succ*Gend)	Sphericity Assumed	37005.208	58	638.021					
	Greenhouse-Geisser	37005.208	58.000	638.021					
	Huynh-Feldt	37005.208	58.000	638.021					
	Lower-bound	37005.208	58.000	638.021					

Levene's Test of Equality of Error Variances[a]

	F	df1	df2	Sig.
Recall of Happy and Successful Male	.529	1	58	.470
Recall of Happy and Successful Female	4.695	1	58	.034
Recall of Happy and Unsuccessful Male	1.235	1	58	.271
Recall of Happy and Unsuccessful Female	.021	1	58	.885
Recall of Sad and Successful Male	.595	1	58	.444
Recall of Sad and Successful Female	2.090	1	58	.154
Recal of Sad and Unsuccessful Male	3.771	1	58	.057
Recall of Sad and Unsuccessful Female	1.208	1	58	.276

Tests the null hypothesis that the error variance of the dependent variable is equal across groups.

a. Design: Intercept + Psychopathy_MedianSplit
Within Subjects Design: Emot + Succ + Gend + Emot * Succ + Emot * Gend + Succ * Gend + Emot * Succ * Gend

Tests of Between-Subjects Effects

Source	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared	Noncent. Parameter	Observed Power[a]
Intercept	516796.875	1	516796.875	194.816	.000	.771	194.816	1.000
Psychopathy_MedianSplit	750.000	1	750.000	.283	.597	.005	.283	.082
Error	153859.375	58	2652.748					

Hierarchical Regression Predicting Emotional Recognition for Business Sample

Descriptive Statistics

	Mean	Std. Deviation	N
Emotional_Recognition	15.5085	1.66478	59
What is your age? (In years)	37.92	9.381	59
What gender are you?	1.64	.483	59
IRI2_TotalScore	60.9609	13.00918	59
AES_TotalScore	133.7820	13.16543	59
PPITotal_RawScore	287.8158	29.80603	59

Variables Entered/Removed[a]

Model	Variables Entered	Variables Removed	Method
1	What gender are you?, What is your age? (In years)[b]	.	Enter
2	AES_TotalScore, IRI2_TotalScore[b]	.	Enter
3	PPITotal_RawScore[b]	.	Enter

a. Dependent Variable: Emotional_Recognition

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.309[a]	.095	.063	1.61133	.095	2.956	2	56	.060
2	.430[b]	.185	.125	1.55744	.090	2.971	2	54	.060
3	.456[c]	.208	.134	1.54959	.023	1.548	1	53	.219

a. Predictors: (Constant), What gender are you?, What is your age? (In years)
b. Predictors: (Constant), What gender are you?, What is your age? (In years), AES_TotalScore, IRI2_TotalScore
c. Predictors: (Constant), What gender are you?, What is your age? (In years), AES_TotalScore, IRI2_TotalScore, PPITotal_RawScore

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Correlations		
		B	Std. Error	Beta			Zero-order	Partial	Part
1	(Constant)	17.453	1.074		16.257	.000			
	What is your age? (In years)	-.006	.023	-.034	-.265	.792	-.073	-.035	-.034
	What gender are you?	-1.044	.442	-.303	-2.362	.022	-.307	-.301	-.300
2	(Constant)	12.717	2.741		4.639	.000			
	What is your age? (In years)	-.003	.022	-.016	-.131	.897	-.073	-.018	-.016
	What gender are you?	-.481	.485	-.140	-.992	.326	-.307	-.134	-.122
	IRI2_TotalScore	.038	.019	.299	1.993	.051	.402	.262	.245
	AES_TotalScore	.010	.018	.081	.581	.564	.260	.079	.071
3	(Constant)	9.891	3.550		2.786	.007			
	What is your age? (In years)	.005	.023	.029	.226	.822	-.073	.031	.028
	What gender are you?	-.658	.503	-.191	-1.307	.197	-.307	-.177	-.160
	IRI2_TotalScore	.042	.019	.331	2.186	.033	.402	.288	.267
	AES_TotalScore	.009	.017	.070	.507	.615	.260	.069	.062
	PPITotal_RawScore	.010	.008	.170	1.244	.219	.003	.168	.152

a. Dependent Variable: Emotional_Recognition

Hierarchical Regression Predicting Emotional Intelligence for Business Sample

Descriptive Statistics

	Mean	Std. Deviation	N
AES_TotalScore	134.9020	12.54951	51
What is your age? (In years)	37.84	9.544	51
What gender are you?	1.59	.497	51
IRI2_TotalScore	61.5430	12.93283	51
DASS_TotalScore	11.0392	8.05223	51
PPITotal_RawScore	286.1203	30.18608	51
Interaction_Psych_DASS	-14.0576	286.86844	51

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.286[a]	.082	.043	12.27477	.082	2.132	2	48	.130
2	.453[b]	.205	.117	11.79476	.123	2.329	3	45	.087
3	.464[c]	.215	.108	11.85256	.010	.562	1	44	.457

a. Predictors: (Constant), What gender are you?, What is your age? (In years)
b. Predictors: (Constant), What gender are you?, What is your age? (In years), DASS_TotalScore, PPITotal_RawScore, IRI2_TotalScore
c. Predictors: (Constant), What gender are you?, What is your age? (In years), DASS_TotalScore, PPITotal_RawScore, IRI2_TotalScore, Interaction_Psych_DASS

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	642.346	2	321.173	2.132	.130[b]
	Residual	7232.164	48	150.670		
	Total	7874.510	50			
2	Regression	1614.277	5	322.855	2.321	.059[c]
	Residual	6260.233	45	139.116		
	Total	7874.510	50			
3	Regression	1693.251	6	282.208	2.009	.085[d]
	Residual	6181.259	44	140.483		
	Total	7874.510	50			

a. Dependent Variable: AES_TotalScore
b. Predictors: (Constant), What gender are you?, What is your age? (In years)
c. Predictors: (Constant), What gender are you?, What is your age? (In years), DASS_TotalScore, PPITotal_RawScore, IRI2_TotalScore
d. Predictors: (Constant), What gender are you?, What is your age? (In years), DASS_TotalScore, PPITotal_RawScore, IRI2_TotalScore, Interaction_Psych_DASS

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Correlations		
		B	Std. Error	Beta			Zero-order	Partial	Part
1	(Constant)	146.616	8.478		17.294	.000			
	What is your age? (In years)	-.008	.184	-.006	-.043	.966	-.045	-.006	-.006
	What gender are you?	-7.189	3.526	-.285	-2.039	.047	-.286	-.282	-.282
2	(Constant)	107.778	24.043		4.483	.000			
	What is your age? (In years)	-.045	.183	-.034	-.246	.807	-.045	-.037	-.033
	What gender are you?	-4.534	4.047	-.180	-1.120	.269	-.286	-.165	-.149
	IRI2_TotalScore	.427	.166	.440	2.572	.013	.376	.358	.342
	DASS_TotalScore	-.377	.242	-.242	-1.557	.127	.025	-.226	-.207
	PPITotal_RawScore	.049	.061	.117	.794	.431	-.061	.118	.106
3	(Constant)	107.602	24.162		4.453	.000			
	What is your age? (In years)	-.057	.185	-.043	-.309	.759	-.045	-.047	-.041
	What gender are you?	-5.056	4.126	-.200	-1.225	.227	-.286	-.182	-.164
	IRI2_TotalScore	.422	.167	.434	2.526	.015	.376	.356	.337
	DASS_TotalScore	-.375	.244	-.241	-1.541	.130	.025	-.226	-.206
	PPITotal_RawScore	.055	.062	.132	.885	.381	-.061	.132	.118
	Interaction_Psych_DASS	.005	.006	.103	.750	.457	.064	.112	.100

a. Dependent Variable: AES_TotalScore

Hierarchical Regression Predicting Empathy for Business Sample

Descriptive Statistics

	Mean	Std. Deviation	N
IRI2_TotalScore	61.5430	12.93283	51
What is your age? (In years)	37.84	9.544	51
What gender are you?	1.59	.497	51
AES_TotalScore	134.9020	12.54951	51
DASS_TotalScore	11.0392	8.05223	51
PPITotal_RawScore	286.1203	30.18608	51
Interaction_Psych_DASS	-14.0576	286.86844	51

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.499[a]	.249	.218	11.43992	.249	7.951	2	48	.001
2	.688[b]	.473	.414	9.89687	.224	6.378	3	45	.001
3	.688[c]	.473	.401	10.00868	.000	.000	1	44	.988

a. Predictors: (Constant), What gender are you?, What is your age? (In years)
b. Predictors: (Constant), What gender are you?, What is your age? (In years), AES_TotalScore, DASS_TotalScore, PPITotal_RawScore
c. Predictors: (Constant), What gender are you?, What is your age? (In years), AES_TotalScore, DASS_TotalScore, PPITotal_RawScore, Interaction_Psych_DASS

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	2081.052	2	1040.526	7.951	.001[b]
	Residual	6281.850	48	130.872		
	Total	8362.902	50			
2	Regression	3955.241	5	791.048	8.076	.000[c]
	Residual	4407.662	45	97.948		
	Total	8362.902	50			
3	Regression	3955.262	6	659.210	6.581	.000[d]
	Residual	4407.640	44	100.174		
	Total	8362.902	50			

a. Dependent Variable: IRI2_TotalScore
b. Predictors: (Constant), What gender are you?, What is your age? (In years)
c. Predictors: (Constant), What gender are you?, What is your age? (In years), AES_TotalScore, DASS_TotalScore, PPITotal_RawScore
d. Predictors: (Constant), What gender are you?, What is your age? (In years), AES_TotalScore, DASS_TotalScore, PPITotal_RawScore, Interaction_Psych_DASS

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Correlations		
		B	Std. Error	Beta			Zero-order	Partial	Part
1	(Constant)	79.864	7.901		10.108	.000			
	What is your age? (In years)	.065	.171	.048	.382	.704	-.021	.055	.048
	What gender are you?	-13.093	3.286	-.503	-3.984	.000	-.497	-.499	-.498
2	(Constant)	43.997	23.361		1.883	.066			
	What is your age? (In years)	.083	.153	.061	.541	.591	-.021	.080	.059
	What gender are you?	-6.006	3.325	-.231	-1.807	.078	-.497	-.260	-.196
	AES_TotalScore	.300	.117	.291	2.572	.013	.376	.358	.278
	DASS_TotalScore	.633	.186	.394	3.397	.001	.478	.452	.368
	PPITotal_RawScore	-.082	.050	-.192	-1.634	.109	-.321	-.237	-.177
3	(Constant)	43.977	23.664		1.858	.070			
	What is your age? (In years)	.083	.156	.061	.534	.596	-.021	.080	.058
	What gender are you?	-5.996	3.426	-.230	-1.750	.087	-.497	-.255	-.192
	AES_TotalScore	.301	.119	.292	2.526	.015	.376	.356	.277
	DASS_TotalScore	.633	.188	.394	3.359	.002	.478	.452	.368
	PPITotal_RawScore	-.082	.052	-.192	-1.599	.117	-.321	-.234	-.175
	Interaction_Psych_DASS	-7.443E-005	.005	-.002	-.015	.988	-.009	-.002	-.002

a. Dependent Variable: IRI2_TotalScore

Mixed Design Factorial ANOVA for Emotional Recognition for the Criminal Sample

Within-Subjects Factors

Measure: MEASURE_1

Condition	Dependent Variable
1	Experiment
2	Control

Between-Subjects Factors

		N
TrialOrder	1.00	23
	2.00	21
Psychopathy_MedianSplit	1.00	22
	2.00	22

Descriptive Statistics

	TrialOrder	Psychopathy_MedianSplit	Mean	Std. Deviation	N
Experiment	1.00	1.00	5.5000	2.06828	10
		2.00	7.0769	.86232	13
		Total	6.3913	1.67167	23
	2.00	1.00	7.9167	.99620	12
		2.00	8.0000	.86603	9
		Total	7.9524	.92066	21
	Total	1.00	6.8182	1.96726	22
		2.00	7.4545	.96250	22
		Total	7.1364	1.56400	44
Control	1.00	1.00	8.0000	1.15470	10
		2.00	8.3077	.94733	13
		Total	8.1739	1.02922	23
	2.00	1.00	6.3333	1.43548	12
		2.00	6.7778	1.30171	9
		Total	6.5238	1.36452	21
	Total	1.00	7.0909	1.54023	22
		2.00	7.6818	1.32328	22
		Total	7.3864	1.45020	44

Box's Test of Equality of Covariance Matrices[a]

Box's M	18.342
F	1.848
df1	9
df2	12937.417
Sig.	.055

Tests of Within-Subjects Effects

Measure: MEASURE_1

Source		Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared	Noncent. Parameter	Observed Power[a]
Condition	Sphericity Assumed	1.153	1	1.153	.929	.341	.023	.929	.156
	Greenhouse-Geisser	1.153	1.000	1.153	.929	.341	.023	.929	.156
	Huynh-Feldt	1.153	1.000	1.153	.929	.341	.023	.929	.156
	Lower-bound	1.153	1.000	1.153	.929	.341	.023	.929	.156
Condition * TrialOrder	Sphericity Assumed	57.522	1	57.522	46.351	.000	.537	46.351	1.000
	Greenhouse-Geisser	57.522	1.000	57.522	46.351	.000	.537	46.351	1.000
	Huynh-Feldt	57.522	1.000	57.522	46.351	.000	.537	46.351	1.000
	Lower-bound	57.522	1.000	57.522	46.351	.000	.537	46.351	1.000
Condition * Psychopathy_MedianSplit	Sphericity Assumed	1.110	1	1.110	.895	.350	.022	.895	.152
	Greenhouse-Geisser	1.110	1.000	1.110	.895	.350	.022	.895	.152
	Huynh-Feldt	1.110	1.000	1.110	.895	.350	.022	.895	.152
	Lower-bound	1.110	1.000	1.110	.895	.350	.022	.895	.152
Condition * TrialOrder * Psychopathy_MedianSplit	Sphericity Assumed	3.579	1	3.579	2.884	.097	.067	2.884	.381
	Greenhouse-Geisser	3.579	1.000	3.579	2.884	.097	.067	2.884	.381

	Huynh-Feldt	3.579	1.000	3.579	2.884	.097	.067	2.884	.381
	Lower-bound	3.579	1.000	3.579	2.884	.097	.067	2.884	.381
Error(Condition)	Sphericity Assumed	49.640	40	1.241					
	Greenhouse-Geisser	49.640	40.000	1.241					
	Huynh-Feldt	49.640	40.000	1.241					
	Lower-bound	49.640	40.000	1.241					

Levene's Test of Equality of Error Variances[a]

	F	df1	df2	Sig.
Experiment	4.258	3	40	.011
Control	.829	3	40	.486

Tests the null hypothesis that the error variance of the dependent variable is equal across groups.

a. Design: Intercept + TrialOrder + Psychopathy_MedianSplit + TrialOrder * Psychopathy_MedianSplit
Within Subjects Design: Condition

Tests of Between-Subjects Effects

Measure: MEASURE_1
Transformed Variable: Average

Source	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared	Noncent. Parameter	Observed Power[a]
Intercept	4515.534	1	4515.534	2451.056	.000	.984	2451.056	1.000
TrialOrder	.028	1	.028	.015	.903	.000	.015	.052
Psychopathy_MedianSplit	7.835	1	7.835	4.253	.046	.096	4.253	.521
TrialOrder * Psychopathy_MedianSplit	2.479	1	2.479	1.345	.253	.033	1.345	.205
Error	73.691	40	1.842					

Mixed Design Factorial ANOVA for Social Information Processing for Criminal Sample - Recognition

Within-Subjects Factors

Measure: MEASURE_1

Emot	Succ	Gend	Dependent Variable
1	1	1	Recognition_HappySuccessful_Male
		2	Recongition_HappySuccessful_Female
	2	1	Recongtion_HappyUnsuccessful_Male
		2	Recognition_HappyUnsuccessful_Female
2	1	1	Recognition_SadSuccessful_Male
		2	Recogntion_SadSuccessful_Female
	2	1	Recongition_SadUnsuccessful_Male
		2	Recognition_SadUnsuccessful_Female

Descriptive Statistics

	Psychopathy_MedianSplit	Mean	Std. Deviation	N
Recognition of Happy and Successful Male	1.00	.86	.351	22
	2.00	.77	.429	22
	Total	.82	.390	44
Recognition of Happy and Successful Female	1.00	.73	.456	22
	2.00	.86	.351	22
	Total	.80	.408	44
Recongition of Happy and Unsuccessful Male	1.00	.86	.351	22
	2.00	.86	.351	22
	Total	.86	.347	44
Recognition of Happy and Unsuccessful Female	1.00	.73	.456	22
	2.00	.82	.395	22
	Total	.77	.424	44
Recognition of Sad and Successful Male	1.00	.95	.213	22
	2.00	.91	.294	22
	Total	.93	.255	44
Recongition of Sad and Successful Female	1.00	.91	.294	22
	2.00	.86	.351	22
	Total	.89	.321	44
Recongition of Sad and Unsuccesful Male	1.00	.91	.294	22
	2.00	.82	.395	22
	Total	.86	.347	44
Recognition of Sad and Unsuccessful Female	1.00	.91	.294	22
	2.00	.91	.294	22
	Total	.91	.291	44

Box's Test of Equality of Covariance Matrices[a]

Box's M	101.684
F	2.243
df1	36
df2	5935.602
Sig.	.000

Tests of Within-Subjects Effects

Source		Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared	Noncent. Parameter	Observed Power[a]
Emot	Sphericity Assumed	.639	1	.639	5.841	.020	.122	5.841	.656
	Greenhouse-Geisser	.639	1.000	.639	5.841	.020	.122	5.841	.656
	Huynh-Feldt	.639	1.000	.639	5.841	.020	.122	5.841	.656
	Lower-bound	.639	1.000	.639	5.841	.020	.122	5.841	.656
Emot * Psychopathy_MedianSplit	Sphericity Assumed	.139	1	.139	1.272	.266	.029	1.272	.197
	Greenhouse-Geisser	.139	1.000	.139	1.272	.266	.029	1.272	.197
	Huynh-Feldt	.139	1.000	.139	1.272	.266	.029	1.272	.197
	Lower-bound	.139	1.000	.139	1.272	.266	.029	1.272	.197
Error(Emot)	Sphericity Assumed	4.597	42	.109					

	Greenhouse-Geisser	4.597	42.000	.109					
	Huynh-Feldt	4.597	42.000	.109					
	Lower-bound	4.597	42.000	.109					
	Sphericity Assumed	.003	1	.003	.035	.852	.001	.035	.054
Succ	Greenhouse-Geisser	.003	1.000	.003	.035	.852	.001	.035	.054
	Huynh-Feldt	.003	1.000	.003	.035	.852	.001	.035	.054
	Lower-bound	.003	1.000	.003	.035	.852	.001	.035	.054
	Sphericity Assumed	.003	1	.003	.035	.852	.001	.035	.054
Succ * Psychopathy_MedianSplit	Greenhouse-Geisser	.003	1.000	.003	.035	.852	.001	.035	.054
	Huynh-Feldt	.003	1.000	.003	.035	.852	.001	.035	.054
	Lower-bound	.003	1.000	.003	.035	.852	.001	.035	.054
	Sphericity Assumed	3.369	42	.080					
Error(Succ)	Greenhouse-Geisser	3.369	42.000	.080					
	Huynh-Feldt	3.369	42.000	.080					
	Lower-bound	3.369	42.000	.080					
	Sphericity Assumed	.071	1	.071	.422	.520	.010	.422	.097
Gend	Greenhouse-Geisser	.071	1.000	.071	.422	.520	.010	.422	.097
	Huynh-Feldt	.071	1.000	.071	.422	.520	.010	.422	.097
	Lower-bound	.071	1.000	.071	.422	.520	.010	.422	.097

Gend * Psychopathy_MedianSplit	Sphericity Assumed	.230	1	.230	1.366	.249	.032	1.366	.208
	Greenhouse-Geisser	.230	1.000	.230	1.366	.249	.032	1.366	.208
	Huynh-Feldt	.230	1.000	.230	1.366	.249	.032	1.366	.208
	Lower-bound	.230	1.000	.230	1.366	.249	.032	1.366	.208
Error(Gend)	Sphericity Assumed	7.074	42	.168					
	Greenhouse-Geisser	7.074	42.000	.168					
	Huynh-Feldt	7.074	42.000	.168					
	Lower-bound	7.074	42.000	.168					
Emot * Succ	Sphericity Assumed	.026	1	.026	.377	.542	.009	.377	.092
	Greenhouse-Geisser	.026	1.000	.026	.377	.542	.009	.377	.092
	Huynh-Feldt	.026	1.000	.026	.377	.542	.009	.377	.092
	Lower-bound	.026	1.000	.026	.377	.542	.009	.377	.092
Emot * Succ * Psychopathy_MedianSplit	Sphericity Assumed	.003	1	.003	.042	.839	.001	.042	.055
	Greenhouse-Geisser	.003	1.000	.003	.042	.839	.001	.042	.055
	Huynh-Feldt	.003	1.000	.003	.042	.839	.001	.042	.055
	Lower-bound	.003	1.000	.003	.042	.839	.001	.042	.055
Error(Emot*Succ)	Sphericity Assumed	2.847	42	.068					
	Greenhouse-Geisser	2.847	42.000	.068					

	Huynh-Feldt	2.847	42.000	.068					
	Lower-bound	2.847	42.000	.068					
Emot * Gend	Sphericity Assumed	.071	1	.071	.630	.432	.015	.630	.121
	Greenhouse-Geisser	.071	1.000	.071	.630	.432	.015	.630	.121
	Huynh-Feldt	.071	1.000	.071	.630	.432	.015	.630	.121
	Lower-bound	.071	1.000	.071	.630	.432	.015	.630	.121
Emot * Gend * Psychopathy_MedianSplit	Sphericity Assumed	.071	1	.071	.630	.432	.015	.630	.121
	Greenhouse-Geisser	.071	1.000	.071	.630	.432	.015	.630	.121
	Huynh-Feldt	.071	1.000	.071	.630	.432	.015	.630	.121
	Lower-bound	.071	1.000	.071	.630	.432	.015	.630	.121
Error(Emot*Gend)	Sphericity Assumed	4.733	42	.113					
	Greenhouse-Geisser	4.733	42.000	.113					
	Huynh-Feldt	4.733	42.000	.113					
	Lower-bound	4.733	42.000	.113					
Succ * Gend	Sphericity Assumed	.003	1	.003	.025	.876	.001	.025	.053
	Greenhouse-Geisser	.003	1.000	.003	.025	.876	.001	.025	.053
	Huynh-Feldt	.003	1.000	.003	.025	.876	.001	.025	.053
	Lower-bound	.003	1.000	.003	.025	.876	.001	.025	.053
Succ * Gend * Psychopathy_MedianSplit	Sphericity Assumed	.003	1	.003	.025	.876	.001	.025	.053

	Greenhouse-Geisser	.003	1.000	.003	.025	.876	.001	.025	.053
	Huynh-Feldt	.003	1.000	.003	.025	.876	.001	.025	.053
	Lower-bound	.003	1.000	.003	.025	.876	.001	.025	.053
Error(Succ*Gend)	Sphericity Assumed	4.869	42	.116					
	Greenhouse-Geisser	4.869	42.000	.116					
	Huynh-Feldt	4.869	42.000	.116					
	Lower-bound	4.869	42.000	.116					
Emot * Succ * Gend	Sphericity Assumed	.139	1	.139	1.847	.181	.042	1.847	.264
	Greenhouse-Geisser	.139	1.000	.139	1.847	.181	.042	1.847	.264
	Huynh-Feldt	.139	1.000	.139	1.847	.181	.042	1.847	.264
	Lower-bound	.139	1.000	.139	1.847	.181	.042	1.847	.264
Emot * Succ * Gend * Psychopathy_MedianSplit	Sphericity Assumed	.071	1	.071	.943	.337	.022	.943	.158
	Greenhouse-Geisser	.071	1.000	.071	.943	.337	.022	.943	.158
	Huynh-Feldt	.071	1.000	.071	.943	.337	.022	.943	.158
	Lower-bound	.071	1.000	.071	.943	.337	.022	.943	.158
Error(Emot*Succ*Gend)	Sphericity Assumed	3.165	42	.075					
	Greenhouse-Geisser	3.165	42.000	.075					
	Huynh-Feldt	3.165	42.000	.075					

Lower-bound	3.165	42.000	.075					

Levene's Test of Equality of Error Variances[a]

	F	df1	df2	Sig.
Recognition of Happy and Successful Male	2.454	1	42	.125
Recognition of Happy and Successful Female	5.281	1	42	.027
Recongition of Happy and Unsuccessful Male	.000	1	42	1.000
Recognition of Happy and Unsuccessful Female	2.040	1	42	.161
Recognition of Sad and Successful Male	1.420	1	42	.240
Recongition of Sad and Successful Female	.881	1	42	.353
Recongition of Sad and Unsuccesful Male	3.177	1	42	.082
Recognition of Sad and Unsuccessful Female	.000	1	42	1.000

Tests the null hypothesis that the error variance of the dependent variable is equal across groups.

a. Design: Intercept + Psychopathy_MedianSplit

Within Subjects Design: Emot + Succ + Gend + Emot * Succ + Emot * Gend + Succ * Gend + Emot * Succ * Gend

Tests of Between-Subjects Effects

Measure: MEASURE_1
Transformed Variable: Average

Source	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared	Noncent. Parameter	Observed Power[a]
Intercept	257.389	1	257.389	941.426	.000	.957	941.426	1.000
Psychopathy_MedianSplit	.003	1	.003	.010	.919	.000	.010	.051
Error	11.483	42	.273					

Mixed Design Factorial ANOVA for Social Information Processing for Criminal Sample - Recall

Within-Subjects Factors

Emot	Succ	Gend	Dependent Variable
1	1	1	Recall_HappySuccessful_Male
		2	Recall_HappySuccessful_Female
	2	1	Recall_HappyUnsuccessful_Male
		2	Recall_HappyUnsuccessful_Female
2	1	1	Recall_SadSuccessful_Male
		2	Recall_SadSuccessful_Female
	2	1	Recall_SadUnsuccessful_Male
		2	Recall_SadUnsuccessful_Female

Descriptive Statistics

	Psychopathy_MedianSplit	Mean	Std. Deviation	N
Recall of Happy and Successful Male	1.00	7.9545	14.19751	22
	2.00	6.8182	23.37813	22
	Total	7.3864	19.12288	44
Recall of Happy and Successful Female	1.00	22.7273	28.77364	22
	2.00	11.3636	16.77454	22
	Total	17.0455	23.97475	44
Recall of Happy and Unsuccessful Male	1.00	23.8636	32.25390	22
	2.00	15.9091	18.16829	22
	Total	19.8864	26.18114	44
Recall of Happy and Unsuccessful Female	1.00	22.7273	28.77364	22
	2.00	15.9091	21.19279	22
	Total	19.3182	25.21053	44
Recall of Sad and Successful Male	1.00	34.0909	29.42449	22
	2.00	14.7727	19.90916	22
	Total	24.4318	26.68106	44
Recall of Sad and Successful Female	1.00	25.0000	30.86067	22
	2.00	22.7273	29.79003	22
	Total	23.8636	29.99736	44
Recal of Sad and Unsuccessful Male	1.00	13.6364	28.58495	22
	2.00	9.0909	16.44879	22
	Total	11.3636	23.16181	44
Recall of Sad and Unsuccessful Female	1.00	35.2273	39.08103	22
	2.00	30.6818	32.67063	22
	Total	32.9545	35.67160	44

Box's Test of Equality of Covariance Matrices[a]

Box's M	47.317
F	1.044
df1	36
df2	5935.602
Sig.	.397

Tests of Within-Subjects Effects

Measure: MEASURE_1

Source		Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared	Noncent. Parameter	Observed Power[a]
Emot	Sphericity Assumed	4618.253	1	4618.253	9.710	.003	.188	9.710	.861
	Greenhouse-Geisser	4618.253	1.000	4618.253	9.710	.003	.188	9.710	.861
	Huynh-Feldt	4618.253	1.000	4618.253	9.710	.003	.188	9.710	.861
	Lower-bound	4618.253	1.000	4618.253	9.710	.003	.188	9.710	.861
Emot * Psychopathy_MedianSplit	Sphericity Assumed	15.980	1	15.980	.034	.855	.001	.034	.054
	Greenhouse-Geisser	15.980	1.000	15.980	.034	.855	.001	.034	.054
	Huynh-Feldt	15.980	1.000	15.980	.034	.855	.001	.034	.054
	Lower-bound	15.980	1.000	15.980	.034	.855	.001	.034	.054
Error(Emot)	Sphericity Assumed	19975.142	42	475.599					
	Greenhouse-Geisser	19975.142	42.000	475.599					
	Huynh-Feldt	19975.142	42.000	475.599					

	Lower-bound	19975.142	42.000	475.599					
Succ	Sphericity Assumed	640.980	1	640.980	1.863	.180	.042	1.863	.266
	Greenhouse-Geisser	640.980	1.000	640.980	1.863	.180	.042	1.863	.266
	Huynh-Feldt	640.980	1.000	640.980	1.863	.180	.042	1.863	.266
	Lower-bound	640.980	1.000	640.980	1.863	.180	.042	1.863	.266
Succ * Psychopathy_MedianSplit	Sphericity Assumed	143.821	1	143.821	.418	.521	.010	.418	.097
	Greenhouse-Geisser	143.821	1.000	143.821	.418	.521	.010	.418	.097
	Huynh-Feldt	143.821	1.000	143.821	.418	.521	.010	.418	.097
	Lower-bound	143.821	1.000	143.821	.418	.521	.010	.418	.097
Error(Succ)	Sphericity Assumed	14449.574	42	344.037					
	Greenhouse-Geisser	14449.574	42.000	344.037					
	Huynh-Feldt	14449.574	42.000	344.037					
	Lower-bound	14449.574	42.000	344.037					
Gend	Sphericity Assumed	4987.571	1	4987.571	8.326	.006	.165	8.326	.805
	Greenhouse-Geisser	4987.571	1.000	4987.571	8.326	.006	.165	8.326	.805
	Huynh-Feldt	4987.571	1.000	4987.571	8.326	.006	.165	8.326	.805
	Lower-bound	4987.571	1.000	4987.571	8.326	.006	.165	8.326	.805
Gend * Psychopathy_MedianSplit	Sphericity Assumed	87.003	1	87.003	.145	.705	.003	.145	.066

	Greenhouse-Geisser	87.003	1.000	87.003	.145	.705	.003	.145	.066
	Huynh-Feldt	87.003	1.000	87.003	.145	.705	.003	.145	.066
	Lower-bound	87.003	1.000	87.003	.145	.705	.003	.145	.066
Error(Gend)	Sphericity Assumed	25159.801	42	599.043					
	Greenhouse-Geisser	25159.801	42.000	599.043					
	Huynh-Feldt	25159.801	42.000	599.043					
	Lower-bound	25159.801	42.000	599.043					
Emot * Succ	Sphericity Assumed	1933.594	1	1933.594	3.393	.073	.075	3.393	.436
	Greenhouse-Geisser	1933.594	1.000	1933.594	3.393	.073	.075	3.393	.436
	Huynh-Feldt	1933.594	1.000	1933.594	3.393	.073	.075	3.393	.436
	Lower-bound	1933.594	1.000	1933.594	3.393	.073	.075	3.393	.436
Emot * Succ * Psychopathy_MedianSplit	Sphericity Assumed	300.071	1	300.071	.526	.472	.012	.526	.109
	Greenhouse-Geisser	300.071	1.000	300.071	.526	.472	.012	.526	.109
	Huynh-Feldt	300.071	1.000	300.071	.526	.472	.012	.526	.109
	Lower-bound	300.071	1.000	300.071	.526	.472	.012	.526	.109
Error(Emot*Succ)	Sphericity Assumed	23938.210	42	569.957					
	Greenhouse-Geisser	23938.210	42.000	569.957					
	Huynh-Feldt	23938.210	42.000	569.957					
	Lower-bound	23938.210	42.000	569.957					

Emot * Gend	Sphericity Assumed	783.026	1	783.026	.972	.330	.023	.972	.161
	Greenhouse-Geisser	783.026	1.000	783.026	.972	.330	.023	.972	.161
	Huynh-Feldt	783.026	1.000	783.026	.972	.330	.023	.972	.161
	Lower-bound	783.026	1.000	783.026	.972	.330	.023	.972	.161
Emot * Gend * Psychopathy_MedianSplit	Sphericity Assumed	939.276	1	939.276	1.166	.286	.027	1.166	.184
	Greenhouse-Geisser	939.276	1.000	939.276	1.166	.286	.027	1.166	.184
	Huynh-Feldt	939.276	1.000	939.276	1.166	.286	.027	1.166	.184
	Lower-bound	939.276	1.000	939.276	1.166	.286	.027	1.166	.184
Error(Emot*Gend)	Sphericity Assumed	33824.574	42	805.347					
	Greenhouse-Geisser	33824.574	42.000	805.347					
	Huynh-Feldt	33824.574	42.000	805.347					
	Lower-bound	33824.574	42.000	805.347					
Succ * Gend	Sphericity Assumed	783.026	1	783.026	1.001	.323	.023	1.001	.165
	Greenhouse-Geisser	783.026	1.000	783.026	1.001	.323	.023	1.001	.165
	Huynh-Feldt	783.026	1.000	783.026	1.001	.323	.023	1.001	.165
	Lower-bound	783.026	1.000	783.026	1.001	.323	.023	1.001	.165
Succ * Gend * Psychopathy_MedianSplit	Sphericity Assumed	44.389	1	44.389	.057	.813	.001	.057	.056
	Greenhouse-Geisser	44.389	1.000	44.389	.057	.813	.001	.057	.056

	Huynh-Feldt	44.389	1.000	44.389	.057	.813	.001	.057	.056
	Lower-bound	44.389	1.000	44.389	.057	.813	.001	.057	.056
Error(Succ*Gend)	Sphericity Assumed	32844.460	42	782.011					
	Greenhouse-Geisser	32844.460	42.000	782.011					
	Huynh-Feldt	32844.460	42.000	782.011					
	Lower-bound	32844.460	42.000	782.011					
Emot * Succ * Gend	Sphericity Assumed	5768.821	1	5768.821	11.279	.002	.212	11.279	.907
	Greenhouse-Geisser	5768.821	1.000	5768.821	11.279	.002	.212	11.279	.907
	Huynh-Feldt	5768.821	1.000	5768.821	11.279	.002	.212	11.279	.907
	Lower-bound	5768.821	1.000	5768.821	11.279	.002	.212	11.279	.907
Emot * Succ * Gend * Psychopathy_MedianSplit	Sphericity Assumed	1109.730	1	1109.730	2.170	.148	.049	2.170	.302
	Greenhouse-Geisser	1109.730	1.000	1109.730	2.170	.148	.049	2.170	.302
	Huynh-Feldt	1109.730	1.000	1109.730	2.170	.148	.049	2.170	.302
	Lower-bound	1109.730	1.000	1109.730	2.170	.148	.049	2.170	.302
Error(Emot*Succ*Gend)	Sphericity Assumed	21480.824	42	511.448					
	Greenhouse-Geisser	21480.824	42.000	511.448					
	Huynh-Feldt	21480.824	42.000	511.448					
	Lower-bound	21480.824	42.000	511.448					

Levene's Test of Equality of Error Variances[a]

	F	df1	df2	Sig.
Recall of Happy and Successful Male	.034	1	42	.855
Recall of Happy and Successful Female	4.305	1	42	.044
Recall of Happy and Unsuccessful Male	12.224	1	42	.001
Recall of Happy and Unsuccessful Female	.927	1	42	.341
Recall of Sad and Successful Male	2.977	1	42	.092
Recall of Sad and Successful Female	.177	1	42	.676
Recal of Sad and Unsuccessful Male	3.088	1	42	.086
Recall of Sad and Unsuccessful Female	2.545	1	42	.118

Tests of Between-Subjects Effects

Measure: MEASURE_1

Transformed Variable: Average

Source	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared	Noncent. Parameter	Observed Power[a]
Intercept	134277.344	1	134277.344	86.231	.000	.672	86.231	1.000
Psychopathy_MedianSplit	4618.253	1	4618.253	2.966	.092	.066	2.966	.391
Error	65401.278	42	1557.173					

Hierarchical Regression Predicting Emotional Recognition for Criminal Sample

Variables Entered/Removed[a]

Model	Variables Entered	Variables Removed	Method
1	What gender are you?, What is your age? (In years)[b]	.	Enter
2	AES_TotalScore, IRI_TotalScore[b]	.	Enter
3	PPITotal_RawScore[b]	.	Enter

a. Dependent Variable: EmotionalRecognition

Model Summary[d]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.077[a]	.006	-.043	2.02406	.006	.123	2	41	.885
2	.205[b]	.042	-.056	2.03728	.036	.735	2	39	.486
3	.244[c]	.060	-.064	2.04501	.017	.706	1	38	.406

a. Predictors: (Constant), What gender are you?, What is your age? (In years)
b. Predictors: (Constant), What gender are you?, What is your age? (In years), AES_TotalScore, IRI_TotalScore
c. Predictors: (Constant), What gender are you?, What is your age? (In years), AES_TotalScore, IRI_TotalScore, PPITotal_RawScore
d. Dependent Variable: EmotionalRecognition

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	1.007	2	.503	.123	.885[b]
	Residual	167.970	41	4.097		
	Total	168.977	43			
2	Regression	7.107	4	1.777	.428	.787[c]
	Residual	161.871	39	4.151		
	Total	168.977	43			
3	Regression	10.059	5	2.012	.481	.788[d]
	Residual	158.918	38	4.182		
	Total	168.977	43			

a. Dependent Variable: EmotionalRecognition
b. Predictors: (Constant), What gender are you?, What is your age? (In years)
c. Predictors: (Constant), What gender are you?, What is your age? (In years), AES_TotalScore, IRI_TotalScore
d. Predictors: (Constant), What gender are you?, What is your age? (In years), AES_TotalScore, IRI_TotalScore, PPITotal_RawScore

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Correlations		
		B	Std. Error	Beta			Zero-order	Partial	Part
1	(Constant)	15.490	2.300		6.733	.000			
	What is your age? (In years)	.001	.021	.005	.034	.973	.014	.005	.005
	What gender are you?	-.521	1.068	-.076	-.488	.628	-.077	-.076	-.076
2	(Constant)	12.481	3.615		3.452	.001			
	What is your age? (In years)	-.002	.022	-.016	-.098	.922	.014	-.016	-.015
	What gender are you?	-.333	1.096	-.049	-.304	.763	-.077	-.049	-.048
	IRI_TotalScore	.014	.029	.079	.493	.625	.096	.079	.077
	AES_TotalScore	.016	.015	.173	1.084	.285	.178	.171	.170
3	(Constant)	15.861	5.418		2.928	.006			
	What is your age? (In years)	-.008	.023	-.057	-.337	.738	.014	-.055	-.053
	What gender are you?	-.342	1.101	-.050	-.311	.758	-.077	-.050	-.049
	IRI_TotalScore	.001	.033	.006	.030	.976	.096	.005	.005
	AES_TotalScore	.014	.015	.154	.948	.349	.178	.152	.149
	PPITotal_RawScore	-.007	.009	-.157	-.840	.406	-.181	-.135	-.132

a. Dependent Variable: EmotionalRecognition

Hierarchical Regression Predicting Emotional Intelligence for Criminal Sample

Variables Entered/Removed[a]

Model	Variables Entered	Variables Removed	Method
1	What gender are you?, What is your age? (In years)[b]	.	Enter
2	IRI_TotalScore, C_DASS, C_Psychopathy[b]	.	Enter
3	Inteaction_Psych_DASS[b]	.	Enter

a. Dependent Variable: AES_TotalScore

Model Summary[d]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.196[a]	.039	-.008	21.59880	.039	.822	2	41	.447
2	.388[b]	.151	.039	21.08362	.112	1.676	3	38	.188
3	.443[c]	.196	.066	20.79210	.045	2.073	1	37	.158

a. Predictors: (Constant), What gender are you?, What is your age? (In years)
b. Predictors: (Constant), What gender are you?, What is your age? (In years), IRI_TotalScore, C_DASS, C_Psychopathy
c. Predictors: (Constant), What gender are you?, What is your age? (In years), IRI_TotalScore, C_DASS, C_Psychopathy, Inteaction_Psych_DASS
d. Dependent Variable: AES_TotalScore

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	767.171	2	383.585	.822	.447[b]
	Residual	19126.832	41	466.508		
	Total	19894.003	43			
2	Regression	3002.282	5	600.456	1.351	.264[c]
	Residual	16891.721	38	444.519		
	Total	19894.003	43			
3	Regression	3898.474	6	649.746	1.503	.204[d]
	Residual	15995.529	37	432.312		
	Total	19894.003	43			

a. Dependent Variable: AES_TotalScore
b. Predictors: (Constant), What gender are you?, What is your age? (In years)
c. Predictors: (Constant), What gender are you?, What is your age? (In years), IRI_TotalScore, C_DASS, C_Psychopathy
d. Predictors: (Constant), What gender are you?, What is your age? (In years), IRI_TotalScore, C_DASS, C_Psychopathy, Inteaction_Psych_DASS

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Correlations		
		B	Std. Error	Beta			Zero-order	Partial	Part
1	(Constant)	119.512	24.548		4.868	.000			
	What is your age? (In years)	.253	.224	.174	1.130	.265	.182	.174	.173
	What gender are you?	-5.440	11.397	-.074	-.477	.636	-.093	-.074	-.073
2	(Constant)	109.843	36.307		3.025	.004			
	What is your age? (In years)	.080	.238	.055	.336	.739	.182	.054	.050
	What gender are you?	-3.353	11.347	-.045	-.296	.769	-.093	-.048	-.044
	C_Psychopathy	-.065	.091	-.126	-.712	.481	-.190	-.115	-.106
	C_DASS	-.643	.319	-.341	-2.012	.051	-.319	-.310	-.301
	IRI_TotalScore	.205	.363	.106	.564	.576	.039	.091	.084
3	(Constant)	112.707	35.860		3.143	.003			
	What is your age? (In years)	.070	.235	.048	.299	.767	.182	.049	.044
	What gender are you?	-2.946	11.193	-.040	-.263	.794	-.093	-.043	-.039
	C_Psychopathy	-.062	.090	-.122	-.695	.491	-.190	-.114	-.102
	C_DASS	-.736	.321	-.390	-2.288	.028	-.319	-.352	-.337
	IRI_TotalScore	.151	.360	.078	.420	.677	.039	.069	.062
	Inteaction_Psych_DASS	.009	.006	.222	1.440	.158	.149	.230	.212

a. Dependent Variable: AES_TotalScore

Hierarchical Regression Predicting Empathy for Criminal Sample

Variables Entered/Removed[a]

Model	Variables Entered	Variables Removed	Method
1	What gender are you?, What is your age? (In years)[b]	.	Enter
2	AES_TotalScore, C_Psychopathy, C_DASS[b]	.	Enter
3	Inteaction_Psych_DASS[b]	.	Enter

a. Dependent Variable: IRI_TotalScore

Model Summary[d]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.208[a]	.043	-.003	11.11611	.043	.926	2	41	.404
2	.608[b]	.369	.286	9.37490	.326	6.548	3	38	.001
3	.611[c]	.374	.272	9.46707	.004	.264	1	37	.611

a. Predictors: (Constant), What gender are you?, What is your age? (In years)
b. Predictors: (Constant), What gender are you?, What is your age? (In years), AES_TotalScore, C_Psychopathy, C_DASS
c. Predictors: (Constant), What gender are you?, What is your age? (In years), AES_TotalScore, C_Psychopathy, C_DASS, Inteaction_Psych_DASS
d. Dependent Variable: IRI_TotalScore

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	228.929	2	114.465	.926	.404[b]
	Residual	5066.280	41	123.568		
	Total	5295.210	43			
2	Regression	1955.434	5	391.087	4.450	.003[c]
	Residual	3339.775	38	87.889		
	Total	5295.210	43			
3	Regression	1979.072	6	329.845	3.680	.006[d]
	Residual	3316.138	37	89.625		
	Total	5295.210	43			

a. Dependent Variable: IRI_TotalScore
b. Predictors: (Constant), What gender are you?, What is your age? (In years)
c. Predictors: (Constant), What gender are you?, What is your age? (In years), AES_TotalScore, C_Psychopathy, C_DASS
d. Predictors: (Constant), What gender are you?, What is your age? (In years), AES_TotalScore, C_Psychopathy, C_DASS, Inteaction_Psych_DASS

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Correlations		
		B	Std. Error	Beta			Zero-order	Partial	Part
1	(Constant)	77.670	12.634		6.148	.000			
	What is your age? (In years)	-.086	.115	-.115	-.746	.460	-.094	-.116	-.114
	What gender are you?	-7.121	5.865	-.187	-1.214	.232	-.174	-.186	-.185
2	(Constant)	69.594	13.998		4.972	.000			
	What is your age? (In years)	-.092	.105	-.122	-.874	.388	-.094	-.140	-.113
	What gender are you?	-5.296	4.978	-.139	-1.064	.294	-.174	-.170	-.137
	C_Psychopathy	-.117	.036	-.444	-3.264	.002	-.446	-.468	-.421
	C_DASS	.350	.138	.359	2.529	.016	.369	.380	.326
	AES_TotalScore	.041	.072	.079	.564	.576	.039	.091	.073
3	(Constant)	70.547	14.257		4.948	.000			
	What is your age? (In years)	-.092	.106	-.123	-.868	.391	-.094	-.141	-.113
	What gender are you?	-5.220	5.029	-.137	-1.038	.306	-.174	-.168	-.135
	C_Psychopathy	-.117	.036	-.441	-3.213	.003	-.446	-.467	-.418
	C_DASS	.326	.147	.335	2.218	.033	.369	.343	.289
	AES_TotalScore	.031	.075	.061	.420	.677	.039	.069	.055
	Inteaction_Psych_DASS	.001	.003	.072	.514	.611	.217	.084	.067

a. Dependent Variable: IRI_TotalScore

Appendix I – Statistical Output for Study 3

Nonparametric Sample Differences

Hypothesis Test Summary

	Null Hypothesis	Test	Sig.	Decision
1	The distribution of PPITotal_RawScore is the same across categories of Sample.	Independent-Samples Kruskal-Wallis Test	.426	Retain the null hypothesis.
2	The distribution of PDS_TotalScore is the same across categories of Sample.	Independent-Samples Kruskal-Wallis Test	.066	Retain the null hypothesis.
3	The distribution of IRI2_TotalScore is the same across categories of Sample.	Independent-Samples Kruskal-Wallis Test	.607	Retain the null hypothesis.
4	The distribution of AES_TotalScore is the same across categories of Sample.	Independent-Samples Kruskal-Wallis Test	.002	Reject the null hypothesis.
5	The distribution of DASS_TotalScore is the same across categories of Sample.	Independent-Samples Kruskal-Wallis Test	.000	Reject the null hypothesis.
6	The distribution of ASSERTIVE is the same across categories of Sample.	Independent-Samples Kruskal-Wallis Test	.009	Reject the null hypothesis.
7	The distribution of UnderAssertive is the same across categories of Sample.	Independent-Samples Kruskal-Wallis Test	.016	Reject the null hypothesis.
8	The distribution of OverAssertive is the same across categories of Sample.	Independent-Samples Kruskal-Wallis Test	.273	Retain the null hypothesis.
9	The distribution of LC_TotalScore is the same across categories of Sample.	Independent-Samples Kruskal-Wallis Test	.000	Reject the null hypothesis.

Asymptotic significances are displayed. The significance level is .05.

MANOVA for Sample and PPI-R Factors

Between-Subjects Factors

		Value Label	N
Sample	1.00	Successful	60
	2.00	Criminal	44
	3.00	Noncriminal	115

Box's Test of Equality of Covariance Matrices[a]

Box's M	13.926
F	1.132
df1	12
df2	87873.157
Sig.	.328

Multivariate Tests[a]

Effect		Value	F	Hypothesis df	Error df	Sig.	Partial Eta Squared	Noncent. Parameter	Observed Power[d]
Intercept	Pillai's Trace	.983	4074.728[b]	3.000	214.000	.000	.983	12224.184	1.000
	Wilks' Lambda	.017	4074.728[b]	3.000	214.000	.000	.983	12224.184	1.000
	Hotelling's Trace	57.122	4074.728[b]	3.000	214.000	.000	.983	12224.184	1.000
	Roy's Largest Root	57.122	4074.728[b]	3.000	214.000	.000	.983	12224.184	1.000
Sample	Pillai's Trace	.245	10.013	6.000	430.000	.000	.123	60.080	1.000
	Wilks' Lambda	.760	10.494[b]	6.000	428.000	.000	.128	62.966	1.000
	Hotelling's Trace	.309	10.974	6.000	426.000	.000	.134	65.843	1.000
	Roy's Largest Root	.285	20.458[c]	3.000	215.000	.000	.222	61.374	1.000

a. Design: Intercept + Sample
b. Exact statistic
c. The statistic is an upper bound on F that yields a lower bound on the significance level.
d. Computed using alpha =

Levene's Test of Equality of Error Variances[a]

	F	df1	df2	Sig.
PPI_FactorSelfCentred_RawScore	3.687	2	216	.027
PPI_FactorFearDominance_RawScore	.104	2	216	.901
PPI_FactorColdhearted_RawScore	.067	2	216	.935

Tests the null hypothesis that the error variance of the dependent variable is equal across groups.
a. Design: Intercept + Sample

Tests of Between-Subjects Effects

Source	Dependent Variable	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared	Noncent. Parameter	Observed Power[d]
Corrected Model	PPI_FactorSelfCentred_RawScore	10674.847[a]	2	5337.423	8.230	.000	.071	16.460	.959
	PPI_FactorFearDominance_RawScore	9745.202[b]	2	4872.601	15.862	.000	.128	31.724	.999
	PPI_FactorColdhearted_RawScore	68.681[c]	2	34.340	.722	.487	.007	1.445	.171
Intercept	PPI_FactorSelfCentred_RawScore	3791725.808	1	3791725.808	5846.741	.000	.964	5846.741	1.000
	PPI_FactorFearDominance_RawScore	2551752.016	1	2551752.016	8306.849	.000	.975	8306.849	1.000
	PPI_FactorColdhearted_RawScore	182039.663	1	182039.663	3829.540	.000	.947	3829.540	1.000
Sample	PPI_FactorSelfCentred_RawScore	10674.847	2	5337.423	8.230	.000	.071	16.460	.959
	PPI_FactorFearDominance_RawScore	9745.202	2	4872.601	15.862	.000	.128	31.724	.999
	PPI_FactorColdhearted_RawScore	68.681	2	34.340	.722	.487	.007	1.445	.171
Error	PPI_FactorSelfCentred_RawScore	140080.226	216	648.520					
	PPI_FactorFearDominance_RawScore	66352.285	216	307.187					
	PPI_FactorColdhearted_RawScore	10267.699	216	47.536					
Total	PPI_FactorSelfCentred_RawScore	4598233.162	219						
	PPI_FactorFearDominance_RawScore	3130238.360	219						
	PPI_FactorColdhearted_RawScore	221093.586	219						
Corrected Total	PPI_FactorSelfCentred_RawScore	150755.073	218						
	PPI_FactorFearDominance_RawScore	76097.487	218						
	PPI_FactorColdhearted_RawScore	10336.379	218						

a. R Squared = .071 (Adjusted R Squared = .062)
b. R Squared = .128 (Adjusted R Squared = .120)
c. R Squared = .007 (Adjusted R Squared = -.003)
d. Computed using alpha =

Multiple Comparisons

Tukey HSD

Dependent Variable	(I) Sample	(J) Sample	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
						Lower Bound	Upper Bound
PPI_FactorSelfCentred_RawScore	Successful	Criminal	-18.6218*	5.05448	.001	-30.5502	-6.6933
		Noncriminal	-13.7336*	4.05561	.002	-23.3047	-4.1624
	Criminal	Successful	18.6218*	5.05448	.001	6.6933	30.5502
		Noncriminal	4.8882	4.51424	.526	-5.7653	15.5417
	Noncriminal	Successful	13.7336*	4.05561	.002	4.1624	23.3047
		Criminal	-4.8882	4.51424	.526	-15.5417	5.7653
PPI_FactorFearDominance_RawScore	Successful	Criminal	19.4321*	3.47869	.000	11.2224	27.6417
		Noncriminal	6.5104	2.79123	.054	-.0769	13.0976
	Criminal	Successful	-19.4321*	3.47869	.000	-27.6417	-11.2224
		Noncriminal	-12.9217*	3.10688	.000	-20.2539	-5.5895
	Noncriminal	Successful	-6.5104	2.79123	.054	-13.0976	.0769
		Criminal	12.9217*	3.10688	.000	5.5895	20.2539
PPI_FactorColdhearted_RawScore	Successful	Criminal	.6331	1.36844	.889	-2.5963	3.8626
		Noncriminal	1.3029	1.09800	.462	-1.2884	3.8942
	Criminal	Successful	-.6331	1.36844	.889	-3.8626	2.5963
		Noncriminal	.6697	1.22217	.848	-2.2146	3.5541
	Noncriminal	Successful	-1.3029	1.09800	.462	-3.8942	1.2884
		Criminal	-.6697	1.22217	.848	-3.5541	2.2146

Based on observed means.
The error term is Mean Square(Error) = 47.536.
*. The mean difference is significant at the

Multinomial Regression Predicting Samples

Case Processing Summary

		N	Marginal Percentage
Sample	Successful	53	25.5%
	Criminal	40	19.2%
	Noncriminal	115	55.3%
Valid		208	100.0%
Missing		7	
Total		215	
Subpopulation		208[a]	

a. The dependent variable has only one value observed in 208 (100.0%) subpopulations.

Model Fitting Information

Model	Model Fitting Criteria			Likelihood Ratio Tests		
	AIC	BIC	-2 Log Likelihood	Chi-Square	df	Sig.
Intercept Only	417.120	423.795	413.120			
Final	375.745	442.496	335.745	77.375	18	.000

Goodness-of-Fit

	Chi-Square	df	Sig.
Pearson	359.127	396	.908
Deviance	335.745	396	.987

Pseudo R-Square

Cox and Snell	.311
Nagelkerke	.360
McFadden	.187

Likelihood Ratio Tests

Effect	Model Fitting Criteria			Likelihood Ratio Tests		
	AIC of Reduced Model	BIC of Reduced Model	-2 Log Likelihood of Reduced Model	Chi-Square	df	Sig.
Intercept	380.247	440.323	344.247	8.502	2	.014
PPI_FactorSelfCentred_RawScore	381.097	441.172	345.097	9.351	2	.009
PPI_FactorFearDominance_RawScore	389.780	449.856	353.780	18.035	2	.000
PDS_TotalScore	378.009	438.085	342.009	6.264	2	.044
IRI2_TotalScore	379.132	439.208	343.132	7.387	2	.025
AES_TotalScore	372.027	432.103	336.027	.282	2	.869
DASS_TotalScore	377.300	437.375	341.300	5.554	2	.062
UnderAssertive	376.831	436.907	340.831	5.086	2	.079
OverAssertive	375.173	435.248	339.173	3.427	2	.180
LC_TotalScore	377.402	437.478	341.402	5.657	2	.059

The chi-square statistic is the difference in -2 log-likelihoods between the final model and a reduced model. The reduced model is formed by omitting an effect from the final model. The null hypothesis is that all parameters of that effect are 0.

Parameter Estimates

Sample[a]		B	Std. Error	Wald	df	Sig.	Exp(B)	95% Confidence Interval for Exp(B)	
								Lower Bound	Upper Bound
Successful	Intercept	2.741	2.527	1.176	1	.278			
	PPI_FactorSelfCentred_RawScore	-.039	.014	7.989	1	.005	.962	.937	.988
	PPI_FactorFearDominance_RawScore	.028	.013	4.699	1	.030	1.029	1.003	1.056
	PDS_TotalScore	-.078	.045	3.005	1	.083	.925	.846	1.010
	IRI2_TotalScore	-.012	.017	.465	1	.495	.988	.956	1.022
	AES_TotalScore	.007	.014	.275	1	.600	1.007	.981	1.034
	DASS_TotalScore	.043	.023	3.469	1	.063	1.044	.998	1.093
	UnderAssertive	-.076	.037	4.181	1	.041	.927	.862	.997
	OverAssertive	.034	.069	.245	1	.621	1.035	.904	1.185
	LC_TotalScore	-.084	.049	2.940	1	.086	.920	.836	1.012
Criminal	Intercept	7.737	2.821	7.524	1	.006			
	PPI_FactorSelfCentred_RawScore	.001	.013	.009	1	.926	1.001	.976	1.027
	PPI_FactorFearDominance_RawScore	-.046	.016	8.295	1	.004	.955	.925	.985
	PDS_TotalScore	-.098	.048	4.155	1	.042	.907	.825	.996
	IRI2_TotalScore	-.057	.022	6.730	1	.009	.944	.904	.986
	AES_TotalScore	.001	.013	.003	1	.954	1.001	.976	1.026
	DASS_TotalScore	.039	.022	3.172	1	.075	1.039	.996	1.085
	UnderAssertive	-.047	.039	1.487	1	.223	.954	.885	1.029
	OverAssertive	-.101	.064	2.536	1	.111	.904	.798	1.024
	LC_TotalScore	.056	.046	1.447	1	.229	1.057	.966	1.158

a. The reference category is: Noncriminal.

Logistical Regression Predicting Criminal and Successful Sample

Case Processing Summary

Unweighted Cases[a]		N	Percent
Selected Cases	Included in Analysis	93	93.0
	Missing Cases	7	7.0
	Total	100	100.0
Unselected Cases		0	.0
Total		100	100.0

Dependent Variable Encoding

Original Value	Internal Value
CRIMINAL	0
SUCCESS	1

Variables in the Equation

		B	S.E.	Wald	df	Sig.	Exp(B)
Step 0	Constant	.281	.209	1.805	1	.179	1.325

Variables not in the Equation

			Score	df	Sig.
Step 0	Variables	PPI_FactorSelfCentred_RawScore	12.644	1	.000
		PPI_FactorFearDominance_RawScore	19.852	1	.000
		PDS_TotalScore	5.732	1	.017
		IRI2_TotalScore	.340	1	.560
		AES_TotalScore	12.543	1	.000
		DASS_TotalScore	13.897	1	.000
		UnderAssertive	5.295	1	.021
		OverAssertive	2.029	1	.154
		LC_TotalScore	26.715	1	.000
	Overall Statistics		44.796	9	.000

Omnibus Tests of Model Coefficients

		Chi-square	df	Sig.
Step 1	Step	59.675	9	.000
	Block	59.675	9	.000
	Model	59.675	9	.000

Model Summary

Step	-2 Log likelihood	Cox & Snell R Square	Nagelkerke R Square
1	67.427a	.474	.636

a. Estimation terminated at iteration number 6 because parameter estimates changed by less than .001.

Hosmer and Lemeshow Test

Step	Chi-square	df	Sig.
1	3.815	8	.873

Classification Table[a]

	Observed		Predicted		
			CRIM_SUCCESS		Percentage Correct
			CRIMINAL	SUCCESS	
Step 1	CRIM_SUCCESS	CRIMINAL	34	6	85.0
		SUCCESS	7	46	86.8
	Overall Percentage				86.0

Variables in the Equation

		B	S.E.	Wald	df	Sig.	Exp(B)	95% C.I.for EXP(B)	
								Lower	Upper
Step 1[a]	PPI_FactorSelfCentred_RawScore	-.023	.021	1.179	1	.278	.977	.937	1.019
	PPI_FactorFearDominance_RawScore	.083	.025	10.893	1	.001	1.087	1.034	1.141
	PDS_TotalScore	.086	.082	1.086	1	.297	1.089	.927	1.280
	IRI2_TotalScore	.103	.036	8.178	1	.004	1.108	1.033	1.189
	AES_TotalScore	-.001	.020	.001	1	.975	.999	.961	1.040
	DASS_TotalScore	-.048	.040	1.431	1	.232	.953	.882	1.031
	UnderAssertive	-.015	.066	.053	1	.818	.985	.865	1.121
	OverAssertive	.162	.117	1.934	1	.164	1.176	.936	1.478
	LC_TotalScore	-.195	.079	6.144	1	.013	.823	.705	.960
	Constant	-10.278	4.527	5.154	1	.023	.000		