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Gender differences in the expression of psychopathy: 'Cluster B' personality disorders.

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Gender Differences in the Expression of Psychopathy: 'Cluster B' Personality Disorders

by

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ABSTRACT

Researchers have suggested that the construct of psychopathy may be expressed differentially by gender as 'Cluster B' personality disorders which are typically more female or feminine (Histrionic [HPD],Borderline [BPD]) rather than more male or masculine (Antisocial [ASPD], Narcissistic [NPD]). Using regression analysis based on a sample (N = 453) of undergraduate students at the University of Windsor, this research tested the hypotheses that: psychopathic traits underlie 'Cluster B' disorders, and that being female and/or feminine moderates the expression of psychopathy as HPD/BPD versus ASPD/NPD. Psychopathy was significantly predictive of the personality disorder scores. Gender moderated the expression of psychopathy as BPD relative to ASPD for females, and gender role moderated the expression of psychopathy as HPD relative to NPD for feminine individuals. These findings suggest improvements can be made to diagnosis and treatment, especially in forensic settings. Also, previous research related to personality disorders can be beneficially applied to psychopathy.

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TABLE OF CONTENTS

LIST OF TABLES

CHAPTER I

INTRODUCTION

It has been empirically established that many of the personality disorders that are described in clinical literature and in practice are disproportionately diagnosed in one or the other gender. This is particularly true of 'Cluster B' personality disorders (Paris, 1997). With these disorders, the gender ratio can be as striking as 3:1 in favor of a particular sex (American Psychiatric Association, 2000). These gender differences may stem directly from the criteria that are being used to diagnose the disorders. Some researchers have claimed that the criteria used for Histrionic Personality Disorder (HPD), Borderline Personality Disorder (BPD), and Dependent Personality Disorder (DPD) resemble exaggerated feminine traits more than the criteria for Antisocial Personality Disorder (ASPD) and Narcissistic Personality Disorder (NPD) (Kaplan, 1983). Since traits can be viewed on a continuum, if the more "normal" forms of the traits are already associated with a particular gender, then the extreme forms are more likely to be attributed differentially as well. In this sense, personality disorders and personality disorder traits can be said to be gender syntonic (or gender dystonic).

A given group of personality disorders are clustered in the *Diagnostic and Statistical Manual of Mental Disorders IV-TR* (APA, 2000) because of their sharing similar traits. All 'Cluster B' personality disorders are thought to share a flare for being dramatic, a greater degree of emotionality, and being "erratic" or impulsive. Even beyond this, however, researchers (Cale & Lilienfeld, 2002a) have suggested that both individuals with HPD and those with ASPD use manipulation to achieve ends but the expression of manipulation is gendered. In ASPD, the manipulation is coercive, whereas

in HPD it is seductive. In other words, both involve self-gratification, but use more gender-syntonic techniques for accomplishing this. Narcissistic personality disorder is also characterized by this interpersonal exploitativeness, and is associated with a tendency to seek attention, which is similar to HPD. In addition, HPD and ASPD share tendencies of impulsivity, egocentricity, and shallow affect (Gacono & Meloy, 1994). Likewise, researchers have suggested that BPD and ASPD share tendencies toward impulsivity, anger, and unstable interpersonal relationships (Gacono & Meloy, 1994). Despite these similarities, clinicians view ASPD and NPD differently than HPD and BPD, and tend to associate psychopathy with only the former two. Consequently, women with antisocial/psychopathic tendencies may not be receiving the same degree of treatment or in some cases, the same level of constraint from society, as are men. This is especially important in forensic settings, where women have symptoms which may warrant a diagnosis of psychopathy but have not received the proper diagnosis, leading to inaccurate treatment decisions. These women may be just as psychopathic, but not as antisocial, and more histrionic than is associated with the male prototype of the psychopath.

In addition to similarities between these disorders, the characterizations of all four of these disorders contain similarities with modern conceptualizations of psychopathy as well. For example, the criteria for a diagnosis of ASPD contain many of the behavioural features of psychopathy, such as criminal involvement, a lack of regard for others and their property, and manipulativeness (APA, 2000). In addition, HPD is characterized by shallow affect, egocentricity, manipulativeness, and impulsivity (APA, 2000). Borderline personality disorder is also characterized by such manipulativeness, and is often

associated with criminality (Salekin, Rogers, & Sewell, 1997). Minimal research has examined the relationship between NPD and psychopathy, despite an apparent overlap in the traits associated with each. For example, grandiosity, entitlement, and dominance are often found in both disorders.

STATEMENT OF THE PROBLEM

The majority of the research in this area has focused on HPD and ASPD as gendered expressions of psychopathy. However, as detailed in the following literature review, the results have been ambiguous. For example, Hamburger et al. (1996) found that psychopathy predicted both HPD and ASPD scores, and that this prediction was moderated by gender as predicted (i.e. psychopathic males tended to exhibit ASPD characteristics, psychopathic females tended to exhibit HPD characteristics). However, Cale and Lilienfeld (2002a) found weak and inconsistent support for this same hypothesis. Similar discrepancies were found when the moderating effect of gender roles was examined; some researchers have found higher rates of psychopathology in general when gender role deviated from biological sex, but not for 'Cluster B' personality disorders in particular (Klonsky, Jane, Turkheimer, & Oltmanns, 2002). Hamburger and colleagues (1996) did not find support for the moderating effect of gender roles in the relationship between psychopathy and 'Cluster B' personality disorders.

The present study will expand on prior studies and hopefully clarify some of the ambiguities in earlier research. In addition to examining ASPD and HPD, in this study, BPD and NPD will also be examined. Examining BPD and NPD, in addition to the other two 'Cluster B' disorders may advance the present level of knowledge on this topic, and has been a future direction mentioned by many previous researchers. As already

referenced above, not just HPD and ASPD, but all four 'Cluster B' personality disorders have traits in common with psychopathy.

Perhaps the most important reason to include all the 'Cluster B' disorders in the study of gendered psychopathy is that some prior inconclusive results may be due to differences in severity of disorder rather than differences in basic personality disorder dimensions. In particular, BPD is a more severe disorder than HPD in the sense of having much more life disruptive consequences for the individual. Both BPD and HPD can be "characterized by attention seeking, manipulation, and rapidly shifting emotions", but BPD more than HPD is also characterized by "self-destructiveness, angry disruptions in close relationships, and chronic feelings of deep emptiness and loneliness" (APA, 2000, p. 709). For this reason, it is likely that the BPD vs. ASPD comparison will capture the contrast between female and male psychopathy better than any of the other possibilities. Clearly, it is consistent with Hare's view ASPD and NPD manifest two slightly different aspects of psychopathy. As detailed more below, NPD is closer to the first group of traits that Hare (1980) has identified as definitive of psychopathy, whereas ASPD is closer to Hare's second cluster of definitive traits of psychopathy. Including both ASPD and NPD, then, may capture a fuller range of psychopathy traits.

Another source of confusion in earlier studies stems from the operationalization of the hypotheses. Most prior researchers have tested independently whether sex or gender role moderates the relation of psychopathy measures to first one personality disorder (for example, HPD), and then to another (for example, ASPD). A more precise and powerful test, however, is to use the personality disorder scales as within subject variables (by forming a difference score), and then test the moderation hypothesis

(Cohen, Cohen, West, & Aiken, 2003). It is conceivable that one might not have powerful enough statistics to achieve significance without including both personality disorders differentially as the dependent variable.

I predict that the psychopathic traits that are measured in this study will underlie all four of these disorders, forming some of their common bases. In addition, in attempts to explain differential gender diagnoses of most 'Cluster B' disorders, I predict that measures of psychopathic traits will significantly interact with gender or gender roles in the prediction of HPD, BPD, ASPD, and NPD. Females or feminine individuals scoring high on the psychopathic trait measures will be higher than males/masculine individuals on HPD and BPD relative to ASPD and NPD. On the other hand, males or masculine individuals scoring high on the psychopathic trait measures will be higher than females/feminine individuals on ASPD and NPD relative to HPD and BPD. Stated another way, gender and gender roles will moderate the expression of psychopathy. Support for these hypotheses will have implications in terms of diagnosis and treatment, and will point to a clinical emphasis on differences instead of similarities. For example, if psychopathy is related to 'Cluster B' disorders, than the advances researchers and clinicians have made in treating these personality disorders can be applied to psychopathy, which is presently considered "untreatable". Ignoring these similarities deprives the field of best utilizing the knowledge that has been accumulated. In addition, considering that psychopathy may be present in females, yet expressed differently, has implications for release and treatment decisions in forensic institutions.

REVIEW OF LITERATURE

Psychopathy

Since the original conceptualization of psychopathy, this construct has become erroneously associated with other constructs such as sociopathy, criminality, and ASPD. Research which examines any of these constructs must have clearly established the operationalizations that will be applied. For this reason, the following section will clarify what psychopathy is meant to represent in the present research.

Cleckley (1982) was one of the earliest researchers to examine the construct of psychopathy. He characterized psychopathy as follows: having superficial charm and good intelligence; the absence of delusions and other signs of irrational thinking; the absence of "nervousness" or psychoneurotic manifestations; being unreliable; being dishonest and insecure; lacking remorse and shame; behaving in inadequately motivated antisocial ways; having poor judgment and failing to learn by experience; demonstrating pathologic egocentricity and incapacity for love; having a general poverty in major affective reactions; specific loss of insight; being unresponsiveness in general interpersonal relations; performing fantastic and uninviting behaviour with, and sometimes without, drinking; rarely completing suicide; having an impersonal, trivial, and poorly integrated sex life; failing to follow any life plan (p. 204). Using these original criteria, more modern conceptualizations have viewed psychopathy as "a distinctive pattern of interpersonal, affective, and behavioural symptoms" (Hart & Hare, 1997, p. 22). The interpersonal characteristics include arrogance, callousness, grandiosity, manipulation, and superficiality. As Hare (1993) wrote, "psychopaths have a narcissistic and grossly inflated view of their self-worth and importance, a truly

astounding egocentricity and sense of entitlement, and see themselves as the center of the universe, as superior beings who are justified in living according to their own rules" (p.38). Affectively, psychopaths are characterized as lacking guilt, remorse, or empathy; being unable to form meaningful relationships, and being short-tempered. Most important, this set of narcissistic, egocentric, entitled, non-empathic, and guiltless traits places psychopathy squarely within the realm of narcissistic disorders. Behaviourally, psychopaths are impulsive, irresponsible, and prone to violate norms and expectations (Hart & Hare, 1997). This latter set of characteristics can be seen to include what came to be called sociopathy and antisocial personality. The former group of more squarely narcissistic traits are neither necessary nor sufficient for antisocial nor sociopathic traits, which are clearly more behavioural.

Over time, the term psychopathy came to be used to mean sociopathy, criminality, and antisocial personality disorder (Sutker & Allain, 2001). Sociopathy is a term that emphasizes the lack of social sophistication of the individual more than the psychological ones. The major problem is a sort of social coarseness, rather than a lack of the capacity for empathy as such. Unlike psychopaths, these individuals have low to moderate intelligence levels (Hart & Hare, 1997). Criminality, which could be considered a coial construct, is not the same as psychopathy, and is far more behaviourally focused. In addition, crime is much more common than psychopathy (Hart & Hare, 1997). Although many psychopaths engage in criminal activity, most criminals are not psychopaths. This also holds for antisocial personality disorder. The idea to keep in mind is that these three terms are not synonymous, and should not be used as such. One of the major problems with attempts to operationally define psychopathy, and thus study expressions of it, is the

fact that lay theories associate psychopathy with these other terms (i.e. criminality; ASPD; sociopathy), and this has lead to ambiguous conclusions about the specific construct of psychopathy. In addition, research is further compromised by sampling procedures that confuse these different labels. These definitional problems are common, and important to keep in mind when examining any research focusing on psychopathy.

The association between psychopathy and ASPD is to be expected. For example, ASPD is definitely, and inevitably, associated with psychopathy, as ASPD was created to reflect psychopathy in personality disorder classification. In its original form, in the Diagnostic and Statistical Manual of Mental Disorders (DSM-II), the category was a moderately accurate reflection of Cleckey's personality-based criteria (Sutker & Allain, 2001). However, with subsequent revisions and attempts to increase the reliability of the diagnosis, ASPD became a nomenclature for the behavioural aspects of psychopathy (Sutker & Allain, 2001). After field trials were conducted, some "Associated Features" were added to the diagnosis of ASPD in the DSM-IV-TR that can be used when assessing a forensic population (Hare, 1996, 1998). These features contain some of the original psychopathic personality dimensions, such as a lack of empathy, glibness, egocentricity, and interpersonal callousness (APA, 2000). However, whether to use these extra features is the choice of the clinician. It should be noted however, that this choice can result in two different diagnoses of ASPD, which appear quite different. This is a problem because people may be diagnosed as ASPD outside forensic contexts, but not fit the criteria based on the additional features when they are admitted to such a setting (Hare, 1998). However, a related issue is whether these associated features are used by clinicians in practice, and thus whether an ASPD diagnosis that relates directly to

psychopathy is ever made. This confusion between psychopathy and ASPD raises questions for research comparing the two disorders, and especially for research asserting that one may be the expression of the other, as it is not made clear which operationalization of ASPD is being used, or whether the emphasis is on the original diagnostic features or the associated features as well.

The construct of psychopathy has a long history in psychological research. The definition of the concept has evolved, and clearer differentiations have been made between psychopathy and other constructs such as ASPD, sociopathy, and criminality. The clearer the distinctions between the constructs, the better researchers are to draw accurate conclusions about the constructs they intend to investigate. When other constructs are confused with psychopathy in the operationalization and assessment stages, the meaning of the findings is obscured. Currently, diagnostic materials, such as the DSM-IV-TR, do not contain a category for psychopathy, but have included ASPD, and associated features, to address it. Considering the influence of the DSM in modern clinical practice and research, the use of ASPD instead of psychopathy as a diagnostic category has important implications on the accuracy of research and the conclusions that are drawn from it. In the present research, ASPD and psychopathy are clearly differentiated and psychopathy is operationalized to reflect both the original construct definition and the most highly respected modern adaptations. By doing this, we are better able to draw accurate and clear conclusions, and to provide further evidence for the differentiation between ASPD and psychopathy.

Gender Differences in Psychopathy

Modern assessment tools for the construct of psychopathy have contributed to

more accurate operationalization and differentiation from other constructs. In addition, research with the assessment tools in a variety of populations has increased the awareness of differences between groups, such as males and females. These differences are outlined here to provide a better understanding of how psychopathy can be expressed, providing for further discussion of how personality disorder diagnoses may relate to these differential expressions.

In order to bridge the gap between personality and behavioural-based conceptions of psychopathy, Hare and colleagues developed diagnostic tools for assessing psychopathy that reflect the interpersonal, affective, and behavioural aspects involved. The first of these was the Psychopathy Checklist (PCL; Hare, 1980), which has since been revised (PCL-R; Hare, 1991). A briefer, screening version was also developed (PCL: SV; Hart, Cox, & Hare, 1995). Since the only assessment instruments specific to psychopathy were created for, and standardized on, males, it is more likely that males would more often be labelled with this 'disorder' than females. Current research is attempting to remedy this situation, by studying the PCL-R using female samples, and gathering information on the validity of these tools with this population, as well as gathering information on differences in the expression of psychopathy among females (e.g. Forth, Brown, Hart, & Hare, 1996; Salekin et al., 1997).

Some research has been conducted examining rates of psychopathy in female populations. Based on the DSM criteria of ASPD and assessments with the PCL-R and related versions, studies have found far lower rates of both psychopathy and ASPD in female populations (Forth et al., 1996; Salekin et al., 1997). Likewise, according to Mulder, Wells, Joyce, and Bushnell (1994), "No matter how antisocial behavior has been

conceptualized, men have consistently been found to be antisocial more often than women, regardless of age, race, or sociocultural status" (p. 279).

There are two factors in the PCL-R, a trait dimension (Factor 1) and a behavioural dimension (Factor 2). Factor 1, which is also known as personality-focused, primary psychopathy, dimensional, and intrapersonal and interpersonal characteristics, reflects more of an Affective/Interpersonal Trait approach, much like the original criteria intended (Cleckley, 1941). Factor 2, which is also known as behaviour-focused, secondary psychopathy, categorical, and interpersonal/criminal behaviour, agrees more with the DSM criteria of ASPD, with an Antisocial/Unstable Lifestyle focus (see Table 1). These factors correlated at $r = .50$ (Hart & Hare, 1997).

Table 1: Factor 1 and Factor 2 of the Psychopathy Checklist (PCL-R)

Factor 1: Affective/Interpersonal Traits	Factor 2: Antisocial/Unstable Lifestyle
• Glibness/superficial charm • Egocentricity/grandiose sense of self-worth • Pathological lying and deception • Conning/lack of sincerity • Lack of remorse or guilt • Lack of affect or emotional depth • Callous/lack of empathy • Failure to accept responsibility for own actions • Drug or alcohol not direct cause of antisocial behaviour	• Prone to boredom/low frustration tolerance • Parasitic life-style • Short-tempered/poor behavioural control • Early behaviour problems • Lack of realistic long-term plans • Impulsivity • Irresponsible behaviour as a parent • Frequent marital relationships • Juvenile delinquency • Poor probation or parole risk • Many types of offense

Antisocial personality disorder corresponds almost solely to the second factor. In terms of the factor structure of the PCL-R, for males Factor 1 is characterized by selfish, callous, and remorseless use of others, while Factor 2 is characterized by chronically unstable, antisocial, and socially deviant lifestyles (Hare, 1991). However, for females, this factor structure is different. Lack of empathy/guilt, interpersonal deception,

sensation seeking, and proneness to boredom characterized Factor 1, while early behavioural problems, promiscuity, and adult antisocial behaviour characterized Factor 2 (Salekin et al., 1997). In addition, some PCL-R criteria have been found to be inapplicable to females, such as juvenile delinquency, grandiosity, and failure to accept responsibility. Despite these differences, the family histories of both male and female psychopaths are similarly characterized by parental loss and deprivation, mental illness, alcoholism, foster home placements and neglect (Gacono & Meloy, 1994). The predispositions to criminality and deficits in personal, social, and occupational functioning were the same, regardless of gender (Gacono & Meloy, 1994).

As research extended beyond the definition of psychopathy, to the assessment of the construct, more focus was extended to gender differences in the expression of psychopathy. Finding that the original assessment tools developed for psychopathy applied differently to females than to males, researchers were better able to illustrate how the construct could differ based on gender. There are still a number of similarities in the operationalization of psychopathy, regardless of gender, but there are a number of differences as well. These differences may also be differentially related to particular personality disorder diagnoses, as moderated by gender. If this is the case, the gendered diagnosis of four personality disorders which are similar in many ways may be better explained as gender moderated representations of the same disorder.

Personality Disorders and Gender

Before moving on to the particular personality disorders that are relevant to this research, it is important to provide a brief overview of personality disorders in general. Understanding the ways in which these disorders are organized in modern diagnostic

conceptualizations highlights the similarities between certain categories. Given these similarities, differences in the rates of diagnosis by gender are more striking.

Personality disorders are compilations of maladaptive traits that begin early in life, are enduring and pervasive, and result in impairment for the individual possessing them. Such disorders have had a long historical development and are now listed in the DSM-IV-TR (APA, 2000) under Axis II of the five axis model. There are ten personality disorders contained under this title, and they are subsumed under three cluster headings. Paranoid, Schizoid, and Schizotypal personality disorders fall under 'Cluster A', odd or eccentric type. Antisocial, Borderline, Histrionic, and Narcissistic personality disorders fall under 'Cluster B', dramatic, emotional, or erratic type. 'Cluster C', anxious or fearful type, which includes Avoidant, Dependent, and Obsessive-Compulsive personality disorders. Certain of these disorders are diagnosed more frequently in one sex than the other (APA, 2000). For example, antisocial and schizoid personality disorders are diagnosed more frequently in males, whereas borderline, histrionic, and dependent personality disorders are diagnosed more often in females, at least in clinical settings (Corbitt & Widiger, 1995).

This relationship between gender and personality disorders, much of which deals with the social aspects of the criteria and diagnoses, has been a specific area of controversy. For instance, many feminist researchers have asserted that histrionic, borderline, and dependent personality disorders are actually society's way of pathologizing extreme forms of feminine stereotypes and expectations (e.g. Kaplan, 1983). These expectations and stereotypes also contribute to clinician's prototypes of particular disorders and thus lead to biased diagnoses. Although important and

interesting, these ideas are beyond the scope of this review.

The DSM-IV-TR claims that these differences reflect real variation in the presence of such traits in the different gender populations. This claim has been supported by some research (Widiger & Corbitt, 1995). However, other research, as mentioned, has found that sex biases in diagnosis rather than criteria (Ford & Widiger, 1989), differences related to gender roles (Kaplan, 1983; Rienzi, Forquera, & Hitchcock, 1995), and differential gender expressions of the same underlying personality traits (Nuckolls, 1992), have contributed to some of these differences. Findings are mixed in all of these research areas.

This gender differentiation is commonly found among 'Cluster B' disorders. For example, ASPD is diagnosed three times more often in men than women and BPD is differentially diagnosed at a rate of 3:1 in females over males (APA, 2000). Similar ratios have been found for HPD, but not consistently so outside of a clinical setting (Cale & Lilienfeld, 2002a). There is some indication that the different disorders in this category are gender-syntonic expressions of common underlying emotionality, impulsivity, and manipulation (APA, 2000).

The four disorders that are relevant to this examination are antisocial, narcissistic, histrionic, and borderline personality disorders. It is informative and helpful to be aware of the specific criteria for diagnosing these disorders before looking at the similarities between them and the research surrounding the differences in diagnosis observed across gender. As indicated above, there are a number of different hypotheses for the reason these gender differences exist. The hypothesis extended in the present research is that the four 'Cluster B' disorders represent gendered expressions of psychopathy.

Personality Disorder Criteria

The DSM-IV-TR contains the criteria used to diagnose the "Cluster B' personality disorders. From the perspective of diagnosis, a certain number of criteria are required for each disorder. However, in the present research it is the individual characteristics, or traits, that are most relevant. As is mentioned above, this cluster of disorders is characterized by emotional, erratic and dramatic traits and behaviours. Given the gender differences in diagnosis discussed above, it is useful to examine the criteria with the possibility that the criteria used for diagnosis may represent the gendered expression of psychopathy.

Antisocial Personality Disorder was conceptualized in the DSM-IV-TR under the following criteria: Pervasive pattern of disregard for and violation of the rights of others occurring since age 15 years, as indicated by three (or more) of the following: Failure to conform to social norms with respect to lawful behaviours as indicated by repeatedly performing acts that are grounds for arrest; deceitfulness, as indicated by repeated lying, use of aliases, or conning others for personal profit or pleasure; impulsivity or failure to plan ahead; irritability and aggressiveness, as indicated by repeated physical fights or assaults; reckless disregard for safety of self or others; consistent irresponsibility, as indicated by repeated failure to sustain consistent work behaviour or honour financial obligations; lack of remorse, as indicated by being indifferent to or rationalizing having hurt, mistreated, or stolen from another. Additional criteria are that the individual is at least age 18 years, that there is evidence of 'Conduct Disorder' (CD) with onset before age 15 years, and that the occurrence of antisocial behaviour is not exclusively during the course of schizophrenia or a manic episode (APA, 2000, p. 706).

Narcissistic Personality Disorder is conceptualized as a pervasive pattern of

grandiosity (in fantasy or behaviour), need for admiration, and lack of empathy, beginning by early adulthood and present in a variety of contexts, as indicated by five or more of the following: Grandiose sense of self-importance; preoccupation with fantasies of unlimited success, power, brilliance, beauty, or ideal love; belief that he/she is "special" and unique and can only be understood by, or should associate with, other special or high-status people (or institutions); requirement of excessive admiration; sense of entitlement; interpersonal exploitativeness; lacking empathy; envy of others and belief that others envy him/her; arrogant, and displays haughty behaviours or attitudes (APA, 2000, p. 717).

The criteria for Histrionic Personality Disorder, as listed in the DSM-IV-TR, are a pervasive pattern of excessive emotionality and attention seeking, beginning early in adolescents, spanning contexts, and indicated by at least five of the following: being uncomfortable in situations in which they are not the center of attention; interactions with others that is characterized by inappropriate sexually seductive or provocative behaviour; displaying rapidly shifting and shallow expression of emotions; use of physical appearance to draw attention to self; style of speech that is excessively impressionistic and lacking in detail; showing self-dramatization, theatrically and exaggerated expression of emotion; suggestibility; or considering relationships to be more intimate than they actually are (APA, 2000, p. 714).

Alternately, Borderline Personality Disorder is characterized by a pervasive pattern of instability of interpersonal relationships, self-image, and affects, and marked impulsivity beginning early and presenting across contexts, as indicated by at least five in the following: Frantic efforts to avoid real or imagined abandonment; a pattern of

unstable and intense interpersonal relationships characterized by alternating between extremes of idealization and devaluation; identity disturbance; impulsivity in at least two self-damaging areas; recurrent suicidal behaviour, gestures, threats, or self-mutilating behaviour; affective instability due to reactivity of mood; chronic feelings of emptiness; inappropriate, intense anger or difficulty controlling anger; or transient, stress related paranoid ideation or severe dissociative symptoms (APA, 2000, p. 710).

*Commonalities in the 'Cluster B' disorders.*_After examining the criteria for all four of these disorders, it is easy to see commonalities. In fact, their mutual inclusion in the 'Cluster B' category of disorders characterized by emotional, dramatic, and impulsive behaviours makes this shared basis obvious. For instance, borderline and antisocial personality disorder both share tendencies toward impulsivity, anger, and unstable interpersonal relationships, and histrionic and antisocial personality disorder share impulsivity, egocentricity, and shallow affect (Gacono & Meloy, 1994). Manipulativeness is another element common to histrionic, borderline, and antisocial personality disorders (Cale & Lilienfeld, 2002a). The particular means of manipulating, as well as the ends the individual wishes to achieve may differ, but the over-arching characteristic is evident. For instance, individuals with borderline personality disorder use guilt and self-damaging behaviours to avoid abandonment. Individuals with histrionic personality disorder manipulate through seduction, in order to maintain the focus of attention on them; whereas individuals with ASPD manipulate through coercion to achieve some sort of material goods, or profit (Widiger & Bornstein, 2001). Narcissistic personality disorder is also characterized by interpersonal exploitativeness (APA, 2000). In addition, borderline and antisocial personality disorders occur at high

rates in criminal populations. This has not been consistently the case in individuals with HPD and NPD, who do not often harm others or engage in illegal antisocial behaviour.

The similarities in personality traits and the mutual inclusion of these four disorders in the same cluster, leads one to wonder about the gender division between NPD and ASPD on the one hand, and HPD and BPD on the other. It seems intuitive to wonder if these common bases may be related to another concept. Of particular interest is whether histrionic and borderline personality disorders reflect more typical female expressions of psychopathy, whereas ASPD and NPD reflect the more typical male expression. Further, it is possible that NPD and HPD represent the Factor 1 aspects of psychopathy, and ASPD and BPD the Factor 2 aspects, for males and females, respectively. Research to date has only examined whether HPD and ASPD are differential gender expressions of the same underlying construct of psychopathy, ignoring the possibility that BPD and NPD may also represent gendered expressions of psychopathy. The current study seeks to extend beyond the limitations of previous research by including BPD and NPD. Aspects of modern conceptualizations of psychopathy are also symptoms of BPD and NPD, and some of the ambiguous findings in previous research may be resolved if 'Cluster B' disorders are all examined.

Tying Personality Disorders to Psychopathy?

In an attempt to explain some of the similarities between psychopathy and the 'Cluster B' disorders and the gender division within the cluster, researchers have examined the possibility that ASPD and HPD may represent gendered expressions of psychopathy. Still others have used gender roles as the moderating variable, in addition to gender. As is illustrated below, the findings have been mixed, and a number of future

directions have been suggested. In addition, when reviewing the literature, the confusion discussed above with regards to a lack of construct differentiation makes findings difficult to interpret.

Since ASPD was conceptualized in the DSM to replace psychopathic personality disorder, it is intuitive that ASPD would represent some component of psychopathy, and thus is diagnosed at high rates for individuals who are psychopathic. Due to the fact that females express psychopathy differently than males, there may be other personality disorders which correspond more closely to these expressions in female populations. As mentioned earlier, some research has examined whether this disorder may be HPD (Cale & Lilienfeld, 2002a; Hamburger, Lilienfeld, & Hogben, 1996). This disorder shares many common elements with ASPD, such as manipulativeness, impulsivity, egocentricity, and shallow affect. These similarities are supported in the research findings (Gacano & Meloy, 1994). These findings suggest that since ASPD is related to psychopathy, and is similar in ways to HPD, that HPD may also be related to psychopathy. In addition, these disorders have higher than chance rates of co-morbidity with one another (Lilienfeld, VanValenburg, Larntz, & Akiskal, 1986). However, the similarities between ASPD and HPD may not extend outside of the domain of psychopathy to which ASPD is thought to relate (i.e.: Factor 2).

*Gendered expressions of psychopathy.*_Research that has examined whether HPD and ASPD are gendered expressions of psychopathy has been inconclusive. For example, Hamburger et al. (1996) found that psychopathy predicted both HPD and ASPD scores, and that this prediction was moderated by gender as predicted (i.e. psychopathic males tended to exhibit ASPD characteristics, psychopathic females tended to exhibit HPD

characteristics). However, Cale and Lilienfeld (2002a) found weak and inconsistent support for this same hypothesis.

Other research has found a direct connection between psychopathy and HPD through a mediating disorder. For example, Lilienfeld et al. (1986) found that HPD was linked to ASPD in men, and somatization disorder in women. Hysteria (formerly an Axis I disorder, with some similarities to HPD) is also associated with marital problems, poor work history, teenage delinquency, alcohol problems, and sociopathy in first-degree relatives (Guze, 1983). In addition, researchers have noted a tendency for people with hysteria to marry psychopaths. Consideration of the relationship literature supporting connections between attraction and similarity (e.g. Byrne, 1971) would suggest significant similarities between hysterics and psychopaths.

Another area of research has been the relationship between gender roles and the 'Cluster B' personality disorders. Specifically, there has been a relationship proposed between masculinity and antisocial traits, and femininity and histrionic/borderline traits. Again, in this domain, the results are mixed. Some researchers have found that collateral sources are more likely to endorse these particular diagnoses in those fitting a stereotypical role for the hypothesized sex (Rienzi et al., 1995; Sprock, Blashfield, & Smith, 1990). However, other researchers have found that being viewed (by self or other) as different from the expected gender role associated with biological sex, was a bigger indicator of personality disorder than the actual gender role that the person fit into (Klonsky et al., 2002). Still others have found that biological sex was a better indicator than gender roles (Sprock, Crosby, & Nielsen, 2001). This is an interesting area which requires further investigation as it relates to both clinical and social domains. If more

equivocal support is found for an influence of gender role on disorder expression, or base rate, researchers could further determine the factors leading to these differences, such as societal norms and perceptions, or hormonal influences. Research has examined gender roles as a moderator of psychopathic expression as HPD in feminine individuals, and ASPD in masculine individuals, and found that there was no significant moderating effect (Hamburger et al., 1996). However, these researchers encouraged further research on this finding as they speculated that there may not have been enough of a discrepancy between gender and role in this sample.

Borderline personality disorder is one of the most researched personality disorders. However, much less research has been conducted on borderline personality disorder as a female expression of psychopathy, despite similarities in outcome (criminal involvement) for individuals diagnosed with BPD and psychopathy disorders. Like the comorbidity of ASPD and psychopathy in males, BPD is often comorbid with psychopathy in females (Paris, 1997). BPD is closely associated with Factor 2 of the PCL-R (Salekin et al., 1997), which is thought to be represented by ASPD. In addition, there is considerable overlap between BPD and ASPD in terms of symptoms, personality dimensions that underlie their phenomenology, risk factors, and outcome and response to treatment (Paris, 1997). The differences between male and female psychopaths may be similar to those seen between BPD and ASPD. However, except for the links between BPD and ASPD, there are no strong empirical links between borderline personality and psychopathy.

Minimal research has examined the relationship between NPD and psychopathy, despite an apparent overlap in the traits associated with each. For example, grandiosity,

entitlement, and dominance are often found in both disorders. Paulhus and Williams (2002) found overlap between the constructs of subclinical narcissism and subclinical psychopathy, supporting the commonalities in the expressions of these disorders. However, these researchers also found them to be distinct constructs. As 50-75% of individuals diagnosed with NPD are male, and given that NPD is another disorder within the 'Cluster B' category of personality disorders, this disorder is worth examining in the context of this research.

Conclusion

In conclusion, it seems that the evidence for links between the 'Cluster B' personality disorders and psychopathy is mixed. First, ASPD is a behavioural expression of psychopathy. It is firmly supported that the two disorders are related; however ASPD is diagnosed almost universally in psychopathic individuals, but the reverse does not hold. However, it is generally concluded by some researchers that ASPD is the expression of psychopathy. ASPD only captures Factor 2 of the PCL-R, which is regarded as a definitive measure of psychopathy. To the extent that researchers have relied on measures of ASPD to test gender differences in psychopathy, this reliance amounts to using only a small part of the larger construct of psychopathy, of which PCL-R Factor 1 is considerably larger. Therefore, concluding anything about gender differences in psychopathy by use of ASPD measures, including comparisons between ASPD and other personality disorders, is not informative about gender differences in psychopathy.

The second important issue is the fact that although there are obvious commonalities between the 'Cluster B' personality disorders. For example, all of the

personality disorders within this cluster share elements such as a predisposition toward impulsivity and behavioural disinhibition which may account for links found between psychopathy, ASPD, and HPD (Cale & Lilienfeld, 2002a). Manipulativeness, impulsivity, shallow or unstable affect and aggression are just a few of the other shared features. These features may also be shared with psychopathy, rather than psychopathy being the underlying construct for the personality disorders.

Less research has been conducted on borderline personality disorder as the female expression of psychopathy, but some researchers have recommended that this research be conducted, due to the inconsistencies in research involving HPD, and similarities between HPD and BPD (Cale & Lilienfeld, 2002a). The similarities in expression and consequences for borderline and antisocial personality disordered individuals, further reinforce the inclusion of BPD as a variable in gendered expression research (Cale & Lilienfeld, 2002a, 2002b). Narcissistic personality disorder is another of the disorders in this cluster, and may be related to psychopathy, to the same degree as ASPD. ASPD taps the behavioural elements of psychopathy (Factor 2), and NPD may be more related to the trait dimension (Factor 1). As mentioned above, more research needs to examine other personality disorders as expressions of psychopathy.

Differences in expressions of psychopathy have definitely been found between genders. Unfortunately, these differences have not clearly been mapped onto personality disorders. It seems that although there are commonalities, since no personality disorder completely corresponds to psychopathy, no clear relationships have been illustrated between these classes of disorder. More research is definitely needed to clarify some of the issues faced by previous researchers. Constructs need to be clearly operationalized,

consistent and adequate measurement tools need to be used, and other disorders need to be investigated from their relationship to the construct of psychopathy (e.g.: narcissistic/ borderline personality disorders) before any firm conclusions can be made. More specifically, a dimensional approach to assessing these disorders could be used, especially in nonclinical samples, where the severity or pervasiveness of the disorders is not as pronounced (Cale & Lilienfeld, 2002b).

Aims and Objectives of the Present Study

The following hypotheses were examined in the present study: 1) Psychopathy underlies all four 'Cluster B' personality disorders; 2) For females, relative to males, psychopathic traits will predict higher levels of HPD and BPD relative to ASPD and NPD, while for males, relative to females, psychopathic traits will predict higher levels of ASPD and NPD relative to BPD and HPD; and 3) Sex type "feminine" interacting with psychopathic traits will predict higher levels of HPD and BPD relative to ASPD and NPD, while sex type "masculine" interacting with psychopathic traits will predict higher levels of ASPD and NPD relative to BPD and HPD.

In this research, more specific and diverse traits are examined, and the constructs are operationalized with a number of diverse measures. In using specific and diverse measures, it will also allow for better specification of the elements of psychopathy that are predictive of particular 'Cluster B' personality disorders. The addition of NPD and BPD is advancement beyond current developments, as these other disorders have been recommended but not investigated. For example, narcissism is an element of psychopathy, and is one of the differential personality traits between males and females when psychopathic checklists have been validated on these populations. Borderline also

shares many characteristics with psychopathy and had definite differential sex prevalence statistics, whereas HPD prevalence estimates were more mixed. By conducting the research in this manner, this study extends and refines prior research.

In clarifying the relationship between the 'Cluster B' disorders and psychopathy, clinicians can be more accurate in the classification and treatment of these disorders. In addition, because this research is an advance over previous research, it has the potential to contribute to an inconsistent area and may contribute to the research clarifying the role of biology and/or socialization in the expression and classification of disorders. If gender moderates the expression of psychopathy, than it suggests that biology plays a role in disorder expression, whereas, if gender role is a moderator, socialization may contribute to disorder expression. The pattern of results found here could suggest that one of these factors has a more significant role, or that both biology and socialization are additive contributors. This research also allows for greater specificity in terms of the aspects of psychopathy related to the personality disorders, as there are a greater range of measures included.

CHAPTER II

DESIGN AND METHODOLOGY

Participants

Participants were 97 male and 356 female undergraduate students (for a total sample of 453) from the University of Windsor, provided with bonus points for participating. Participants were from all levels of psychology that offer bonus points for course credit.

The sample size was deemed adequate for the use of Multiple Regression Analysis as Cohen, Cohen, West, and Aiken (2003) suggest that small effect sizes are expected for interaction effects. The smaller the expected effect size, the smaller the required sample size required to detect that effect. A sample of at least 392 is necessary to achieve power = .80.

The mean age of the participants was 21.8 years (SD = 4.5) ranging from 17 to 50. From the sample, 383 (84.5%) participants described themselves as Caucasian or White; 16 (3.5%) as African, Caribbean or Black; 10 (2.2%) as East Indian or South Asian; 12 (2.6%) as Arabic or Middle Eastern; 19 (4.2%) as Asian; 4 (0.1%) as Hispanic; 9 (2.0%) reported another ethnicity. Due to the open ended nature of the demographic question related to ethnicity, where more than one was written, only the first was counted here. Most of the students, 405 (89.4%), described themselves as single, while 25 (5.5%) as married, 17 (3.8%) as common-law and 6 (1.3%) as divorced.

Materials

Each participant was administered an electronic, web based, questionnaire package consisting of 7 scales: (a) the Self-Report Psychopathy Scale (SRP-II; Hare,

1985); (b) the Exploitativeness/Entitlement Items of the Narcissistic Personality Inventory (NPI; Raskin & Hall, 1979); (c) the O'Brien Multiphasic Narcissism Inventory (OMNI; O'Brien, 1987); (d) the Personality Diagnostic Questionnaire (PDQ-4+; Hyler, 1994); (e) the Millon Clinical Multiaxial Inventory-III (MCMI-III; Millon, 1997); (f) the Bem Sex Role Inventory – Short Form (BSRI-SF; Bem, 1981); and (g) the Paulhus Deception Scales (formerly Balanced Inventory of Socially Desirable Responding (BIDR); Paulhus, 1998). Demographic questions were also asked. These questionnaires were part of a larger research protocol.

Psychopathy

Modern conceptualizations view psychopathy as "a distinctive pattern of interpersonal, affective, and behavioural symptoms" (Hart & Hare, 1997, p. 22). The interpersonal characteristics include arrogance, callousness, grandiosity, manipulation, and superficiality. As Hare (1993) wrote, "psychopaths have a narcissistic and grossly inflated view of their self-worth and importance, a truly astounding egocentricity and sense of entitlement, and see themselves as the center of the universe, as superior beings who are justified in living according to their own rules" (p.38). Affectively, psychopaths are characterized as lacking guilt, remorse, or empathy; being unable to form meaningful relationships, and being short-tempered. Behaviourally, they are impulsive, irresponsible, and prone to violate norms and expectations (Hart & Hare, 1997). The following measures are used to examine different aspects of psychopathy so that these aspects can be examined separately for their role in representation of psychopathy as one or more of the 'Cluster B' disorders based on gender and gender role moderation. The Self-Report Psychopathy Scale (SRP-II), Exploitativeness/Entitlement Factor of the

Narcissistic Personality Inventory (NPI), and the O'Brien Multiphasic Narcissism Inventory (OMNI) are all used because they overlap and supplement each other in ways that allow for greater specificity.

Self-Report Psychopathy Scale (SRP-II). The SRP-II (Hare, 1985) is based on previous work on the Psychopathy Checklist Revised (PCL-R), and was developed to be a self-report version of the PCL-R. Participants respond to 60 items on a five-point scale (1 = *disagree strongly*, 5 = *agree strongly*), with each item designed to capture the behaviours, emotions and attitudes associated with psychopathy. Examples of items include "Rules are made to be broken" and "It is sometimes fun to see how far you can push someone before they catch on". The SRP-II has adequate reliability. Coefficient alpha for the SRP-II ranges from .81 to .84 (e.g. Williams & Paulhus, 2004; Paulhus & Williams, 2002). Validity has also been reported. For example, the SRP correlates with the Self-Report Delinquency Inventory, $r = .47$, $p < .01$ (Williams & Paulhus, 2004). The SRP-II correlates moderately with DSM-IV antisocial personality disorder criteria, MCMI-II APD Scale scores ($r = .41$) and the PCL-R ($r = .54$; Benning, Patrick, Salekin, & Leistico, 2005). Convergent validity of the SRP-II is supported by correlations with the Authority Problems ($r = .56$; Lilienfeld, 1999) and Social Imperturbability ($r = .23$; Lilienfeld, 1999) subscales of the MMPI-2 Psychopathic Deviate scale, the Psychopathic Personality Inventory ($r = 0.77$; Williams & Paulhus, 2004), and Levenson's primary and secondary psychopathy scales ($r = .62$; Williams, Nathanson, & Paulhus, 2003). Higher scores on the SRP-II have been found to be associated with increased lying and narcissistic behaviour as well as decreased empathy (Zagon & Jackson, 1994). This measure has been and can be used to detect subclinical levels of psychopathy. A number

of factor structures have been examined, including two-factor (Harpur, Hakstian, & Hare, 1988) and three-factor (Cooke & Michie, 2001) structure of sub-clinical psychopathy. Williams, Nathanson, and Paulhus (2002) found that both solutions were viable, but that the three-factor solution may be more useful for making predictions. The two-factor structure consists of antisocial behaviour and cold affect factors, whereas the three-factor solution consists of anti-social behaviour, deficient affect, and interpersonal callousness (Williams et al., 2002).

Narcissistic Personality Inventory (NPI) - Exploitativeness/Entitlement Factor. The NPI was developed by Raskin and Hall (1979) to measure the concept of narcissism, based on the following defining characteristics: a) a grandiose sense self-importance; b) a preoccupation with fantasies of unlimited success, power, brilliance; c) exhibitionism; d) a response to criticism characterized by indifference, or defeat with cool indifference, or with marked feelings of rage, inferiority, shame, humiliation, emptiness; e) entitlement, expecting special favours without assuming reciprocal responsibilities; f) exploitativeness; relationships vacillate between the extremes of over idealization and devaluation; and g) a lack of empathy. Many of these characteristics are the same as those which characterize the first factor in current conceptualizations of psychopathy. Exploitativeness/entitlement is one of four replicated factors emerging from the original 54-item inventory (Emmons, 1984). The other three factors are considered to be more adaptive (leadership/authority, superiority/arrogance, and self absorption/self admiration; Emmons, 1984). The exploitativeness/entitlement factor of the NPI (E/E) is made up of 8 items (see Table 2), consisting of two statements each. For each item, one of the two statements is endorsed through forced choice selection. This factor of the NPI is more

strongly associated with neuroticism, whereas the other factors are more strongly associated with extraversion (Hibbard & Bunce, 1995). It has been validated with both clinical and non-clinical populations, and has a Cronbach's alpha of .68-.74 (Kubarych, Deary, Austin, 2004; Paulhus & Williams, 2002), which is no doubt attenuated by the low number of items. It correlates significantly with Machiavellianism and low emotional and cognitive empathy (e.g. Emmons, 1984; Watson, Grisham, Trotter, Biderman, 1984), important components of psychopathy.

Table 2: Exploitativeness/Entitlement Items from the Narcissistic Personality Inventory

1)	I expect a great deal from other people.
	I like to do things for other people.
2)	I am envious of other people's good fortune.
	I enjoy seeing other people have good fortune.
3)	I insist upon getting the respect that is due me.
	I usually get the respect I deserve.
4)	I will never be satisfied until I get all that I deserve.
	I will take my satisfactions as they come.
5)	I have a strong will to power.
	Power for its own sake doesn't interest me.
6)	I get upset when people don't notice how I look when I go out in public.
	I don't mind blending into the crowd when I go out in public.
7)	I find it easy to manipulate people.
	I don't like it when I find myself manipulating people.
8)	I am more capable than other people.
	There is a lot I could learn from other people.

John and Robins (1994) compared self to peer evaluations, and then breaking the sample into 3 approximately equal groups, found that the highest NPI tercile overvalued self, the lowest undervalued self, and the middle had the same evaluation of self as did peer evaluations. This clearly shows a self enhancing bias. In unpublished results from a large data set (N = 701) of university students, Hibbard (1992) divided participants into 10 approximately equal groups, and inspected the percentage of total NPI scores comprised by items from the E/E factor. He found that this percentage increases

significantly across these deciles, especially across the last 3 deciles (roughly, the upper third) of participants. In other words, higher scorers' NPI scores actually consist of increasingly and significantly greater percentage of E/E items, and a smaller percentage of items from the more adjusted NPI factors. This finding was replicated in another as yet unpublished data set using University of Windsor students (N = 565; Carroll, Hart, & Hibbard, 2005).

Watson et al. (1984) arguing for the existence of "healthy" narcissism showed that narcissism as measured by the NPI actually has a significant and positive correlation with measures of empathy, but only when the "healthy" narcissism factors are used and when the E/E item variance associated with these factors is removed. This finding was extended by inspecting the correlations between the NPI, on the one hand, and on the other, a measure of forgiveness of others and measures of secure and insecure attachment in the Lifestyle data (Carroll et al., 2005). The correlation of forgiveness with total NPI was r = -.22, but after removing variance associated with E/E factor, healthy narcissism factors correlated with forgiveness, r = .06. Similar findings were noted with the attachment scale measures. Obviously, all these results are relevant to considering the NPI E/E scale as an indicator of a lack of empathy and of interpersonal coldness.

The joint consideration of the John and Robins (1994) findings, the robust finding that higher NPI scores consist of a higher percent of E/E items and a lower percent of healthy NPI items, and the pattern of correlations with scales indicating interpersonal coldness, all suggest that the E/E factor measures an aspect of narcissism consistent with the first factor of Hare's (1991) measure and theory of the construct of psychopathy.

O'Brien Multiphasic Narcissism Inventory (OMNI). This is a 41 item self-report

inventory answered in Yes/No (True/False) format. Example questions include "Do you tend to feel humiliated when criticized" or "Does your life deserve special recognition." This inventory is composed of three factors: the Narcissistic Personality (NP) factor, the Poisonous Pedagogy (PP) factor, and the Narcissistically Abused Personality (NAP) factor (Watson, Little, Sawrie, & Biderman, 1992). This factor structure is the same for clinical and non-clinical samples (O'Brien, 1988). The PP and NP factors correlate best with the overall NPI (r = .41; Hibbard, 1992), with the E/E factor of the NPI specifically, and with lower levels of cognitive empathy (Watson et al., 1992).

This inventory was included to measure elements of narcissism that are also associated with psychopathy, such as goal instability, lack of empathy, poor perspective taking, a sense of grandiosity, and a sense of entitlement. In both clinical and non-clinical samples, the scale has demonstrated reliability with alpha coefficients of .71 and above, and test-retest of .71 (O'Brien, 1987). Unlike the NPI, the OMNI was validated using known groups of individuals with primary or secondary diagnoses of NPD (O'Brien, 1987, 1988). In addition, in student samples, the OMNI regularly has larger correlations than does the NPI with clinical measures of Narcissistic or Antisocial PD. For example, unpublished results from a California student sample (Hibbard & Porcerelli, 1998) indicate a correlation with the Millon Clinical Multiaxial Inventory II Antisocial PD of r = .49 (MCMI-II ASPD correlation with NPI, r = .19). In the Lifestyle data set (Carroll et al., 2005), the OMNI correlates with the Personality Diagnostic Questionnaire-4 (Hyler, et al., 1990) NPD scale, r = .59, and with ASPD scale, r = .41, (PDQ-R NPD and ASPD correlations with NPI = .41 and .19, respectively). These correlations suggest that the OMNI is a better measure of the narcissistic features hypothesized to comprise

psychopathy than is the NPI.

'Cluster B' Personality Disorders

Antisocial, borderline, histrionic, and narcissistic personality disorders fall under 'Cluster B', dramatic, emotional, or erratic type. Two separate measures of the traits that characterize these disorders were used in this study, the Personality Diagnostic Questionnaire (PDQ-4+) and Millon Clinical Multiaxial Inventory-III (MCMI-III), to increase the confidence in the any conclusions that can be drawn from the data.

Personality Diagnostic Questionnaire (PDQ-4+). This measure was used to assess DSM-IV-TR criteria for the personality disorders. There are 120 items, to be answered in true-false format. Examples of items include, "I often wonder who I really am" or "I have never told a lie". Test-retest is moderate, ranging from .48-.79, and the mean internal consistency across the scales is .61, with range from .46-.72 (Hyler et al., 1990). The low internal consistency values reflect the relatively low internal consistency of the various personality disorder criteria, the PDQ-4+ being essentially a list of these criteria. The 'Cluster B' disorders have variable places within this range. This measure correlates moderately with structured interview measures (Hyler et al., 1990).

Millon Clinical Multiaxial Inventory-III (MCMI-III). The MCMI-III contains scales for the 10 DSM IV personality disorders as well as for 10 clinical syndromes with 12 to 24 items each. Response is in a true-false format. There are moderately high scale intercorrelations (Strack, 2002). The scale includes a three item validity index with highly improbable events designed to detect random responding and confusion. In addition, there are three modifying indices related to disclosure (amount of self-disclosure and willingness to admit symptoms and problems), desirability (related to

looking favourable and without problem), and debasement (accentuating, exaggerating, or highlighting problems) (Strack, 2002). Examples of questions on this test include, "Things that are going well today won't last long" or "I show my feelings quickly and easily." Internal consistencies range from .67-.90, with test-retest stability at .84-.96 over 5 to 14 days (Millon, 1997). The Cluster B personality disorder scales are correlated with other measures of the personality disorders, but Strack (2002) has written that they are not well correlated with structured clinical interviews, with the exception of Antisocial Personality Disorder. It is with this in mind, that the MCMI-III is used as a secondary measure of these disorders.

Gender Roles

A gender role is a set of behavioural norms associated with males and with females, respectively, in a given social group or system. The Bem Sex Role Inventory-Short Form (BSRI-SF) was used to measure this concept.

Bem Sex Role Inventory- Short Form (BSRI-SF). The BSRI-SF was used to obtain a measure of gender roles. There are 30 items (10 feminine, 10 masculine, 10 neutral), endorsed on a 7 point Likert scale from "Never or Almost Never True of Me" to "Always or Almost Always True of Me". The scoring yields a fourfold classification, whereby if the number of feminine items endorsed substantially exceeds the number of masculine, the individual is labelled 'feminine'. The opposite is the case for the reverse. Androgynous have equally high numbers of both type of items, and undifferentiated have equally low numbers of both type of items. Items include aggressive, independent, jealous, assertive, genuine, etc. The short form (BSRI-SF) was created to improve internal consistency by deleting items with weak correlations with the total score of their

respective scale (Holt & Ellis, 1998) As a result, the BSRI-SF is a more pure measure of the two factors (which have been labelled "assertiveness-dominance" or "instrumentality" and "nurturance-interpersonal warmth" or "expressiveness"), and has superior psychometric properties when compared to the longer form of the scale (Bem, 1979; Campbell, Gillaspy, & Thompson, 1997). Undesirable items on the femininity scale also were deleted, resulting in higher femininity scores than on the original scale. Internal consistency for the BSRI-SF is very good (.82-.89) and slightly better than the original measure, particularly for the femininity scale (Bem, 1981). Support for the validity of the BSRI-SF is more limited; however, it has been found to correlate significantly with other measures of masculinity (or instrumentality) and femininity (or expressiveness) (Bem, 1981). The feminine and masculine subscales are orthogonal (uncorrelated) and classifications made by this scale have corresponded to proposed differences between the types in other research (Bem, 1981).

Additional Variables

Paulhus Deception Scales (formerly Balanced Inventory of Socially Desirable Responding (BIDR)). These scales measure an individual's tendency to give socially desirable responses on self-report instruments. The subscale of interest in this study is Impression Management (IM) - the tendency to give inflated self-descriptions. Items are answered on a 5 point scale from "*never true*" to "*very true*". Examples of items include "I don't gossip about other people's business" or "I never swear". The coefficient alpha for the IM and PDS total scales range from .81-.86 (Paulhus, 1991). This measure is strongly related to other measures of desirable responding. In factor analysis, the IM scale correlates highly with a cluster of measures known as lie scales, and role playing

measures (Paulhus, 1998).

*Demographic questionnaire.*_The participants in this study were administered a short demographic questionnaire requesting background information. Specifically, the questionnaire was designed to obtain information of the following characteristics: age, gender, handedness, race/ethnicity, marital status, and highest level of education completed.

Procedure

The participants were recruited through the participant pool procedures at the University of Windsor. The recruitment covered Winter 2005 through Fall 2005, and each round contained approximately 100 potential participants. Participants randomly selected by the participant pool for this research were sent an initial email describing the study and were asked to reply if interested. If they replied, usernames and passwords were generated to maintain confidentiality and these were distributed to them immediately. Participants were assigned randomly to one of three forms in which order of administration was counterbalanced. The actual survey questions were completed online from any computer with a high speed internet connection, after first completing an electronic consent form. Participants were allowed to log-off and log-on again at another time without losing saved information, to control for fatigue, but even if some participants completed the entire set of questionnaires without a break, random assignment to counterbalanced order would spread any fatigue effects randomly across the questionnaires. A status page was contained in the database to track percent completion to 100%. Expiry reminders were sent out two days before expiration, as well as on the day of expiration, and if necessary after the expiry occurred, and extensions

were granted if participants had experienced problems completing due to computer difficulties or difficulties with the server. Thank-you emails containing debriefing information were sent out after completion. Approximately 75% of the people who were contacted agreed to participate, and of those, 95% of the participants completed all aspects of the questionnaire.

CHAPTER III

ANALYSIS OF RESULTS

An examination of the assumptions of normality revealed that one of the scored scales, the Exploitativeness/Entitlement items of the Narcissistic Personality Inventory, was slightly skewed (1.03). A square root transformation was performed to transform below the 1.0 level. There were five missing data points in the sample, and all were corrected using an item mean substitution. The means and standard deviations are reported in Tables 3, 4, and 5, for the entire sample, males, and females, respectively. To investigate the role of social desirability, correlations between the Paulhus Impression Management Factor and the psychopathy and personality disorder measures were examined (see Tables 6 and 7). There were moderate but significant negative correlations with the MCMI-III scale for BPD (r = -.13), PDQ-4+ scale for ASPD (r = -.24), and the SRP-II (r = -.23). There was also a positive correlation with MCMI-III scale for HPD (r = .40).

Correlation/Regression Analyses

Hypothesis 1. The hypothesis that psychopathy underlies all four 'Cluster B' personality disorders was tested by examining the correlations between each of the psychopathy measures and the scores for all four 'Cluster B' personality disorder scores of both the PDQ-4+ and the MCMI-III. These results are displayed in Table 6.

All five measures of psychopathy, including the Self-Report Psychopathy Scale (SRP-II), the three factors of O'Brien Multiphasic Narcissism Inventory (OMNI), and the Exploitativeness/Entitlement items from the Narcissistic Personality Inventory (NPI) were significantly correlated with the four 'Cluster B' personality disorders as measured

Table 3: Means and Standard Deviations for the Entire Sample (N = 453)

	M	*SD*
Psychopathy		
SRP-II	214.77	32.69
OMNI NPD	5.49	2.70
OMNI PPD	6.13	2.64
OMNI NAP	3.55	1.79
NPI E/E	2.01	1.82
Socially Desirable Responding		
Paulhus IM	1.87	2.30
Personality Disorders		
PDQ HPD	2.45	1.70
PDQ NPD	2.61	1.83
PDQ BPD	2.99	2.14
PDQ ASPD	1.40	1.56
MCMI HPD	67.65	23.28
MCMI NPD	69.36	19.99
MCMI BPD	36.34	28.20
MCMI ASPD	51.14	22.32
Female-Syntonicity		
Difference Score (PDQ BPD minus ASPD)	1.59	1.77
Difference Score (PDQ HPD minus NPD)	-0.16	1.74
Difference Score (MCMI BPD minus ASPD)	-14.81	23.64
Difference Score (MCMI HPD minus NPD)	-1.71	23.09
Difference Score (PDQ BPD minus NPD)	0.38	2.11
Difference Score (PDQ HPD minus ASPD)	1.05	1.78
Difference Score (MCMI BPD minus NPD)	-33.02	37.08
Difference Score (MCMI HPD minus ASPD)	16.51	33.49

Note. Paulhus IM = Impression Management Scale of Paulhus Deception Scales. PDQ = Personality Diagnostic Questionnaire. MCMI = Millon Clinical Multiaxial Inventory-III. ASPD = Antisocial Personality Disorder Scale. NPD = Narcissistic Personality Disorder Scale. BPD = Borderline Personality Disorder Scale. HPD = Histrionic Personality Disorder Scale. SRP-II = Self-Report Psychopathy Scale. OMNI NPD, PPD, and NAP = the Narcissistic Personality, Poisonous Pedagogy, and Narcissistically Abused Personality Dimensions of the O'Brien Multiphasic Narcissism Inventory, respectively. NPI E/E = Exploitativeness/Entitlement Items from the Narcissistic Personality Inventory.

Table 4: Means and Standard Deviations for Males only (N = 97)

	M	*SD*
Psychopathy		
SRP-II	238.74	32.61
OMNI NPD	5.34	2.83
OMNI PPD	6.78	2.71
OMNI NAP	3.55	1.96
NPI E/E	2.51	1.92
Socially Desirable Responding		
Paulhus IM	1.70	1.99
Personality Disorders		
PDQ HPD	2.27	1.67
PDQ NPD	2.90	1.86
PDQ BPD	3.19	2.09
PDQ ASPD	2.11	1.85
MCMI HPD	49.73	15.61
MCMI NPD	69.79	22.13
MCMI BPD	43.45	27.68
MCMI ASPD	52.94	23.87
Female-Syntonicity		
Difference Score (PDQ BPD minus ASPD)	1.07	1.86
Difference Score (PDQ HPD minus NPD)	-0.63	1.84
Difference Score (MCMI BPD minus ASPD)	-9.48	22.94
Difference Score (MCMI HPD minus NPD)	-20.06	20.88
Difference Score (PDQ BPD minus NPD)	0.29	2.02
Difference Score (PDQ HPD minus ASPD)	0.15	1.70
Difference Score (MCMI BPD minus NPD)	-26.34	38.56
Difference Score (MCMI HPD minus ASPD)	-3.21	29.99

Note. Paulhus IM = Impression Management Scale of Paulhus Deception Scales. PDQ = Personality Diagnostic Questionnaire. MCMI = Millon Clinical Multiaxial Inventory-III. ASPD = Antisocial Personality Disorder Scale. NPD = Narcissistic Personality Disorder Scale. BPD = Borderline Personality Disorder Scale. HPD = Histrionic Personality Disorder Scale. SRP-II = Self-Report Psychopathy Scale. OMNI NPD, PPD, and NAP = the Narcissistic Personality, Poisonous Pedagogy, and Narcissistically Abused Personality Dimensions of the O'Brien Multiphasic Narcissism Inventory, respectively. NPI E/E = Exploitativeness/Entitlement Items from the Narcissistic Personality Inventory.

Table 5: Means and Standard Deviations for Females only (N = 356)

	M	*SD*
Psychopathy		
SRP-II	208.24	29.55
OMNI NPD	5.53	2.66
OMNI PPD	5.96	2.60
OMNI NAP	3.55	1.74
NPI E/E	1.88	1.77
Socially Desirable Responding		
Paulhus IM	1.92	2.38
Personality Disorders		
PDQ HPD	2.50	1.70
PDQ NPD	2.54	1.82
PDQ BPD	2.94	2.15
PDQ ASPD	1.21	1.42
MCMI HPD	72.53	22.64
MCMI NPD	69.24	19.40
MCMI BPD	34.40	28.07
MCMI ASPD	50.65	21.88
Female-Syntonicity		
Difference Score (PDQ BPD minus ASPD)	1.73	1.73
Difference Score (PDQ HPD minus NPD)	-0.03	1.69
Difference Score (MCMI BPD minus ASPD)	-16.26	23.65
Difference Score (MCMI HPD minus NPD)	3.29	21.07
Difference Score (PDQ BPD minus NPD)	0.40	2.14
Difference Score (PDQ HPD minus ASPD)	1.29	1.73
Difference Score (MCMI BPD minus NPD)	-34.84	36.50
Difference Score (MCMI HPD minus ASPD)	21.88	32.40

Note. Paulhus IM = Impression Management Scale of Paulhus Deception Scales. PDQ = Personality Diagnostic Questionnaire. MCMI = Millon Clinical Multiaxial Inventory-III. ASPD = Antisocial Personality Disorder Scale. NPD = Narcissistic Personality Disorder Scale. BPD = Borderline Personality Disorder Scale. HPD = Histrionic Personality Disorder Scale. SRP-II = Self-Report Psychopathy Scale. OMNI NPD, PPD, and NAP = the Narcissistic Personality, Poisonous Pedagogy, and Narcissistically Abused Personality Dimensions of the O'Brien Multiphasic Narcissism Inventory, respectively. NPI E/E = Exploitativeness/Entitlement Items from the Narcissistic Personality Inventory.

Table 6: Correlations of Psychopathy Measures (and Paulhus Impression Management) and Personality Disorder Subscales in the Entire Sample (N = 453)

	Histrionic PD	Narcissistic PD	Borderline PD	Antisocial PD
Personality Disorder Questionnaire (PDQ-4+)				
SRP-II	.20**	.35**	.22**	.60**
OMNI NPD	.49**	.39**	.40**	.25**
OMNI PPD	.46**	.49**	.39**	.36**
OMNI NAP	.23**	.22**	.35**	.11*
NPI E/E	.36**	.51**	.35**	.35**
Paulhus IM	.06	-.08	-.05	-.24**
Million Clinical Multiaxial Inventory (MCMI-III)				
SRP-II	-.02	.45**	.24**	.49**
OMNI NPD	-.18**	.00	.42**	.25**
OMNI PPD	-.16**	.20**	.42**	.28**
OMNI NAP	-.34**	-.30**	.38**	.07
NPI E/E	-.19**	.19**	.35**	.33**
Paulhus IM	.40**	-.01	-.13**	-.04

Note. Paulhus IM = Impression Management Scale from Paulhus Deception Scales. PD = Personality Disorder. SRP-II = Self-Report Psychopathy Scale. OMNI NPD, PPD, and NAP = the Narcissistic Personality, Poisonous Pedagogy, and Narcissistically Abused Personality Dimensions of the O'Brien Multiphasic Narcissism Inventory, respectively. NPI E/E = Exploitativeness/Entitlement Items from the Narcissistic Personality Inventory.

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

Table 7: Correlations between Variables for the Entire Sample (N = 453)

	1	2	3	4	5	6	7	8	9	10	11	12	13	14
1. Paulhus IM	-	.29**	.11*	.29**	.03	.30**	.05	.44**	-.26**	-.23**	.26**	.09	.31**	.15**
2. PD BPD-ASPD		-	.02	.37**	.07	.57**	.34**	.48**	-.21**	-.27**	.26**	.16**	.32**	.14**
3. PD HPD-NPD			-	-.03	.35**	.45**	.46**	.03	.19**	-.17**	.07	-.07	-.00	-.17
4. MC BPD-ASPD				-	-.18**	.21**	.09	.66**	-.15**	-.17**	-.27**	-.24**	-.39**	.11*
5. MC HPD-NPD					-	.19**	.19**	-.00	.56**	-.41**	-.18**	-.33**	-.09	-.30**
6. PD BPD-NPD						-	-.18**	.44**	-.21**	-.08	.06	-.03	.16**	-.05
7. PD HPD-ASPD							-	-.02	.22**	-.34**	.25**	.12**	.13**	.04
8. MC BPD-NPD								-	-.65**	-.06	.32**	.21**	.45**	.22**
9 .MC HPD-ASPD									-	-.34**	-.29**	-.29**	-.29**	-.37**
10. SRP-II										-	.12**	.35**	-.11*	.38**
11. OMNI NPD											-	.47**	.36**	.43**
12. OMNI PPD												-	.28**	.50**
13 OMNI NAP													-	.19**
14. NPI E/E														-

Note. Paulhus IM = Impression Management Scale from Paulhus Deception Scales. PD = Personality Diagnostic Questionnaire. MC = Millon Clinical Multiaxial Inventory -III. BPD-ASPD = Difference score, subtracting Antisocial Personality Disorder Scale from Borderline Personality Disorder Scale. HPD-NPD = Difference score, subtracting Narcissistic Personality Disorder Scale from Histrionic Personality Disorder Scale. BPD-NPD = Difference score, subtracting Narcissistic Personality Disorder Scale from Borderline Personality Disorder Scale. HPD-ASPD = Difference score, subracting Antisocial Personality Disorder Scale from Histrionic Personality Disorder Scale. SRP-II = Self-Report Psychopathy Scale. OMNI NPD, PPD, and NAP = the Narcissistic Personality, Poisonous Pedagogy, and Narcissistically Abused Personality Dimensions of the O'Brien Multiphasic Narcissism Inventory, respectively. NPI E/E = Exploitativeness/Entitlement Items from the Narcissistic Personality Inventory.
* $p < .05$; ** $p < .01$; *** $p < .001$

by the PDQ-4+. Correlations of the psychopathy measures with the MCMI-III scales, in contrast, showed more variability. The size of the correlations between the psychopathy measures and the MCMI-III personality disorder scales were usually larger than those with the PDQ-4, but were not as consistently significant. For example, the SRP-II correlated significantly with all but the scale for HPD. Likewise, the Narcissistic Personality Dimension of the OMNI correlated significantly with all the MCMI-III scales except MCMI-III Narcissistic PD, while the Narcissistically Abused Personality Dimension correlated significantly with all but the scale for ASPD. Still, for the MCMI-III measure, at least four of the five operationalizations of psychopathy were correlated with each personality disorder scale.

To further test the primary hypothesis regarding the positive relation between psychopathy and the 'Cluster B' personality disorders, separate regression analyses were carried out with all the measures of psychopathy entered simultaneously as predictors of each personality disorder score. Separate regression analyses were conducted, using each 'Cluster B' personality disorder score for the PDQ-4+ (see Table 8) and the MCMI-III (see Table 9) as dependent variables. In this way, it could be determined how much variance is predicted in each personality disorder score by the entire set of predictors. This was to be represented by the $AdjR^2$. These regression analyses would also show which of the psychopathy measures would predict unique variance in each of the personality disorder variables. This is indicated by the beta (standardized B) weights of the variables, which are interpreted to mean the weighting of the standardized score of a variable, adjusting for the prediction value of all the other variables. Because beta weights are adjusted for all other predictors, the beta value represents unique predictive

Table 8: Regression Coefficients for Centered Psychopathy Measures Predicting 'Cluster B' Personality Disorder Scores the PDQ-4+ for the Entire Sample

	B	SE *B*	β	AdjR^2
PDQ HPD				.31***
(Constant)	2.45	.07		
SRP-II	.00	.00	.05	
OMNI NPD	.21	.03	.33***	
OMNI PPD	.15	.03	.24***	
OMNI NAP	.04	.04	.04	
NPI E/E	.14	.11	.07	
PDQ NPD				.35***
(Constant)	2.61	.07		
SRP-II	.01	.00	.17***	
OMNI NPD	.09	.03	.14**	
OMNI PPD	.16	.03	.23***	
OMNI NAP	.08	.04	.08	
NPI E/E	.56	.11	.24***	
PDQ BPD				.27***
(Constant)	2.99	.09		
SRP-II	.01	.00	.12**	
OMNI NPD	.15	.04	.18***	
OMNI PPD	.11	.04	.13*	
OMNI NAP	.28	.05	.23***	
NPI E/E	.35	.14	.13*	
PDQ ASPD				.40***
(Constant)	1.40	.06		
SRP-II	.03	.00	.56***	
OMNI NPD	.06	.03	.10*	
OMNI PPD	.04	.03	.07	
OMNI NAP	.10	.04	.11**	
NPI E/E	.05	.09	.03	

Note. PDQ = Personality Diagnostic Questionnaire. ASPD = Antisocial Personality Disorder Scale. NPD = Narcissistic Personality Disorder Scale. BPD = Borderline Personality Disorder Scale. HPD = Histrionic Personality Disorder Scale. SRP-II = Self-Report Psychopathy Scale. OMNI NPD, PPD, and NAP = the Narcissistic Personality, Poisonous Pedagogy, and Narcissistically Abused Personality Dimensions of the O'Brien Multiphasic Narcissism Inventory, respectively. NPI E/E = Exploitativeness/Entitlement Items from the Narcissistic Personality Inventory.

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

Table 9: Regression Coefficients for Centered Psychopathy Measures Predicting 'Cluster B' Personality Disorder Scores the MCMI-III for the Entire Sample

	B	SE *B*	β	AdjR^2
MCMI HPD				.12***
(Constant)	67.65	1.02		
SRP-II	-0.00	.04	-.00	
OMNI NPD	-0.07	.46	-.01	
OMNI PPD	-0.00	.50	.00	
OMNI NAP	-4.10	.64	-.32***	
NPI E/E	-3.77	1.64	-.13*	
MCMI NPD				.28***
(Constant)	69.36	.80		
SRP-II	0.24	.03	.39***	
OMNI NPD	0.04	.36	.01	
OMNI PPD	1.28	.39	.17**	
OMNI NAP	-3.28	.50	-.29***	
NPI E/E	-1.53	1.28	-.06	
MCMI BPD				.31***
(Constant)	36.34	1.10		
SRP-II	0.13	.04	.15**	
OMNI NPD	1.95	.50	.19***	
OMNI PPD	1.57	.54	.15**	
OMNI NAP	4.22	.69	.27***	
NPI E/E	3.80	1.77	.11*	
MCMI ASPD				.28***
(Constant)	51.14	.89		
SRP-II	0.29	.03	.43***	
OMNI NPD	1.03	.40	.13*	
OMNI PPD	-0.11	.43	-.01	
OMNI NAP	0.64	.56	.05	
NPI E/E	3.73	1.43	.13**	

Note. MCMI = Millon Clinical Multiaxial Inventory-III. ASPD = Antisocial Personality Disorder Scale. HPD = Histrionic Personality Disorder Scale. BPD = Borderline Personality Disorder Scale. NPD = Narcissistic Personality Disorder Scale. SRP-II = Self-Report Psychopathy Scale. OMNI NPD, PPD, and NAP = the Narcissistic Personality, Poisonous Pedagogy, and Narcissistically Abused Personality Dimensions of the O'Brien Multiphasic Narcissism Inventory, respectively. NPI E/E = Exploitativeness/Entitlement Items from the Narcissistic Personality Inventory.

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

value, when the beta is significant ($p < .05$). The predictors operationalizing psychopathy were the three OMNI scales, the NPI E/E, and the SRP-II. These analyses were completed with the combined sample of males and females.

Consistent with the hypothesis, some measure of psychopathy predicted all 'Cluster B' personality scores for both measures. The psychopathy measures significantly predicted PDQ-4+ HPD, $AdjR^2 = .31$, $F(5,447) = 41.29$, $p < .001$; the Narcissistic Personality Dimension and the Poisonous Pedagogy Dimension of the OMNI were each positive unique predictors. PDQ-4+ NPD scores were significantly predicted by the psychopathy measures, $AdjR^2 = .35$, $F(5,447) = 48.93$, $p < .001$; Narcissistic Personality Dimension and the Poisonous Pedagogy Dimension of the OMNI, as well as the SRP-II and NPI E/E were all positive unique predictors. PDQ-4+ BPD scores were significantly predicted by the psychopathy measures, $AdjR^2 = .27$, $F(5.447) = 34.56$, $p < .001$; all five psychopathy measures were positive unique predictors. The psychopathy measures significantly predicted PDQ-4+ ASPD, $AdjR^2 = .40$, $F(5,447) = 60.93$, $p < .001$; the SRP-II, Narcissistic Personality and Narcissistically Abused Personality Dimensions of the OMNI were positive unique predictors.

When examining the MCMI-III measure of HPD, the psychopathy measures were significant predictors, $AdjR^2 = .12$, $F(5,447) = 13.70$, $p < .001$; the Narcissistically Abused Personality Dimension of the OMNI, and the NPI E/E were unique negative predictors. The psychopathy measures significantly predicted MCMI-III NPD, $AdjR^2 = .28$, $F(5,447) = 36.13$, $p < .001$; the SRP-II and Poisonous Pedagogy Dimension of the OMNI were unique positive predictors, while the Narcissistically Abused Personality Dimension of the OMNI was a unique negative predictor. MCMI-III BPD scores were

significantly predicted by the psychopathy measures, $AdjR^2 = .31$, $F(5,447) = 41.23$, $p < .001$; all five psychopathy measures were unique positive predictors. The psychopathy measures significantly predicted MCMI-III ASPD, $AdjR^2 = .28$, $F(5,447) = 35.57$, $p < .001$; the SRP-II, Narcissistic Personality Dimension of the OMNI, and NPI E/E were positive unique predictors.

Thus, although psychopathy was significantly related to personality disorder scores overall, different operationalizations of psychopathy were primarily responsible for this relationship, depending on the personality disorder being predicted, and depending on whether the MCMI-III or the PDQ-4+ was used. This suggests that there is something common in all of the psychopathy measures that accounts for emotional, dramatic, and erratic traits that characterize 'Cluster B' personality disorders. Differences between the measures suggest differences in the theories that were used to develop the measures. Variability amongst the predictors likely relates to the dimensions of psychopathy (i.e., aspects of factor 1 versus factor 2) most closely associated with each personality disorder in the different theories. These results, as well as the correlations cited above, support Hypothesis 1: Psychopathy is significantly related to all four 'Cluster B' personality disorders.

Hypothesis 2. Hypothesis 2 states that, for females, relative to males, psychopathic traits predict higher levels of HPD and/or BPD relative to ASPD and/or NPD. Essentially, the hypothesis predicts that sex moderates the effects of the psychopathy measures when predicting difference scores.

In order to operationalize this hypothesis, the relevant personality disorder scales

are conceptualized as within subject variables. And the question is simply, Do sex (or gender role) and psychopathy interact to predict these within subject variables. Otherwise put, does sex moderate the relation of psychopathy to an individual's being higher on one variable as opposed to the other. So, for example, one central operationalization of the issue might be put thus: Does sex influence the prediction by psychopathy of BPD exceeding ASPD?

There is nothing particularly remarkable about this use of the within subject variable or "difference" score in this context. Although the use of difference scores as change indicators has often been challenged (although see Allison, 1990, for a good summary of the issues and a rejoinder), change is not the issue in the present case. Difference scores are routinely used for a number of purposes, e.g., the difference between intelligence and achievement as an indicator of learning disability, and the research literature contains many instances of the use of a within subject difference score as a dependent variable.

These difference scores are defined as the differences computed by subtracting the more male-syntonic disorder scores (Antisocial and Narcissistic) from the more female-syntonic disorder scores (Borderline and Histrionic). Hence, the scores are HPD minus ASPD, HPD minus NPD, BPD minus ASPD and BPD minus NPD, defined separately for the PDQ-4+ and the MCMI-III scales. Hence, the prediction of moderation has a very specific direction, i.e., being female should have a stronger correlation (defining all positive correlations as stronger than any negative correlation) with the difference scores as they have been defined above than does being male.

Type 1 error rate. This set of regression analyses, then, actually is eight different

regression equations, each with a separate difference score for the dependent variable. Conducting multiple significance tests in this way would generally call for an adjustment to the Type I error rate. However, several other considerations apply which make it inappropriate to make straightforward adjustments to the significance tests for each of the R's in these regression analyses. First, such adjustments assume that the tests are truly statistically independent. However, when the predictors are identical, and the dependent variables are correlated, the tests are clearly not independent. As seen in Table 10, in the present case, the dependent variables (the difference scores) were correlated.

Table 10: Intercorrelations of Difference Scores for the Personality Disorder Measures

	1	2	3	4	5	6	7	8
1. PDQ BPD-ASPD	-	.02	.37***	.07	.57***	.34***	.48***	-.21***
2. PDQ HPD-NPD		-	-.03	.35***	.45***	.46***	.03	.19***
3. MCMI BPD-ASPD			-	-.18***	.21***	.09	.66***	-.15***
4. MCMI HPD-NPD				-	.19***	.19***	-.00	.56***
5. PDQ BPD-NPD					-	-.18***	.44***	-.22***
6. PDQ HPD-ASPD						-	-.02	.22***
7. MCMI BPD-NPD							-	-.65***
8. MCMI HPD-ASPD								-

Note. PDQ = Personality Diagnostic Questionnaire. MCMI = Millon Clinical Multiaxial Inventory-III. BPD-ASPD = Difference score, subtracting Antisocial Personality Disorder Scale from Borderline Personality Disorder Scale. HPD-NPD = Difference score, subtracting Narcissistic Personality Disorder Scale from Histrionic Personality Disorder Scale. BPD-NPD = Difference score, subtracting Narcissistic Personality Disorder Scale from Borderline Personality Disorder Scale. HPD-ASPD = Difference score, subracting Antisocial Personality Disorder Scale from Histrionic Personality Disorder Scale.

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

Subsequent principal components analysis indicated that there were at most three orthogonal components contributing to variance in the correlation matrix of these difference scores which explained 76% of the total variance. Ordinarily, the Bonferroni correction for the family-wise alpha adopted for these 8 regression tests, then, would assume that 3 such tests were being made, and on this assumption, adjusted alpha at .05 would be set at an observed alpha for each test of .017. However, among the difference

scores that comprise the dependent variables, each personality score of a single pair was considered a more valid operationalization of the overall hypothesis. Specifically, the Borderline minus Antisocial difference score is considered the most valid operationalization of the hypothesis. This is because in contemporary nosological terms, ASPD is a more severe disorder than HPD. ASPD and BPD are more equivalent in severity. For this very reason, regressing this difference score on the predictors is not simply one among an equal family of predictions.

In similar fashion, the SRP-II is not simply one among equals of the predictors. Rather, it is the best validated scale for the contemporary construct of psychopathy. Consequently, its interaction term was entered into the equation first, prior to the entry of the other psychopathy measures. However, this means that the interaction for the SRP-II should not truly be considered part of an equal family of statistical tests. Hence, it is likely most reasonable to set $p = .05$ for each of these various tests for interaction, at the same time realizing that especially for omnibus tests of the R^2cha for entry of the OMNI and NPI E/E variables, Type I error rate is likely inflated.

Thus, in each regression analysis, the five psychopathy measures were entered in the first block along with the variable indicating sex of the subject. Each of the psychopathy measures was first centered with a mean of 0, and the sex variable was effects coded, coding males = -1 and females = 1 (Cohen, Cohen, West, & Aiken, 2003). The SRP-II's interaction term was entered in the second block, alone, prior to the other psychopathy measures, because it is the most exact measure of psychopathy. The remaining four interaction terms were entered on the final block.

When the analyses were conducted, three of the analyses returned significant R^2

change results for the interaction terms. Predicting the difference score, BPD minus ASPD, from the PDQ-4+, the interaction of sex and SRP-II was significant, $R^2cha = .01$, $Fchg_{(1, 445)} = 6.44, p = .012$. Thus, the interaction of participant sex and SRP-II scores accounted for 1% of the incremental variance (see Table 11). Because the observed beta for this interaction was positive ($\beta = .13, t = 2.54, p = .012$), it is in the correct direction, females having the positive unit coding in the effects coding. This small effect means that, relative to males, females' SRP-II scores predict larger positive differences in the BPD minus ASPD difference. This confirms the prediction. In the third step of the hierarchical regression, the additional interaction terms were nonsignificant, $R^2cha = .00$, $Fchg_{(4, 441)} = 0.27, p = .90$. Thus, none of the other psychopathy measures significantly interacted with sex in the prediction of PDQ-4+ BPD-ASPD difference. Table 11 displays the unstandardized regression coefficients (B) and intercept, the standardized regression coefficients (β) for the individual scales, as well as the R and $AdjR^2$ for the interaction terms.

When the MCMI-III BPD - ASPD difference score was used as the dependent the model. Again, since females are coded positively and since the observed β for the interaction with the OMNI NP dimension is positive, this interaction means that larger positive differences on the BPD minus ASPD variable are associated with each unit increase of the OMNI NP dimension for females than for males. Conversely, because males are coded negative, and because the observed β for OMNI NAP dimension is negative, larger positive differences in the BPD minus APD difference are associated with each unit gain in OMNI NAP for males than for females. This was an unexpected finding, likely related to the theories underlying the construction of the MCMI-III and the

Table 11: Regression Coefficients for Sex, Psychopathy Measures, and the Interaction of Sex and Psychopathy in Predicting PDQ-4+ Borderline minus Antisocial PD Difference Scores (N = 453)

Model		B	SE *B*	β	ΔR^2	AdjR^2
1	(Constant)	1.52	.09			.216***
	Sex	.12	.10	.06		
	SRP-II	-.02	.00	-.33***		
	OMNI NPD	.08	.03	.13*		
	OMNI PPD	.07	.04	.10		
	OMNI NAP	.19	.05	.19***		
	NPI E/E	.30	.12	.13*		
2	(Constant)	1.66	.11		.011	.225*
	Sex	.00	.11	.00		
	SRP-II	-.02	.00	-.40***		
	OMNI NPD	.08	.03	.12*		
	OMNI PPD	.07	.04	.11*		
	OMNI NAP	.19	.05	.19***		
	NPI E/E	.31	.13	.13**		
	Sex by SRP-II	.01	.00	.13*		
3	(Constant)	1.66	.11		.002	.220
	Sex	.01	.11	.00		
	SRP-II	-.02	.00	-.40***		
	OMNI NPD	.08	.04	.12		
	OMNI PPD	.06	.05	.08		
	OMNI NAP	.20	.05	.20***		
	NPI E/E	.37	.15	.16*		
	Sex by SRP-II	.01	.00	.12*		
	Sex by OMNI NPD	-.00	.04	-.00		
	Sex by OMNI PPD	.03	.05	.04		
	Sex by OMNI NAP	-.03	.05	-.03		
	Sex by NPI E/E	-.10	.15	-.04		

Note. SRP-II = Self-Report Psychopathy Scale. OMNI NPD, PPD, and NAP = the Narcissistic Personality, Poisonous Pedagogy, and Narcissistically Abused Personality Dimensions of the O'Brien Multiphasic Narcissism Inventory, respectively. NPI E/E = Exploitativeness/Entitlement Items from the Narcissistic Personality Inventory.
* $p < .05$; ** $p < .01$; *** $p < .001$

OMNI NAP factor. Table 12 displays the unstandardized regression coefficients (*B*) and intercept, the standardized regression coefficients (β) for the individual scales, as well as the *R* and $AdjR^2$ for interaction terms.

When the MCMI-III BPD – NPD difference score was used as the dependent variable, the interaction between participant sex and the SRP-II, returned a nonsignificant, $R^2cha = .00$, $Fchg_{(1, 445)} = 0.00$, $p = .97$. The third step, the interaction between participant sex and the remaining psychopathy measures, was significant, $R^2cha = .02$, $Fchg_{(4,441)} = 2.83$, $p = .02$. Thus, the interaction of participant sex and the remaining psychopathy measures accounted for 2% of the variance above and beyond these variables alone and the interaction of participant sex and the SRP-II (see Table 13). In the third step of the hierarchical regression, when all of the measures were included, the interaction of sex and the Narcissistic Personality Dimension of the OMNI (β = .13, $t = 2.01$, $p = .05$), and the interaction of participant sex and the Narcissistically Abused Personality Dimension of the OMNI (β = -.11, $t = -2.16$, $p = .03$), significantly contributed to the model. The positive β for NPD dimension of the OMNI means that for females, relative to males, NPD Dimension of OMNI predicts a larger positive BPD minus NPD score; while the negative β for NAP dimension of OMNI means that for males, relative to females, each unit increase in NAP dimension of OMNI predicts larger (positive) difference in BPD minus NPD score. Again, this was an unexpected finding, although consistent with the pattern found above, further suggesting the likely connection to the theoretical constructions of the MCMI-III and the OMNI NAP factor. Table 13 displays the unstandardized regression coefficients (*B*) and intercept, the standardized regression coefficients (β) for the individual scales, as well as the *R* and $AdjR^2$ for the

Table 12: Regression Coefficients for Sex, Psychopathy Measures, and the Interaction of Sex and Psychopathy in Predicting MCMI-III Borderline minus Antisocial PD Difference Scores (N = 453)

Model		B	SE *B*	β	ΔR^2	AdjR^2
1	(Constant)	-11.24	1.21			.244***
	Sex	-6.23	1.28	-.22***		
	SRP-II	-0.22	0.03	-.31***		
	OMNI NPD	1.15	0.44	.13**		
	OMNI PPD	1.65	0.47	.19***		
	OMNI NAP	3.36	0.60	.25***		
	NPI E/E	-0.11	1.55	-.00		
2	(Constant)	-11.29	1.42		.000	.242
	Sex	-6.19	1.42	-.23***		
	SRP-II	-0.22	0.04	-.31***		
	OMNI NPD	1.15	0.44	.13**		
	OMNI PPD	1.65	0.47	.18***		
	OMNI NAP	3.36	0.60	.25***		
	NPI E/E	-0.11	1.55	-.00		
	Sex by SRP-II	-0.00	0.04	-.00		
3	(Constant)	-11.82	1.42		.017	.253*
	Sex	-5.78	1.42	-.20***		
	SRP-II	-0.21	0.04	-.29***		
	OMNI NPD	0.52	0.55	.06		
	OMNI PPD	1.75	0.61	.20**		
	OMNI NAP	4.09	0.69	.31***		
	NPI E/E	-0.83	2.01	-.03		
	Sex by SRP-II	-0.03	0.04	-.04		
	Sex by OMNI NPD	1.23	0.55	.14*		
	Sex by OMNI PPD	0.17	0.61	.02		
	Sex by OMNI NAP	-1.56	0.69	-.12*		
	Sex by NPI E/E	0.47	2.01	.02		

Note. SRP-II = Self-Report Psychopathy Scale. OMNI NPD, PPD, and NAP = the Narcissistic Personality, Poisonous Pedagogy, and Narcissistically Abused Personality Dimensions of the O'Brien Multiphasic Narcissism Inventory, respectively. NPI E/E = Exploitativeness/Entitlement Items from the Narcissistic Personality Inventory.
* $p < .05$; ** $p < .01$; *** $p < .001$

Table 13: Regression Coefficients for Sex, Psychopathy Measures, and the Interaction of Sex and Psychopathy in Predicting MCMI-III Borderline minus Narcissistic PD Difference Scores (N = 453)

Model		B	SE *B*	β	ΔR^2	AdjR^2
1	(Constant)	-29.50	1.90			.246***
	Sex	-6.16	2.01	-.14**		
	SRP-II	-0.16	0.06	-.14**		
	OMNI NPD	2.14	0.69	.16**		
	OMNI PPD	0.26	0.73	.02		
	OMNI NAP	7.29	0.94	.35***		
	NPI E/E	5.16	2.43	.11*		
2	(Constant)	-29.54	2.22		.000	.244
	Sex	-6.12	2.22	-.14**		
	SRP-II	-0.16	0.06	-.14*		
	OMNI NPD	2.14	0.69	.16**		
	OMNI PPD	0.26	0.74	.02		
	OMNI NAP	7.29	0.95	.35***		
	NPI E/E	5.16	2.43	.11*		
	Sex by SRP-II	-0.00	0.06	-.00		
3	(Constant)	-30.32	2.22		.019	.256*
	Sex	-5.51	2.22	-.12*		
	SRP-II	-0.13	0.07	-.12		
	OMNI NPD	1.22	0.87	.09		
	OMNI PPD	0.55	0.95	.04		
	OMNI NAP	8.48	1.08	.41***		
	NPI E/E	1.88	3.14	.04		
	Sex by SRP-II	-0.07	0.07	-.06		
	Sex by OMNI NPD	1.74	0.87	.13*		
	Sex by OMNI PPD	0.02	0.95	.00		
	Sex by OMNI NAP	-2.34	1.08	-.11*		
	Sex by NPI E/E	4.17	3.14	.09		

Note. SRP-II = Self-Report Psychopathy Scale. OMNI NPD, PPD, and NAP = the Narcissistic Personality, Poisonous Pedagogy, and Narcissistically Abused Personality Dimensions of the O'Brien Multiphasic Narcissism Inventory, respectively. NPI E/E = Exploitativeness/Entitlement Items from the Narcissistic Personality Inventory.
* $p < .05$; ** $p < .01$; *** $p < .001$

interaction terms.

Tables 14 and 15 display the correlations of each of the predictor variables with each of the PD difference scores. Examination of these correlations will enable us to further interpret the meaning of the observed interactions. We begin with the moderation of the SRP-II's correlation with PDQ-4+ BPD – ASPD. The correlations of SRP-II with PDQ-4+ BPD - ASPD are both negative for the two sexes, yet substantially different in size. As shown, SRP-II has a larger negative correlation with the PDQ-4+ BPD minus ASPD score for males (r = -.45) than for females (r = -.16). These differences in turn are due to sex differences in the SRP-II correlations with PDQ-4+ BPD or sex differences in the SRP-II correlations with PDQ-4+ ASPD, or both. To investigate this, Tables 16 and 17 were consulted. As can be seen, the correlations between SRP-II and PDQ-4+ ASPD are almost identical in both sexes, *r*'s = .58 and .56, but the correlation of SRP-II with PDQ-4+ BPD is more than twice as large among the females (*r* = .24) than it is among the males (*r* = .11). This was followed up by a separate regression analysis in which the SRP-II was regressed simultaneously on sex by PDQ-4+ BPD and sex by PDQ-4+ ASPD interaction terms. Only the former had a significant beta. Hence, the differential expression of the SRP-II in females as opposed to males is not due to the relationship with PDQ-4+ ASPD, but rather solely to PDQ-4+ BPD. Thus, females high on psychopathic traits, as measured by the SRP-II are also higher on the traits composing the PDQ-4+ measure of BPD, and not simply low on ASPD.

Next, we examine the moderation of the NPD dimension of the OMNI's correlation with MCMI-III BPD – ASPD. The correlations of the NPD dimension with MCMI-III BPD - ASPD are both positive for the two sexes, yet substantially different in

Table 14: Correlations between Variables for Males only (N = 97)

	1	2	3	4	5	6	7	8	9	10	11	12	13	14
1. Paulhus IM	-	.38**	-.04	.32**	.06	.36**	-.07	.39**	-.21*	-.19	.15	.04	.32**	.13
2. PD BPD-ASPD		-	-.20**	.38**	.14	.45**	.35**	.31**	-.01	-.45**	.30**	.09	.42**	.12
3. PD HPD-NPD			-	-.01	.30**	.45**	.34**	.09	.07	-.04	-.10	-.12	-.08	-.25*
4. MC BPD-ASPD				-	.09	.15	.23*	.60**	.06	-.29**	.17	.12	.52**	.04
5. MC HPD-NPD					-	.32**	.10	.36**	.30**	-.41**	-.24*	-.38**	.04	-.33**
6. PD BPD-NPD						-	-.21*	.45**	-.24*	-.11	-.02	-.15	.16	-.08
7. PD HPD-ASPD							-	-.09	.36**	-.41**	.24*	.15	.19	-.05
8. MC BPD-NPD								-	-.58**	-.15	.16	.09	.54**	.08
9. MC HPD-ASPD									-	-.32**	-.25*	-.28**	-.27**	-.30**
10. SRP-II										-	.03	.35**	-.17	.39**
11. OMNI NPD											-	.60**	.36**	.41**
12. OMNI PPD												-	.21*	.53**
13 OMNI NAP													-	.25*
14. NPI E/E														-

Note. Paulhus IM = Impression Management Scale from Paulhus Deception Scales. PD = Personality Diagnostic Questionnaire. MC = Millon Clinical Multiaxial Inventory -III. BPD-ASPD = Difference score, subtracting Antisocial Personality Disorder Scale from Borderline Personality Disorder Scale. HPD-NPD = Difference score, subtracting Narcissistic Personality Disorder Scale from Histrionic Personality Disorder Scale. BPD-NPD = Difference score, subtracting Narcissistic Personality Disorder Scale from Borderline Personality Disorder Scale. HPD-ASPD = Difference score, subracting Antisocial Personality Disorder Scale from Histrionic Personality Disorder Scale. SRP-II = Self-Report Psychopathy Scale. OMNI NPD, PPD, and NAP = the Narcissistic Personality, Poisonous Pedagogy, and Narcissistically Abused Personality Dimensions of the O'Brien Multiphasic Narcissism Inventory, respectively. NPI E/E = Exploitativeness/Entitlement Items from the Narcissistic Personality Inventory.
* $p < .05$; ** $p < .01$; *** $p < .001$

Table 15: Correlations between Variables for Females only (N = 356)

	1	2	3	4	5	6	7	8	9	10	11	12	13	14
1. Paulhus IM	-	.27**	.15**	.30**	.01	.28**	.07	.47**	-.30**	-.24**	.28**	.11*	.31**	.17**
2. PD BPD-ASPD		-	.06	.41**	-.03	.60**	.31**	.55**	-.35**	-.16**	.25**	.21**	.30**	.18**
3. PD HPD-NPD			-	-.02	.34**	.46**	.47**	.03	.18**	-.16**	.12*	-.03	.02	-.12*
4. MC BPD-ASPD				-	-.21**	.24**	.10	.67**	-.16**	-.22**	.30**	.25**	.35**	.11*
5. MC HPD-NPD					-	.17**	.09	-.05**	.55**	-.27**	-.20**	-.28**	-.14**	-.24**
6. PD BPD-NPD						-	-.19**	.45**	-.22**	-.07	.09	.01	.16**	-.04
7. PD HPD-ASPD							-	.03	.10	-.22**	.26**	.17**	.11*	.12*
8. MC BPD-NPD								-	-.67**	-.10	.37**	.24**	.42**	.24**
9 .MC HPD-ASPD									-	-.23**	-.33**	-.27**	-.31**	-.35**
10. SRP-II										-	.18**	.33**	-.10	.35**
11. OMNI NPD											-	.45**	.37**	.44**
12. OMNI PPD												-	.31**	.48**
13 OMNI NAP													-	.18**
14. NPI E/E														-

Note. Paulhus IM = Impression Management Scale from Paulhus Deception Scales. PD = Personality Diagnostic Questionnaire. MC = Millon Clinical Multiaxial Inventory -III. BPD-ASPD = Difference score, subtracting Antisocial Personality Disorder Scale from Borderline Personality Disorder Scale. HPD-NPD = Difference score, subtracting Narcissistic Personality Disorder Scale from Histrionic Personality Disorder Scale. BPD-NPD = Difference score, subtracting Narcissistic Personality Disorder Scale from Borderline Personality Disorder Scale. HPD-ASPD = Difference score, subracting Antisocial Personality Disorder Scale from Histrionic Personality Disorder Scale. SRP-II = Self-Report Psychopathy Scale. OMNI NPD, PPD, and NAP = the Narcissistic Personality, Poisonous Pedagogy, and Narcissistically Abused Personality Dimensions of the O'Brien Multiphasic Narcissism Inventory, respectively. NPI E/E = Exploitativeness/Entitlement Items from the Narcissistic Personality Inventory.
* $p < .05$; ** $p < .01$; *** $p < .001$

Table 16: Correlations of Psychopathy Measures (and Paulhus Impression Management) and Personality Disorder Subscales for Males Only (N = 97)

	Histrionic PD	Narcissistic PD	Borderline PD	Antisocial PD
Personality Disorder Questionnaire (PDQ-4+)				
SRP-II	.23*	.24*	.11	.58**
OMNI NPD	.44**	.49**	.42**	.18
OMNI PPD	.51**	.57**	.37**	.33**
OMNI NAP	.27**	.32**	.44**	.08
NPI E/E	.23*	.48**	.33**	.25*
Paulhus IM	-.03	.01	.36**	.04
Million Clinical Multiaxial Inventory (MCMI-III)				
SRP-II	.11	.47**	.17	.47**
OMNI NPD	-.16	.12	.32**	.21*
OMNI PPD	-.04	.33**	.38**	.33**
OMNI NAP	-.43**	-.34**	.48**	.06
NPI E/E	-.26*	.17**	.23*	.20*
Paulhus IM	-.25*	-.23**	.35**	.10

Note. Paulhus IM = Impression Management Scale from Paulhus Deception Scales. PD = Personality Disorder. SRP-II = Self-Report Psychopathy Scale. OMNI NPD, PPD, and NAP = the Narcissistic Personality, Poisonous Pedagogy, and Narcissistically Abused Personality Dimensions of the O'Brien Multiphasic Narcissism Inventory, respectively. NPI E/E = Exploitativeness/Entitlement Items from the Narcissistic Personality Inventory.

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

Table 17: Correlations of Psychopathy Measures (and Paulhus Impression Management) and Personality Disorder Subscales for Females Only (N = 356)

	Histrionic PD	Narcissistic PD	Borderline PD	Antisocial PD
Personality Disorder Questionnaire (PDQ-4+)				
SRP-II	.24**	.37**	.24**	.56**
OMNI NPD	.51**	.37**	.40**	.30**
OMNI PPD	.46**	.46**	.40**	.35**
OMNI NAP	.22**	.19**	.32**	.13*
NPI E/E	.42**	.52**	.35**	.36**
Paulhus IM	.23**	.08	.34**	.19**
Million Clinical Multiaxial Inventory (MCMI-III)				
SRP-II	.17**	.39**	.22**	.52**
OMNI NPD	-.22**	-.04	.45**	.26**
OMNI PPD	-.13*	.15**	.41**	.26**
OMNI NAP	-.37**	-.28**	.36**	.08
NPI E/E	-.13*	.20**	.37**	.36**
Paulhus IM	-.29**	-.35**	.36**	.14**

Note. Paulhus IM = Impression Management Scale from Paulhus Deception Scales. PD = Personality Disorder. SRP-II = Self-Report Psychopathy Scale. OMNI NPD, PPD, and NAP = the Narcissistic Personality, Poisonous Pedagogy, and Narcissistically Abused Personality Dimensions of the O'Brien Multiphasic Narcissism Inventory, respectively. NPI E/E = Exploitativeness/Entitlement Items from the Narcissistic Personality Inventory.

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

size. As shown, OMNI NPD has a larger positive correlation with the MCMI-III BPD minus ASPD score for females (r = .30) than for males (r = .17). These differences in turn are due to sex differences in the OMNI NPD correlations with MCMI-III BPD or sex differences in the OMNI NPD correlations with MCMI-III ASPD, or both. To investigate this, Tables 16 and 17 were consulted. As can be seen, the correlations between OMNI NPD and MCMI-III ASPD are similar in size in both sexes, *r*'s = .21 and .26, but the correlation of OMNI NPD with MCMI-III BPD is descriptively larger among the females (*r* = .45) than it is among the males (*r* = .32). This was followed up by a separate regression analysis in which the OMNI NPD was regressed simultaneously on sex by MCMI-III BPD and sex by MCMI-III ASPD interaction terms. Both returned significant betas. Hence, the differential expression of the OMNI NPD in females as opposed to males is due to the relationship with both MCMI-III ASPD and MCMI-III BPD. Thus, for this measure, the relationship is less clear.

Examination of the moderation of the NAP dimension of the OMNI's correlation with MCMI-III BPD – ASPD followed. The correlations of the OMNI NAP with MCMI-III BPD - ASPD are both positive for the two sexes, yet substantially different in size. Descriptively speaking, OMNI NAP has a larger positive correlation with the MCMI-III BPD minus ASPD score for males (r = .52) than for females (r = .30). These differences in turn are due to sex differences in the OMNI NAP correlations with MCMI-III BPD or sex differences in the OMNI NAP correlations with MCMI-III ASPD, or both. To investigate this, Tables 16 and 17 were consulted. As can be seen, the correlations between OMNI NPD and MCMI-III ASPD are nearly identical in size in both sexes, *r*'s = .06 and .08, but the correlation of OMNI NAP with MCMI-III BPD is descriptively

larger among the males (r = .48) than it is among the females (r = .36). This was followed up by a separate regression analysis in which the ONNI NAP was regressed simultaneously on sex by MCMI-III BPD and sex by MCMI-III ASPD interaction terms. Only the former had a significant beta. Hence, the differential expression of the OMNI NAP in females as opposed to males is not due to the relationship with MCMI-III ASPD, but rather solely to MCMI-III BPD.

Finally, we examine the moderation of the NPD dimension of the OMNI's correlation with MCMI-III BPD – NPD. The correlations of the NPD dimension with MCMI-III BPD - NPD are both positive for the two sexes, yet substantially different in size. Descriptively speaking, OMNI NPD has a larger positive correlation with the MCMI-III BPD minus NPD score for females (r = .37) than for males (r = .16). These differences in turn are due to sex differences in the OMNI NPD correlations with MCMI-III BPD or sex differences in the OMNI NPD correlations with MCMI-III NPD, or both. To investigate this, Tables 16 and 17 were consulted. As can be seen, the correlations between OMNI NPD and MCMI-III NPD are different in directionality and size in both sexes, r's = .12 and -.04, for males and females, respectively. The correlation of OMNI NPD with MCMI-III BPD is descriptively larger among the females (r = .45) than it is among the males (r = .32). This was followed up by a separate regression analysis in which the ONNI NPD was regressed simultaneously on sex by MCMI-III BPD and sex by MCMI-III NPD interaction terms. Only the former had a significant beta. Hence, the differential expression of the OMNI NPD in females as opposed to males is not due to the relationship with both MCMI-III NPD, but rather solely to MCMI-III BPD.

Examination of the moderation of the NAP dimension of the OMNI's correlation

with MCMI-III BPD – NPD followed. The correlations of the OMNI NAP with MCMI-III BPD - NPD are both positive for the two sexes, yet different in size. Descriptively speaking, OMNI NAP has a larger positive correlation with the MCMI-III BPD minus NPD score for males (r = .54) than for females (r = .42). These differences in turn are due to sex differences in the OMNI NAP correlations with MCMI-III BPD or sex differences in the OMNI NAP correlations with MCMI-III NPD, or both. To investigate this, Tables 16 and 17 were consulted. As can be seen, the correlations between OMNI NPD and MCMI-III ASPD are different in size, with a descriptively larger negative correlation for males (r = -.34) than for females (r = -.28). The correlation of OMNI NAP with MCMI-III BPD is also larger among the males (r = .48) than it is among the females (r = .36). This was followed up by a separate regression analysis in which the ONNI NAP was regressed simultaneously on sex by MCMI-III BPD and sex by MCMI-III NPD interaction terms. Only the former had a significant beta. Hence, the differential expression of the OMNI NAP in females as opposed to males is not due to the relationship with MCMI-III NPD, but rather solely to MCMI-III BPD.

For all three significant interactions, the differential expression of the psychopathy measures between the sexes was due to the relationship of this predictor with the BPD score, rather than the relationship with the other personality disorder score used to compute the difference score. Thus, it is that higher BPD scores are associated with higher scores on the psychopathy measures for females, rather than lower ASPD scores. The one exception to this was for the MCMI-III BPD minus ASPD difference, where the OMNI NPD was significantly related to both personality disorder scores. Interestingly, for both significant interactions found with the MCMI-III measure (BPD

minus ASPD; BPD minus NPD), the OMNI NAP was positively associated with BPD for males rather than for females.

The hypothesis was that for females, relative to males, psychopathy would be expressed as BPD and HPD relative to ASPD and NPD. This hypothesis was partially supported: For females, higher scores on the psychopathy measures predicted higher BPD scores relative to ASPD scores for both personality disorder measures, and higher BPD relative to NPD for MCMI-III only. This partial support may be informative when considering the roles of biology and socialization, as BPD and ASPD are more severe, behavioural disorders which may be influenced by biology more so than HPD and NPD. Also, these findings suggest that the treatment of females with psychopathic traits could be beneficially influenced by research on BPD.

Hypothesis 3. Hypothesis 3 was tested in the same way as Hypothesis 2, substituting gender role for participant sex in the analyses. This hypothesis states that high femininity of sex role (that is, low masculinity) interacting with psychopathic traits will predict higher levels of HPD and/or BPD relative to ASPD and/or NPD. The BSRI-SF was used to determine gender role. There are four possible categories to which a participant can be assigned by this measure. First, the items are separated into those which correspond to masculine, feminine, and neutral sex roles. For these three categories, which consist of 10 of the 30 overall items each, the 10 items are totalled and the mean for each is calculated. The sample medians for the means of the masculine and feminine items are used to determine the cut-offs for assigning the participants to categories. If the means for masculine and feminine items for a particular participant

exceeds the sample median for both the masculine and feminine items, the person is categorized as "androgynous"; if the means are lower than the median for both, they are categorized as "undifferentiated". If the participant's mean for the masculine items exceeds the sample median for the masculine items, but their mean for the feminine items does not exceed the sample median for the feminine items, they are categorized as "masculine". Finally, if the participant's mean for the feminine items exceeds the sample median for the feminine items, but their mean for the masculine items does not exceed the sample median for the masculine items, they are categorized as "feminine". For this analysis, we are only interested in those individual's who would be classified as having "masculine" or "feminine" sex roles. After reducing the sample to only these individuals, an *N* of 218 remained.

As with Hypothesis 2, the dependent variables were the difference scores for the personality disorders from both the PDQ-4+ and the MCMI-III. Again, this equated to eight regression analyses. The five psychopathy measures were entered in the first block along with the variable indicating gender role of the subject. Each of the psychopathy measures was first centered with a mean of 0, and the gender role variable was effects coded, coding masculine = -1 and feminine = 1 (Cohen, Cohen, West, & Aiken, 2003). The SRP-II's interaction term was entered in the second block, alone, prior to the other psychopathy measures, because it is the most valid measure of psychopathy. The remaining four interaction terms were entered on the final block.

When the analyses were conducted, again, three of the analyses returned significant R^2 change results for the interaction terms. Using the difference score for HPD minus NPD from the PDQ-4+ in the regression, the interaction of gender role and

the SRP-II was significant, $R^2cha = .02$, $Fchg(1, 210) = 5.29$, $p = .02$. Assuming that three tests are being made, an observed p value that high is equal to a Bonferroni p of .06. The interaction of participant gender role and the SRP-II accounted for 2% of the variance above and beyond these variables alone (see Table 18). Because the observed beta for this interaction was positive ($\beta = .15$, $t = 2.30$, $p = .02$), it is in the predicted direction, feminine individuals having the positive unit code in the effects coding. This small effect means that, relative to masculine individuals, feminine individual's SRP-II scores predict larger (positive) differences in the HPD minus NPD difference. This supports the prediction. In the third step of the hierarchical regression, the additional interaction terms were nonsignificant, $R^2cha = .00$, $Fchg(4, 206) = 0.08$, $p = .99$, and none of the interactions significantly contributed to the model. Table 18 displays the unstandardized regression coefficients (B) and intercept, the standardized regression coefficients (β) for the individual scales, as well as the R and $AdjR^2$ for the interaction terms.

When the MCMI-III HPD – NPD difference score was used as the dependent variable, the interaction between gender role and the SRP-II was significant, $R^2cha = .02$, $Fchg_{(1, 210)} = 6.96$, $p = .01$. Thus, the interaction of participant gender role and the SRP-II accounted for 2% of the incremental variance above and beyond these variables alone (see Table 19). Again, the observed beta for this interaction was positive ($\beta = .15$, $t = 2.64$, $p = .01$), and in the predicted direction. This small effect means that, relative to masculine individuals, feminine individual's SRP-II scores predict larger (positive) differences in the HPD minus NPD difference. This, again, supports the prediction. In the third step of the hierarchical regression, the additional interaction terms were

Table 18: Regression Coefficients for Gender Role, Psychopathy Measures, and the Interaction of Gender Role and Psychopathy in Predicting PDQ-4+ Histrionic minus Narcissistic PD Difference Scores (N = 218)

Model		B	SE *B*	β	ΔR^2	AdjR^2
1	(Constant)	-.07	.11			.060**
	Gender Role	.06	.14	.04		
	SRP-II	-.01	.00	-.17		
	OMNI NPD	.11	.05	.18*		
	OMNI PPD	.00	.06	.00		
	OMNI NAP	-.05	.07	-.06		
	NPI E/E	-.34	.20	-.16		
2	(Constant)	.12	.14		.022	.078*
	Gender Role	.09	.14	.05		
	SRP-II	-.01	.00	-.15		
	OMNI NPD	.10	.05	.17*		
	OMNI PPD	.01	.05	.02		
	OMNI NAP	-.04	.07	-.05		
	NPI E/E	-.31	.19	-.15		
	Role by SRP-II	.01	.00	.15*		
3	(Constant)	.13	.14		.001	.062
	Gender Role	.09	.14	.05		
	SRP-II	-.01	.00	-.15		
	OMNI NPD	.10	.05	.16*		
	OMNIPPD	.01	.06	.01		
	OMNI APD	-.05	.07	-.05		
	NPI E/E	-.31	.20	-.15		
	Role by SRP-II	.01	.00	.14		
	Role by OMNI NPD	-.01	.05	-.02		
	Role by OMNI PPD	.01	.06	.01		
	Role by OMNI NAP	-.02	.07	-.02		
	Role by NPI E/E	.08	.20	.04		

Note. SRP-II = Self-Report Psychopathy Scale. OMNI NPD, PPD, and NAP = the Narcissistic Personality, Poisonous Pedagogy, and Narcissistically Abused Personality Dimensions of the O'Brien Multiphasic Narcissism Inventory, respectively. NPI E/E = Exploitativeness/Entitlement Items from the Narcissistic Personality Inventory.
* $p < .05$; ** $p < .01$; *** $p < .001$

Table 19: Regression Coefficients for Gender Role, Psychopathy Measures, and the Interaction of Gender Role and Psychopathy in Predicting MCMI-III Histrionic minus Narcissistic PD Difference Scores (N = 218)

Model		B	SE *B*	β	ΔR^2	AdjR^2
1	(Constant)	-2.60	1.40			.295***
	Gender Role	2.69	1.75	.11		
	SRP-II	-0.20	0.06	-.30***		
	OMNI NPD	-0.28	0.62	-.03		
	OMNI PPD	-1.70	0.70	-.19*		
	OMNI NAP	-0.40	0.86	-.03		
	NPI E/E	-2.43	2.48	-.08		
2	(Constant)	0.20	1.74		.022	.314**
	Gender Role	3.03	1.74	.13		
	SRP-II	-0.19	0.05	-.28**		
	OMNI NPD	-0.44	0.61	-.05		
	OMNI PPD	-1.58	0.69	-.18*		
	OMNI NAP	-0.23	0.85	-.02		
	NPI E/E	-1.93	2.45	-.06		
	Role by SRP-II	0.13	0.05	.15**		
3	(Constant)	0.05	1.77		.012	.313
	Gender Role	2.65	1.77	.11		
	SRP-II	-0.19	0.06	-.28**		
	OMNI NPD	-0.45	0.62	-.05		
	OMNIPPD	-1.45	0.70	-.17*		
	OMNI APD	-0.33	0.86	-.02		
	NPI E/E	-2.40	2.49	-.08		
	Role by SRP-II	0.10	0.06	.11		
	Role by OMNI NPD	0.67	0.62	.08		
	Role by OMNI PPD	-0.55	0.70	-.06		
	Role by OMNI NAP	-0.89	0.86	-.07		
	Role by NPI E/E	2.75	2.49	.09		

Note. SRP-II = Self-Report Psychopathy Scale. OMNI NPD, PPD, and NAP = the Narcissistic Personality, Poisonous Pedagogy, and Narcissistically Abused Personality Dimensions of the O'Brien Multiphasic Narcissism Inventory, respectively. NPI E/E = Exploitativeness/Entitlement Items from the Narcissistic Personality Inventory.
* $p < .05$; ** $p < .01$; *** $p < .001$

nonsignificant, $R^2cha = .01$, $Fchg_{(4, 206)} = 0.91$, $p = .46$, and none of the interactions significantly contributed to the model. Table 19 displays the unstandardized regression coefficients (*B*) and intercept, the standardized regression coefficients (β) for the individual scales, as well as the *R* and $AdjR^2$ for interaction terms.

When the PDQ-4+ HPD – ASPD difference score was used as the dependent variable, the interaction of gender role and the SRP-II was significant, $R^2cha = .04$, $Fchg_{(1, 210)} = 12.11$, $p = .001$. Thus, the interaction of participant gender role and the SRP-II accounted for 4% of the variance above and beyond these variables alone (see Table 20). The observed beta for this interaction was positive (β = .20, $t = 3.48$, $p = .001$), and in the predicted direction. This small effect means that, relative to masculine individuals, feminine individual's SRP-II scores predict larger positive differences in the HPD minus ASPD difference. Again, this supports the prediction. In the third step of the hierarchical regression, the additional interaction terms were nonsignificant, $R^2cha = .02$, $Fchg_{(4, 206)} = 1.787$. Table 20 displays the unstandardized regression coefficients (*B*) and intercept, the standardized regression coefficients (β) for the individual scales, as well as the *R* and $AdjR^2$ for interaction terms.

Tables 21 and 22 display the correlations of each of the predictor variables with each of the PD difference scores. Examination of these correlations will enable us to further interpret the meaning of the observed interactions. We begin with the moderation of the SRP-II's correlation with PDQ-4+ HPD – NPD. The correlations of SRP-II with PDQ-4+ HPD - NPD are different in directionality and size for the two gender roles. As shown, SRP-II has a large negative correlation with the PDQ-4+ HPD minus NPD score for masculine individuals (r = -.30) and a small positive correlation for feminine

Table 20: Regression Coefficients for Gender Role, Psychopathy Measures, and the Interaction of Gender Role and Psychopathy in Predicting PDQ-4+ Histrionic minus Antisocial PD Difference Scores (N = 218)

Model		B	SE *B*	β	ΔR^2	AdjR^2
1	(Constant)	.99	.11			.259***
	Gender Role	.20	.14	.11		
	SRP-II	-.03	.00	-.49***		
	OMNI NPD	.18	.05	.26***		
	OMNI PPD	.12	.06	.17*		
	OMNI NAP	-.09	.07	-.09		
	NPI E/E	.24	.20	.10		
2	(Constant)	1.28	.14		.039	.296**
	Gender Role	.24	.14	.13		
	SRP-II	-.02	.00	-.46***		
	OMNI NPD	.16	.05	.24**		
	OMNI PPD	.13	.05	.19*		
	OMNI NAP	-.08	.07	-.07		
	NPI E/E	.29	.19	.12		
	Role by SRP-II	.01	.00	.20**		
3	(Constant)	1.28	.14		.023	.307
	Gender Role	.29	.14	.15*		
	SRP-II	-.02	.00	-.46***		
	OMNI NPD	.15	.05	.22**		
	OMNIPPD	.12	.05	.19*		
	OMNI APD	-.08	.07	-.08		
	NPI E/E	.33	.19	.14		
	Role by SRP-II	.02	.00	.26***		
	Role by OMNI NPD	-.09	.05	-.13		
	Role by OMNI PPD	-.03	.05	-.04		
	Role by OMNI NAP	.10	.07	.09		
	Role by NPI E/E	-.06	.19	-.03		

Note. SRP-II = Self-Report Psychopathy Scale. OMNI NPD, PPD, and NAP = the Narcissistic Personality, Poisonous Pedagogy, and Narcissistically Abused Personality Dimensions of the O'Brien Multiphasic Narcissism Inventory, respectively. NPI E/E = Exploitativeness/Entitlement Items from the Narcissistic Personality Inventory.
* $p < .05$; ** $p < .01$; *** $p < .001$

Table 21: Correlations between Variables for Masculine Individuals only (N = 108)

	1	2	3	4	5	6	7	8	9	10	11	12	13	14
1. Paulhus IM	-	.34**	-.00	.34**	-.07	.31**	-.04	.45**	-.30**	-.03	.20*	.13	.34**	.13
2. PD BPD-ASPD		-	-.02	.40**	.15	.53**	.32**	.42**	-.04	-.23*	.26**	.16	.34**	.11
3. PD HPD-NPD			-	-.13	.47**	.42**	.42**	.03	.25**	-.30**	.04	-.11	.01	-.22*
4. MC BPD-ASPD				-	-.32**	.22*	.01	.68**	-.24*	.04	.32**	.37**	.46**	.17
5. MC HPD-NPD					-	.31**	.21*	.01	.57**	-.49**	-.31**	-.40**	-.09**	-.45**
6. PD BPD-NPD						-	-.27**	.49**	-.14	-.08	-.06	-.11	.22*	-.15
7. PD HPD-ASPD							-	.15	.36**	-.40**	.35**	.18	.08	.07
8. MC BPD-NPD								-	-.61**	.08	.25**	.24*	.51**	.12
9 .MC HPD-ASPD									-	-.48**	-.29**	-.31**	-.30**	-.38**
10. SRP-II										-	.21*	.42**	.02	.54**
11. OMNI NPD											-	.58**	.41**	.47**
12. OMNI PPD												-	.37**	.65**
13 OMNI NAP													-	.21*
14. NPI E/E														-

Note. Paulhus IM = Impression Management Scale from Paulhus Deception Scales. PD = Personality Diagnostic Questionnaire. MC = Millon Clinical Multiaxial Inventory -III. BPD-ASPD = Difference score, subtracting Antisocial Personality Disorder Scale from Borderline Personality Disorder Scale. HPD-NPD = Difference score, subtracting Narcissistic Personality Disorder Scale from Histrionic Personality Disorder Scale. BPD-NPD = Difference score, subtracting Narcissistic Personality Disorder Scale from Borderline Personality Disorder Scale. HPD-ASPD = Difference score, subracting Antisocial Personality Disorder Scale from Histrionic Personality Disorder Scale. SRP-II = Self-Report Psychopathy Scale. OMNI NPD, PPD, and NAP = the Narcissistic Personality, Poisonous Pedagogy, and Narcissistically Abused Personality Dimensions of the O'Brien Multiphasic Narcissism Inventory, respectively. NPI E/E = Exploitativeness/Entitlement Items from the Narcissistic Personality Inventory.
* $p < .05$; ** $p < .01$; *** $p < .001$

Table 22: Correlations between Variables for Feminine Individuals only (N = 110)

	1	2	3	4	5	6	7	8	9	10	11	12	13	14
1. Paulhus IM	-	.22*	.11	.28**	.07	.32**	-.08	.51**	-.33**	-.29**	.26**	.09	.38**	.25
2. PD BPD-ASPD		-	.03	.30**	.02	.55**	.28**	.43**	-.26**	-.14	.28**	.15	.31**	.21*
3. PD HPD-NPD			-	-.13	.33**	.41**	.44**	.04	.06	.04	.10	.02	-.06	-.04
4. MC BPD-ASPD				-	-.26**	.10	.03	.60**	-.09	-.19*	.19*	.22*	.34**	.10
5. MC HPD-NPD					-	.22**	.06*	-.02	.44**	-.16	-.13	-.30**	-.13	-.17
6. PD BPD-NPD						-	-.31**	.33**	-.17	-.06	.12	-.08	.10	-.06
7. PD HPD-ASPD							-	.03	.02	-.02	.19*	.24*	.11	.22*
8. MC BPD-NPD								-	-.70**	-.04	.35**	.29**	.43**	.28**
9 .MC HPD-ASPD									-	-.19*	-.33**	-.35**	-.32**	-.34**
10. SRP-II										-	.24*	.21*	-.16	.29**
11. OMNI NPD											-	.40**	.23*	.48**
12. OMNI PPD												-	.21*	.52**
13 OMNI NAP													-	.19*
14. NPI E/E														-

Note. Paulhus IM = Impression Management Scale from Paulhus Deception Scales. PD = Personality Diagnostic Questionnaire. MC = Millon Clinical Multiaxial Inventory -III. BPD-ASPD = Difference score, subtracting Antisocial Personality Disorder Scale from Borderline Personality Disorder Scale. HPD-NPD = Difference score, subtracting Narcissistic Personality Disorder Scale from Histrionic Personality Disorder Scale. BPD-NPD = Difference score, subtracting Narcissistic Personality Disorder Scale from Borderline Personality Disorder Scale. HPD-ASPD = Difference score, subracting Antisocial Personality Disorder Scale from Histrionic Personality Disorder Scale. SRP-II = Self-Report Psychopathy Scale. OMNI NPD, PPD, and NAP = the Narcissistic Personality, Poisonous Pedagogy, and Narcissistically Abused Personality Dimensions of the O'Brien Multiphasic Narcissism Inventory, respectively. NPI E/E = Exploitativeness/Entitlement Items from the Narcissistic Personality Inventory.
* $p < .05$; ** $p < .01$; *** $p < .001$

individuals (r = .04). These differences in turn are due to gender role differences in the SRP-II correlations with PDQ-4+ HPD or gender role differences in the SRP-II correlations with PDQ-4+ NPD, or both. To investigate this, correlations between the SRP-II's correlations with the separate personality disorder scores were examined for each gender role (see Tables 23 and 24). The correlations between SRP-II and PDQ-4+ NPD are different in both groups, *r*'s = .29 and .40, for feminine and masculine individuals, respectively. The correlation of SRP-II with PDQ-4+ HPD is twice as large among the feminine individuals (*r* = .30) than it is among the masculine individuals (*r* = .15). This was followed up by a separate regression analysis in which the SRP-II was regressed simultaneously on role by PDQ-4+ HPD and role by PDQ-4+ NPD interaction terms. Only the latter had a significant beta. Hence, the differential expression of the SRP-II in feminine individuals as opposed to masculine individuals is not due to the relationship with PDQ-4+ HPD, but rather solely to PDQ-4+ NPD.

Next, we examine the moderation of the SRP-II's correlation with MCMI-III HPD – NPD. The correlations of SRP-II with MCMI-III HPD - NPD are negative for the two groups, yet substantially different in size. Descriptively speaking, SRP-II has a larger negative correlation with the MCMI-III HPD minus NPD score for masculine individuals (r = -.49) than for feminine individuals (r = -.16). These differences in turn are due to gender role differences in the SRP-II correlations with MCMI-III HPD or gender role differences in the SRP-II correlations with MCMI-III NPD, or both. To investigate this, correlations between the SRP-II's correlations with the separate personality disorder scores were examined for each gender role (see Tables 23 and 24). The correlations between SRP-II and MCMI-III NPD are nearly identical for both

Table 23: Correlation of Psychopathy Measures and Personality Disorder Subscales for Masculine Individuals Only (N = 108)

	Histrionic PD	Narcissistic PD	Borderline PD	Antisocial PD
Personality Disorder Questionnaire (PDQ-4+)				
SRP-II	.15	.40**	.26**	.60**
OMNI NPD	.63**	.52**	.40**	.27**
OMNI PPD	.54**	.57**	.39**	.35**
OMNI NAP	.30**	.26**	.43**	.23*
E/E	.40**	.54**	.33**	.33**
Paulhus IM	.23*	.21**	.47**	.28*
Million Clinical Multiaxial Inventory (MCMI-III)				
SRP-II	-.24*	.33**	.35**	.43**
OMNI NPD	-.18	.18	.45**	.23*
OMNI PPD	-.20*	.27**	.50**	.23**
OMNI NAP	-.32**	-.24*	.47**	.09
E/E	-.25*	.28**	.36**	.28*
Paulhus IM	-.27**	-.22*	.41**	.15

Note. Paulhus IM = Impression Management Scale from Paulhus Deception Scales. PD = Personality Disorder. SRP-II = Self-Report Psychopathy Scale. OMNI NPD, PPD, and NAP = the Narcissistic Personality, Poisonous Pedagogy, and Narcissistically Abused Personality Dimensions of the O'Brien Multiphasic Narcissism Inventory, respectively. NPI E/E = Exploitativeness/Entitlement Items from the Narcissistic Personality Inventory.
* $p < .05$; ** $p < .01$; *** $p < .001$

Table 24: Correlation of Psychopathy Measures and Personality Disorder Subscales for Feminine Individuals (N=110)

	Histrionic PD	Narcissistic PD	Borderline PD	Antisocial PD
Personality Disorder Questionnaire (PDQ-4+)				
SRP-II	.30**	.29**	.20*	.45**
OMNI NPD	.37**	.32**	.42**	.26**
OMNI PPD	.43**	.45**	.32**	.27**
OMNI NAP	.12	.19	.27**	.01
E/E	.39**	.46**	.35**	.25**
Paulhus IM	.15	.06	.41**	.31**
Million Clinical Multiaxial Inventory (MCMI-III)				
SRP-II	.12	.35**	.17	.40**
OMNI NPD	-.18	-.10	.43**	.30**
OMNI PPD	-.22	.05	.43**	.27**
OMNI NAP	-.38**	-.37	.37**	.06
E/E	-.10	.05	.42**	.38**
Paulhus IM	-.25*	-.43**	.44**	.22*

Note. Paulhus IM = Impression Management Scale from Paulhus Deception Scales. PD = Personality Disorder. SRP-II = Self-Report Psychopathy Scale. OMNI NPD, PPD, and NAP = the Narcissistic Personality, Poisonous Pedagogy, and Narcissistically Abused Personality Dimensions of the O'Brien Multiphasic Narcissism Inventory, respectively. NPI E/E = Exploitativeness/Entitlement Items from the Narcissistic Personality Inventory.
* $p < .05$; ** $p < .01$; *** $p < .001$

groups, *r*'s = .35 and .33, for feminine and masculine respectively. The correlation of SRP-II with MCMI-III HPD is of different sign, and twice as large among the masculine individuals (r = -.24), as it is among the feminine individuals (r = .12). This was followed up by a separate regression analysis in which the SRP-II was regressed simultaneously on role by MCMI-III HPD and role by MCMI-III NPD interaction terms. Both had significant betas. Hence, the differential expression of the SRP-II in feminine individuals as opposed to masculine individuals is due to the relationship with both MCMI-III HPD and MCMI-III NPD.

Next, we examine the moderation of the SRP-II's correlation with PDQ-4+ HPD – ASPD. The correlations of SRP-II with PDQ-4+ HPD - ASPD are negative for the two groups, yet substantially different in size. Descriptively speaking, SRP-II has a larger negative correlation with the PDQ-4+ HPD minus ASPD score for masculine individuals (r = -.40) than for feminine individuals (r = -.02). These differences in turn are due to gender role differences in the SRP-II correlations with PDQ-4+ HPD or gender role differences in the SRP-II correlations with PDQ-4+ NPD, or both. To investigate this, correlations between the SRP-II's correlations with the separate personality disorder scores were examined for each gender role (see Tables 23 and 24). The correlations between SRP-II and PDQ-4+ ASPD are different in size, *r*'s = .45 and .60, for feminine and masculine individuals, respectively. The correlation of SRP-II with PDQ-4+ HPD is twice as large among the feminine individuals (r = .30), than it is among the masculine individuals (r = .15). This was followed up by a separate regression analysis in which the SRP-II was regressed simultaneously on role by PDQ-4+ HPD and role by PDQ-4+ ASPD interaction terms. Only the latter had a significant beta. Hence, the differential

expression of the SRP-II in feminine individuals as opposed to masculine individuals is not due to the relationship with PDQ-4+ HPD, but solely with PDQ-4+ ASPD.

For the significant interaction of gender role and SRP-II in predicting PDQ-4+ HPD minus NPD scores, the differential expression of the psychopathy measures between the gender roles was due to the relationship of this predictor with the NPD score. For the significant interaction of role and SRP-II in predicting PDQ-4+ HPD minus ASPD scores, the differential expression of the psychopathy measures between the gender roles was due to the relationship of this predictor with the ASPD score. While, for the MCMI-III HPD minus NPD difference, the SRP-II was significantly related to both personality disorder scores.

The hypothesis was that for feminine individuals, relative to masculine individuals, psychopathy would be expressed as BPD and HPD relative to ASPD and NPD. This hypothesis was partially supported: For feminine individuals, higher scores on the psychopathy measures predicted a large positive difference between HPD scores and NPD scores for both personality disorder measures, and between HPD and ASPD scores for PDQ-4+ only. Again, although partial support, this finding further suggests that biology and socialization have roles in disorder expression that may be guided by severity and behavioural versus trait predominance.

CHAPTER IV

DISCUSSION

The purpose of this study was to examine the possibilities that psychopathy was related to, and underlies, the four 'Cluster B' personality disorders, and that which disorder is expressed depends on the sex and/or the gender role of the individual. The following hypotheses were examined in the present study: 1) Psychopathy underlies all four 'Cluster B' personality disorders; 2) For females, relative to males, psychopathic traits will predict higher levels of HPD and BPD relative to ASPD and NPD, while for males, relative to females, psychopathic traits will predict higher levels of ASPD and NPD relative to BPD and HPD; and 3) Sex type ("feminine" vs. "masculine") will interact with psychopathic traits such that for the "feminine" type, higher levels of psychopathic traits are associated with higher levels of HPD and BPD relative to ASPD and NPD, while for the "masculine" type, higher levels of psychopathic traits are associated with higher levels of ASPD and NPD relative to BPD and HPD.

Overall, support was found for the relationship between psychopathy and the 'Cluster B' disorders. In addition, partial support was found for the moderating effect of sex. For females, relative to males, psychopathy was predictive of higher scores for BPD scales than ASPD and NPD scales. Partial support was also found for the moderating effect of gender role. For those who endorsed a "feminine" gender role, relative to those who endorsed a "masculine" gender role, psychopathy was predictive of higher scores for HPD scales than NPD and ASPD scales.

When the regressions were run for the first hypothesis, measures of psychopathy were differentially related to the personality disorders scales. The significant

psychopathy predictors also differed depending on the personality disorder measure being used. Of the predictors used in this study, the SRP-II measure has the greatest validity as an indicator of psychopathy as the construct is currently used. The SRP-II was significantly related to BPD, NPD, and ASPD for both measures, but had the largest correlation with ASPD. This was to be predicted, since both psychopathy and ASPD are largely constituted by sensation-seeking, disinhibition, and impulsivity. These characteristics are to a lesser extent constituents of NPD, explaining the relationship between the SRP-II and both NPD scales. The NPD and NAP Dimensions of the OMNI are those most associated with distress and disinhibition/impulsivity, which are correlates of BPD, and thus their greater predictive relationship to BPD scales, is expected. The PPD factor of the OMNI, and the NPI E/E items are reflective of a sense of grandiosity and entitlement, and are operationalizations of psychopathy and narcissism, making their relationship to NPD intuitive. This grandiosity is also a characteristic of HPD in DSM classification, explaining the relationship between the NPD and PPD Dimensions of the OMNI and the PDQ-4+ measure of HPD.

An interesting question surfaced from the findings surrounding Hypothesis 1. The psychopathy measures were positively related to the personality disorders in all cases except the MCMI-III scales for HPD and NPD. In these two cases, the NAP Dimension of the OMNI was negatively related to the personality disorder scores, and for HPD, the NPI E/E was also negatively related. This was not the case for the PDQ-4+ measures, that is, PDQ-4+ HPD and NPD were in fact positively correlated with these two psychopathy measures. In an effort to explain why the predictor variables failed to predict the MCMI-III HPD and NPD scales, Appendix 1 of the MCMI-III manual

(Millon, 1997) was consulted. This Appendix indicates that only HPD and NPD have negative correlations with measures of negative affect. (Interestingly, the MCMI-III Compulsive Personality scale is the only other personality disorder scale that correlates negatively with measures of negative affect, and it also correlated negatively with the Symptom Check List-90 (Derogatis, Lipman, Rickels, Uhlenhuth, & Covi, 1974) Obsessive Compulsive scale!). It would seem that Millon's theory of personality disorders, in contrast to that of the PDQ-4+ author (Hyler, 1994), precludes a (positive) association of NPD and HPD with distress. Of the predictor variables used in this study, the NAP Dimension of the OMNI (Hibbard, 1992, 1994), and the E/E items of the NPI are highly correlated with distress/negative affectivity (Bogart, Benotsch, & Panlovic, 2004; Emmons, 1984; Watson & Morris, 1991). Clearly, since these predictors are positively associated with distress/negative affect, but the MCMI-III HPD and NPD are negatively associated with these, the failure of these variables to predict MCMI-III HPD and NPD are due to this theoretical anomaly in the MCMI-III measures, i.e., the MCMI-III HPD and NPD scales are not associated with distress and negative affectivity. The significance of this fact was not foreseen when measures were being selected for the study, and only became salient in the present results. However, the question of whether or not distress/negative affectivity should be included in the characterization of personality disorders, and especially Cluster B personality disorders, is a far reaching one.

The two central dimensions of narcissism are essentially facets of the first two of what are considered the Big Three or Big Five personality dimensions (Hibbard & Bunce, August, 1995). These two dimensions are given various names, but among the most

common are neuroticism and extraversion. The question of whether distress needs be involved in the definition of a personality disorder extends from the consideration that mental disorders ought to involve some type of maladaptation for the individual. Some degree of distress is virtually by definition involved in ego dystonicity, and so the question becomes, if a syndrome is ego *syn*tonic, non-distressful for the person, how would we (more pointedly, why should we) conclude that it is maladaptive? Overly simple responses in terms of living life outside the law or in terms of state imposed punitive consequences for the individual are insufficient if we consider figures like Hannibal Lector from *Silence of the Lambs.* That is, if the mark of a mental disorder is breaking the law or that it can result in confinement, then individuals such as Ghandi or Martin Luther King, Jr., would be classified as mentally disordered. In addition, there are theories about the underpinning psychological mechanisms of psychopathy, notably impulsivity and disinhibition, which postulate that the failures in conscience formation associated with psychopathy are actually due to absence of the capacity to feel distress, anxiety, and/or negative affectivity (Fowles, 1993; Gray, 1982; Lykken, 1957). This is not the time or place to resolve these disputes, obviously. Also, it is noteworthy that whereas the MCMI-III HPD and NPD scales have no correlation with negative affect, this is not true of MCMI-III ASPD nor, of course, of MCMI-III BPD.

To accurately interpret and understand the most significant finding from tests of the moderating effect of sex on the prediction of the PD differences, it is important to again be reminded of three distinguishing features of the various measures used to test the hypothesis that psychopathy is expressed differently by sex in the different personality differences. First, we should recall that the SRP-II is the most valid measure of

psychopathy included in this study; second, we should also remember that, of the various PD diagnoses, BPD and ASPD best operationalize the hypothesis regarding gender differences in psychopathy. Finally, it should be recalled that the difference between the PDQ4 and the MCMI-III is that the former is a clearer operationization of the DSM IV PD criteria, whereas the latter is a theory driven measure of PDs. Given these three considerations, then, it is important to note that when BPD minus ASPD scores were predicted from interactions between sex and psychopathy measures, the SRP-II interacted with sex only when the PDQ4+ measures of BPD and ASPD were used. Indeed, the interaction of SRP-II with MCMI-III BPD minus ASPD did not even approach significance. Hence, using the most valid measure of psychopathy, sex moderated the effect of psychopathy significantly only for the PD measures that operationalize the DSM IV symptom measures, not the ones that operationalize Millon's theory.

Moreover, sex moderated the expression of SRP-II in the BPD minus ASPD contrast, whereas gender role moderated the expression of SRP-II in the HPD minus NPD contrast. This is an interesting finding, because although all four disorders are categorized in the same cluster, BPD and ASPD are more severe; and ASPD is more behaviourally defined, often associated with criminal activity and violence. On the other hand, HPD and NPD are characterized more by patterns of interacting, and are less severe and debilitating, and typically result in less serious negative consequences. As mentioned earlier in the paper, characteristics of BPD and especially ASPD more closely resemble the Factor 2 (behavioural) aspects of psychopathy, while HPD and NPD are more closely associated with Factor 1 (traits) aspects. Thus, it is possible that biological sex has a stronger moderating effect for more severe pathology, while gender role moderates

personality characteristics. This possibility has not been examined in previous literature and could be a direction for future research.

Conclusions

The results of this study support the contention that psychopathy and the 'Cluster B' personality disorders are related in meaningful ways. Furthermore, this study shows that both biological sex and gender roles have a moderating effect on this relationship, and that for females, psychopathy is more likely to be expressed as BPD than either ASPD or NPD; while for feminine individuals, psychopathy is more likely to be expressed as HPD than either NPD or ASPD. Previous research on this topic has resulted in mixed findings, and the current research provides further support for the continued examination of psychopathy and personality disorders, as well as for the continued exploration of intricacies in the findings, for example, that gendered expression of psychopathy as BPD was supported when biological sex was the moderator, while the gendered expression of psychopathy as HPD was supported when gender role was the moderator. This indicates that, to some degree, we are emphasizing differences rather than similarities in classification, and thus, possibly treatment. At present, little can be done for psychopathic individuals. They are considered "lost causes", "lock them up and throw away the key". If psychopathy is related to 'Cluster B' personality disorders, than the treatments and research on these personality disorders could be applied to psychopathy, possibly improving prognosis. Treatment studies of this type would be beneficial.

The connection between psychopathy and 'Cluster B' disorders can be explained by some of the latent variables proposed in other theories such as manipulativeness,

impulsivity, and disinhibition. The findings from this study support a continuum approach to psychopathology versus a dimensional one. If these disorders are all conceptually related, than perhaps they lie on a continuum rather than being discrete categories. The role found here of gender and gender role in differential expression is in line with previous theories concerning: sex role socialization (and its strength above and beyond "role"), similarities in the biological underpinnings of the disorders, and conceptual and symptom similarities.

Implications of the Findings

This study has clinical and research relevance. It is likely that clinicians would be interested in this research because it aids in classification and treatment, by clarifying the similarities and differences between disorders. To date, there has been no reported treatment that is effective for psychopathy. Perhaps, attending to psychopathy as being expressed as other disorders will help tailor treatment, and result in greater success rates. This research is important because it provides further support for one side in an inconsistent area, but also has greatly extended our current understanding in this area, and has highlighted interesting and important avenues for further research. The inclusion of BPD and NPD was suggested, and the results here suggest that these two disorders are as important in the investigation of gendered expression of psychopathy as HPD and ASPD. This study has also allowed for greater specificity, because we were able to examine the psychopathy measures individually and determine the relationship between certain components of psychopathy and particular personality disorders. In addition, this research provides support for both biological and socialization theories, which have

largely been debated and often pitted against each other, although the role of each of these theories should be examined more closely.

Limitations of this Study

Despite the interesting and important findings presented here, it is important to acknowledge the limitations of this study. The use of an undergraduate sample, though sufficient to collect a large enough sample overall, may not be sufficient to collect a large enough sample of personality disordered individuals. The 'Cluster B' personality disorders have a prevalence of only 1-3% in community samples (APA, 2000). However, this does not threaten the results found in this study, but rather, indicates that results may have been stronger, or that more results (i.e.: for all the difference scores) may have been found in a clinical sample. In addition, the sample was not sufficiently diverse in terms of age or ethnicity, limiting the generalizability of the findings. Since personality disorders are considered to be long-standing, age may be less of a factor in the generalizability of these findings. In addition, though the size of each gender sample was sufficient for power, the large difference in the number of males versus females in the sample may still have affected the representation of typically male personality disorders such as ASPD and NPD. However, the use of difference scores should have limited the negative impact this might have had. Student populations, in general, do not necessarily generalize to community or clinical populations. Thus, it would be important for future research to examine these hypotheses with a clinical sample.

The self-report nature of this data collection could have led to bias. However, control measures for social desirability were examined in relation to the data collected to determine if this was the case, and a number of the measures have validity scales built in.

The web-based nature of the data collection allowed for greater convenience to the participants, and greater anonymity, but restricted the amount of control we had over confounds and environmental distracters. Fortunately, the format allowed for counterbalancing of the questionnaires, and also allowed participants to log off and back on again, which controlled for fatigue effects. Method variance is another possible issue, as the self-report measures are all answered on a Likert-scale, however, a number of items are reverse scored, and number of Likert options varies across the measures.

The nature of the hypotheses, and the operationalization of the variables used in this study, created the possibility of multicollinearity. The basis of this research is that the personality disorders examined here are gendered expressions of psychopathy. Basically, that all five disorders are similar in important ways, and that it may be only the role of sex or gender role which leads to their being expressed as different disorders. Thus, the operationalizations of similar constructs will be similar and will overlap. However, with the exception of the SRP-II and ASPD as measured by the PDQ-4+, none of the correlations between the measures of psychopathy and the personality disorder measure exceeded .5.

Future Directions

This study suggests a number of areas for future directions that have been highlighted throughout this discussion. It is important to reiterate these explicitly here. First, future research should replicate this study with a clinical sample to determine if such a sample would produce results that were clearer in terms of the hypotheses here, or if "diagnosable" personality disorders are more distinct from psychopathy. Second, the role of biology and/or socialization should be examined more explicitly. For example, the

sample could be further reduced to those individuals whose biological gender and gender role differ, and then it could be determined which pattern found above (BPD relative to ASPD or HPD relative to NPD) is most prominent. Third, other sources of information, such as significant others or peer sources, could be used to assess for differences in findings across sources as well as to check the reliability of the self-report data. Finally, treatment studies could be carried out with individuals considered high on psychopathic traits, to determine whether validated treatments for personality disorders are efficacious. Such research would help solidify or negate the clinical implications of this research.

APPENDICES

APPENDIX A

Web-based Consent Form

Consent to Participate in Research

Project Title: DISINHIBITION MECHANISMS IN A STUDENT POPULATION

Principle Investigator: Michelle Carroll, M.A. and Kristin Stevens, B.A.

Faculty Sponsor: Stephen Hibbard, Ph.D.

After reading each point, indicate that you understand each point by clicking on the box.

At the end of the form, if you agree to participate, also click on the "I consent to Participate" button. If you have any questions contact the principle investigators via e-mail: steve1c@uwindsor.ca

1. General purpose. For the past few years, studies have been conducted attempting to show how different "mechanisms of disinhibition" affect people's behaviour. "Mechanisms of inhibition" are the ways in which people stop themselves from doing things they don't want to do. Whereas, "mechanisms of disinhibition" are ways that people have trouble stopping themselves from doing things that they shouldn't do. The purpose of the present study is to look at what other personality characteristics may influence these two mechanisms. Another purpose of this study is to investigate the role of gender differences in the manifestation of personality characteristics and emotional problems.

☐ I understand

2. Procedures. For the purpose of this study I will be asked to complete a number of questionnaires pertaining to motivation, personality and other behaviours.

☐ I understand

3. Risks. I understand that there are no significant physical risks or likelihood of psychological injury as a result of reading these lists and giving my ratings. A few of the responses may cause temporary embarrassment or may remind me of acts or situations in my personal life I would rather not recall. However, the questionnaires have been filled out without any lasting effects by thousands of people. If, after responding to the items in these questionnaires, you experience any unpleasant emotions and feel the need to talk to someone about these emotions, help can be found at the Student Counselling Centre (2nd floor of the CAW Centre 253-3000

x4616). If you prefer to seek help elsewhere, a list of resources is available to you through the Student Counselling Centre or through the Psychological Services Centre.

☐ I understand

4. Confidentiality. I understand that my ratings will be completely confidential. There will be no recording of my name or any information that identifies me in any way with my responses. The results of the study showing group data may be later published.

☐ I understand

5. I understand that a summary of the results of the research will be posted on the University of Windsor Research Ethics Board website at www.uwindsor.ca/REB.

☐ I understand

6. I understand that my participation in the process is completely voluntary and that I will be able to withdraw at any time from the study without the loss of bonus points.

☐ I understand

7. I understand that the data collected in this study may be used to test subsequent research questions that may be either developed from the results of the current study or related studies. In such cases, the identity of each participant will remain completely confidential.

☐ I understand

8. I understand that this study has been reviewed and received ethics clearance through the University of Windsor Research Ethics Board. If you have questions regarding your rights as a research subject, contact:

Research Ethics Co-ordinator
Telephone: 519-253-3000, # 3916
University of Windsor E-mail: lbunn@uwindsor.ca
Windsor, Ontario
N9B 3P4

☐ I understand

Click here to indicate that you voluntarily consent to participate in the research project. I consent to participate

APPENDIX B

Web Login Page

Project Title: DISINHIBITION MECHANISMS IN A STUDENT POPULATION

Principal Investigators: Michelle Carroll, M.A. and Kristin Stevens, B.A.

Faculty Sponsor: Stephen Hibbard, Ph.D.

For this study you are asked to complete a number of questionnaires pertaining to how you act and your beliefs about yourself and your behaviour. While this site is as user-friendly as possible, completing these questionnaires is time-consuming and may take you a few hours. Please try to complete all of the questionnaires in one sitting. It is important for the validity of the findings that you be in the same state of mind (i.e. mood) when completing all of the questionnaires. However, you may not have time to complete all of the questionnaires at once or may experience technical difficulties or have unexpected interruptions. For these reasons, this website was developed so that you may return to the login page and continue to complete the questionnaires on more than one occasion. This website is set up so that you have one week to complete all of the questionnaires before your Username and Password expire.

If you need to come back to any of the questionnaires, return directly to this login site and click on the link for the questionnaire where you left off.

If you have any problems completing the questionnaires please click here Help Site or contact Kristin Stevens via e-mail at any time at steve1c@uwindsor.ca.

You are also free to review the consent form that you must submit at the beginning of the study at any time by clicking on this link: Consent form

Many of the questions within and across the questionnaires are similar to one another. It is very important for the accuracy of the results of this study that you answer all of the questions as truthfully as possible. Also, please complete the questionnaires in the order that they appear in the table of contents.

Thank you for participating in this research,

Michelle Carroll and Kristin Stevens

Please Enter the following information:

Please enter your id: [ ]

Password: [ ]

APPENDIX C

Web Status Page

Our database shows that the following information has been completed by you. 0% are marked with "X" and therefore means you have not completed that questionnaire.

Participant:**1249**
This session was activated on : **Wednesday June 15, 2005**
Your session will expire on:**Tuesday March 11, 2008**

N.B. Please complete the questionnaires in the order that they appear in the status table.
Also, when saving the questionnaires, only click on the "save" button once. Sometimes it may take a few seconds before the status page reappears.

	Section	Status	Completed (%)
	Consent Form	👍	100%
	Questionnaire 1	👍	100%
	Questionnaire 2	👍	100%
	Questionnaire 3	👍	100%
	Questionnaire 4	👍	100%
	Questionnaire 5	✖	0%
	Questionnaire 6	✖	0%
	Questionnaire 7	✖	0%
	Questionnaire 8	✖	0%
	Questionnaire 9	✖	0%
	Questionnaire 10	✖	0%
	Questionnaire 11	✖	0%
	Questionnaire 12	✖	0%
	Questionnaire 13	👍	100%
	Questionnaire 14	✖	0%
	Questionnaire 15	✖	0%
	Questionnaire 16	✖	0%
	Questionnaire 17	👍	100%
	Questionnaire 18	✖	0%

	Questionnaire 19		100%
	Questionnaire 20		100%
	Log-off		

Please e-mail the primary investigators (steve1c@uwindsor.ca) once you have completed the study to receive a more detailed description of the study and to confirm that your bonus marks have been submitted to the participant pool.

APPENDIX D

Introduction to Website

Dear Participant Pool Student,

We are Michelle Carroll and Kristin Stevens, two graduate students in the department of Psychology working under the supervision of Dr. Stephen Hibbard. We received your name and e-mail address from the Psychology Participant Pool office as a psychology student who is interested in participating in research in exchange for bonus points in a psychology class. You are eligible to receive up to three (3) bonus marks for your participation in this study for psychology courses in which the professor is offering extra credit for research participation. The study concerns disinhibition mechanisms (the ways in which people have trouble stopping themselves from doing things they do not really want to do) and gender differences as they predict personality and emotional problems. We are asking students to complete a number of questionnaires on personality, and emotional well-being.

We have tried to make our data collection methods as simple and user-friendly as possible. For this purpose, we have created a website where participants may complete the questionnaires at their convenience from any computer with high speed Internet access (i.e., from your home or from the U of W campus). However, there is one requirement in order to participate in the study. You must have an e-mail address that you regularly check in order to receive messages from us during the study. The questionnaires take approximately 2-1/4 hours to complete. If you opt to participate in our study, once we send you a UserID and Password, you would have one week to complete the questionnaires before the Password expires. While we ask that you answer all of the questionnaires in one session, if you run out of time or become too tired, you can logout and return to the website at a later time to complete the rest of the questionnaires. After completion of the questionnaires no later than one week after receiving your password, you would notify us by e-mail that you have completed. You would then receive your bonus points. You may at any time notify us that you have decided to withdraw from the study without penalty. Once you receive the password, the software used to implement the study advises us whether or not you have completed the questionnaires. This is so we may monitor progress. Four days prior to the expiration of your password (three days after you receive it), if you have not completed the questionnaires, you will receive a reminder to complete them. It is very important that you comply with this reminder, because the password expires one week after you receive the password. When you complete the questionnaires, you will send us an e-mail and we will notify the Participant Pool to award your bonus points in the participating Psychology course you have so designated. If you do not comply with the reminder to complete the questionnaires, it is assumed you have decided not to participate, and your name will be returned back to the participant pool. We check our e-mail daily and we strongly encourage your requests for help of any sort in participating in this study. When we conclude the study, we will post a summary of the results on the University of Windsor Research Ethics Board website at www.uwindsor.ca/REB.

You would not need to worry about confidentiality of your responses because all your data would be coded to a research number that is not associated with your student ID number, your name, or any other identifying information. All of your responses will remain completely confidential.

If you wish to participate, please reply to this message and we will send you the web address and your UserID and Password for the study. Make sure you also specify to which course(s) you would like the three (3) bonus marks assigned, and of course, make sure that the professor in that course is actually offering bonus point credit for research participation.

Hope to hear from you soon,
Kristin and Michelle

APPENDIX E

Help Site

Help completing the questionnaires

This Web site has been developed to be as user-friendly as possible. There are twenty (20) questionnaires and a consent form that must be completed. It will take approximately two and a half hours to complete all of them but you can "log out" and return at a later time to complete the study in its entirety.

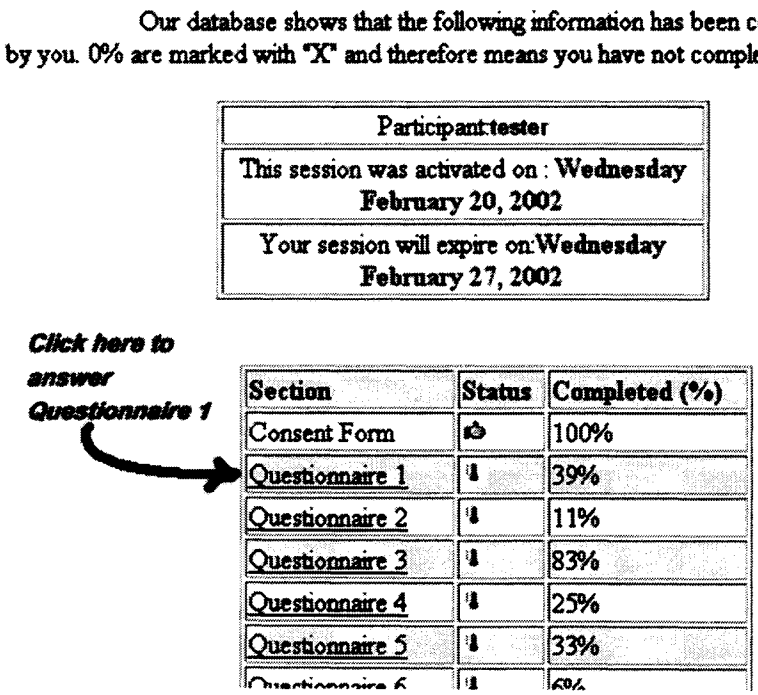
Logging into the site

You will have received a Username and a Password which enable you to login as often as you'd like within a period of time to complete all of the questionnaires. Please ensure that you log out whenever you leave your computer so that unauthorized individuals do not alter your responses.

Your session is "activated" once the experimenter creates your username and password. You will be sent an e-mail once that has been accomplished. From that point you have seven days to complete all twenty questionnaires. After seven days your session will expire and you will not be able to log in again.

The Status Page

A status page will appear after you have logged in. The page appears similar to the picture shown below.



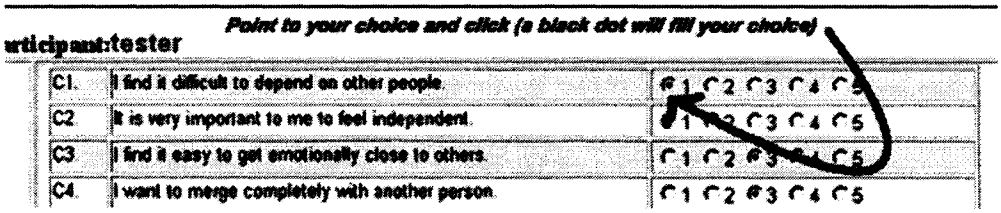
The status page allows you to select which of the twenty questionnaires you'd like to fill out. You just point to the Questionnaire in the list and click on the link.

We ask that you complete the questionnaires in the order in which they appear in the status table.

You'll also notice a status column to the right of the questionnaire link and a column showing the number of questions completed for that questionnaire expressed as a percent. Your status will change to a "thumbs up" picture when you have answered all of the questions.

Selecting your responses

Use your mouse to move the cursor over the radio button that is to represent your answer. Then click the left button. A black dot will remain inside the circle to indicate your selection. If you change your mind just repeat the process to select a different choice. The black dot will move to your new selection.



The last questionnaire

In the last questionnaire, you are asked to provide some information about yourself such as the number of years you have completed in school. You can click on the blank boxes and type out your answer using your keyboard.

APPENDIX F

Confirmation of Interest/Login Information

Dear _____,

Thank you for agreeing to participate in our study. Here is your Userid and Password:

Userid: _____

Password: _____

The survey can be found at the following Web Site:

www.uwindsor.ca/pg

If you haven't already done so, please send us the course(s) you would like the three (3) bonus marks assigned to, including your section number.

If you need help completing the questionnaires please click on the Help Site link for further instructions. You may also contact us at any time via e-mail if you have any questions or problems with the web site.

You will receive three (3) bonus marks for participating in this study. If you haven't already, make sure you let us know which course(s) you would like the three (3) bonus marks assigned to.

You have 7 days to complete the survey in order to receive your bonus marks. Please send us an e-mail when the survey is complete so that we can ensure your bonus marks are submitted.

Thanks,

Kristin

APPENDIX G

Purpose of the Study/ Debriefing

Dear Participant Pool Student,

Thank you for participating in our research study. Your bonus mark information has been recorded and will be sent to the participant pool very soon. The purpose of this study was to test a few different research hypotheses. One of these centred on personality traits known as disinhibition mechanisms and other factors that may lead to the encouragement of gambling behaviours (i.e., why people like to gamble) and gambling problems. You were selected to participate in this study simply because you indicated when you enrolled in the participant pool that you have gambled in the past.

A second research hypothesis that will be tested using the data gathered in this study is to look at the influence of biological sex and gender identity and how these influence the development of personality and personality problems.

If you have any additional questions about this study, feel free to contact us via email and we will try to answer them as best we can.

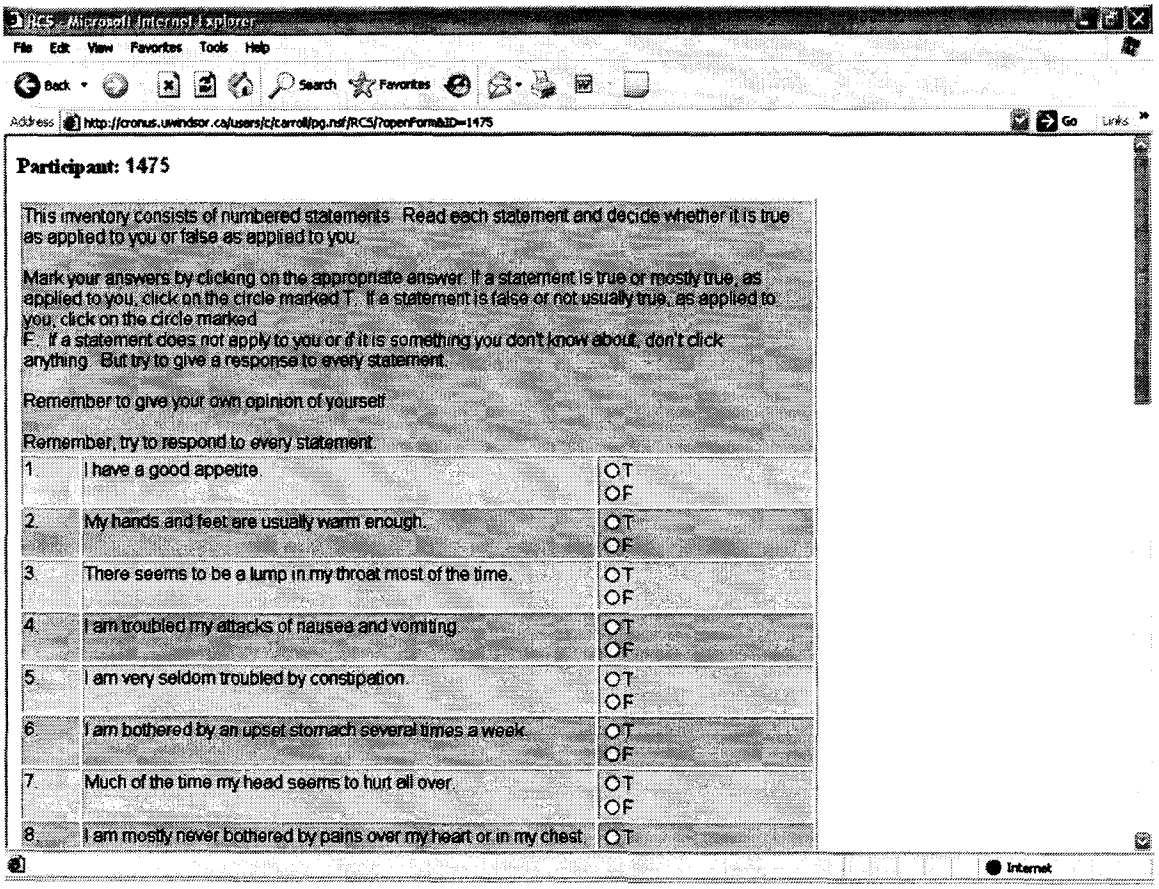
Thanks,

Kristin Stevens, B.A. and Michelle Carroll, M.A.

Clinical Psychology Graduate Students
Department of Psychology
University of Windsor

APPENDIX H

Example of Web-based Questionnaire



RCS - Microsoft Internet Explorer

File Edit View Favorites Tools Help

Back Search Favorites

Address http://cronus.uwindsor.ca/users/c/carroll/pg.nsf/RCS/?openForm&ID=1475

Go Links

Participant: 1475

This inventory consists of numbered statements. Read each statement and decide whether it is true as applied to you or false as applied to you.

Mark your answers by clicking on the appropriate answer. If a statement is true or mostly true, as applied to you, click on the circle marked T. If a statement is false or not usually true, as applied to you, click on the circle marked F. If a statement does not apply to you or if it is something you don't know about, don't click anything. But try to give a response to every statement.

Remember to give your own opinion of yourself.

Remember, try to respond to every statement.

1.	I have a good appetite.	○T ○F
2.	My hands and feet are usually warm enough.	○T ○F
3.	There seems to be a lump in my throat most of the time.	○T ○F
4.	I am troubled my attacks of nausea and vomiting.	○T ○F
5.	I am very seldom troubled by constipation.	○T ○F
6.	I am bothered by an upset stomach several times a week.	○T ○F
7.	Much of the time my head seems to hurt all over.	○T ○F
8.	I am mostly never bothered by pains over my heart or in my chest.	○T

Internet

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