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Personality Constellations in Incarcerated Men Who Scored High on Psychopathy

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Personality Constellations in Incarcerated Men Who Scored High on Psychopathy

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B.A. *summa cum laude*, Connecticut College, 2002

M.A., Emory University, 2005

Advisor: Drew Westen, Ph.D.

An abstract of

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Abstract

Personality Constellations in Incarcerated Men Who Scored High on Psychopathy

By Pavel S. Blagov

Recent advances in the operationalization of psychopathy have led to an increased understanding of the boundaries, the structure, and the nomological network of its construct. Research has reached a point where the empirical identification of replicable and theoretically meaningful psychopathy variants may lead to further advances in the field. We reviewed for theoretical models that account for psychopathy subtypes and conducted a classification study of 91 incarcerated men who met conventional criteria for high levels of psychopathy as defined by Hare's (1991) Psychopathy Checklist – Revised. We expanded upon the methodology of previous research on psychopathy subtypes by utilizing a comprehensive personality assessment instrument (the Shedler-Westen Assessment Procedure – II; Westen & Shedler, 1999) and a prototype matching approach to classification. The analyses revealed a primary (malignant narcissistic) subtype and a secondary (hostile and dysregulated) subtype that were generally consistent with the previous literature and lent support to Patrick's (2007) application of the dual-process model and the neurophysiological theory of affect to psychopathy. We also found limited evidence for a pseudopsychopathic (thrill-seeking) subtype. External validation analyses, statistical controls, and incremental validity analyses provided substantial support for the primary and secondary subtypes (but not for the thrill-seeking one). Future studies on the diagnosis, etiology, prevention, and treatment of psychopathy will likely benefit from taking into account its primary and secondary variants.

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Personality Constellations in Incarcerated Men Who Scored High on Psychopathy

Because a small number of individuals (mostly men) commit the majority of crimes (Farrington, 2005; Moffitt, 1993), psychiatric classification has sought to understand mental health contributors to criminality. Constellations of personality characteristic that predispose individuals toward antisocial behavior and criminality (antisocial personalities) have been of particular interest to experts in psychiatry and criminology alike (Lykken, 1995). A constellation of characteristics called the psychopathic personality (Cleckley, 1941/1982; Hare, 1970) has emerged as a malignant form of personality pathology that predicts a plethora of undesirable outcomes related to crime, violence, recidivism, and resistance to change (Hare, 1998). Following significant advancements in the operationalization and understanding of psychopathy as a unitary construct (Hare, 1996), the field is at a point where further progress may depend on understanding the variants of psychopathy (Cooke, Michie, & Hart, 2006; Hervé, 2007; Skeem, Poythress, Edens, Lilienfeld, & Cale, 2003). I investigated empirically personality subtypes in highly psychopathic male offenders. First, I outline the history, advances in operationalization, and significance of the psychopathy construct. I then summarize the theories and research that informed the current study, and I present the findings.

History of the Psychopathy Construct

The concept of a sociopathic or antisocial personality emerged at the turn of the 19th century in works by Pinel, Esquirol, Rush, Pritchard, and Partridge (Barocas, 1970; Lewis, 1974), who observed patients that behaved aggressively, immorally, or illegally in the absence of psychosis, delirium, or irrational thinking and despite repetitively getting in trouble with the law. By the mid-20th century, clinicians noted the presence of heterogeneity among such persons. For example, Alexander (1930) distinguished among neurotic, characterological, and psychotic sociopathy as well as true criminality. Karpman (1946) endorsed the distinction between a theoretically endogenous condition he called primary psychopathy and an overtly similar disorder with putative psychosocial etiology he termed secondary sociopathy. Cleckley's (1941/1982)

influential monograph aimed to delineate the characteristics that distinguished individuals with genuine personality disturbance. He described psychopathy as a syndrome with features related to affect, interpersonal functioning, and disinhibition: remorselessness, egocentricity, an incapacity for love, impoverished emotionality, deceitfulness, superficial charm, interpersonal unresponsiveness, unreliability, poor judgment, and aimlessly self-defeating antisocial acts. Until the adoption of Cleckley's criteria as an approximate consensual definition of psychopathy in the 1980's, research on psychopathy suffered from controversies and inconsistencies surrounding its measurement (Lilienfeld, 1994).

Since the 1980's, however, researchers have developed reliable, valid, and useful measures of psychopathy (Lilienfeld, 1998) that have enabled productive research on its taxometrics, psychophysiology, neurobiology, etiology, developmental psychopathology, course, and treatment. The pivotal development in psychopathy assessment for research and clinical use in forensics was Hare's (1980) operationalization of Cleckleyan psychopathy with the Psychopathy Checklist (currently in its revised form, the PCL-R, second edition; Hare, 2003). Because of its role in attaining reliability and demonstrating construct validity, it has been treated as the "gold standard" (Brinkley, Newman, Widiger, & Lynam, 2004) of psychopathy assessment. With a prevalence of 1% in the general and up to 25% in prison populations, PCL-R psychopathy is a strong contributor to criminality and violence (Hart & Hare, 1996). In prison samples, psychopathy is linked to having an earlier delinquency onset, wider variety of offences, greater likelihood to reoffend or violate parole, greater degrees of criminal and institutional violence, and poorer treatment outcome (Brinkley *et al.*, 2004; Hart & Hare, 1996; Porter *et al.*, 2000). Linked to violent behavior in childhood, adolescence, and adulthood, psychopathy predicts future violence both in violent criminal offenders and in non-forensic psychiatric patients (Porter & Woodworth, 2006). Furthermore, unlike non-psychopathic violent offenders, whose aggression is most commonly reactive, violent psychopathic individuals aggress in instrumental and goal-driven ways as well as reactively (Blair, Mitchell, & Blair, 2005).

The advances in studying psychopathy in adult forensic populations are paralleled by the development of equivalent assessments for youths (Hare & Neumann, 2006) as well as self-report inventories of psychopathy for research with non-institutionalized or non-criminal populations (Levenson, Kiehl, & Fitzpatrick, 1995; Lilienfeld, 1990). This research has helped clarify the boundaries of the psychopathy construct and its nomological network, and it has increased our confidence in the significance of Cleckleyan psychopathy and our ability to operationalize and assess it (Lilienfeld, 1996; Lilienfeld & Fowler, 2006). Remarkably, a personality constellation very similar to Cleckleyan psychopathy has repeatedly emerged empirically in factor-analytic studies of patients with personality pathology using comprehensive personality assessment instrumentation that was not designed with the psychopathy construct in mind *per se* (Westen & Shedler, 1999b; Westen, Waller, Shedler, & Blagov, in review). In sum, although many questions about the nature of psychopathy remain to be addressed, the scientific community has reached a shared general understanding of how I can measure psychopathy and how people who score high on psychopathy differ from those who do not.

More than 60 years ago, Cleckley (1941/1982) discouraged studying variants of psychopathy until the general construct had been delineated and understood well. I are now at a point where the study of psychopathy variants is likely to improve diagnosis and help advance research in this area (Hervé, 2007). Next, I describe the state of the current understanding of heterogeneity within psychopathy in terms of research findings and theoretical accounts.

Heterogeneity in Psychopathy

Two kinds of research can inform our present understanding of heterogeneity in psychopathy: trait-centered and person-centered studies. Trait-centered studies identify items, symptoms, or descriptors that covary. Such patterns of covariation are thought to reflect factors or latent structures. Person-centered approaches seek subtypes of the disorder defined by clusters of participants, patients, inmates, and so forth that resemble each other in their item or symptom profiles and differ from the rest. Such clusters may be thought of as classes and, in some cases,

they may be naturally occurring classes called taxa (Meehl, 1992). I first review the trait-centered research on the factor structure of psychopathy and then focus on person-centered clinical descriptions and empirical investigations of psychopathy subtypes.

Factor Structure of Psychopathy. Originally, research on the psychometrics of the PCL-R (Hare, 1991; Harpur, Hare, & Hakstian, 1989) uncovered two oblique (r = .5 to .6) yet separable factors: Factor 1 captures aspects of emotional and interpersonal functioning (e.g., callousness, dominance, detachment, manipulativeness), whereas Factor 2 captures a deviant or unstable antisocial lifestyle (impulsivity, irresponsibility, and aggression). This conceptualization of Factor 2 may not be optimal, because it emphasizes behavior rather than personality. Instead, Factor 2 items may be summarized as the person's being very low on the temperament dimension of constraint (Lilienfeld, 1994).

Factor 1 has an inverse relationship to negative emotion, whereas Factor 2 correlates positively with neuroticism (Frick, Lilienfeld, Ellis, Loney, & Silverthorn, 1999), substance abuse, and suicidality. Factor 2 scores are linked to diagnoses of Antisocial Personality Disorder (ASPD) and Conduct Disorder (CD) more closely than are Factor 1 scores (Blair & Frith, 2000; Frick, O'Brien, Wootton, & McBurnett, 1994), whereas Factor 1 items and scores appear to have greater discriminant ability than Factor 2 (Cooke & Michie, 1997). Thus, the disaggregation of psychopathy into two separate but intercorrelated dimensions could mean different things: (a) that Factor 1 captures the underlying personality construct whereas Factor 2 captures the behavioral expression or characteristic adaptations of psychopathy (Lilienfeld, 1998); (b) that Factor 1 and Factor 2 capture the expression of the same underlying pathology in two different domains of personality functioning; (c) that they capture two facets of the same construct; (c) that they capture the level of expression of different psychopathy subtypes; or (d) that Factor 1 corresponds to psychopathy, whereas Factor 2 corresponds to ASPD or another variety of antisocial personality that is not psychopathy and has separate etiology. In addition, personality pathologists and forensic psychologists may informally refer to a "Factor 1 psychopath" and "Factor 2

psychopath," implying that these correlated yet distinct factors may correspond to two subtypes of the same syndrome. Thus, the two-factor model of psychopathy is familiar, replicable, and generative in terms of research, but its implications for assessment and practice are unclear.

More recent factor-analytic studies of the PCL-R complicate the picture. Cooke and Michie (1997, 2001; Cooke *et al.*, 2006) argued for a three-factor structure (see Table 1) based on statistical analyses that used more rigorous methods than the original factor-analyses by Harpur and colleagues (1989). The three-factor structure has tended to replicate. This led Hare (2003) to subsume it under his new four-factor model that groups four of the remaining items into a fourth factor, thus leaving out two items related to relationship instability and promiscuity. Such self-report measures as the Levenson Primary and Secondary Psychopathy scales (Levenson *et al.*, 1995) and the Psychopathic Personality Inventory (Lilienfeld, 1990, 1996) have yielded two-factor structures akin to the two original PCL-R factors (Benning, Patrick, Hicks, Blonigen, & Krueger, 2003). On the other hand, a recent factor analysis of a new self-report inventory of psychopathic traits in adolescents and youths yielded three factors in a sample of 115 adolescent boys from the United Kingdom (Dolan & Rennie, 2006). It seems that solutions with more than two factors describe domains of personality functioning rather than coherent syndrome subtypes and that their relevance to improving diagnosis may be lower than that of the two-factor model.

In sum, while future research may clarify the matter, factor studies leave unanswered the question what psychopathy is (Lilienfeld, 1994, 1998). At present, the extent to which the intercorrelated but separate dimensions uncovered by factor analysis of psychopathy measures capture different facets of the same constructs, the level of expression of different psychopathy subtypes, or simply the expression of a unitary phenomenon in different domains of psychological functioning is not clear. If the two-factor model of psychopathy reflects subtypes, then the classification of individual into subtypes is likely to have important implications because of the factors' disparate associations with serious psychiatric and forensic outcomes.

Psychopathy Subtypes. Karpman (1946), Arieti (1963), Lykken (1995), Millon and Davis (1998) and others provided clinical descriptions of psychopathy subtypes and speculated about ways of classifying "psychopaths." Karpman's theory was perhaps the first widely recognized typology of psychopathic personality (Skeem *et al.*, 2003), distinguishing between primary and secondary subtypes. The two subtypes have similar antisocial, aggressive, and amoral behavior, and both lack a regard for the feelings of others, but they differ in etiology and motivation. Karpman's "primary psychopath" is a "true psychopath," in the sense that such an individual has a constitutional deficit of conscience that makes possible and likely the callous, manipulative, glib, selfish, and untruthful behavior. "Secondary sociopaths," on the other hand, behave antisocially and immorally as a result of neurotic difficulties surrounding the regulation of anxiety and impulsivity that originate in poor parenting and emotional conflicts. Whereas the primary subtype is planful, purposeful, goal directed, and self-centered, the secondary one is emotionally reactive and impetuous but occasionally capable of experiencing guilt or feeling and seeking affection. PCL-R Factor 1 scores may describe Karpman's "primary psychopath," whereas high Factor 2 scores may capture a neurotic and disinhibited "secondary sociopath." Arguably, Karpman's (1946) classification has received the most support to date, perhaps because of its parsimony.

More elaborate clinical classifications can be found in the literature. For example, Arieti (1963) argued descriptively for the presence of a simple, complex, dyssocial, and paranoiac subtype. The simple one resembles Karpman's primary subtype and is driven by immediate gratification, lacks the ability to attach meaningfully to others, and has difficulty anticipating the future. Subsequently, he or she is unable to anticipate anxiety or punishment, lacks conscience, and cannot form loyalties. This kind of person may or may not have above average hostility, but will act on hostile impulses because of the inability to delay gratification. The complex type is similar but more intelligent, more insightful, and therefore more likely to get away with criminal or immoral behavior. The dyssocial kind has a degree of conscience and ability to form loyalties

that are poorly developed and revolve around deviant social groups that provide self-esteem and sanction immediate gratification through antisocial action. The paranoiac type suffers from paranoid delusions and may act out on them. Arieti's ideas were never tested. They will not receive further treatment here, because they partially overlap with the ideas of later theorists (e.g., Lykken, 1995) whose theories are more carefully specified, have received more empirical tests, and will, therefore, be presented in more detail below.

A number of empirical studies have attempted to classify the personalities of criminal offenders, delinquent adolescents, spouse batterers, and other violent individuals (Delsol, Margolin, & John, 2003; Langhinrichsen-Rohling, Huss, and Ramsey, 2000; Megargee & Bohn, 1979; Quay, 1977; Simourd, Hoge, Andrews, & Leschied, 1994). Below, I review studies that are most relevant to the heterogeneity within psychopathy as I currently understand it. Such studies may be divided roughly into three categories: studies that were not genuine subtyping studies but examined theoretically meaningful subgroups of psychopathic individuals, cluster analyses of prisoner samples that found two or more personality types that resembled psychopathy, and cluster analyses of "psychopaths."

Lykken's (1957) classic study deserves a mention, even though it was not a clustering endeavor *per se*. Cleckley (1941/1982) had suggested that an emotional deficit interfered with the development of normal personality in psychopaths, and Lykken hypothesized that the absence of fear (which he assumed was necessary for socialization through anticipation of punishment and avoidance learning) would characterize genuine "psychopaths." He recruited prisoners who had been deemed psychopathic and who had been nominated to participate because they either resembled closely Cleckley's 16-point prototype of a "mask of sanity" (and the concept of the primary psychopath) or they resembled Karpman's (1948) concept of the neurotic/secondary sociopath. Lykken (1957) found that "neurotic psychopaths" scored higher than non-psychopathic prisoners and "primary psychopaths" on regular measures of anxiety, but that they scored intermediate on a measure designed to capture the preference for fear-inducing, risky, or

dangerous situations and activities as opposed to boringly annoying events and tasks. Primary psychopaths scored the highest on the measure, suggesting that they were not motivated to avoid fear. The primary and, to a lesser degree, the secondary type showed poor aversive classical conditioning of an electrodermal response to a buzzer in anticipation of electric shock as well as poor learning of passive avoidance of electric shock in a maze task. This was the first rigorous demonstration of disaggregation of psychopathy, even though the classification of participants into groups was based on clinical judgment rather than empirical-statistical methods. It leaves open the question whether or not such disaggregation would emerge when using empirical-statistical (actuarial) classification.

A recent study used a much more formal way of classifying inmates into primary and secondary psychopathy groups and examined the distinction with self-report measures (Newman, MacCoon, Vaughn, & Sadeh, 2006). After classifying 227 inmates with high PCL-R scores into a primary (*N*=107) and secondary (*N*=110) groups on the basis of their Factor 1 and Factor 2 scores as well as scores on the Welsh Anxiety Scale, Newman and colleagues compared the two groups to non-psychopathic controls along self-report measures that theoretically assessed behavioral activation, behavioral inhibition, as well as reward and punishment sensitivity. Primary psychopathy was associated with low sensitivity to punishment and low behavioral inhibition, whereas secondary psychopathy was associated with high sensitivity to reward, high sensitivity to punishment, and high behavior activation. Behavioral inhibition in secondary psychopaths was somewhat higher but not statistically different from that of controls. This study was not a genuine subtyping study either, but it is of importance because of its explicit intent to test a psychopathy classification from a theoretically informed perspective.

Some clustering studies that did not sample on the basis of psychopathy status are also relevant, because they found subtypes of offenders that may be psychopathy subtypes. In an early cluster analysis of the Minnesota Multiphasic Personality Inventory (MMPI) profiles of 79 male patients from a security hospital, Blackburn (1975) found four personality types, two of which

resembled psychopathy. Both psychopathic types had aggressive, impulsive, and undersocialized features, but the first was extraverted and relatively free of anxiety or guilt whereas the second had features of anxiety and depression related to neuroticism as well as social withdrawal.

In another study that did not subtype "psychopaths" *per se*, Alterman and colleagues (1998) used PCL-R factor scores, measures of CD, ASPD symptoms, and the Socialization scale of the California Psychological Inventory (Gough, 1987) to cluster analyze 252 methadone patients. Measures of anxiety, depression, hostility, and guilt provided external criterion validation. Three of the types included no individuals who matched the psychopathy construct, allowing inference regarding psychopathy subtypes. Type 3 (*N*=45) had moderate antisocial behavior related to emotional instability, Type 4 (*N*=42) had antisocial behavior related to drug use, and Type 6 (*N*=70) had low antisocial behavior. Importantly, individuals falling in the other three types had higher psychopathy scores and 47-70% met a liberal diagnostic cutoff of PCL≥20, allowing some inference regarding psychopathy subtypes. Type 1 (*N*=27) had a high level of antisocial behavior with an early onset as well as high levels of anxiety, depression, and verbal, assaultive, and indirect hostility. Type 2 (*N*=30) had a high level of antisocial behavior with a later onset and also suffered from anxiety and depression. Alterman and colleagues (1998) deemed Type 1 and Type 2 to be varieties of secondary psychopathy. Type 5 (*N*=38) had a moderate level of antisocial behavior accompanied by classic features of primary psychopathy, including low anxiety, guilt, and depression. The findings were somewhat consistent with the literature on the differential association of Factors 1 and 2 from the PCL-R with antisocial behavior.

A cluster analysis of PCL-R items (Haapasalo & Pulkkinen, 1992) in a sample of non-violent male offenders from Sweden identified a group (N=27 or 29%) of men who had high scores on items from Factor 1, a group (N=23 or 25%) who scored high on items from Factor 2, and a larger group (N=42 or 46%) who appeared to be non-psychopathic (albeit impulsive) criminals. With high scores on glibness, grandiosity, manipulativeness, remorselessness,

callousness, shallow emotionality, irresponsibility, and lack of realistic long-term goals, the first group resembled the construct of a primary psychopath. With high scores on items related to poor behavior controls and early antisocial behavior, the second group resembled the secondary psychopath construct and had the greatest number of criminal convictions when compared to the first and to the third groups.

Blackburn and Coid (1999) sought personality disorder subtypes in a sample of 164 violent male offenders from a maximum security hospital (*N*=82) and from the special units for disruptive inmates in three English prisons (*N*=81). Of these men, 47% (78) met the diagnostic cutoff (PCL-R total score ≥ 30) for psychopathy. The authors used Ward's method of cluster analysis with personality disorder symptoms obtained with the Structured Clinical Interview for DSM-III Axis II Personality Disorders (Spitzer, Williams, & Gibbon, 1987). Six subtypes emerged and then replicated approximately in two random half-samples from the overall sample: (1) antisocial-narcissistic (N=37); (2) paranoid-antisocial (*N*=25); (3) borderline-antisocial-passive-aggressive (*N*=26); (4) borderline (*N*=50); (5) compulsive-borderline (*N*=13); and (6) schizoid (*N*=13). The subtypes differed markedly in their PCL-R scores. In particular, the average PCL-R total scores of the antisocial-narcissistic, paranoid-antisocial, and borderline-antisocial-passive-aggressive subtypes ranged from 31-32, whereas the PCL-R total scores of the remaining groups ranged from 18-21. Approximately 80% of the men from each of the first three groups had PCL-R total scores ≥ 29; these percentages ranged from 8-15 in the other groups. The three psychopathic groups did not differ in their scores on Factor 2 of the PCL-R. Their Factor 2 scores were significantly higher than those of the non-psychopathic groups. On Factor 1, groups 1 and 2 were higher than group 3, which was higher than the non-psychopathic groups. The psychopathic groups tended to have begun engaging in crime earlier and to have greater numbers of criminal convictions, violence convictions, and burglary convictions than the non-psychopathic groups. Groups 1 and 3 had greater numbers of convictions for violence and burglary than Group 2, whereas Group 2 had a greater number of convictions for fraud. Group 2 evidenced a tendency

toward a history of psychotic disorders, whereas Group 3 had a significantly greater history of mood and anxiety disorders than Group 1. The psychopathic groups had significantly greater substance abuse histories compared to the non-psychopathic groups but did not differ among each other in this respect. In summary, Blackburn and Coid (1999) appear to have found, on the basis of clustering symptoms of personality disorders, an antisocial-narcissistic subtype that resembles the notion of primary psychopathy, as well as two kinds of secondary subtypes, one that is peculiar, withdrawn, and mistrustful, and one that is emotionally dysregulated, insecure, dependent, and vulnerable.

Hicks, Markon, Patrick, Krueger, and Newman (2004) studied subtypes by clustering general personality descriptors in 96 men from a maximum- and a medium-security prison who met a diagnostic cutoff for psychopathy (PCL-R total scores ≥ 30). Variables from the Multidimensional Personality Questionnaire – Brief Form (MPQ-BF; Patrick, Curtin, & Tellegen, 2002), a hierarchical personality inventory representing a three-factor model of temperament and personality, were fitted in model-based cluster analysis to a total of 54 possible models differing in their assumptions about the number of subpopulations as well as the shape, volume, and orientation of the subpopulations in multivariate space. The best-fitting models had two clusters, and the authors selected the one with the best fit statistics. The two subgroups received the labels "emotionally stable psychopaths" (akin to primary) and "aggressive psychopaths" (akin to secondary), because of the pattern of findings about the ways in which their personalities compared to normative data and to prisoner controls (see Table 2). In addition, the aggressive subtype scored higher than emotionally stable ones on Stress Reaction, Alienation, and Aggression but lower on Well Being, Achievement, and Control. In terms of higher-order factors, the aggressive subtype had higher scores on Negative Emotionality and lower scores on Constraint and Agentic Positive Emotionality when compared to the emotionally stable one. Participants falling into the aggressive psychopathy cluster engaged in greater numbers of fights as children and as adults, had earlier ages of first criminal charges, and endorsed greater problems

with alcohol use relative to emotionally stable ones. Those falling into the emotionally stable psychopathy cluster had greater estimated IQ on a vocabulary measure and scored higher on self-report measures of socialization and anxiety. Thus, participants comprising the emotionally stable subtype resembled the historical notion of primary psychopathy in that they described themselves as immune to negative emotions resulting from unpleasant events, as socially domineering but lacking in closeness, and as planful and sensation-seeking rather than impulsive. Their profiles deviated significantly but not extremely so from those of control prisoners, suggesting that, in certain circumstances, they might come across as normal (a Cleckleyan "mask of sanity"). On the other hand, in addition to an extreme elevation in aggression, the aggressive subtype was much more maladjusted, differing from norms in an undesirable direction on most scales of the MPQ-BF. It compared unfavorably to primary psychopathy along a number of external criteria related to antisocial history. Reliance on self-report for the personality and personal history data was the major limitation of this study. As with other studies, the use of cluster-analysis makes the pattern of findings relatively susceptive to the effects of randomness and measurement method.

In a Brazilian forensic sample of 56 men with PCL-R scores of 23 or greater, Morana, Camara, and Arboleda-Florez (2006) cluster-analyzed the checklist data using several possible algorithms, each time finding two clusters. Items loading on Factor 1 described the first cluster best (grandiosity, manipulativeness, remorselessness, callousness, shallow emotionality, and failure to accept responsibility), although three Factor 2 items (lack of realistic long-term goals poor behavioral controls impulsivity) also characterized participants from this group. The second cluster was associated mostly with Factor 2 items (need for stimulation, parasitic lifestyle, promiscuity and multiple affairs, irresponsibility, juvenile delinquency, early behavior problems, criminal versatility, revocation of conditional release) but also with glibness and lying (which usually load on Factor 1). These data roughly replicate Haapasalo and Pulkkinen's (1992) study and might reflect primary and a secondary psychopathy subtypes, but they might also reflect a

grouping of primary and secondary psychopaths in the first cluster and a grouping of chronically criminal individuals who are not highly psychopathic (sociopathic perhaps) in the second cluster.

The most recent subtyping study (Skeem, Johansson, Andershed, Kerr, & Louden, 2007) was a model-based cluster analysis of PCL-R scores based on the three-factor solution (Cooke & Michie, 2001) and a trait anxiety measure. Participants were 123 men who scored in the top third of the distribution of PCL-R scores (M = 33, SD = 2.7) in a sample of 367 Swedish men sentenced to four years or more of incarceration for violent but non-sexual crimes (mean PCL-R scores of 22, SD = 10.3 for the overall sample). Using statistical specifications similar to those from the study by Hicks and colleagues (2004), Skeem's group (2007) limited the analyses to six models with cluster numbers varying from 1-9 (or a total of 54 models). They chose a two-cluster solution as the best-fitting, most parsimonious, and most stable across subsamples and variable sets. This cluster solution had an 87% posterior probability of assigning an individual correctly to a cluster, and the probability of more than 80% of the individuals of the sample to be assigned to the correct cluster was high. The first cluster received the label primary psychopathy and differed from the second cluster (called secondary psychopathy) along the variables used in the cluster analysis as follows. The primary psychopathy cluster (N=74) had similar levels of antisocial behavior but scored lower on anxiety and higher on arrogant and deceitful behavior, deficient emotional experience, impulsive and irresponsible behavioral style when compared to the secondary psychopathy cluster (N=49). In validation analyses, secondary psychopathy was linked to greater levels of Borderline Personality Disorder features, irritability, social withdrawal, lack of assertiveness, and major mental illness, and their global adaptive functioning was lower. However, their scores on self-report measures of impulsivity and narcissism were similar to those in the primary psychopathy cluster.

The research reviewed thus far has certain limitations. Very few studies subtyped individuals who had already been classified as highly psychopathic using *bona fide* PCL-R assessment and conventional cutoff scores. Most studies used cluster analytic methods with

known psychometric disadvantages relying on a limited number of selected traits or PCL-R items for subtyping. Nevertheless, primary and secondary psychopathy subtypes roughly consistent with the clinical descriptive literature have tended to emerge in the empirical literature. The extent to which secondary psychopathy captures a kind of psychopathy (personality pathology rooted in temperament) or sociopathy (antisocial personality resulting primarily from poor or deviant socialization) is unclear, and it is possible that primary psychopathy, secondary psychopathy, and pseudopsychopathy/sociopathy are all found among criminal individuals with high PCL-R scores. Further research on psychopathy subtypes should be informed by theoretical accounts of psychopathy that are consistent with the findings from the trait-centered and person-centered research discussed above.

Theoretical Accounts of the Heterogeneity in Psychopathy

The list of theories of psychopathy is long (Patrick, 2006). A number of theories that explain the development of an antisocial behavioral style in general (Ellis, 1987; Eysenck, 1987, 1997; Newman & Wallace, 1993; Zuckerman, 1990) are not being treated here because they are not specific enough to account for Cleckleyan psychopathy and its putative variants. A number of very specific theories of psychopathy ascribe it to a deficit in emotion (Hart & Hare, 1996), fear (Lykken, 1995; Patrick, 1994), cognitive/affective integration (Shapiro, 1965), and empathy (Blair, 1995). Such specific theories emphasize a single cause and may not account for heterogeneity within psychopathy. Furthermore, they have tended to give rise to more complex theories that take into account psychopathy variants and have the potential to explain the factor-analytic and person-centered findings. Here I treat the theoretical approaches that are most fully developed and that can inform my predictions.

The dual-process model (Fowles & Dindo, 2006) uses Gray's (1987) neurophysiological theory of behavioral motivation to explain variability in temperament and behavior among highly psychopathic individuals. Gray understood behavior as the outcome of three motivational systems: fight-or-flight, behavioral inhibition, and behavioral activation. According to the model

(Fowles, 1987; Fowles & Dindo, 2006) a constitutional weakness in behavior inhibition would produce lack of anxiety, preclude socialization, and lead to antisocial behavior. This part of the model is consistent with primary psychopathy. The model accounts for secondary psychopathy by proposing that excess behavioral activation may lead to impulsive antisocial behavior during states of heightened arousal. Two theorists have elaborated on the dual-process model in ways that lead to somewhat divergent predictions about the personality characteristics that would define psychopathy subtypes.

Lykken (1995) integrated his fear deficit theory of primary psychopathy (Lykken, 1957) with the dual-process model and proposed two pathways to the development of a psychopathic presentation. It predicts primary psychopathy with core features of low fear and low anxiety and a number of derivative features that map onto the PCL-R Factor 1 symptoms of glibness and superficial charm, grandiosity, deceitfulness, guiltlessness, shallow affect, lack of empathy, and failure to accept responsibility for one's own actions. Lykken (1995) also argued that low fear would cause individuals with primary psychopathy to have such features as unreliability, inadequately motivated social behavior, an impersonal sex life, and lovelessness, which do not typically load on Factor 1. Except for unreliability and poor judgment, it is somewhat unclear how these features would derive directly from lack of fear. In my view, the dual-process model as interpreted by Lykken predicts a more circumscribed variant of psychopathy characterized primarily by PCL-R Factor 1 characteristics. As he interprets the dual-process model, secondary psychopathy would be characterized by high activity levels (resulting from high behavioral activation) and impulsivity. This version of the model accounts for the PCL-R Factor 2 items of need for stimulation/proneness for boredom, poor behavioral controls, early behavioral problems, impulsivity, revocation of conditional release, and irresponsibility. It does not account directly for juvenile delinquency, lack of realistic long-term goals, or parasitic lifestyle.

Patrick (2007) offered a slightly different integration between the psychophysiological theory of affect and the dual-process model and also proposed two etiological pathways to

manifest psychopathy. This version of the model leads to somewhat different predictions than Lykken's (1995) version. In the presence of ambivalent or potentially threatening stimuli, both the behavioral activation (orienting and appetitive behavior) and behavioral inhibition (defensive) systems become active. At low aversive stimulus intensities, both systems can be active in parallel. In healthy individuals, at higher aversive stimulus intensities, the two systems act in opposition and the behavior inhibition system triggers avoidance. The threshold of the switch from working in parallel to working in opposition is the fear threshold. Individual differences in behavioral inhibition and activation translate into individual differences in dispositional fear. People with a deficit in behavioral inhibition would have a high fear threshold and their appetitive behavior would persist under contingencies of punishment and nonreward. According to Patrick (2007), this is the basis for a primary psychopathy subtype defined by Factor 1 features. From this view, it follows that primary psychopathy would be linked not only to deficits in negative affect but also to high activity levels (despite normal baseline behavioral activation). Patrick's explanation of secondary psychopathy takes into account findings that implicate response modulation at the level of attentional and executive functioning (Newman, 1998). Individuals with primary psychopathy would attend selectively to appetitive cues and ignore aversive cues because of bias in their affective processing. Individuals with secondary psychopathy would have difficulty attending to aversive cues once appetitive ones activate behavior, but the reason would be essentially a deficit in attention. In this case, behavior in the presence of aversive stimuli persists despite the absence of a major deficit in the behavior inhibition system. The individual with this kind of psychopathy may be prone to negative emotion resulting from the consequences of maladaptive behavior, which the person usually externalizes (Patrick, Hicks, Krueger, & Lang, 2005). Thus, Patrick's (2007) interpretation of the dual-process model predicts a primary subtype with low fear and high activity levels and a secondary subtype with problems related to attention deficit/hyperactivity.

The aggression-inhibition model (Blair *et al.*, 2005) is a critique of the fear deficit and dual-process theories on the grounds that they are underspecified in two ways. First, Blair and colleagues (2005) argued that fearlessness is not attributable to the functioning of a single neural system, because different neural pathways mediate different kinds of fear-related responses (e.g., aversive conditioning vs. instrumental avoidance or social vs. novelty phobias). Second, he questioned the assumption that avoidance of punishment is the primary mechanism of socializing children away from aggressive behavior. Blair argued that this kind of socialization depends on an inherent tendency for empathy with the fear and sadness of other people to inhibit aggressive instrumental behavior. A specific amygdala dysfunction can explain the deficits in emotional experience, perception, empathy, and learning in psychopathic people. In particular, it may explain why psychopathic individuals learn normally in most cases but have difficulty with learning the association between a conditioned stimulus and a negative emotional response (e.g., the anticipation of threat and passive avoidance learning, as demonstrated by Lykken in 1957).

Blair and colleagues (2005) asserted that children with amygdala dysfunction have difficulty recognizing fear and sadness in others, experience inadequate empathy-mediated aggression inhibition, do not learn well from punishment, and therefore easily learn to use instrumental aggression if the environment rewards it. This aspect of Blair's model accounts for primary psychopathy. In addition, dysfunction in ventrolateral prefrontal cortex related to attention deficit/hyperactivity spectrum disorders (e.g., Schulz, Newcorn, Fan, Tang, Halperin, 2005) will promote impulsivity and difficulty with response control. In the presence of a conditioning history that rewarded coercive interactions (Patterson, 1982), this vulnerability may account for the proclivity toward reactive aggression that is common but neither specific nor distinctive of highly psychopathic individuals. Thus, secondary psychopathy from Blair's perspective would resemble primary psychopathy with the addition of attentional problem and/or hyperactivity, higher levels of reactive aggression, and impulsivity.

The paralimbic dysfunction model (Kiehl, 2006) entails a broader neuropsychological dysfunction than does the aggression-inhibition model. It upholds that focal neurophysiological dysfunctions may account for facets of psychopathy but not for the entire syndrome, which is best understood as a diffuse dysfunction throughout the paralimbic system.

For example, research on "pseudopsychopathy" (Anderson, Bechara, Damasio, Tranel, & Damasio, 1999; Anderson, Damasio, Tranel, & Damasio, 2000) and "acquired sociopathy" (Tranel, 2002) implicates the orbitofrontal and ventromedial prefrontal cortex in difficulties in avoiding aversive situations and acting primarily to pursue salient and immediate positive reinforcement. Both orbitofrontal damage and psychopathy are linked to problems with extinction, reversal learning, and relearning in go/no-go tasks (Kiehl, 2006). Thus, orbitofrontal prefrontal cortex dysfunction may account for psychopathic individuals' lack of empathy and emotional insight, poor planning and organization, impulsivity and irresponsibility, and reactive aggression. It is less likely to account for grandiosity and confabulation, and it is inconsistent with callousness, predatory aggression, and the making of grandiose plans. Furthermore, observations of intact autonomic responses to aversive stimuli in psychopathic individuals (Blair, Jones, Clark, & Smith, 1997; Patrick, Bradley, & Lang, 1993) suggest dissimilarities with orbitofrontal patients. Unlike orbitofrontal patients, psychopathic individuals are not particularly likely to suffer from mood disturbance, apathy, hoarding, and incontinence (Kiehl, 2006). Thus, neurodevelopmental abnormalities in orbitofrontal cortex may account for some but not all features of psychopathy.

Similarly, the anterior cingulate cortex may be involved, because it receives and integrates cognitive, emotional, and motivational inputs. It participates in instrumental conditioning and context-appropriate set-shifting (Rushworth, Walton, Kennerley, & Bannerman, 2004), particularly in the absence of immediate gratification. The anterior cingulate participates in rapid discriminant avoidance learning (Gabriel, 1993; Luu & Tucker, 2004) in which the amygdala is essential, and in which psychopathic individuals may have a weakness. The

maturation and function of the dorsal anterior cingulate are linked respectively to the development and exercise of effortful control, which, in turn, promote anxiety tolerance and protect from antisocial development (Bush, Luu, & Posner, 2000; Kochanska, Murray, & Coy, 1997; Nigg, 2006; Posner & Rothbart, 2000). The ventral anterior cingulate participates in the modulation of emotion (Bush *et al.*, 2000) and emotional introspection (Davidson & Irwin, 1999) and influences autonomic, visceral, and endocrine processes (Devinsky, Morrell, & Vogt, 1995), suggesting a putative involvement in the affective aspects of psychopathy. Tasks that evoke sadness and anxiety in normal volunteers or symptoms in anxiety patients activate the ventral anterior cingulate (e.g., Liotti *et al.*, 2000). It has a non-specific involvement in both positive and negative emotion (Murphy, Nimmo-Smith, & Lawrence, 2003). Kiehl (2006) suggests that the anterior cingulate may be involved in symptoms of psychopathy related to emotional unconcern (shallow affect and low empathy), disagreeableness, hostility, impulsivity, perseveration, and irresponsibility.

The amygdala is involved in the perception of emotion cues and generation of emotion states and its reactivity corresponds to individual differences in emotion (Davison & Irwin, 1999). Believed to be relatively specialized in the processing of fear (Murphy *et al.*, 2003), recent evidence suggest that it also participates in positive emotion (Canli *et al.*, 2001). Consensus has emerged that it responds even in the absence of explicit perception, and that its responses habituate rapidly. In human fear perception, the amygdala and medial prefrontal cortex become active in a predictable temporal sequence (Williams *et al.*, 2000). Cognitive tasks may reduce amygdala activity relative to passive viewing, suggesting that its activity may be modulated top-down by attentional demands (Phan, Wager, Taylor, & Liberzon, 2004). Thus, prefrontal control over amygdala activity has been implicated in reactive aggression (Blair, 2005). In addition, the amygdala is necessary for certain kinds of learning. Primates require intact connections between amygdala and orbitofrontal cortex to be able to learn from their experience that the reinforcement value of a stimulus has changed (Baxter, Parker, Lindner, Izquierdo, & Murray, 2000). Even

though lesioning the amygdala may not interfere with simple conditioning, this structure appears to be essential to second-order conditioning (Cardinal, Parkinson, Hall, & Everitt, 2002). Its basolateral nucleus projects heavily to frontal structures and the striatum to influence complex behavior, and its central nucleus controls arousal through the brainstem. Kiehl (2006) reviewed additional research on amygdalectomy and antero-lateral temporal lobe epilepsy in human and non-human animals. He implicated the amygdala and closely related structures of the antero-lateral temporal lobes (Laakso *et al.*, 2001; Raine *et al.*, 2004) in the affective deficits (particular in fear, aversive conditioning, and empathy), aggression, poor behavioral controls, as well as an exaggerated propensity toward approach behavior (e.g., hypersexuality) in psychopathy.

Even though Kiehl (2006) does not link the paralimbic dysfunction model to subtypes of psychopathy, he states that specific patterns of brain system dysfunction would likely explain different constellations of symptoms. His theory implies three subtypes that share the features of lack of empathy, poor emotional insight, and irresponsibility but that differ in other ways. The "orbitofrontal" subtype is capable of varied emotional experiences and suffers from mood disturbance, poor planning and organization, impulsivity and reactive aggression. Individuals that match thus subtype would be more apathetic than Lykken's secondary subtype, more emotionally dysregulated than Patrick's secondary subtype, and less callous and fearless than Blair's secondary subtype. The "amygdaloid-hippocampal" subtype would have pervasive affective and interpersonal deficits and likely also high levels of aggression and approach behavior similar to Patrick's (2007) conceptualization of primary psychopathy. The paralimbic model leaves open the possibility for a third (also neurologically based) subtype linked to a dysfunction of the cingulate that spreads to its interconnected regions. This subtype's features would be a mixture of the orbitofrontal and the amygdaloid-hippocampal subtypes with signature features of perseveration and hostility, which Kiehl (2006) links to selective anterior cingulate lesions.

Pseudopsychopathic Subtypes. In addition to the primary and secondary psychopathy subtypes outlined above, each theory more or less explicitly posits a third pseudopsychopathic

subtype whose behavioral style resembles psychopathy but whose etiology is more removed from temperament and neurobiology and more closely rooted in psychosocial factors. For example, from the perspective of the dual-process model, Lykken (1995, 2006) predicted that some individuals would receive high psychopathy scores on the PCL-R (particularly on Factor 2) because they experienced inadequate parenting and coercive reinforcement cycles (Patterson, 1982) and developed antisocial behavior despite that they have relatively normal temperaments. Blair's (2005) model leaves rooms for a putative third subtype that would show evidence for difficulties with attention and hyperactivity and a history of reactive violence but no clear signs of psychopathy other than Cooke *et al.*'s (2006) Factor 3 items.

Differential Predictions of Subtypes. The theories outlined above make somewhat similar predictions regarding the personality constellations that would explain the variance among people with high psychopathy scores in the sense that all predict a primary and a secondary subtype of psychopathy. However, as I alluded above, the theories differ in their predictions regarding the characteristics of the primary and secondary subtypes as well as the putative pseudopsychopathic subtype. The differential predictions are listed in Table 3. I find that the dual-process model perspective as elaborated upon in the theoretical work of Patrick (2007) matches most closely the empirical findings from the factor-analytic and the subtyping literature. However, drawing conclusions regarding psychopathy subtypes is premature, given certain limitations of the previous literature. Below, I present the rationale for the present study by reviewing some of these limitations and offering an approach that addresses them.

The Present Study

I examined the occurrence of mutually non-exclusive constellations of personality and psychopathology descriptors in psychopathic incarcerated men to inform future classification efforts and possibly diagnostic practices. As outlined above, previous studies that examined psychopathy subtypes have been methodologically heterogeneous in terms of participant samples and item sets, and their findings suggest two or possibly three separable personality

constellations. On the other hand, the genuine clustering studies have tended to be similar in terms of their statistical clustering methods. Confidence in the validity of psychiatric classification increases when studies using different item sets and different analytic methods yield similar results (Blashfield & Draguns, 1976; Meehl, 1992; Poythress & Skeem, 2006). The present study's participant selection, unique sample set, and classification technique (one that had not been used in psychopathy research to date) present certain advantages toward the goal of identifying psychopathy variants.

Participant Sample. Very few of the subtyping studies I reviewed above (and none of the studies I did not review in detail) used samples of individuals who met conventional criteria for psychopathy based on a *bona fide* PCL-R assessment. I focused on a sample of men with PCL-R scores greater than or equal to 30 (the conventional diagnostic cutoff) that were based on a standard PCL-R assessment. In fact, for selection purposes, I used PCL-R scores based on averaged ratings by two examiners who used data from a standard interview as well as prison file data (as recommended by Hare, 1991).

There may be some disadvantages to basing participant selection on the PCL-R. It may not capture psychopathy as fully (it has no items for low anxiety or fearlessness) or as narrowly (it emphasizes impulsivity and criminality) as some theorists conceptualize it. It may underdiagnose psychopathy in non-criminal individuals, does not offer insight into the extent to which psychopathy should be treated categorically or dimensionally, and does not explain the nature of psychopathy (Lilienfeld, 1994). Nevertheless, the PCL-R is the best selection measure available for research with prison samples, as it has demonstrated its construct, predictive, and incremental validity for forensic purposes, and it has received support from laboratory tests involving psychophysiological and neuroimaging measures (Lilienfeld, 1998; Patrick *et al.*, 1993; Pridmore, Chambers, & McArthur, 2005).

"Psychopaths" were the focus of subtyping because these individuals are of particular interest to psychiatrists and forensic and legal experts and can be treated as a separable class. The

use of inmates with PCL-R diagnoses of psychopathy in this study does not imply an assumption of taxonicity and, as will become evident below, I use a subtyping method that is consistent with both dimensional and categorical approaches to classification and diagnosis. By focusing on participants with a high level of psychopathy, I avoided the potential pitfall that subtypes might not be equally separable or stable at lower severity levels. Thus, I took the more efficient approach to examine the characteristics and validity of subtypes of diagnosable "psychopaths," leaving open the possibility to examine them across the entire span of the severity continuum in the future.

A Prototype Matching Approach. Either dimensions or categories may capture the heterogeneity in psychopathy (Patrick, 1997), and the question whether to study it in one way or the other is relevant to the present project. Poythress and Skeem (2006) suggested that subtyping studies should recruit participant who meet the PCL-R diagnostic cutoff for psychopathy if they intend to treat the disorder as a taxon, whereas the entire range of severity ought to be represented if the construct is being treated as a continuum. Neither Cleckley nor Hare argued that psychopathy should be construed as a taxon as opposed to a dimension (Harris, Rice, & Quinsey, 1994), even though they considered "psychopaths" to be different from most people in important ways. Hare (1991) conceived of the 30 point cutoff on the PCL-R as an indicator that the patient matched well a psychopathy prototype.

In psychopathology, taxa are syndromes that exist as a separate class in nature, independent of clinician's awareness and judgment. Biological sex (Golden & Meehl, 1980), schizotypy (Golden & Meehl, 1979) and dementia (Golden, 1982) are examples of taxa. Harris and colleagues (1994) reported data suggesting that the distributions of PCL-R Factor 2 scores in prisoners suggest the presence of a criminal behavior/criminal history taxon, but the evidence for PCL-R total and Factor 1 capturing taxa was not as strong. Marcus, John, and Edens (2004) and Edens, Marcus, Lilienfeld, and Poythress (2006) rejected a psychopathy taxon on the basis of taxometrics analyses. On the other hand, unlike the dual-process model, neither the aggression-

inhibition model nor the paralimbic dysfunction model of psychopathy assumes a latent dimensional structure.

The question about dimensions versus categories can be resolved empirically (Meehl, 1992). However, at the present state of elaboration of the psychopathic personality construct, a reconciliatory or integrative approach that accommodates both dimensions and categories may be preferable (Krueger, 2006). Thus, at this stage of research, a strategy for classification of psychopathy subtypes should accommodate dimensional as well as categorical approaches. I took advantage of a prototype matching approach (Westen, Shedler, & Bradley, 2006), which is well suited for both dimensional and categorical analyses and conceptualization.

Researchers from different backgrounds are moving toward an ideal type or prototype approach (Blashfield, 1985; Lynam & Widiger, 2001; Millon, 2000; Westen & Shedler, 2000; Widiger, 1982). An ideal type is a description of a hypothetical ideal case of a patient with a condition in which there are not necessary or sufficient definitional features; the better a patient's case approximates it, the more relevant the diagnosis (Schwartz, Wiggins, & Norko, 1995; Widiger, 1982). A prototype is similar to an ideal type in its selective listing of characteristics and recognition of diagnostic fuzziness, but it is not a synthesized abstraction; instead, it simply enumerates all poignant and relevant statements that might describe the condition (Schwartz *et al.*, 1995). The contents of both ideal types and prototypes are drawn from empirical reality.

Prototypes may be a useful way to classify subtypes of psychopathy, in that they capture the gradient in the extent to which an individual matches each of several subtypes. Each of the four theories I discussed is consistent with a spectrum that can be captured through the degree to which a participant's personality profile matches one or more non-orthogonal prototypes. Prototypes are also consistent with a health-sickness continuum because they offer dimensional ratings for relevance and severity. In this way they allow the assessment of where a person falls on the spectrum of psychopathic personality (what kind of psychopathic personality the person has) as well as where the person falls on the dimension of severity (how psychopathic the person

is). Furthermore, prototypes are also consistent with categorical diagnosis, because they can be assigned a cutoff diagnostic level (which can be determined empirically if the prototype is reflective of a taxon). Prototypes are constellations of traits and therefore allow clustering from a pool of items that involve not only psychopathy symptoms but also related features of psychopathology and personality. Because of these considerations, a prototype-matching approach is consistent with the theories of psychopathy I reviewed.

Item Set. Previous research has tended to limit the item pool only to the PCL-R descriptors of psychopathy, a small number of general personality dimensions, or personality disorder diagnoses. For example, the researchers who conducted the cluster analyses I summarized above chose limited sets of measures to cluster based on theoretical preconceptions. This has made it difficult to compare the findings of the studies to the theoretical predictions of theories other than those of the authors of the respective studies. I used a comprehensive pool of personality and psychopathology descriptors from the Shedler-Westen Assessment Procedure – II (SWAP-II; Westen & Shedler, 1999a) that have been selected on the basis of their utility in describing health and dysfunction in personality. Because the SWAP-II is an omnibus measure of personality and its pathology, and because my clustering technique, unlike previous cluster analyses, used individual items instead of scale scores, the use of this instrument allowed us to compare the results of the subtyping effort to the psychopathy theories discussed earlier.

The use of the SWAP-II is consistent with the recommendations for item selection in research on psychopathy subtypes recently put forth by Poythress and Skeem (2006). At least three strategies for selecting item sets to identify psychopathy subtypes are available to researchers. The first one involves the clustering of psychopathy symptoms or features, and in practice it is most likely to involve clustering of PCL-R items (although see Falkenbach, 2004, for a clustering study of psychopathy descriptors in a non-forensic non-patient sample). This strategy is limited by its restricted range of items, which may occlude subtypes that are defined best by features the PCL-R does not capture (e.g., deficits in negative affect, inability to learn

from past mistakes). The SWAP-II includes items that correspond to most of Cleckley's and Hare's psychopathy indicators (see Table 4), and it also includes a wide range of items related to personality pathology and healthy personality functioning. It includes features of neuroticism, symptoms of narcissistic, histrionic, borderline, or paranoid personality pathology, and symptoms of attention or hyperactivity not represented in the PCL-R. It is consistent with Poythress and Skeem's (2006) second and third item set selection strategies that involve a broad range of putative traits, symptoms, mechanisms, adaptations, or etiological influences besides psychopathy items and general personality indicators.

Subtyping Technique. I used Q-factor analysis procedures that help identify such naturally occurring groups as people who share personality features (Block, 1978; Colvin, Block, & Funder, 1995; Shedler & Block, 1990) or personality pathology (Westen & Shedler, 1999a, 1999b). Q-factor analysis with the SWAP-II generates empirical prototypes by intercorrelating participants' item set profiles to extract groups of patients who resemble one another and differ from others in the sample. The procedure also identifies the items that best describe each prototype. The underlying Q-factors can be orthogonal or oblique, depending on the rotation technique in use. This is important for subtyping psychopathy, because its theories predict partially overlapping subtypes rather than non-overlapping entities.

As noted above, previous research on subtyping samples of incarcerated, criminal, antisocial, delinquent, or spouse-abusing participants has tended to use cluster-analytic techniques. Cluster analytic techniques and Q-factor analysis have certain similarities. Both sets of techniques use an index of similarity among participants (e.g., correlation coefficients or indices of distance in multivariate space defined by a set of variables) and both seek to reduce the data to a small set of participant groupings that minimize the variance among participants within groupings (Bailey, 1975). The techniques can be contrasted with conventional R-factor analysis. If I collected some data on different kinds of fruit, both cluster analysis and Q-factor analysis would classify each piece of fruit in a bin that corresponds to its respective species: apples, pears,

oranges, bananas, etc. In contrast, R-factor analysis would most likely identify a number of dimensions that are useful in describing qualities that apply to each kind of fruit: tartness, redness, sphericity vs. elongation, juiciness, etc. Thus, cluster analysis and Q-factor analysis are most appropriate for classification purposes, yet they also differ in meaningful ways.

With regard to differences between cluster analysis and Q-factor analysis, both rational and pragmatic reasons exist for choosing Q-factor analysis for the purposes of this project. The rational reason concerns the nature of the procedures and the kind of data they yield. Cluster analysis seeks to define groups on the basis of exclusive membership by drawing boundaries around the participants that "belong" in each cluster (Punj & Stewart, 1983). As mentioned earlier, Q-factor analysis does not assume that the subtypes or diagnostic entities are mutually exclusive and extracts prototypes that are relatively separate from each other but that allow different degrees of match to each prototype for each participant (Westen *et al.*, 2006). Q-factor analysis is the preferable technique because psychopathic personality subtypes are not likely to have clear-cut boundaries and to be fully mutually exclusive.

Q-factor analysis has some additional advantages over cluster analysis when considering factor-analytic conventions regarding the number of factors to extract and cluster-analytic conventions regarding the number of clusters to define. Such traditional cluster-analytic techniques as Ward's k-means technique rely primarily on the statistician's holistic judgment for the selection of the cluster solution. Even though in Q-factor analysis the researcher ultimately decides which solution to retain, this decision is informed also by such computational procedures as the estimation of the magnitude of the eigenvalues of the covariance matrix and statistical significance testing for the amount of variance explained by each Q-factor (parallel analysis). Although this is ultimately an empirical question that will not be resolved in the present study, I do suspect that Q-factor analysis would produce results with greater replicability and fidelity relative to traditional cluster-analytic tools.

Recent advances in classification techniques include model-based cluster analysis (Banfield & Raftery, 1993) and the use of latent class and latent profile analysis to address cluster-analytic questions with continuous data (Goodman, 1974; Lazarsfled & Henry, 1968; Vermunt & Magidson, 2002). These approaches are promising and powerful because they allow the testing of specific models, and they also offer goodness-of-fit indices that can inform the decision how many clusters or latent classes underlie the data. As with traditional cluster-analytic procedures, model-based cluster analysis and latent profile analysis are not the optimal solution for the purposes of the current project because of both rational and practical considerations.

The rational consideration once again involves the theoretical reality that the different statistical techniques model. Both model-based cluster analysis and latent profile analysis assume that the participants originate from independent and mutually exclusive populations. Q-factor analysis is similar to them in that it also models latent entities (Q-factors) based on indicators continuous indicators that are assumed to be independent. However, it models prototypes as opposed to categorical latent variables (in latent profile analysis) or mutually exclusive populations (in model-based class analysis). Thus, Q-factor analysis may be more appropriate for the empirical identification of diagnostic entities that may be partially overlapping in nature. The relative disadvantage of Q-factor analysis is that it does not offer goodness-of-fit indices to help determine an optimal solution. On the other hand, it offers quantitative indices that inform the decision how many Q-factors to extract, whereas model-based cluster analysis and latent profile analysis require the researcher to specify in advance the number and also the specifications of the underlying clusters or latent classes that will be modeled.

The pragmatic consideration concerns one of the goals of the project, namely, to identify psychopathy subtypes using a comprehensive pool of items. Cluster analysis and latent profile analysis are well suited for use with a small number of indicators that are pre-selected based on theory or based on the extent to which they discriminate among the participants (Bailey, 1975). For example, Alterman and colleagues (1998) assumed that the PCL-R factors exhausted the

relevant individual differences among participants and subjected those data to cluster analysis. Often, the indicators are aggregate dimensions derived through such data reduction techniques as factor analysis. For example, Hicks and colleagues (2004) cluster-analyzed a small number of supraordinate traits with the explicit understanding that these traits capture theoretically relevant constructs. Q-factor analysis, on the other hand, is well suited to identify prototypes based on a larger number of candidate items and to provide information about the extent to which each item is associated with each prototype. One of the goals of this project is to not limit the number of variables to PCL-R symptoms, basic personality traits, or DSM-IV symptoms, but to use a comprehensive item pool. This is consistent with the Q-factor analytic approach and it leaves open the possibility for unexpected findings, thus offering a potentially stronger test of any predictions, compared to the alternative statistical approaches.

Predictions. I predicted that (1) two (primary and secondary psychopathy) or three (primary and secondary psychopathy as well as a pseudopsychopathy) oblique Q-factors would emerge in Q-factor analysis. I expected primary psychopathy to be distinguished by low negative emotionality (particularly anxiety), narcissistic features reflective of positive emotionality directed toward the self, and social potency and agency. I did not expect this subtype to be distinguished by aggression. I predicted that secondary psychopathy would be distinguished by externalizing features, negative affectivity (anxiety, depression, and anger), aggressiveness, and impulsivity related to inattention/hyperactivity. Finally, if present, I anticipated the pseudopsychopathic subtype to be distinguished by a capacity to experience normal negative and positive emotions, a capacity for empathy and emotional investment in others, but also by hostility, anger, and motivated emotional detachment.

Preliminary Validation and Incremental Validity Analyses. I made predictions about the relationships between the extent to which participants matched the psychopathy variants (match to prototype) and a range of external variables: PCL-R scores, ASPD diagnostic status, and counts of the number of different kinds of antisocial behaviors in childhood and adulthood

provided by an independent team of researchers; childhood abuse history status; self-report measures on dimensions of temperament and general personality traits including trait anger, sensation seeking, and socialization; and observer-report measures of impulsivity (particularly reactive aggression and inattention/hyperactivity). Table 5 contains a list of the predictions (positive and negative signs indicate predictions for significant positive or negative correlations, whereas empty cells indicate that I did not expect a significant association and made no prediction). Together with Q-factor analysis of the SWAP-II, these additional analyses would help interpret the results in the context of the theoretical accounts of psychopathy subtypes. To aid with interpretation, I included measures of SWAP-II rater confidence and interview behavior related to psychopathy. These variables might confound the relationships between psychopathy subtypes and external validity variables and I planned to examine the results while controlling for them. In addition, I planned to explore the incremental validity of the SWAP-II psychopathy prototypes over the PCL-R factors and the major interpersonal traits of dominance and hostility. A small but persuasive body of research has found associations between psychopathy dimensions and dominance and hostility measured on the interpersonal circumplex (Salekin, Leistico, Trobst, Schrum, & Lochman, 2005; Salekin, Trobst, & Krioukova, 2001). I predicted that the personality subtypes would generally have incremental validity over the PCL-R factors and the interpersonal dimensions but did not write specific hypotheses as I did for the unmoderated tests outlined in Table 5.

Method

Participants

Videotaped interviews, prison file data, and self-report measures were gathered from incarcerated men as part of a previous study (Hicks *et al.*, 2004) and an ongoing project (Christopher Patrick, Ph.D., personal communication, April 2007) at the University of Minnesota. The participants were residents at low-medium to high-medium security federal prisons in Florida and Minnesota. When the Florida and Minnesota teams collected the data, the researchers

obtained informed consent from the participants and provided compensation for their time in the form of a small payment or choice of a free food item from the canteen. The majority were incarcerated for drug-related offenses (illegal possession, trafficking, or conspiracy to sell and distribute), whereas others were imprisoned for federal offenses involving illegal possession of firearms, fraud, bank robbery, criminal sexual conduct, and others, generally representative of the federal prison population.

From the larger pool of inmate volunteers (N = 815), I took a probability sample of approximately 90 participants who met cutoff score of 30 or greater in a PCL-R assessment (see below) and qualified for a formal diagnosis of psychopathy (Hare, 1991). I used data on these participants for subtyping and validation purposes as explained below. In addition, for blinding purposes, I took a probability sample of approximately 40 participants with PCL-R scores lower than 30 (approximately 30% of the overall sample size). The demographic data for the sample for this study were similar to the demographic data for the participants in the overall project. The participants were men with ages ranging from 19 – 55 years, M = 32.1 (SD = 7.6), Md = 32.0. A majority of them identified as White (52%), a substantial proportion identified as Black (35%), and the ethnicity of the remaining ones was Hispanic (10%) or other (3%). The high psychopathy sample did not differ significantly in terms of ethnic composition and mean age from the overall sample.

Procedures

One master's level advanced doctoral student in clinical psychology (the author and principal investigator), two research assistants with bachelor's degrees in psychology, and four undergraduate research assistants (with varying degrees of experience with psychopathology coursework and research ranging from none to considerable for their level of training) served as raters. The author served as a principal rater and trained the rest of the team. The principal rater was blind to the psychopathy scores of the participants, whereas the remaining raters were blind to the scope of the project, the hypotheses, the base rate of psychopathy in the sample, and the

psychopathy scores. All raters were blind to the validation data. To enable the raters to use the instruments, they received brief didactic training in personality pathology, styles, and traits, the goals of clinical interviewing, and directions how to use the rating instruments. Except for the principal rater, the rest had no exposure to the information on psychopathy subtypes. As part of their training, the raters completed a minimum of five sets of complete ratings with detailed feedback. Two undergraduate assistants who did not achieve satisfactory levels of agreement on the measures did not continue to work as raters and were not included in the count above.

The raters viewed the videotaped interviews while taking detailed notes on their observations and then rated the personality, personality pathology, interpersonal behavior, and impulsivity of the participants using an electronic spreadsheet that contained a packet of measures (described below). All ratings were made immediately following the viewing of each interview. The overall procedure took approximately four hours per participant. Because of limited time and other resources, the principal investigator completed half of the ratings, whereas the trained observers completed approximately equal numbers of the other half (excluding training).

Measures

Measures Collected Prior to the Current Project

The Psychopathy Checklist – Revised (PCL-R; Hare, 1980, 1991, 2003) integrates clinical observations with information from records to rate each of 20 items (22 in the original version) on a 0-2 scale, a score of 30 being the typical diagnostic cutoff for psychopathy. Hicks and colleagues (2004) described the procedures for evaluating inmates with the PCL-R on the basis of a semi-structured interview and prison file data. The interviews lasted approximately 1.5 – 2.5 hours (most were two hours long and very few went under 1.5 or over 2.5 hours) and covered such areas as educational, occupational, family, relationship, and criminal history, details surrounding the present offense and conviction, quality of relationships, parenting, plans for the future, general health and mental health history, history of substance use, self-esteem and self-image, and adjustment to incarceration. This research version of the PCL-R included additional

questions administered in a semi-structured format and covering the range of DSM-III-R and DSM-IV symptoms of CD and ASPD.

The interviewers were students at the bachelor's or master's level who had received training in administering the PCL-R interview and scoring the instrument. A second diagnostician sat on the interview or watched a recording before completing an independent PCL-R rating. The PCL-R ratings incorporated prison file data. Thus, two sets of PCL-R Total, Factor 1, and Factor 2 scores were available for each participant. I averaged them across raters to increase the reliability of the scores. Interrater reliability measured with interclass correlation coefficient (*ICC*) for the total scores on the PCL-R ranged from .77 - .95 overall for the larger Florida and Minnesota studies. The PCL-R manual reports agreement of .53 for Factor 1 and .62 for Factor 2 (Hare, 1991). In the present study, interrater agreement ranged from .90 – .96.

Based on the PCL-R interview and prison file data, besides PCL-R Total Scores and Factor 1 and Factor 2 scores, the researchers from the Minnesota team derived additional variables that I used for the validation analyses in the current project. These included: a categorical diagnosis of DSM-IV ASPD (either estimated from DSM-III-R symptoms assessed during the interviews collected in the 1990's in Florida or from DSM-IV symptoms assessed during the interviews collected in the early 2000's in Minnesota), number of different kinds of childhood antisocial behaviors, number of different kinds of childhood violent behaviors, age at first criminal charge, number of total criminal charges before the age of 18, number of adult nonviolent charges, and number of adult nonviolent institutional charges. In addition, those researchers coded childhood abuse as either present or absent in two different ways – from the records in the prison file and from the interview material.

The Multidimensional Personality Questionnaire (the 300-item MPQ; Tellegen, 1982) and its ***Brief Form*** (the 155-item MPQ-BF; Patrick *et al.,* 2002) capture Tellegen's (1982) trait model. They offer respectively 14 and 11 distinct and highly internally consistent scales and three orthogonal higher order dimensions: Positive emotionality (PEM), Negative Emotionality

(NEM), and Constraint (CON). PEM measures the active engagement with the social environment akin to social dominance and achievement motivation as well as the seeking of pleasant experiences in closeness to others and relationships. NEM reflects a proclivity to feel anxious, angry, and vulnerable, to become overwhelmed by stress, and to experience the social world as unfriendly and unjust. CON measures a dimension ranging from high self-restraint, avoidance of danger or extreme excitement, conservatism, and cautiousness to high impulsivity, thrill seeking, and nonconformity. Over the past two decades, the MPQ has yielded meaningful findings in over 100 peer-reviewed empirical studies, linking its dimensions to behavioral, personality, psychophysiological, and genetic data. The developers of the MPQ-BF constructed an inventory that maps closely onto the original longer version. Because approximately half of the participants had completed the MPQ and the other half had completed the MPQ-BF, I used scores standardized per half sample of only the three most reliable and cross-form equivalent supraordinate dimensions PEM, NEM, and CON. In addition, the MPQ has the following validity scales: Unlikely Virtues; Vrin (Variable Response Inconsistency); Trin (True Response Inconsistency); and Drin (Desirable Response Inconsistency). I used the validity scale scores to enhance the validation analyses as will be described below.

The NEO Five-Factor Inventory (NEO-FFI; Costa & McCrae, 1989, 1992) is a brief version of the NEO Personality Inventory (NEO-PI) designed to measure traits that comprise the Five Factor Model of personality. The model was derived factor-analytically, tested, and replicated over the last 40 years (McCrae & Costa, 1997). It isolates five relatively nonredundant basic traits rotated orthogonally: Neuroticism (N), Extroversion (E), Openness to experience (O), Agreeableness (A), and Conscientiousness (C). In its widespread version, the NEO-PI Revised (NEO-PI-R; Costa & McCrae, 1992), each factor has six scales or "facets." The NEO-FFI has 60 items total or 12 items per factor, and it does not measure the factors' facets. NEO-FFI data were available on approximately one third of the sample.

***The Positive and Negative Affect Schedule* – 20** (PANAS-20; Watson, Clark, & Tellegen, 1988) is a self-report measure widely used to capture two orthogonal dispositional dimensions of mood, positive and negative affect (PA and NA). It consists of 20 emotion words and asks for a 1-5 Likert-type rating of the extent to which the participant felt each emotion during the past few weeks. High ratings on a dimension indicate chronic activation of the respective affect system, whereas low ratings suggest the absence of affect with that valence (as opposed to presence of the opposite affect). Internal consistency estimates for the two scales range from .84 - .90. PANAS data were available on a small subsample of participants ($N = 18$).

The State-Trait Anger Expression Inventory-2 (STAXI-2; Spielberger, 1999) is a 57-item self-report measure of the experience, expression, and control of anger. Data from the following subscales of the Trait Anger scale were available for approximately 30% of the present sample: Anger expression-out (how often anger is expressed outwardly), Anger expression-in (how often anger is experienced but is suppressed instead of expressed), Anger control (the frequency of efforts to outwardly control anger or to control it inwardly by trying to cool off or calm down), and a total Anger expression index (an overall measure of the expression and control of anger). The manual discusses in detail the factor structure and validation of the STAXI-2 and reports internal consistency estimates for the subscales ranging from .73 – .93.

The Sensation Seeking Scale – Form V (Zuckerman, Eysenck, & Eysenck, 1978; Zuckerman, Kolin, Price, & Zoob, 1964) is a highly reliable (Deditius-Island & Caruso, 2002) self-report measure of a latent trait defined by "the seeking of varied, novel, complex, and intense sensations and experiences, and the willingness to take physical, social, legal, and financial risks for the sake of such experience" (Zuckerman, 1994, p. 27). It has four subscales: Thrill and Adventure Seeking, Experience Seeking, Boredom Proneness, and Disinhibition. Internal reliabilities are respectively .77 – .82, .61 – .67, .56 – .65 and.74 – .78. Data on the Sensation Seeking Total Score and the four subscales were available for a portion of the sample.

The Emotionality-Activity-Sociability-Impulsivity Survey (EASI-S; Buss & Plomin, 1975, 1984) is a 25-item self-report inventory that measures the four temperament dimensions Emotionality (sensitivity to negative emotions and their intensity, with Anger, Fearfulness, and Distress subscales), Activity (the tendency to have high energy, to engage in many activities, and to live a fast-paced life), Sociability (the degree of enjoyment of the company and attention of others), and Impulsivity (the tendency toward disinhibited behavior and acting before thinking).

The Drinking Motives Questionnaire (DMQ; Cooper, Russell, Skinner, & Windle, 1992) measures participants' perceptions about the extent to which they drink to cope with negative emotions (e.g., to reduce self-consciousness, anxiety, or depression), to enhance positive emotions (e.g., to have fun or to get high), or to accomplish social goals (e.g., to be sociable or to conform). This three-dimensional measure has received validation in relation to behavior outcomes (Stewart, Zeitlin, & Samoluk, 1996) and personality (Stewart & Devine, 2000).

The Socialization Scale *(So)* (Gough, 1994) from the California Psychological Inventory (Gough, 1987) measures a personality dimension ranging from high willingness to comply with social norms for proper behavior to extreme disposition toward rule-breaking and delinquent behavior. It consists of 46 True/False questions and its consistency is approximately .70. The scale distinguishes between delinquent and non-delinquent individuals; furthermore, people who receive high scores are perceived by others as calm, mature, and responsible, whereas low scorers are seen as immature and erratic.

Measures Collected for the Purposes of the Present Project

The Shedler-Westen Assessment Procedure-II (SWAP-II; Westen & Shedler, 1999a; Westen & Shedler, 1999b; Westen & Shedler, 2000) is the most recent version of the SWAP, a Q-sort for assessing personality and its pathology. A trained observer rank-orders 200 items in a fixed distribution with eight categories to describe the research participant or patient, yielding a 0-7 score for each item. Items were derived from such sources as DSM-III-R and DSM-IV Axis II criteria as well as Axis I constructs with relevance to personality, the personality pathology

literature, research on normal traits and psychological health, and pilot research-clinical interviews. The SWAP-II features items that correspond to most PCL-R items and to Cleckley's checklist of psychopathy features (see Table 1). Additional SWAP-II items related to descriptions and theoretical conceptualizations of psychopathy include items related to inattention, somatization, narcissism, sadism, anger and hostility, features of borderline personality disorder, internalizing features, projection and projective identification, and so forth. The items were developed over several years using standard psychometric methods.

Research supports the reliability and validity of the SWAP in predicting such objective indicators of personality dysfunction as suicide attempts, psychiatric hospitalizations, global functioning, diagnoses by clinicians, and developmental and history variables (Westen, Bradley, & Hilsenroth, 2004; Westen & Harnden-Fischer, 2001; Westen & Muderrisoglu, 2003; Westen & Shedler, 1999a, 1999b; Westen, Shedler, Durrett, Glass, & Martens, 2003). The adolescent version predicts scales from the Child Behavior Checklist (Dutra, Campbell, & Westen, 2004) and measures of attachment (Nakash-Eisikovits, Dierberger, & Westen, 2002). Correlations between treating clinicians and independent interviewers exceed .7 for both dimensional and trait measures of personality pathology derived from the SWAP (Westen & Muderrisoglu, 2003, 2005). Similarly, recent data from Drew Westen's laboratory indicate that the test-retest reliability of the instrument averaged .81 in a study of the temporal stability of its factors over a four-to-eight month period (Westen *et al.*, in review).

I used the PCL-R interview data to evaluate each participant using the SWAP-II. In a subsample of 48 participants, the median Q-correlations between SWAP-II factor profiles based on ratings by the principal rater and each of the other raters ranged from r_q = .66 – .88 with an overall median of r_q = .82 that was indicative of high interrater reliability. The median internal consistency of the factors was α = .71. The following factors had poor internal consistency (α < .60), most likely because of range restriction given the nature of the sample and the interview: Obsessionality (.26), Schizotypy (.53), Somatization (.36), Anxiety (.51), and Histrionic

sexualization (.29). Internal consistency for the remaining SWAP-II factors was acceptable to high (.62 – .91). The mean test-retest Q-correlation for five participants selected at random for re-evaluation with the SWAP-II after a four month period was .85. Although I present these data as demonstration for the overall acceptable reliability of the ratings, I also note that I used raw item scores (as opposed to aggregate factor scores) for the subtyping analyses, to model the naturally occurring covariation patterns characteristic of the high psychopathy population.

Confidence Scale. To capture variability in raters' confidence in their SWAP-II descriptions of the participants, I wrote a rationally derived scale with 16 questions on a 1 – 5 scale. I wrote 10 questions concerning five areas of general rater experience: ease of making judgments, sufficiency of information, feelings of doubt, belief that the rater understood the participant well, and beliefs about the accuracy of the ratings. I selected these areas to maximize the scale's sampling from different areas of the domain of confidence, including affect, cognition, and effort. Each area was represented by two questions that had slightly different wording and were keyed in opposite directions. In addition, I wrote six questions to capture common experiences unique to Q-sorts and the SWAP that users of the instrument have reported informally. These experiences relate to rater confidence and to the difficulty of the ratings. They include placing too many items in the highest or lowest piles of the Q-sort and having to decide which items to move respectively down or up the distribution to make one's ratings conform to its fixed shape. Appendix A displays the Confidence Scale.

A principal components analysis (PCA) of the 16 items that comprised the Confidence Scale suggested that the data could be reduced to two factors that explained 59% of the variance. I used PCA instead of factor analysis to reduce the information in the Confidence Scale because I were not interested in modeling variance unique to the items. Instead, I were interested in summarizing the largest possible amount of variance efficiently. A PCA with the extraction of two principal components (I will call them factors for convenience) and a varimax rotation yielded the following simple structure. The majority of the items (12) loaded on Factor 1. The

absolute values of the loadings ranged from .53 – .84. This factor explained 45% of the variance and received the label "Confidence." Four items defined Factor 2 with loadings ranging from .67 – .87. This factor explained 15% of the variance and received the label "Difficulty," because all four items pertained to difficulties describing the participant because the raters thought that too many items were highly descriptive of him. Internal consistency for the two factors was .93 and .79.

The Interpersonal Measure of Psychopathy (IMP; Kosson, Steuerwald, Forth, & Kirkhart, 1997) is an observer-report measure of the degree to which interpersonal interactions related to psychopathy take place between a research participant and an interviewer. Kosson and colleagues constructed the scale with the explicit goal to reduce the amount of inference needed in evaluating interpersonal features of psychopathy by measuring specific behavior in the interview setting, thus creating a measure that cannot replace a comprehensive diagnostic assessment of psychopathy (i.e., the PCL-R) but that may contribute incrementally to the assessment of psychopathy's interpersonal behavior facet (as its item content is non-redundant with the PCL-R). Interviewers use their estimate of the frequency with which a certain interpersonal behavior took place to rate each of 21 items (e.g., interrupts, fills in dead space) by deciding "whether the trait or the interpersonal dynamic described this individual" on a scale from 1—4 (1 = "not at all," 2 = "somewhat," 3 = "very well," and 4 = "perfectly.") Because in the present study observers of taped interviews instead of direct interviewers completed the measure, I modified the scale by omitting item 21 ("intense eye contact"; see Zolondek, Lilienfeld, Patrick, & Fowler, 2006, who used the same modification).

In the original report (Kosson *et al.*, 1997), the authors of the measure reported internal consistency of $\alpha = .75 – .91$ and interrater reliability of $r = .60 – .83$. Replicated findings regarding the scale's validity include its moderately high association with PCL-R Factor 1 and a weaker association with Factor 2 that is attributable to Factor 1 (Kosson *et al.*, 1997; Zolondek *et al.*, 2006). In addition, Kosson's and Zolondek's groups reported evidence for the IMP's

convergent and discriminant validity with respect to observer-report and self-report measures of interpersonal traits, general traits, and ASPD and CD, although findings regarding ASPD and CD did not fully replicate. Age was significantly and positively linked to IMP scores in both studies. Finally, Zolondek and colleagues questioned the IMP's incremental validity over Factor 1 of the PCL-R in predicting external outcomes. Nevertheless, scholars have adopted the IMP as an adjunct measure in comprehensive psychopathy assessments, particularly when selecting participants in psychophysiological and neuroimaging research (e.g., Yang *et al.*, 2005). In the present study, internal consistency was $\alpha = .84$, and interrater reliability was $r = .63$ ($ICC = .54$).

The Interpersonal Adjective Scales – Revised (IAS-R; Wiggins, Trapnell, & Phillips, 1988) is a 64-item self-report questionnaire that measures interpersonal traits. Wiggins (1979) constructed the original 128-item version of the measure (IAS) using a theoretical-empirical approach to reflect neo-Sullivanian theory's emphasis on the exchange of power and love in human interaction. In the IAS-R, items are located on a circumplex defined by two global orthogonal dimensions (DOM: Dominance, and LOV: Affiliation; the coordinates of the interpersonal circle), and they also comprise eight scales (PA: Assured-dominant, BC: Arrogant-calculating, DE: Cold-hearted, FG: Aloof-introverted, HI: Unassured-submissive, JK: Unassuming-ingenious, LM: Warm-agreeable, NO: Gregarious-extraverted) that correspond to octants of the circle (eight items per scale). Sample items include: distant, firm, cheerful, kind, boastful, and sly. Respondents rate them on an 8-point Likert-type scale ranging from 1 ("extremely inaccurate") to 8 ("extremely accurate") to indicate how well each adjective describes them.

Reliability estimates for the normative college sample (Wiggins, 1995) range from .73 (JK) to .86 (FG). The manual provides extensive validity data. In addition, researchers using the IAS-R have linked a number of self-report scales of psychopathy dimensions to the upper left quadrant of the interpersonal circle, particularly the BC (Arrogant-calculating) octant in a university student sample (Salekin *et al.*, 2001) and the BC and DE (Cold-hearted) octants in a

sample of young offenders (Salekin *et al.*, 2005). Experimental evidence (Knutson, 1996) suggests that the IAS-R can measure the inferences that observers make about people's dispositional dominance and hostility on the basis of emotion in facial expressions. Thus, the IAS-R appears to be an appropriate instrument to capture variance in those inferences of observers about the personalities of participants that are linked to nonverbal behavior and that may influence ratings of psychopathy as well as other dispositional constructs.

I used the IAS-R as an observer measure of interpersonal traits. Raters received instructions to rate the extent to which each adjective described a participant's behavior by combining their observations of the person's behavior during the interview with inference based on the interview's content. I used the standard formulas for calculating DOM and LOV: DOM = .3((zPA − zHI) + .707(zNO + zBC − zFG − zJK)) and LOV = .3((zLM − zDE) + .707(zNO − zBC − zFG + zJK)), where *z* designates a standardized *z*-score based on normative data for men (Wiggins, 1995). Internal consistency was very high: α = .94 for DOM and α = .92 for LOV, and it was also high for the eight scales (α = .82 – .88). Interrater reliability was less impressive but also high: r = .67 (*ICC* = .56) for DOM and r = .66 (*ICC* = .54) for LOV. Below, I generally refer to LOV as Hostility, because the measure was keyed in this direction (higher scores corresponded to greater hostility rather than affiliation).

The Impulsivity Questionnaire (IMPQ; Westen & Heim, 2005; see Appendix B) is an observer-report instrument with 50 questions that measure the extent to which specific behaviors as well as inferred cognitive and affective processes related to impulsivity describe an individual. Sample items include: "Often 'blurts things out' without thinking"; "Tends to analyze situations in superficial ways"; and "When distressed, tends to act without thinking." Respondents rate the extent to which each item is "descriptive of the participant's enduring personality characteristics" on a scale ranging from 1 ("not true") to 7 ("very true"). The Impulsivity Questionnaire is still under development. It began by generating a pool of 70 items written to reflect constructs related to multiple dimensions of impulsivity encountered in the literature on impulsivity in personality

and eating disorders. In a pilot study, 234 clinicians from a practice-research network completed the questionnaire to describe patients with clinically significant symptoms of eating disorders (Eddy, Novotny, & Westen, in preparation). Subsequent item-analyses led to the exclusion or revision of items that carried too little variance or that were redundant with other items, resulting in the present form of the questionnaire. Eddy, Novotny, and Westen reported evidence for the presence of five principal components (Cognitive, Aggressive, Attentional, Self-destructive, and Antisocial) in examining the covariance structure of the 70-item version. Nevertheless, the psychometric properties of the questionnaire and the structure of impulsivity as measured by this instrument remain unexplored.

In the present study, Principal Components Analysis of the 50 items that comprised the Impulsivity Questionnaire suggested that four to six factors might account for approximately half of the variance. Following an examination of four- to six-factor extractions with orthogonal and oblique rotations, an Unweighted Least Squares (ULS) extraction of five factors with a Promax rotation ($\kappa = 4$) emerged as the simplest and most easily interpretable solution (see Appendix C). This solution explained 43% of the variance (respectively 24%, 7%, 5%, 4%, and 3% for Factors 1 – 5). The twelve items that defined Factor 1 with loadings greater than .30 (ranging from .32 – .97) described an "Aggressive/antisocial behavior" dimension. The eleven items loading on Factor 2 (loadings ranging from .34 – .81) described pleasure-oriented, present-bound, and compulsive behavior without regard for negative consequences. This factor received the label "Immediate gratification." Seven items with loadings ranging from .32 – .84 characterized Factor 3, which captured a dimension of "Inattention/hyperactivity." Ten items (with loadings .31 – .74 on Factor 4) described impulsivity in cognition and decision making, particularly in complex, emotional, and interpersonal situations ("Cognitive/affective impulsivity.") Finally, all four items with loadings greater than .30 on the fifth factor (loadings ranging from .34 – .67) described reactive and poorly controlled behavior despite the presence of insight, self-conscious emotions, and the capacity to relate. Six of the 50 items did not load sufficiently on any of the factors. These

items described thrill seeking, superficial cognition, promiscuity, and self-destructive behavior (having unprotected sex, suicidality under stress, and bingeing and purging.)

Internal consistency estimated for the first four factors were high and ranged from α = .81 – .91, whereas the fifth factor had α = .66 (which was adequate for a very short scale). Interrater reliability coefficients for Factor 1 ranged from *r* = .69 – .89 with a median of .79. Interrater reliability for Factor 2 was modest but acceptable for research purposes, ranging from *r* = .46 – .81 with a median of .60. The corresponding estimates for Factors 3 – 5 were generally lower than .50, which precluded the use of those data in subsequent analyses. I used Factor 1 (Aggressive Impulsivity, 12 items with loadings > .30, *α* = .91, interrater *r* = .79, *ICC* = .64) and Factor 3 (Attentional Impulsivity, seven items with loadings > .30, *α* = .81, interrater *r* = .48, *ICC* = .41) for the validation analyses with the understanding that analyses involving Attentional Impulsivity should be interpreted tentatively, given its relatively low interrater reliability.

Results

Most Descriptive Characteristics

Once the interview scoring was complete, I obtained PCL-R data on the 127 participants from the laboratory that originally collected them at the University of Minnesota. The PCL-R scores (averages between two raters) of 91 participants (72%) were greater than or equal to the cutoff of 30 points. Before conducting the subtyping analyses, to facilitate their interpretation, I examined the most descriptive personality characteristics of the high psychopathy sample and compared them to the PCL-R psychopathy construct.

I averaged the SWAP-II profiles of the 91 participants and sorted the items by mean score in descending order (see Table 6). The average personality profile largely subsumed the PCL-R definition of psychopathy, featuring 15 items that overlapped in meaning with 14 PCL-R items (see Table 7). Three PCL-R items were not represented, because they do not have SWAP-II equivalents (“early behavioral problems,” “juvenile delinquency,” and “revocation of conditional release”). One PCL-R item (“glibness/superficial charm”) similarly does not have a direct

semantic match in the SWAP-II, but part of the construct it assesses was represented by the SWAP-II item "Appears comfortable and at ease in social situations." The PCL-R item "grandiosity" was not represented because SWAP-II items with similar meaning ranked lower than 30 in terms of average score. (As will be shown below, items related to grandiosity played an important role in delineating the heterogeneity among the participants.)

The most descriptive characteristics included a number of items that are not represented in the PCL-R but that relate to some PCL-R items or to the psychopathy construct as described in the literature. In aggregate, these items described hostile extraversion (oppositionality, anger, a tendency to engage in power struggles, and violence). I used the list of the top 30 most descriptive items for the 91 men with PCL-R $\geq$ 30 and averaged them to compute a SWAP-II psychopathy score in the overall sample of 127. As expected, in this sample, the SWAP-II overall psychopathy score yielded a moderately high correlation with the PCL-R total score, $r(125) = .69$, $p < .001$. Overall, these results suggest that the raters who worked on this project were able to identify psychopathic features in the participants on a gradient that paralleled PCL-R psychopathy. The results from the subtyping analyses that follow are best understood with the most descriptive characteristics profile as a backdrop.

Psychopathy Subtypes

To identify latent dimensions that represent subtypes of highly psychopathic participants, I subjected the SWAP-II profiles of the 91 men who scored 30 points or higher on the PCL-R to Q-factor analysis using factor-analytic conventions. To determine the number of factors to extract, I examined the results of a Principal Components Analysis for the proportion of variance explained by the variance components and studied the scree plot reflecting these data. In addition, I inspected the patterns of participants' factor loadings and the factor scores of items for two- to four-factor extractions using the Unweighted Least Squares (ULS) and the Principal Axes Factoring methods with orthogonal and oblique rotations. The ULS extraction, which tends to maximize accuracy of estimation with relatively small samples, tended to produce the optimal

combination of simple structure and meaningful Q-factors in this sample. This was also true of the Promax rotation, which is an oblique rotation appropriate when factors are intercorrelated and is more likely to reflect the realities of personality than an orthogonal rotation. I used a Promax rotation with κ=2 to balance the need for ecological validity with the taxonomic need for obtaining relatively independent Q-factors. The data were suggestive of either two or three Q-factors. I conducted a parallel analysis by simulating random SWAP-II profiles for 50 samples of 90 fictional participants each, conducting an Unweighted Least Squares estimation on the simulated data, taking the 95th percentiles of the eigenvalues (essentially critical values in a significance test), and plotting them against the observed eigenvalues in the real data. The observed eigenvalues of the first three Q-factors were higher than the critical values. I decided to retain three Q-factors that in turn explained 62.8, 4.3, and 3.0 percent of the observed variance (see Appendix D). As will be demonstrated below, the decision to retain the small but statistically significant second Q-factor received additional support in the validation analyses.

Overall, the ULS solution with a Promax rotation (κ=2) explained 69% of the variance in the SWAP-II profiles of the highly psychopathic participants. The obliqueness of the solution was evident in the correlations among the pairs of Q-factors: The first two Q-factors were moderately correlated at .50, the first and the third were correlated at .34, and the second and the third at .33. The median communality was .71 and 95% of the cases had communalities of .50 or higher, whereas only one case had a communality estimate lower than .46, suggesting that this Q-factor extraction explained a substantial proportion of the variance in the SWAP-II profiles (in Q-factor analysis communalities reflect variance explained in participants, not items). All participants had loadings of .30 or larger on at least one Q-factor. Furthermore, 74 of the participants had loadings of .40 or larger on one and only one Q-factor (see Appendix E), suggesting that 81% of the participants could be classified relatively easily (if I adopted a categorical approach to classifying the participants into these three psychopathy subtypes). If I used the highest factor loading to

classify the participants, 47 would fall into the first subtype, 32 into the second, and 12 into the third.

The first Q-factor (Table 8) described a person with poor behavioral and emotional controls who tends to be hostile, violent, abusive, impulsive, unempathic, irresponsible, and prone to negative emotional experiences that may spiral out of control. Unstable relationships, occupational functioning, and lifestyle, proneness toward substance abuse, and failure to learn from consequences also characterize this subtype. It is consistent with the notion of a "secondary psychopath." Thus, I labeled this hostile and dysregulated subtype Secondary Psychopathy.

The second Q-factor (Table 9) described a grandiose, entitled, arrogant, extraverted, manipulative, articulate, socially skilled, hypermasculine, and seductive personality subtype who tends to feel quite good about himself, to be critical and exploitative of others, and to deceive others without feelings of remorse. This subtype was not associated strongly with the negative emotionality and affective/behavioral dyscontrol that characterized the first one. It was overall consistent with the notion of a "primary psychopath." I labeled it Primary Psychopathy.

The third Q-factor (Table 10) was the smallest in terms of number of participants who loaded highly on it. A number of items describing psychological health (particularly sociability, positive affectivity, socialization, and the capacity to relate to others) were linked to this Q-factor. (This finding needs to be interpreted in relation to the other Q-factors while keeping in mind that all participants had very high psychopathy scores on the PCL-R.) On the more morbid side, these participants tended to show evidence for psychological conflict over authority and achievement, signs of emotional avoidance, as well as thrill seeking, recklessness, and proneness to substance abuse. Whereas the other two subtypes were not associated highly with items related to interpersonal attachment (whether secure or insecure), the third Q-factor was linked to items describing both a capacity for relating to others positively as well as attachment insecurity. Overall, this subtype is partially consistent with the prediction for a sociopathic personality and

might represent a pseudopsychopathic personality organized around sensation-seeking and strong positive emotionality. I called it the Thrill-seeking subtype.

I examined the subtypes for rater effects in univariate and multivariate analyses (see Table 11), and I found that participants' degree of match to the three subtypes did not appear to vary significantly as a function of the SWAP-II raters.

To avoid confusion between the labeling and the ordering of the Q-factors, from this point on I organize the tabular results and the discussion in the following order: Primary (even though this was the second Q-factor in the solution), Secondary, and Thrill-seeking.

External Validation

To examine the validity of the Q-factors, I tested *a priori* hypotheses regarding their associations with external validation criteria. Above, I outlined two sets of prediction: one to use in case two psychopathy subtypes had emerged, and one to use in case I found evidence for three subtypes. Because I retained and presented three Q-factors, I tested the second set of hypotheses. Tables 12 and 13 present descriptive statistics for the external validation variables and the additional variables I used for statistical control and incremental validity analyses.

Because of sample size limitations, not all validation analyses presented below had adequate power to detect medium effect sizes. For a medium effect size (R = .30) at α = .05 (one-tailed), power for the correlation analyses ranged from .90 (for N = 91) to .56 (for N = 34). For a large effect size (R = .50), it ranged from .99 (for N = 91) to .90 (for N = 34). For the partial correlation tests, for a medium effect size (f^2 = .15), power ranged from .90 (for N = .91) to .50 (for N = 34). For a large effect size (f^2 = .35), it ranged from .99 (for N = 91) to .85 (for N = 34). The low N's resulted largely from two factors. One was the fact that, apart from the PCL-R and MPQ/MPQ-BF, validation data were available only for the participants from the Florida prison. The other involved constraints on the volunteers' time imposed by prison schedules. Because I could not easily attribute "missingness" to factors that I could model, and because I did not have data I could use to impute missing values for the Minnesota sample, I did not use imputation

procedures for missing data. Thus, the external validation results have power and sampling limitations. They should be treated as preliminary data to inform our understanding of the nomological network of psychopathy subtypes and not as accurate estimates of population parameters.

Because the predictions were selective and specific, and because of concerns about increased Type II error rates, I adopted a liberal significance level cutoff of one-tailed $\alpha = .05$ across the analyses and focus on the interpretation of results that met this cutoff. The tables also highlight findings that met a cutoff of $\alpha = .10$ to assist in visualizing patterns within the data, although these particular findings are less likely to be robust.

Table 14 shows support for 33 predictions, a trend in the predicted direction for 11 predictions, 31 inconclusive findings, and only one finding that showed a trend in the opposite direction of the prediction. Within the high psychopathy sample, the degree of match to the Primary Psychopathy subtype was positively linked to PCL-R Factor 1, higher age at the first charge for offending, three different self-report measures of extraversion/positive emotionality, and self-report temperamental activity level. The degree of match to this subtype was linked negatively to internal expression of anger, neuroticism and fearfulness self-report, and observer-report of inattention/hyperactivity. Also consistent with the predictions were trends toward negative associations between Primary Psychopathy and the presence of childhood abuse (in file data), depression levels on self-report, and observer ratings of aggressive impulsivity. Notable inconclusive findings where I expected to see significant relationships but observed none were those concerning Negative Affect on the PANAS, Negative Emotionality on the MPQ, Distress on the EASI, and sensation seeking. Not part of my predictions, but consistent with the notion of a psychopathic character style that is less impulsive and more planful were the significant negative correlations of the Primary Psychopathy subtype with PCL-R Factor 2 scores, ASPD diagnostic status, the number of juvenile charges and the number of different kinds of childhood

antisocial behaviors, as well as trends toward significant negative relationships with childhood violent behaviors and aggressive/antisocial impulsivity on the IMPQ.

The extent to which participants' SWAP-II profiles matched the Secondary Psychopathy subtype was linked, as predicted, to PCL-R Factor 2 scores, the number of antisocial and violent behaviors, childhood abuse, high anger expression (internal and external), low anger control, low openness, low socialization, low overall sensation seeking, and a disposition toward high negative emotionality (fearfulness, distress, and anger) on the EASY, as well as high aggressive/antisocial and inattentive/hyperactive impulsivity on the IMPQ. Trends toward significance in the expected (negative) direction were present when correlating this subtype with neuroticism on the NEO-FFI and negative affectivity on the PANAS. I expected but did not observe significant relationships between this subtype and the number of juvenile charges and nonviolent charges, the subscales of the Drinking Motives Questionnaire, NEO-FFI Conscientiousness, MPQ Constraints, and MPQ NEM, and certain scales of the Sensation Seeking Scale and the EASI. Several significant relationships about which I had made no predictions were actually consistent with a highly aggressive and explosive character style ridden with anger and other negative emotions: a link to earlier age at the first juvenile charge, a negative relationship with PANAS Positive Affect, and a trend toward a weak positive relationship with the PCL-R Total score.

The Thrill-Seeking subtype yielded mixed results. As predicted, match to this prototype was linked in the negative direction to childhood abuse and to Aggressive/antisocial Impulsivity on the IMPQ. It was also linked in the positive direction to efforts to control anger and to NEO-FFI Openness. Also consistent with the predictions were trends toward a significant negative association with the PCL-R Total Score and positive association with NEO-FFI Agreeableness. The analyses involving the Drinking Motives Questionnaire and the SADU were, once again, inconclusive, as were results involving internally expressed anger, EASI Impulsivity, and the Sensation Seeking Scale subscales of Disinhibition and Boredom Susceptibility. Findings that I had not predicted included: negative correlations with PCL-R Factor 1 scores, antisocial behavior,

overall and outward anger expression, EASI Anger, MPQ NEM, and IMPQ Inattention/hyperactivity, as well as positive correlations with Thrill and Adventure Seeking and Socialization. A trend toward a significant positive association with the number of total juvenile charges contradicted my predictions. Overall, the results for this subtype were consistent with a thrill and novelty seeking personality that is prone to criminality but less prone to violence and aggression within the context of a high psychopathy sample and who is relatively free from (or avoidant of) negative emotion on self-report.

Potential Confounds

Ethnicity. I coded ethnicity dichotomously to distinguish between White and Non-white participants and repeated the Q-factor analysis by including this variable with the SWAP-II variables. It received the following Q-factor scores: .07, .24, -.39. Their magnitude suggests that this variable did not load strongly on either Q-factor (factor loadings are analogous to *Z*-scores and express the item's standardized "factor score" relative to the other items). I also examined the results of a multivariate test using participants' loadings on the three Q-factors as dependent variables and race coded categorically (White, Black, Hispanic, and other) as the predictor, and I found non-significant results for the omnibus test and the univariate between-subjects effects. Finally, I examined the associations of individual SWAP-II items with ethnicity, adopting a relatively liberal (for the number of analyses) α-level of .01. The results are displayed in Table 15. Because certain items related to promiscuity and punishment insensitivity were linked to being Non-white, whereas certain items related to narcissism were linked to being White, I assumed that, despite the otherwise negative findings, the role of ethnicity as a potential confound in the validation analyses merited attention.

It is evident from Table 16 that controlling for ethnicity did not alter the observed relationships among the Q-factors and the validation variables. Controlling for ethnicity led to a slight increase in the correlation between the Thrill-Seeking subtype and the Schedule of Alcohol and Drug Use composite score (SADU) and between the same subtype and the Sensation Seeking

Scale Total Score, suggesting that ethnicity may have acted as a suppressor variable in these relationships. Overall, the ethnicity of the participants did not appear to play a substantial role in the classification and nomological network of psychopathic subtypes in this sample.

Confidence. Correlational analyses presented in Table 17 suggest that raters were less confident and found it more difficult when scoring the SWAP-II profiles of participants matching the Primary subtype. The Secondary subtype also had a positive association with the difficulty of the ratings but had no linear relationship to confidence. The Thrill-Seeking subtype appeared easier to describe using the SWAP-II, as raters tended to report greater confidence in their ratings and lower difficulty the more strongly the participants matched this prototype. I suspect that the Primary subtype's manipulativeness and positive self-presentation may account for its association with lower confidence. Qualitatively, these participants tend to obfuscate the interview by volunteering lengthy explanations attributing their antisocial behavior to external factors or telling grandiose stories imbued with positive self-presentation. I suspect that the positive association between the Primary and Secondary subtypes and SWAP-II scoring difficulty may reflect the substantial amount of psychopathology that was readily observable to the raters who found themselves placing a great number of SWAP-II items in the top piles (most highly characteristic of the participant) and then having to decide which items to "push down" to conform to the fixed distribution of the Q-sort. The Thrill-Seeking subtype appears to have been easier to describe, perhaps because of its lesser amount of psychopathology.

Because factors of the Confidence Scale were linked to the predictors, I repeated the external validation analyses while controlling for Confidence and Difficulty. Relatively few of the results changed, as can be seen from Table 18.

The results related to the Primary subtype were particularly robust in this case. A negative relationship between this subtype and EASI Distress emerged. I had predicted this relationship but did not observe it in the original analysis, suggesting that variance in the SWAP-II profiles related to the difficulty of scoring obscures their relationship to self-reported Distress.

The results related to the Secondary subtype were also relatively robust, although four analyses that previously supported the construct were rendered non-significant: the presence of childhood abuse (as reported in the interview), the number of nonviolent institutional charges, Thrill and Adventure Seeking, and Depression on the BDI. Because these constructs were also positively associated with one or both Confidence Scale factors, the most likely explanation is that participants with greater scores on the self-report measures of these constructs tended to be more difficult to describe with the SWAP, leading the raters to attended more closely to and weigh more heavily explicit self-report about the constructs during the interview. This would have created an apparent association between the SWAP-II profiles and the self-report measures that actually became attenuated when controlling for the Confidence Scale factors. In addition, a negative association between Secondary psychopathy and NEO-FFI Extraversion emerged. Because participants who had higher Extraversion scores tended to be easier to describe with the SWAP-II, confidence most likely acted as a suppressor of the relationship between Secondary Psychopathy and Extraversion.

Partialing out the Confidence Scale factors had a more complex effect on the results pertaining to the Thrill-seeking subtype. They rendered several findings linking this subtype to lower levels of antisocial behavior non-significant, and they also attenuated greatly the relationship with total number of juvenile charges. A significant relationship between age of first criminal charge and match to this subtype emerged, as did positive relationships with self-report Sensation Seeking (Total Score and Boredom Susceptibility) and a negative relationship with EASI Distress. The relationship to IMPQ Inattention/hyperactivity became non-significant.

Interpersonal Behavior in the Interview

As mentioned earlier, a potential concern regarding the internal validity of this project was the possibility that certain aspects of the interpersonal behavior of "psychopaths" (e.g., trying to dominate the interaction, to interrupt and distract, and to solicit alliance from the interviewer) may dilute or bias the findings. I examined the fidelity of the external validation findings while

partialing out scores on the Interpersonal Measure of Psychopathy (IMP). As shown in Table 19, the correlation matrix remained largely unchanged.

With regard to the Secondary subtype, its negative relationship to the PCL-R Factor 1 was attenuated, suggesting perhaps that the raters used interpersonal behavior during the interview to evaluate constructs that load on the PCL-R Factor 1 (as they should).

With regard to the Thrill-Seeking subtype, partialing out IMP scores rendered non-significant the previously observed positive association with the number of delinquent charges and the negative associations with PCL-R Factor 1, EASI Activity, and IMPQ Inattention/hyperactivity. Conversely, the negative associations with EASI Distress and Anger Expression In were augmented. These data suggest that the raters were using (appropriately) interpersonal behavior in the interview as a source of information regarding such constructs as level of activity/hyperactivity and the interpersonal/affective features of psychopathy. They also suggest that variance in interpersonal behavior during the interview may suppress to some extent the ability of the SWAP-II ratings to predict internalizing psychopathology and that controlling for interpersonal behavior during the interview may uncover these relationships.

The findings were more interesting when considering the Primary subtype, because they concern some of the predictions and shed light on the nature of the constructs. The fact that the association between this subtype and PCL-R Factor 1 remained positive and significant is worth noting, because it suggests that raters were not relying exclusively on the behaviors that the IMP measures when describing participants who matched this subtype. It also raises concern about the incremental validity of the IMP, which was developed to tap a construct similar to Factor 1 psychopathy . Also notable is the fact that the IMP appeared to mediate the relationships between this subtype and both Extraversion and Neuroticism on the NEO-FFI, as these relationships were attenuated when partialing out the IMP. Conversely, significant relationships analyses with NEO-FFI Openness and the Sensation Seeking Scale Total Score that had been predicted but not found significant in the previous emerged. A trend toward a negative relationship to EASI Anger also

emerged. The data suggest that the IMP may capture constructs that both mediate and suppress important relationships between the SWAP-II prototype and key traits measured by self-report.

Incremental Validity over Interpersonal Traits

The interpersonal trait dimensions Dominance and Hostility (measured via observer-report using the IAS-R) explained the relationship between the psychopathy subtypes and some but not all external validation variables (see Table 20). After partialing out the IAS-R variables, the relationships between the Primary subtype and PCL-R Factor and between the Secondary subtype and PCL-R Factor 2 remained significant, whereas the relationship between the Thrill-Seeking subtype and the PCL-R Total Score shrank to near zero. The Primary subtype retained a significant negative relationship to PCL-R Factor 2, although the correlation between the Secondary subtype and PCL-R Factor 1 was attenuated. These results suggest that the variance in the interpersonal traits measured with the IAS-R and its overlap with the PCL-R variables and the SWAP-II subtypes did not exhaust the relationship between the psychopathic subtypes and the PCL-R. The above was also generally the case with regard to measures of ASPD and antisocial behavior in childhood and adulthood.

Conversely, the negative relationships between the Primary subtype and childhood abuse (coded form prison files) and the age of first charge and the positive relationship between the Secondary subtype and the number of nonviolent institutional charges were attenuated and rendered non-significant when controlling for the IAS-R dimensions. Furthermore, the Thrill-Seeking subtype's positive correlation with the number of juvenile charges became non-significant, whereas a trend toward a significant positive association between this subtype and higher age at the first criminal charge emerged. A trend toward a negative association between the Primary subtype and the number of nonviolent institutional charges emerges, whereas the negative link to the total number of juvenile charges wakened substantially. These findings suggest that (with the exception of age of first charge, which remained negatively correlated with the Secondary subtype), the Dominance and Hostility aspects of personality accounted in part for

the relationship between psychopathic personality subtypes and the age, the number of times, and the kind of offences for which the participants had been caught.

As with the previous analyses, findings related to the Drinking Motives Questionnaire were unremarkable. A trend toward a positive association (in the predicted direction) between the Schedule of Alcohol and Drug Use composite and the Thrill-Seeking subtype emerged.

Removing the effects of the IAS-R variables had an impact on some of the relationships I had detected between the psychopathy subtypes and a number of variables tapping into the negative affectivity and positive affectivity constructs (anger, depression, neuroticism) as well as agreeableness and sensation seeking. In summary, the findings strengthen the evidence for a negative relationship between the Thrill-Seeking subtype and negative affectivity. They suggest that interpersonal traits may explain only partially the relationship between the Secondary subtype and self-report of negative emotionality and sensation seeking (but not observer-report of impulsivity). Similarly, the interpersonal traits may explain partially the relationship between the Primary subtype and positive and negative emotionality.

Observer-report of Impulsivity

Above, I discussed results regarding the *a priori* hypotheses regarding the relationships between the psychopathy subtypes and the Aggressive/antisocial and Inattentive/hyperactive factors of the Impulsivity Questionnaire. Table 21 shows additional exploratory results. They suggest that the Secondary subtype correlated positively with all impulsivity factors, that the Thrill-Seeking factor correlated negatively with impulsivity, and that the Manipulative Narcissistic subtype had a tendency to associate with impulsivity factors in a negative direction, particularly with Inattention/hyperactivity and with impulsive behavior that takes place despite better intentions.

Validity Scales

Among the validity scales of the MPQ (see Table 22), only Vrin evidenced significant correlations with the Q-factors. Vrin consists of pairs of items with similar content and is scored

according to the configuration of answers in each pair: when a participant gives answers in the opposite direction to the two questions in a pair, a point is added. The usual interpretation of high scores is indiscriminate responding.

Vrin mediated the negative relationship between Primary Psychopathy and ASPD and its positive relationship with MPQ PEM. Vrin's effect on the relationship between Primary Psychopathy with Boredom Susceptibility (a positive relationship emerged), EASI Sociability (a negative relationships emerged), and, to a lesser extent, with Experience Seeking (the negative relationship was strengthened) was suggestive of a suppression effect.

Partialing out Vrin (see Table 23) rendered non-significant the relationships between Secondary Psychopathy and PCL-R Factor 1 as well as childhood abuse reported in the interview, the negative affectivity variables on the EASY (Fearfulness, Distress, and Anger), Socialization, and Sensation Seeking Total and Thrill and Adventure Seeking. A stronger relationship between Secondary Psychopathy and MPQ Constraint (in the negative direction) and EASI Activity (in the positive direction) emerged. In addition, controlling for Vrin inversed the relationship between MPQ NEM and Secondary Psychopathy. Controlling for Vrin reduced the relationship between the Thrill-Seeking subtype and Thrill and Adventure Seeking, Socialization, and other variables. It led to stronger relationships with MPQ PEM and Constraint and, in the negative direction, with EASI Distress and Impulsivity.

Incremental Validity over the PCL-R Factors

I examined the relationships of the external validation variables Primary and the Secondary Psychopathy while controlling respectively for PCL-R Factor 1 and Factor 2 scores. A number of theoretically significant relationships remained significant. In particular, Primary Psychopathy retained its negative relationship with childhood abuse according to prison records, its negative relationships with negative emotionality and impulsivity and positive relationships with positive emotionality indices. A strong positive relationship with Activity and a strong negative relationship with Fearfulness stood out. After controlling for PCL-R Factor 2 scores,

Secondary Psychopathy remained positively linked to antisocial behavior in childhood, earlier offending, childhood abuse according to records, and measures of anger, distress, fearfulness, and impulsivity. It was negatively linked to measures of socialization, openness, positive affectivity, and sensation seeking.

Discussion

Psychopathy is a personality constellation with devastating consequences for the people who have it and for those around them. Cleckley's (1941/1982) delineation of the syndrome and its operationalization using Hare's (1980) Psychopathy Checklist have stimulated informative research on psychopathy as a unitary construct as well as its factor structure. Recent efforts to identify variants of the syndrome have been suggestive of a primary (emotionally stable) and secondary (aggressive and explosive) subtype as well as a possible pseudopsychopathic or sociopathic subtype (Hervé, 2007). Four theoretical accounts have been put forth that may account of this heterogeneity: two versions of the dual-process model (Lykken, 1995; Patrick, 2006), the aggression-inhibition model (Blair, 2005), and the paralimbic dysfunction model (Kiehl, 2006). To expand upon the existing literature, I studied subtypes of personality constellations in incarcerated men who met conventional cutoffs for psychopathy.

Prior research in this area has several limitations that complicate the drawing of theoretical conclusions. In particular, few previous studies subtyped the personalities of conventionally defined "psychopaths," and all studies relied on cluster analyses that limited the number of items or measures that could be included. I selected participants on the basis of *bona fide* assessments with the PCL-R. Furthermore, I used an omnibus measure of personality and personality pathology (the SWAP-II) that had a comprehensive item set not limited by theoretical preconceptions. In addition, the project had a number of strengths related to its statistical methodology. First, the derivation of personality constellations was largely empirical. Second, the method allowed us to combine quantitative and qualitative procedures for determining the appropriate number of Q-factors to extract. Third, the resulting subtypes were not mutually

exclusive. Furthermore, they could be translated to both dimensional and categorical approaches to diagnosis and classification. In addition to the subtyping analyses, I tested a set of predictions about the subtypes' relationships to external validation variables, conducted incremental validity analyses, and examined the results for potential confounds.

The average SWAP-II description of the participants (their most descriptive characteristics) subsumed all PCL-R items but grandiosity (which played an important role in distinguishing subtypes) and items that were not represented in the SWAP-II (early behavioral problems, juvenile delinquency, and revocation of conditional release). In addition, several highly descriptive SWAP-II items had no direct PCL-R equivalents but mapped closely onto some of Cleckley's (1941) psychopathy criteria. They include Item 112 ("Appears impervious to consequences…") that corresponds to Cleckley's eighth criterion ("Poor judgment and failure to learn by experience") and Items 95 ("Appears comfortable in social situations"), 94 ("Has an active and satisfying sex life"), and 101 ("Generally finds contentment and happiness in life's activities") that correspond to Cleckley's third criterion ("Absence of nervousness or psychoneurotic manifestation"). The PCL-R does not have items that correspond directly to these criteria. These findings are consistent with previous research using the SWAP with mental health patients in which a similar psychopathy dimension emerged empirically (Westen *et al.*, in review). These results provide both a validity check for my methodology and support for the coherence of Cleckleyan psychopathy as a unitary construct. In addition, the SWAP-II description included items related to thrill seeking, substance abuse, reactive and instrumental violence, and angry hostility, consistent with psychopathy's link to the broader externalizing spectrum (Patrick *et al.*, 2005).

I found evidence for two psychopathy subtypes (Primary and Secondary Psychopathy) that were consistent with the predictions I based of the dual-process model (Fowles & Dindo, 2006) as framed by Patrick (2007). Below, I provide the reasoning behind this conclusion.

Relative to the highly psychopathic participants in general, Primary Psychopathy was distinguished by a number of items related to PCL-R Factor 1 psychopathy, particularly grandiosity, manipulativeness, remorselessness, deceitfulness, and socially and sexually appealing qualities related to glibness and superficial charm. This subtype correlated positively with PCL-R Factor 1 and negatively with PCL-R Factor 2 even after controlling for other variables. This subtype's relationship to agentic and dominance-oriented aspects of extraversion and positive emotionality was consistent with Patrick's (2007) reading of the dual-process model but not with the other three theoretical models. This was evident both from the SWAP-II items that distinguished this subtype and from the pattern of correlations with external validation variables. Thus, Primary Psychopathy was somewhat more strongly associated with NEO-FFI Extraversion than it was with MPQ Positive Emotionality, consistent with previous findings suggesting that this kind of psychopathy is linked to the appetitive surgency and social potency of extraversion rather than its affiliative aspects (Church, 1994; Hicks *et al.*, 2004). The substantial correlations with EASI Activity and Positive Affectivity on the PANAS support this interpretation as well. Furthermore, controlling statistically for the IMP attenuated the relationship with NEO-FFI Extraversion, again suggesting that appetitive and domineering interpersonal behavior may explain Primary Psychopathy's link to the extraversion/positive emotionality superfactor.

I found support for the predictions that Primary Psychopathy would evidence inverse relationships with measures of negative affectivity (including general neuroticism, fearfulness, depression, and internally directed anger) as well as with inattention/hyperactivity, childhood abuse. The findings regarding neuroticism, inattention/hyperactivity, anger, and abuse were particularly robust when controlling for covariates, although controlling for the MPQ's Vrin Scale attenuated the fearfulness finding. These findings are consistent with both the dual-process model and the aggression-inhibition model and implicate a specific affective deficit (and not an attentional deficit or coercive parenting) as an etiological factor in primary psychopathy.

Consistent with the literature on primary psychopathy, individuals matching closely the respective SWAP-II prototype were less likely to receive diagnoses of ASPD or to report a diverse variety of childhood antisocial behaviors or an early age of first charge, relative to the high psychopathy sample overall. The predictions regarding drinking motivation and sensation seeking in relation to this subtype did not find consistent support. Nevertheless, the overall picture of primary psychopathy emerging from this study is similar to prior findings of an emotionality stable (Alterman *et al.*, 1995; Hicks *et al.*, 2004), primary (Skeem *et al.*, 2007), extraverted (Blackburn, 1975), and narcsissitic-antisocial (Blackburn & Coid, 1999). The data support most closely Patrick's (2007) model. Clinically, prisoners who match this subtype resemble closely the theoretical (Kernberg, 1998) and even more closely the empirical (Russ, Shedler, Bradley, & Westen, in press) construct of "malignant narcissism."

The findings regarding Secondary Psychopathy were generally consistent with the predictions. As expected, a number of features of PCL-R Factor 2 characterized this subtype: impulsivity, irresponsibility, and unstable relationships and lifestyle. In addition and as predicted, its SWAP-II prototype described an emotionally and behaviorally dysregulated person who suffers from a range of negative affects (particularly depression, anxiety, and anger), as well as emotional and violent outbursts, hostility, and other externalizing features. Participants' degree of match to this prototype had a weak negative relationship to PCL-R Factor 1 scores and a low-moderate positive relationship to PCL-R Factor 2 scores, ASPD diagnostic status, versatility of antisocial behavior, and lower age at first charge. Secondary Psychopathy was linked to a range of self-report measures of negative affectivity (including depression, fearfulness, distress, anger, and general negative emotionality) and socialization. It correlated with observer-report measures of impulsive aggression, inattention/hyperactivity, other impulsivity factors, as well as file records of childhood abuse.

Because Secondary Psychopathy's relationships with measures of positive affectivity, sensation seeking, and temperamental activity were generally negative or absent, I concluded that

the findings were not consistent with abnormal behavioral activation. The negative affectivity findings and the indirect evidence for executive dysfunction (pervasive impulsivity and hyperactivity) were not entirely consistent with models that propose normal behavioral inhibition, whereas the aggression-inhibition model did not account adequately for the degree and pervasiveness of negative affectivity in this subtype. The findings were most consistent with Patrick's (2007) interpretation of the dual-process model and with Kiehl's (2006) paralimbic dysfunction model, because they predicted positive links with inattention and negative affectivity but no positive links with positive affectivity. The Secondary Psychopathy subtype resembled the aggressive, neurotic, and dysregulated subtypes found by other researchers (in particular by Alterman *et al,* 1998; Haapasalo & Pulkkinen, 1992; Hicks *et al.*, 2004; and Skeem *et al.*, 2007).

Despite my adoption of the "secondary psychopathy" label, I do not believe that "psychoneurosis" alone can account for the severe presentation of the Secondary Psychopathy subtype (see Karpman, 1946). The dual-process model is consistent with a certain degree of emotional conflict in individuals who find themselves repeatedly behaving maladaptively and being able to feel bad about it. Indeed, the SWAP-II profile for this subtype includes a number of items that imply conflicting motivation. Nevertheless, the data on the Secondary Psychopathy subtype are overall suggestive of a much more complex etiology related to punishment insensitivity (Dadds & Salmon, 2003) due to a confluence of attentional and executive deficits/low effortful control (Blair, 2005; Kochanska, 1993), coercive conditioning (Patterson, 1982), and abusive or incompetent parenting (Lykken, 1995). Whereas Primary Psychopathy may be most consistent with developmental psychopathology findings of callous/unemotional and narcissistic children who go on to develop severe externalizing disorders (Frick *et al.*, 2003), Secondary Psychopathy may be most consistent with findings of children with comorbid Attention-deficit/Hyperactivity Disorder and CD (Colledge & Blair, 2001).

In contrast to the Primary and Secondary Psychopathy subtypes, the Thrill-Seeking subtype did not yield results consistent with my predictions. The SWAP-II data were consistent

with a subtype whose most descriptive features were psychopathic but who could be distinguished from the other subtypes by its association with certain psychological strengths, positive emotionality, and sociability as well as psychological conflict, emotional detachment, and thrill seeking. It evidenced a tendency to associate negatively with PCL-R total and Factor 1 scores and some indices of antisocial behavior, anger, inattention, and aggressive impulsivity. Trends for positive associations with the total number of criminal charges, efforts to control anger, socialization, and sensation seeking were also present. However, many of these relationships changed once I controlled for ethnicity, confidence factors, interpersonal traits, and response inconsistency. Furthermore, I based my original decision to retain the Q-factor underlying this subtype on parallel analysis results that barely reached significance. I thus concluded that the results regarding this putative third subtype were inconclusive and that they might have reflected measurement error in the PCL-R assessment or in the SWAP-II evaluations.

In contrast to the Thrill-seeking subtype, the external validity findings regarding Primary and Secondary Psychopathy subtypes were relatively robust even when I controlled for potential confounds. For example, controlling for interpersonal behavior during the interview measured with the IMP had very few effects on the pattern of findings. Overall, the findings may be reflective of the SWAP-II subtypes' validity, although they might also reflect poor incremental validity of the IMP (see Zolondek *et al.*, 2006). The analyses suggest that ethnicity overall was largely independent from the subtypes (despite that some SWAP-II items showed moderate correlations with ethnicity) and that controlling for it did not generally alter their relationships to external variables. These results are in accord with prior literature suggesting that, despite slight differences in the performance of a limited number of PCL-R items, ethnicity overall is unrelated to psychopathy (Cooke, Kosson, & Michie, 2001). The fact that among the MPQ validity scales only Vrin had some relationship to the findings and that this influence was not substantial is consistent with previous research (Piedmont & McCrae, 2000) that found that controlling for validity scales does not generally alter the relationships between content scales and validation

variables, variable inconsistency scales perhaps being the exception. In sum, the two psychopathy subtypes were embedded in a multi-method nomological net that was resistant to tear.

Importantly, the Primary and Secondary Psychopathy subtypes evidenced incremental validity respectively over Factor 1 and Factor 2 scores on the PCL-R in predicting such constructs as childhood abuse, antisocial history, socialization, basic traits and temperament, sensation seeking, anger expression, and impulsivity. They also had incremental validity over observer ratings of interpersonal traits (Dominance and Hostility) measured with the IAS-R. These traits mediated the relationships between the psychopathy subtypes and some of the self-report measures that captured similar constructs, yet they did not generally attenuate the subtype's relationships to such constructs at the respective PCL-R factors, history of antisocial behavior, some self-report personality measures, and observer ratings of impulsivity. Certain methodological limitations notwithstanding, the results from the study significantly increase our confidence in the existence of Primary and Secondary Psychopathy and in the dual-process model's ability to account to a range of findings linked to these psychopathy variants.

Limitations

The main limitations of the project stem from possible but unknown self-selection biases among participants who volunteer for psychological research in prisons as well as practical limitations on the use of multiple fully blinded SWAP-II raters and collecting larger amounts of data. Above, I discussed limitations related to sample size and power. Despite these limitations, and despite potential difficulties related to range restriction, I found support for many of my predictions. This speaks in part to the intensity of the personality pathology in highly psychopathic inmates. Additional limitations stem from known aspects of the interview material and the participant sample that I discuss in some detail below.

The interview material I used to complete the SWAP-II, interpersonal, and impulsivity ratings (PCL-R interviews supplemented with questions related to ASPD, CD, and substance abuse) closely resembled a long clinical interview but was not designed for the SWAP-II *per se.*

Thus, the ability of the raters to make reliable inference and evaluate each SWAP-II item carefully may have been limited for items that the interviewers did not probe for. For example, SWAP-II items related to certain potentially relevant constructs (e.g., posttraumatic stress, transient borderline states, suicidality, and paraphilias) were not assessed in any detail in the interviews and had small variances. This limitation may be addressed by expanding the PCL-R assessment using strategies from the diagnostic interview for the SWAP-II (Westen, 2000).

The gender composition of the sample is a limitation as the findings may not generalize to women. Future Q-factor analytic research using the SWAP-II with women with high psychopathy scores may help clarify some questions regarding psychopathy and gender that researchers have raised. For example, recent research (Bolt, Hare, Vitale, & Newman, 2004) suggests that the small 3-point difference between men and women in mean PCL-R scores (Hare, 2003) may be attributable to women's scoring lower on the behavioral items: early behavioral problems, juvenile delinquency, and criminal versatility. On the other hand, women with antisocial problems may endorse at higher rates items related to poor relationships functioning, anxiety, and depression (Mulder, Wells, & Bushnell, 1994). In samples with significant rates of psychopathy, relationship variables and sexual promiscuity may have much more discriminative power in women than they do in men (Salekin *et al.*, 1997), whereas psychopathic men tend to reach the ceiling effect on promiscuity. These observations may have a bearing on the hypothesis that men with psychopathy as their underlying problem may more often receive ASPD diagnoses, whereas women with the same syndrome may receive the diagnoses of Borderline and Histrionic Personality Disorder (Cale & Lilienfeld, 2002; Hamburger, Lilienfeld, Hogben, 1996). The present findings in men show that Primary Psychopathy was linked to some items that may describe histrionic personality (attention seeking, seductiveness, sexualization, and machismo), whereas Secondary Psychopathy was linked to items that may describe borderline personality (emotional dysregulation, volatile anger). Because the SWAP-II measures subtle aspects of relational functioning and does not emphasize the kinds of early behavioral problems that are

characteristic of conduct disordered boys (Silverthorn, Frick, & Reynolds, 2001), and because it includes items that correspond to all personality disorder symptoms, future research with the SWAP-II in the two genders may help clarify their similarities and dissimilarities with regard to the psychopathy construct overall as well as its subtypes.

In a similar vein, the sample's composition limits the generalizability findings to those individuals with psychopathic personalities who tend to not only commit criminal offenses but also get caught and convicted of them. A small body of research suggests that highly psychopathic individuals ("successful psychopaths") with PCL-R scores similar to those obtained by the participants in this study may "function" in society without attracting the attention of law enforcement (Babiak, 1995; Salekin *et al.*, 2001). Research also suggests that subclinical levels of psychopathy may have serious effects on the individuals who have this personality style as well as on their community. For example, a constellation of psychopathic and narcissistic characteristics called "aberrant self-promotion" predicts rule violations, drunken misbehavior, campus arrests, and criminal behavior in college students (Gustafson & Ritzer, 1995). Based on the existing literature (e.g., Falkenbach, 2004), the primary and secondary subtypes of psychopathy may generalize to non-clinical populations. Nevertheless, a subtyping project using a comprehensive personality assessment equivalent to this study has not been conducted in a general or subclinical sample yet.

Implications and Conclusions

More than a decade after Hare (1996) declared that the time of psychopathy had arrived, evidence for the importance of this ruinous disorder continues to accumulate. Indeed, our understanding of the Cleckley (1941/1982) and Hare (1980) "psychopath" is reaching the point where I are able to not only distinguish between levels of psychopathy but also between two salient, replicable, and theoretically meaningful variants that have implications for diagnosis, assessment, prophylaxis, and treatment: primary and secondary psychopathy.

With regard to diagnosis, evidence has accrued for these two psychopathy subtypes. Regrettably, psychopathy is not an official diagnostic entity in the Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition, (DSM-IV; APA, 1994) for reasons that appear to be largely historical. In actuality, a PCL-R diagnosis of psychopathy may outperform the current ASPD diagnosis in predicting criminal behavior (Hare, Hart, & Harpur, 1991). Initially, psychopathy formed the basis for the antisocial diagnoses in the DSM. For example, DSM-II (APA, 1968) emphasized psychopathic traits (selfishness, callousness, irresponsibility, impulsivity, frustration intolerance, and disloyalty). In a push toward atheoretical, objective, and reliable operationalization of disorders, DSM-III (APA, 1980) introduced ASPD by defining it largely on the basis of specific antisocial behaviors as opposed to personality dysfunction. DSM-III-R (APA, 1987) and DSM-IV increasingly emphasized a history of juvenile conduct problems as a necessary criterion. DSM-IV-TR (APA, 2000) defines it as a pervasive pattern of violating the rights of others occurring since adolescence. ASPD applies to a broad range of criminal offenders, some of whom have conduct problems secondary to poverty, substance use, or intellectual and social skills deficits (Hare *et al.*, 1991); it may miss non-criminal psychopathy or psychopaths with undetected crimes (Widom, 1977). As researchers identified a number of psychometric and conceptual flaws of ASPD as a psychiatric construct (Cunningham & Reidy, 1998; Lilienfeld, 1994), psychopathy has once again emerged as a promising construct for the classification of antisocial personality. It should make its way back into the formal diagnostic system in the near future. Based on the findings and review of the related literature, it would be justifiable to also include the two psychopathy subtypes as provisional diagnostic qualifiers and to test their utility in the field using appropriate self-report and clinician-report measures such as the PCL-R (Hare, 2003), the Psychopathic Personality Inventory – Revised (Lilienfeld & Widows, 2005), and the SWAP-II.

The punishment insensitivity, lack of empathy, and irresponsibility that characterize the two subtypes of psychopathy may have different etiological origins and neurobiological

underpinnings. I agree with Hicks and colleagues (2004), who suggested that psychopathy subtypes may account for some of the inconsistent findings in the literature regarding psychopathy's relationships to laboratory findings (e.g., Morgan & Lilienfeld, 2000; Pridmore, Chambers, & McArthur, 2005; Raine, 1989). I suggest that taking into account psychopathy variants in future studies using neuropsychological, electrophysiological, and neurophysiological measures may clarify the associations between Primary Psychopathy and amygdala dysfunction (Blair, 2005) and between Secondary Psychopathy and more pervasive orbitofrontal and paralimbic dysfunction (Blair, 2005; Kiehl, 2006) to promote integration between the neurophysiological models and the dual-process model of psychopathy.

Increased understanding of the differential etiology of psychopathy variants may lead to strategies for prevention and treatment. For example, whereas parenting skills may not moderate the relationship between the callous-unemotional temperament I putatively link to primary psychopathy and severe antisocial problems in the future (Oxford, Cavell, & Hughes, 2003; Wootton, Frick, Shelton, & Silverthorn, 1997), perhaps intervention that addresses parenting (Webster-Stratton & Hammond, 1997), attention problems, and peer relations (Brown *et al.*, 1997) may reduce the morbidity of secondary psychopathy. On the other hand, quality of attachment may be a potential intervention target for intervention to reduce behavior problems in fearless children (see Kochanska, 1995) and might have some implications for the treatment of primary psychopathy. In relation to adults, treatments aiming at the protection of potential victims of "psychopaths" (Harris & Rice, 2006) may benefit from knowledge about psychopathy variants, whereas individuals who match the secondary variant more closely than the primary one might potentially welcome and benefit from cognitive-behavioral treatments (see Thornton & Blunt, 2007) to improve emotion-regulation and reduce reactive aggression.

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Table 1
Models of the Factor Structure of the Hare Psychopathy Checklist – Revised (Hare, 1991)

PCL-R Items	Two[1]	Three[2]	Four[3]
1. Glib/superficial charm	a	a	a
2. Grandiose sense of self-worth	a	a	a
3. Need for stimulation/proneness to boredom	b		c
4. Pathological lying	a	a	a
5. Conning/manipulative	a	a	a
6. Lack of remorse or guilt	a	b	b
7. Shallow affect	a	b	b
8. Callous/lack of empathy	a	b	b
9. Parasitic lifestyle	b	c	c
10. Poor behavioral controls	b		d
11. Promiscuous sexual behavior			
12. Early behavioral problems	b		d
13. Lack of realistic, long-term goals	b	c	c
14. Impulsivity	b	c	c
15. Irresponsibility	b	c	c
16. Failure to accept responsibility for own actions	a	b	b
17. Many short-term marital affairs			
18. Juvenile delinquency	b		d
19. Revocation of conditional release	b		d
20. Criminal versatility			d

[1] Hare (1991); a: Interpersonal/affective, b: Social deviance;
[2] Cooke, Michie, and Hart (2004); a: Arrogant/deceitful interpersonal style, b: Deficient affective experience; c: Impulsive and irresponsible behavioral style;
[3] Hare and Neumann (2006); a: Interpersonal, b: Affective, c: Lifestyle, d: Antisocial.

Table 2

In Hicks et al. *(2004), Two Subtypes of Psychopaths (*Emotionally Stable, N=*30, and* Aggressive*,* N = *66) Differed on the Primary Dimensions and the Higher-order Factors of the Multidimensional Personality Questionnaire – Brief Form (MPQ-BF; Patrick et al., 2002) from a Normative Sample and from Non-psychopathic Prisoner Controls (*N=*125).*

Compared to:	**Normative Sample**		**Non-psychopathic Prisoner Controls**	
Psychopathy Subtype:	**Emotionally Stable**	**Aggressive**	**Emotionally Stable**	**Aggressive**
MPQ-BF Dimension				
Agentic Positive Emotionality	***High***		***High***	
Well Being		Low		Low
Social Potency	High	High		High
Achievement	High			Low
Communal Positive Emotionality				***Low***
Well Being		Low		Low
Social Closeness	Low	Low		Low
Negative Emotionality		***High***	***Low***	***High***
Stress Reaction	Low	High	Low	High
Alienation	High	High		High
Aggression		High		High
Constraint		***Low***		***Low***
Harm Avoidance	Low	Low		Low
Control		Low		Low
Traditionalism		Low		Low

Table 3
Summary of Theoretical Accounts of Psychopathy Subtypes

Model	Subtypes		
	Primary	**Secondary**	**Tertiary**
Dual-process (Lykken, 1995)	Fearlessness and PCL-R Factor 1 characteristics	PCL-R Factor 2 items related to high activity and impulsivity	Sociopathic (resulting from incompetent and coercive parenting)
Dual-process (Patrick, 2007)	Low negative affectivity and high agentic positive emotion with PCL-R Factor 1 features	PCL-R Factor 2 items combined with inattention and externalized negative affectivity	Sociopathic (resulting from incompetent parenting and coercive cycles)
Aggression-inhibition (Blair, 2005)	Deficits in affect, empathy, and passive avoidance learning; instrumental aggression	Deficits in affect, empathy, and passive avoidance learning; instrumental aggression; inattention/hyperactivity and reactive aggression	Inattentive and aggressive sociopathic (resulting from poor behavioral controls and aggressive conditioning)
Paralimbic dysfunction (Kiehl, 2006)	Unemotional, unempathic, and irresponsible; high levels of general aggression and approach behavior	Unempathic and irresponsible, unstable affect, executive function deficits, impulsivity, and reactive aggression	Features of the primary and secondary subtypes combined with perseveration and hostility

Table 4
Most PCL-R Items have a Semantic Equivalent in the SWAP-II

PCL-R	SWAP-II
1 Glib/superficial charm	(92. Is articulate; can express self well in words.) (95. Appears comfortable and at ease in social situations.)
2 Grandiose sense of self-worth	4. Has an exaggerated sense of self-importance (e.g., feels special, superior, grand, or envied). 190. Appears to feel privileged and entitled; expects preferential treatment.
3 Need for stimulation/ proneness to boredom	71. Tends to seek thrills, novelty, excitement, etc.; appears to require a high level of stimulation.
4 Pathological lying	20. Tends to be deceitful; tends to lie or mislead. 162. Expresses contradictory feelings or beliefs without being disturbed by the inconsistency; has little need to reconcile or resolve contradictory ideas.
5 Conning/manipulative	194. Tends to be manipulative.
6 Lack of remorse or guilt	113. Experiences little or no remorse for harm or injury caused to others.
7 Shallow affect	126 Appears to have a limited or constricted range of emotions.
8 Callous/lack of empathy	52. Has little empathy; seems unable or unwilling to understand or respond to others' needs or feelings.
9 Parasitic lifestyle	3. Takes advantage of others; has little investment in moral values (e.g., puts own needs first, uses or exploits people with little regard for their feelings or welfare, etc.).
10 Poor behavioral controls	31. Tends to show reckless disregard for the rights, property, or safety of others.
11 Promiscuous sexual behavior	132. Tends to have numerous sexual involvements; is promiscuous.
12 Early behavioral problems	No equivalent.
13 Lack of realistic, long-term goals	172. Seems unable to settle into, or sustain commitment to, identity-defining life roles (e.g., career, occupation, lifestyle, etc.). 188. Work-life and/or living arrangements tend to be chaotic or unstable (e.g., job or housing situation seems always temporary, transitional, or ill-defined).
14 Impulsivity	134. Tends to act impulsively (e.g., acts without forethought or concern for consequences).
15 Irresponsibility	24. Tends to be unreliable and irresponsible (e.g., may fail to meet work obligations or honor financial commitments).
16 Failure to accept responsibility for own actions	14. Tends to blame own failures or shortcomings on other people or circumstances; attributes his/her difficulties to external factors rather than accepting responsibility for own conduct or choices.
17 Many short-term marital affairs	153. Relationships tend to be unstable, chaotic, and rapidly changing.
18 Juvenile delinquency	No equivalent.
19 Revocation of conditional release	No equivalent.
20 Criminal versatility	40. Tends to engage in unlawful or criminal behavior.

Table 5

Predictions about Psychopathy Subtypes and Their Relationships to External Variables

	Set 1		Set 2		
Predictions	**Primary**	**Secondary**	**Primary**	**Secondary**	**Pseudo**
PCL-R total					-
PCL-R factor 1	+		+		
PCL-R factor 2		+		+	
Antisocial Personality Disorder		+		+	
Adult antisocial behaviors		+		+	
Childhood antisocial behaviors		+		+	-
Childhood violent behaviors		+		+	-
Childhood abuse	-	+	-	+	+
Age first charge	+	-	+	-	+
Total charges by 17		+		+	-
Nonviolent charges		+		+	
Nonviolent institutional charges		+		+	-
Drinking Motives: Social		+		+	+
Drinking Motives: Coping	-	+	-	+	+
Drinking Motives: Enhancement		+		+	+
SADU illicit drugs composite		+		+	+
Anger Expression: Total		+		+	
Anger In	-	+	-	+	+
Anger Out		+		+	
Anger Control	-	+	-	+	+
NEO-FFI Extraversion	+		+		
NEO-FFI Agreeableness	-		-		+
NEO-FFI Neuroticism	-	+	-	+	
NEO-FFI Conscientiousness		-		-	
NEO-FFI Openness	+	-	+	-	+
PANAS Positive Affect	+		+		
PANAS Negative Affect	-	+	-	+	
MPQ Positive Emotionality	+		+		
MPQ Negative Emotionality	-	+	-	+	
MPQ Constraint		-		-	
Socialization Scale		-		-	
Sensation Seeking Scale Total	+	-	+	-	
Thrill & Adventure Seeking	+	-	+	-	
Experience Seeking	+	-	+	-	
Disinhibition					-
Boredom Susceptibility					-
Beck Depression Inventory	-	+	-	+	
EASI Sociability		-		-	
EASI Activity	+		+		
EASI Impulsivity		+		+	-
EASI Fearfulness	-	+	-	+	
EASI Distress	-	+	-	+	
EASI Anger		+		+	
IMPQ: Aggressive/antisocial		+		+	-
IMPQ: Inattention/hyperactivity	-	+	-	+	

Table 6

The 30 Highest-ranking SWAP-II Items Comprising the Most Descriptive Characteristics of 91 Incarcerated Men with High PCL-R Total Scores (PCL-R ≥ 30)

	SWAP-II Item	*M*	*SD*
40	Tends to engage in unlawful or criminal behavior.	6.5	1.0
31	Tends to show reckless disregard for the rights, property, or safety of others.	6.2	1.1
20	Tends to be deceitful; tends to lie or mislead.	6.1	1.4
112	Appears impervious to consequences; seems unable or unwilling to modify behavior in response to threats or negative consequences.	6.1	1.2
113	Experiences little or no remorse for harm or injury caused to others.	6.0	1.2
52	Has little empathy; seems unable to understand or respond to others' needs and feelings unless they coincide with his/her own.	5.9	1.3
3	Takes advantage of others; is out for number one.	5.9	1.6
71	Tends to seek thrills, novelty, excitement, etc.; appears to require a high level of stimulation.	5.7	1.3
194	Tends to be manipulative.	5.6	1.6
147	Tends to abuse drugs or alcohol.	5.6	1.9
24	Tends to be unreliable and irresponsible (e.g., may fail to meet work obligations or honor financial commitments).	5.5	1.8
172	Seems unable to settle into, or sustain commitment to, identity-defining life roles (e.g., career, occupation, lifestyle, etc.).	5.4	1.4
14	Tends to blame own failures or shortcomings on other people or circumstances; attributes his/her difficulties to external factors rather than accepting responsibility for own conduct or choices.	5.4	1.6
134	Tends to be impulsive.	5.1	1.7
115	Is prone to violence (e.g., may break things or become physically assaultive).	5.1	2.0
188	Work-life and/or living arrangements tend to be chaotic or unstable (e.g., job or housing situation seems always temporary, transitional, or ill-defined).	5.0	1.8
132	Tends to have numerous sexual involvements; is promiscuous.	5.0	1.8
95	Appears comfortable and at ease in social situations.	4.8	1.5
8	Tends to get into power struggles.	4.3	1.8
153	Relationships tend to be unstable, chaotic, and rapidly changing.	4.3	1.6
94	Has an active and satisfying sex life.	4.3	1.3
41	Appears unable to describe important others in a way that conveys a sense of who they are as people; descriptions of others come across as two-dimensional and lacking in richness.	4.2	1.3
126	Appears to have a limited or constricted range of emotions.	4.2	1.5
177	Repeatedly convinces others of his/her commitment to change but then reverts to previous maladaptive behavior; tends to convince others that "this time is really different."	4.1	1.9
103	Tends to react to perceived slights or criticism with rage and humiliation.	4.1	1.9
129	Tends to be conflicted about authority (e.g., may feel s/he must submit, rebel against, win over, defeat, etc.).	3.9	1.9
179	Tends to be energetic and outgoing.	3.9	1.8
162	Expresses contradictory feelings or beliefs without being disturbed by the inconsistency; has little need to reconcile or resolve contradictory ideas.	3.8	1.6
16	Tends to be angry or hostile (whether consciously or unconsciously).	3.8	1.9
101	Generally finds contentment and happiness in life's activities.	3.8	1.7

Table 7

Correspondence between SWAP-II Descriptive Characteristics of Highly Psychopathic Men Identified with the SWAP-II and PCL-R Items

	SWAP-II Item	PCL-R Item Match
40	Tends to engage in unlawful or criminal behavior.	20 Criminal versatility
31	Tends to show reckless disregard for the rights, property, or safety of others.	(10 Poor behavioral controls)
20	Tends to be deceitful; tends to lie or mislead.	4 Pathological lying
112	Appears impervious to consequences; seems unable or unwilling to modify behavior in response to threats or negative consequences.	
113	Experiences little or no remorse for harm or injury caused to others.	6 Lack of remorse or guilt
52	Has little empathy; seems unable to understand or respond to others' needs and feelings unless they coincide with his/her own.	8 Callous/lack of empathy
3	Takes advantage of others; is out for number one.	9 Parasitic lifestyle
71	Tends to seek thrills, novelty, excitement, etc.; appears to require a high level of stimulation.	3 Need for stimulation/ proneness to boredom
194	Tends to be manipulative.	5 Conning/manipulative
147	Tends to abuse drugs or alcohol.	
24	Tends to be unreliable and irresponsible (e.g., may fail to meet work obligations or honor financial commitments).	15 Irresponsibility
172	Seems unable to settle into, or sustain commitment to, identity-defining life roles (e.g., career, occupation, lifestyle, etc.).	13 Lack of realistic, long-term goals
14	Tends to blame own failures or shortcomings on other people or circumstances; attributes his/her difficulties to external factors rather than accepting responsibility for own conduct or choices.	16 Failure to accept responsibility for own actions
134	Tends to be impulsive.	14 Impulsivity
115	Is prone to violence (e.g., may break things or become physically assaultive).	
188	Work-life and/or living arrangements tend to be chaotic or unstable (e.g., job or housing situation seems always temporary, transitional, or ill-defined).	
132	Tends to have numerous sexual involvements; is promiscuous.	11 Promiscuous sexual behavior
95	Appears comfortable and at ease in social situations.	(1 Glib/superficial charm)
8	Tends to get into power struggles.	
153	Relationships tend to be unstable, chaotic, and rapidly changing.	(17 Many short-term marital affairs)
94	Has an active and satisfying sex life.	
41	Appears unable to describe important others in a way that conveys a sense of who they are as people; descriptions of others come across as two-dimensional and lacking in richness.	
126	Appears to have a limited or constricted range of emotions.	7 Shallow affect
177	Repeatedly convinces others of his/her commitment to change but then reverts to previous maladaptive behavior; tends to convince others that "this time is really different."	
103	Tends to react to perceived slights or criticism with rage and humiliation.	
129	Tends to be conflicted about authority (e.g., may feel s/he must submit, rebel against, win over, defeat, etc.).	
179	Tends to be energetic and outgoing.	
162	Expresses contradictory feelings or beliefs without being	

	disturbed by the inconsistency; has little need to reconcile or resolve contradictory ideas.
16	Tends to be angry or hostile (whether consciously or unconsciously).
101	Generally finds contentment and happiness in life's activities.

Table 8
Q-factor 1: Secondary Psychopathy

SWAP-II Item		Factor Score
189	Tends to feel unhappy, depressed, or despondent.	3.0
65	Attempts to dominate a significant other (e.g., spouse, lover, family member) through violence or intimidation.	2.8
14	Tends to blame own failures or shortcomings on other people or circumstances; attributes his/her difficulties to external factors rather than accepting responsibility for own conduct or choices.	2.4
188	Work-life and/or living arrangements tend to be chaotic or unstable (e.g., job or housing situation seems always temporary, transitional, or ill-defined).	2.3
115	Is prone to violence (e.g., may break things or become physically assaultive).	2.3
112	Appears impervious to consequences; seems unable or unwilling to modify behavior in response to threats or negative consequences.	2.3
24	Tends to be unreliable and irresponsible (e.g., may fail to meet work obligations or honor financial commitments).	2.2
147	Tends to abuse drugs or alcohol.	2.2
54	Tends to feel s/he is inadequate, inferior, or a failure.	2.1
21	Tends to be hostile toward members of the opposite sex, whether consciously or unconsciously (e.g., may be disparaging or competitive).	2.1
15	Lacks a stable sense of who s/he is (e.g., attitudes, values, goals, and feelings about self seem unstable or ever-changing).	2.0
52	Has little empathy; seems unable to understand or respond to others' needs and feelings unless they coincide with his/her own.	2.0
16	Tends to be angry or hostile (whether consciously or unconsciously).	2.0
185	Is prone to intense anger, out of proportion to the situation at hand (e.g., has episodes of rage).	1.9
153	Relationships tend to be unstable, chaotic, and rapidly changing.	1.9
134	Tends to be impulsive.	1.9
12	Emotions tend to spiral out of control, leading to extremes of anxiety, sadness, rage, etc.	1.8
31	Tends to show reckless disregard for the rights, property, or safety of others.	1.8
40	Tends to engage in unlawful or criminal behavior.	1.8
35	Tends to feel anxious.	1.8
177	Repeatedly convinces others of his/her commitment to change but then reverts to previous maladaptive behavior; tends to convince others that "this time is really different."	1.8
103	Tends to react to perceived slights or criticism with rage and humiliation.	1.7
3	Takes advantage of others; is out for number one.	1.7
172	Seems unable to settle into, or sustain commitment to, identity-defining life roles (e.g., career, occupation, lifestyle, etc.).	1.7
149	Tends to feel like an outcast or outsider.	1.7
39	Appears to gain pleasure or satisfaction by being sadistic or aggressive toward others (whether consciously or unconsciously).	1.6
20	Tends to be deceitful; tends to lie or mislead.	1.5
160	Lacks close friendships and relationships.	1.5
13	Tends to use his/her psychological or medical problems to avoid work or responsibility (whether consciously or unconsciously).	1.4
41	Appears unable to describe important others in a way that conveys a sense of who they are as people; descriptions of others come across as two-dimensional and lacking in richness.	1.3

Table 9
Q-factor 2: Primary Psychopathy

SWAP-II Item		Factor Score
4	Has an exaggerated sense of self-importance (e.g., feels special, superior, grand, or envied).	4.3
48	Seeks to be the center of attention.	3.8
92	Is articulate; can express self well in words.	3.3
49	Has fantasies of unlimited success, power, beauty, talent, brilliance, etc.	3.3
190	Appears to feel privileged and entitled; expects preferential treatment.	3.3
53	Seems to treat others primarily as an audience to witness own importance, brilliance, beauty, etc.	3.1
107	Tends to express qualities or mannerisms traditionally associated with own gender to an exaggerated or stereotypical degree (i.e., a hyper-feminine woman; a hyper-masculine, "macho" man).	2.8
43	Tends to seek power or influence over others (whether in beneficial or destructive ways).	2.6
179	Tends to be energetic and outgoing.	2.4
194	Tends to be manipulative.	2.3
84	Tends to be competitive with others (whether consciously or unconsciously).	2.3
182	Tends to be controlling.	2.3
19	Enjoys challenges; takes pleasure in accomplishing things.	1.8
3	Takes advantage of others; is out for number one.	1.8
95	Appears comfortable and at ease in social situations.	1.7
133	Tends to be dismissive, haughty, or arrogant.	1.7
101	Generally finds contentment and happiness in life's activities.	1.6
97	Tends to use his/her physical attractiveness to an excessive degree to gain attention or notice.	1.6
164	Tends to be self-righteous or moralistic.	1.5
34	Tends to be sexually seductive or provocative (e.g., may be inappropriately flirtatious, preoccupied with sexual conquest, prone to "lead people on," etc.).	1.5
114	Tends to be critical of others.	1.5
143	Tends to believe s/he can only be appreciated by, or should only associate with, people who are high-status, superior, or otherwise "special."	1.5
68	Has a good sense of humor.	1.4
113	Experiences little or no remorse for harm or injury caused to others.	1.4
132	Tends to have numerous sexual involvements; is promiscuous.	1.4
5	Tends to be emotionally intrusive (e.g., may not respect other people's needs for autonomy, privacy, etc.)	1.3
20	Tends to be deceitful; tends to lie or mislead.	1.3
170	Tends to be oppositional, contrary, or quick to disagree.	1.2
63	Is able to assert him/herself effectively and appropriately when necessary.	1.1
45	Is prone to idealizing people; may see admired others as perfect, larger than life, all wise, etc.	1.1

Table 10
Q-factor 3: Thrill-Seeking Subtype

SWAP-II Item		Factor Score
63	Is able to assert him/herself effectively and appropriately when necessary.	3.2
51	Tends to be liked by other people.	3.1
101	Generally finds contentment and happiness in life's activities.	3.1
155	Tends to describe experiences in generalities; is reluctant to provide details, examples, or supporting narrative.	2.6
68	Has a good sense of humor.	2.5
2	Is able to use his/her talents, abilities, and energy effectively and productively.	2.4
146	Tends to elicit boredom in others (e.g., may talk incessantly, without feeling, or about inconsequential matters).	2.3
94	Has an active and satisfying sex life.	2.3
111	Has the capacity to recognize alternative viewpoints, even in matters that stir up strong feelings.	2.2
82	Is capable of hearing information that is emotionally threatening (i.e., that challenges cherished beliefs, perceptions, and self-perceptions) and can use and benefit from it.	2.1
144	Tends to see self as logical and rational, uninfluenced by emotion; prefers to operate as if emotions were irrelevant or inconsequential.	2.1
147	Tends to abuse drugs or alcohol.	2.0
95	Appears comfortable and at ease in social situations.	1.9
129	Tends to be conflicted about authority (e.g., may feel s/he must submit, rebel against, win over, defeat, etc.).	1.8
172	Seems unable to settle into, or sustain commitment to, identity-defining life roles (e.g., career, occupation, lifestyle, etc.).	1.7
33	Is conflicted or inhibited about achievement or success (e.g., achievements may be below potential, may sabotage self just before attaining important goals, etc.).	1.7
71	Tends to seek thrills, novelty, excitement, etc.; appears to require a high level of stimulation.	1.6
32	Is capable of sustaining meaningful relationships characterized by genuine intimacy and caring.	1.5
151	Appears to experience the past as a series of disjointed or disconnected events; has difficulty giving a coherent account of his/her life story.	1.5
179	Tends to be energetic and outgoing.	1.4
72	Tends to perceive things in global and impressionistic ways (e.g., misses details, glosses over inconsistencies, mispronounces names).	1.3
19	Enjoys challenges; takes pleasure in accomplishing things.	1.3
106	Tends to express emotion appropriate in quality and intensity to the situation at hand.	1.3
31	Tends to show reckless disregard for the rights, property, or safety of others.	1.3
40	Tends to engage in unlawful or criminal behavior.	1.3
126	Appears to have a limited or constricted range of emotions.	1.2
141	Is invested in seeing and portraying self as emotionally strong, untroubled, and emotionally in control, despite clear evidence of underlying insecurity, anxiety, or distress.	1.2
175	Tends to be conscientious and responsible.	1.2
177	Repeatedly convinces others of his/her commitment to change but then reverts to previous maladaptive behavior; tends to convince others that "this time is really different."	1.2
120	Has moral and ethical standards and strives to live up to them.	1.1

Table 11

*Multivariate and Univariate Tests of Rater Effects on Mean Q-factor Loadings (*N = 91)

		Q-factor 1				*Q-factor 2*				*Q-factor 3*			
Descriptives													
Rater		***M***	***SD***	***N***		***M***	***SD***	***N***		***M***	***SD***	***N***	
PB		.43	.22	47		.35	.22	47		.22	.18	47	
AP		.38	.33	7		.42	.23	7		.17	.13	7	
DH		.50	.12	5		.25	.18	5		.30	.22	5	
JP		.43	.24	10		.34	.21	10		.20	.18	10	
KL		.39	.23	8		.35	.23	8		.28	.18	8	
MH		.39	.30	8		.33	.21	8		.23	.12	8	
SL		.52	.11	6		.34	.09	6		.21	.10	6	
Total		.43	.23	91		.35	.21	91		.22	.17	91	
Univariate	F_{Welch}	df_1	df_2	***p***	F_{Welch}	df_1	df_2	***p***	F_{Welch}	df_1	df_2	***p***	
Rater Effects	.55	6	12.9	.76	.20	6	12.6	.97	.28	6	12.5	.94	
Multivariate	Λ_{Wilks}	***F***	df_1	df_2	***p***								
Rater Effect	.87	.64	18	232	.86								

Table 12
Descriptive Statistics for the Validation Variables

Variable	*N*	*Min.*	*Max.*	*M*	*SEM*	*SD*
PCL-R total	91	30	38	32.49	.22	2.07
PCL-R factor 1	91	5	16	13.02	.19	1.82
PCL-R factor 2	91	11.5	17.5	14.76	.17	1.59
Antisocial Personality Disorder	41	0	1	.93	.04	.26
Adult antisocial behaviors	41	2.8	7	4.90	.18	1.14
Childhood antisocial behaviors	41	1	11	5.09	.33	2.10
Childhood violent behaviors	41	0	5	1.21	.21	1.36
Childhood abuse (records)	41	0	1	.17	.06	.38
Childhood abuse (interview)	41	0	1	.20	.06	.40
Age first charge	41	11	41	19.39	.78	5.00
Total charges by 17	38	0	17	1.29	.52	3.19
Nonviolent charges	41	0	61	17.90	2.12	13.60
Nonviolent institutional charges	40	0	1	.45	.08	.50
Drinking Motives: Social	40	5	20	1.48	.67	4.25
Drinking Motives: Coping	40	5	20	7.68	.57	3.62
Drinking Motives: Enhancement	40	5	20	9.88	.76	4.82
SADU illicit drugs composite	40	0	18	7.48	.90	5.71
Anger Expression: Total	34	24	65	41.32	1.44	8.39
Anger In	34	9	24	15.91	.65	3.77
Anger Out	34	8	27	16.50	.75	4.36
Anger Control	34	3	12	7.79	.36	2.10
NEO-FFI Extraversion	33	18	43	29.45	.98	5.63
NEO-FFI Agreeableness	33	17	35	25.33	.88	5.07
NEO-FFI Neuroticism	33	0	35	19.76	1.41	8.10
NEO-FFI Conscientiousness	33	17	45	32.88	1.03	5.94
NEO-FFI Openness	33	18	42	27.36	1.05	6.05
PANAS Positive Affect	18	18	43	33.83	1.76	7.46
PANAS Negative Affect	18	11	29	17.72	1.08	4.60
MPQ Positive Emotionality	79	-2.54	1.93	.10	.11	.96
MPQ Negative Emotionality	79	-2.85	2.28	.10	.12	1.03
MPQ Constraint	79	-2.2	2.61	-.09	.12	1.03
Socialization Scale	33	16	37	26.44	1.06	6.07
Sensation Seeking Scale Total	34	0	34	2.94	1.38	8.04
Thrill & Adventure Seeking	33	0	10	6.04	.50	2.86
Experience Seeking	33	1	10	5.84	.35	2.02
Disinhibition	33	0	10	5.82	.41	2.34
Boredom Susceptibility	33	1	9	3.91	.42	2.43
Beck Depression Inventory	18	0	36	9.11	2.05	8.68
EASI Sociability	33	4	15	9.27	.51	2.93
EASI Activity	33	2	16	1.94	.53	3.02
EASI Impulsivity	33	2	16	9.27	.62	3.57
EASI Fearfulness	33	0	12	4.30	.52	2.98
EASI Distress	33	0	11	5.36	.55	3.15
EASI Anger	33	2	16	8.58	.71	4.05
IMPQ: Aggressive/antisocial	90	1.75	5.92	4.26	.11	1.01
IMPQ: Inattention/hyperactivity	90	1.29	5.86	3.14	.10	.96

Table 13
Descriptive Statistics for the Potential Third Variables

Variable	*N*	*Min.*	*Max.*	*M*	*SEM*	*SD*
Interpersonal Measure of Psychopathy	91	24	58	37.38	.75	7.16
IAS-R Dominance	91	-.42	-.01	-.21	.01	.07
IAS-R Hostility	91	-.14	.19	.00	.01	.06
Confidence Scale: F1 Confidence	91	12	40	23.44	.67	6.43
Confidence Scale: F2 Difficulty	91	2	18	11.30	.37	3.56
MPQ Unlikely Virtues (*Z*-score)	79	-1.7	2.9	.02	.12	1.03
MPQ Drin (*Z*)	32	-1.9	1.9	-.03	.19	1.09
MPQ Trin (*Z*)	79	-2.4	3.7	-.06	.12	1.06
MPQ Vrin (*Z*)	79	-2.0	2.4	.01	.11	1.00

IAS-R: Interpersonal Adjective Scales
IMPQ: Impulsivity Questionnaire
MPQ: Multidimensional Personality Questionnaire

Table 14

Tests of Predictions about Correlations between Psychopathic Personality Subtypes (Participants' Loadings on the Three Q-factors) and External Variables.

Q-factor Loadings	Primary		Secondary		Thrill-Seeking		
Variables	***r***	***p***	***r***	***p***	***r***	***p***	***N***
PCL-R total	-.01	.46	.17†	.06	-.16†	.06	91
PCL-R factor 1	.45**	<.01	-.17†	.05	-.29**	<.01	91
PCL-R factor 2	-.30**	<.01	.27**	.01	.02	.43	91
Antisocial Personality Disorder	-.28**	.04	.26†	.05	.04	.41	41
Adult antisocial behaviors	-.08	.31	.27**	.04	-.22†	.09	41
Childhood antisocial behaviors	-.27**	.05	.42**	<.01	-.23†	.08	41
Childhood violent behaviors	-.24†	.06	.40**	.01	-.25†	.06	41
Childhood abuse (records)	-.23†	.08	.44**	<.01	-.33**	.02	41
Childhood abuse (interview)	-.05	.37	.23†	.07	-.29**	.03	41
Age first charge	.28**	.04	-.42**	<.01	.10	.27	41
Total charges by 17	-.37**	.01	.16	.17	.23†	.08	38
Nonviolent charges	-.14	.19	-.01	.48	.15	.17	41
Nonviolent institutional charges	-.15	.18	.22†	.09	-.18	.14	40
Drinking Motives: Social	.11	.25	.01	.47	-.06	.37	40
Drinking Motives: Coping	.05	.39	.14	.20	-.15	.18	40
Drinking Motives: Enhancement	.20	.11	-.05	.39	-.09	.29	40
SADU illicit drugs composite	-.19	.12	.01	.47	.21	.10	40
Anger Expression: Total	-.18	.15	.45**	<.01	-.30**	.04	34
Anger In	-.35**	.02	.41**	.01	-.14	.22	34
Anger Out	-.01	.48	.31**	.04	-.26†	.07	34
Anger Control	.04	.41	-.31**	.04	.31**	.04	34
NEO-FFI Extraversion	.41**	.01	-.21	.13	-.20	.14	33
NEO-FFI Agreeableness	-.10	.28	-.20	.13	.27†	.06	33
NEO-FFI Neuroticism	-.36**	.02	.28†	.06	.04	.40	33
NEO-FFI Conscientiousness	.21	.12	-.06	.38	-.15	.21	33
NEO-FFI Openness	.14	.23	-.52**	<.01	.40**	.01	33
PANAS Positive Affect	.58**	.01	-.61**	<.01	-.06	.41	18
PANAS Negative Affect	-.05	.42	.40†	.05	-.24	.17	18
MPQ Positive Emotionality	.21**	.03	-.16†	.08	.02	.45	79
MPQ Negative Emotionality	.12	.15	.12	.15	-.28**	.01	79
MPQ Constraint	-.08	.25	.02	.45	.05	.33	79
Socialization Scale	.18	.16	-.53**	<.01	.38**	.01	33
Sensation Seeking Scale Total	.17	.17	-.30**	.04	.20	.13	34
Thrill & Adventure Seeking	-.01	.47	-.26†	.07	.32**	.03	33
Experience Seeking	.14	.21	-.22	.11	.13	.23	33
Disinhibition	.07	.36	-.01	.49	.02	.46	33
Boredom Susceptibility	.06	.38	-.08	.33	.06	.38	33
Beck Depression Inventory	-.35†	.08	.36†	.07	-.20	.21	18
EASI Sociability	.12	.25	-.07	.35	-.07	.36	33
EASI Activity	.43**	.01	-.09	.31	-.27†	.07	33
EASI Impulsivity	.11	.28	.07	.36	-.10	.28	33
EASI Fearfulness	-.49**	<.01	.42**	.01	-.01	.48	33
EASI Distress	-.21	.12	.42**	.01	-.22	.11	33
EASI Anger	-.17	.17	.51**	<.01	-.36**	.02	33
IMPQ: Aggressive/antisocial	-.15†	.08	.57**	<.01	-.40**	<.01	90
IMPQ: Inattention/hyperactivity	-.23*	.01	.36**	<.01	-.18*	.04	90

† $p < .10$, * $p < .05$, ** $p < .01$ (one-tailed).

Table 15

Correlations between Psychopathic Personality Subtypes (Participants' Loadings on the Three Q-factors) and Potentially Confounding or Mediating Variables

Q-factor Loadings	Primary		Secondary		Thrill-Seeking		
Variable	***r***	***p***	***r***	***p***	***r***	***p***	***N***
Confidence Scale: Confidence	-.43 **	<.01	-.07	.53	.52 **	<.01	91
Confidence Scale: Difficulty	.21 *	.04	.32 **	<.01	-.77 **	<.01	91
IMP: Interpersonal Measure of Psychopathy	.59 **	<.01	-.13	.22	-.56 **	<.01	91
IAS-R: Interpersonal Adjective Scales							
Dominance (male norms)	-.79 **	<.01	.37 **	<.01	.34 **	<.01	91
Hostility (male norms)	.18 †	.10	.33 **	<.01	-.55 **	<.01	91

† $p < .10$, * $p < .05$, ** $p < .01$ (one-tailed).

Table 16
SWAP-II Items Most Closely Associated with Ethnicity at α = .01 (*N* = 91)

	SWAP-II Item	***r****
	Most closely associated with Non-white ethnicity	
75	Tends to think in concrete terms and interpret things in overly literal ways; has limited ability to appreciate metaphor, analogy, or nuance.	.39
94	Has an active and satisfying sex life.	.35
132	Tends to have numerous sexual involvements; is promiscuous.	.34
112	Appears impervious to consequences; seems unable or unwilling to modify behavior in response to threats or negative consequences.	.30
179	Tends to be energetic and outgoing.	.27
34	Tends to be sexually seductive or provocative (e.g., may be inappropriately flirtatious, preoccupied with sexual conquest, prone to "lead people on," etc.).	.26
107	Tends to express qualities or mannerisms traditionally associated with own gender to an exaggerated or stereotypical degree (i.e., a hyper-feminine woman; a hyper-masculine, "macho" man).	.26
	Most closely associated with White ethnicity	
114	Tends to be critical of others.	-.32
9	When upset, has trouble perceiving both positive and negative qualities in the same person at the same time; sees others in black or white terms (e.g., may swing from seeing someone as caring to seeing him/her as malevolent and intentionally hur	-.31
129	Tends to be conflicted about authority (e.g., may feel s/he must submit, rebel against, win over, defeat, etc.).	-.30
133	Tends to be dismissive, haughty, or arrogant.	-.28

*$p < .01$, $N = 91$.

Table 17
Partial Correlations Controlling for Ethnicity.

Q-factor loadings controlling for ethnicity	Primary		Secondary		Thrill-Seeking		
Variables	***pr***	***p***	***pr***	***p***	***pr***	***p***	***df***
PCL-R total	-.01	.46	.17 †	.06	-.17 †	.06	88
PCL-R factor 1	.45 **	<.01	-.17 †	.05	-.29 **	<.01	88
PCL-R factor 2	-.30 **	<.01	.27 **	.01	.01	.45	88
Antisocial Personality Disorder	-.28 *	.04	.26 †	.05	.05	.39	38
Adult antisocial behaviors	-.09	.29	.28 *	.04	-.25 †	.06	38
Childhood antisocial behaviors	-.27 *	.05	.43 **	<.01	-.24 †	.07	38
Childhood violent behaviors	-.25 †	.06	.40 **	.01	-.26 †	.05	38
Childhood abuse (records)	-.23 †	.08	.44 **	<.01	-.33 *	.02	38
Childhood abuse (interview)	-.05	.38	.24 †	.07	-.29 *	.04	38
Age first charge	.29 *	.03	-.43 **	<.01	.12	.23	38
Total charges by 17	-.38 *	.01	.16	.18	.23 †	.09	35
Nonviolent charges	-.14	.20	-.01	.48	.16	.16	38
Nonviolent institutional charges	-.15	.18	.22 †	.09	-.18	.14	37
Drinking Motives: Social	.12	.24	.02	.46	-.04	.41	37
Drinking Motives: Coping	.05	.38	.14	.20	-.14	.20	37
Drinking Motives: Enhancement	.21 †	.10	-.05	.39	-.07	.33	37
SADU illicit drugs composite	-.19	.12	.01	.47	.24 †	.07	37
Anger Expression: Total	-.18	.15	.45 **	<.01	-.30 *	.04	31
Anger In	-.35 *	.02	.42 **	.01	-.13	.24	31
Anger Out	-.01	.48	.31 *	.04	-.26 †	.07	31
Anger Control	.05	.40	-.31 *	.04	.33 *	.03	31
NEO-FFI Extraversion	.41 *	.01	-.20	.13	-.20	.14	30
NEO-FFI Agreeableness	-.10	.29	-.20	.13	.28 †	.06	30
NEO-FFI Neuroticism	-.37 *	.02	.30 †	.05	.07	.36	30
NEO-FFI Conscientiousness	.21	.13	-.06	.38	-.16	.19	30
NEO-FFI Openness	.15	.21	-.54 **	<.01	.43 **	.01	30
PANAS Positive Affect	.60 **	.01	-.64 **	<.01	-.08	.38	15
PANAS Negative Affect	-.06	.41	.40 †	.06	-.25	.17	15
MPQ Positive Emotionality	.21 *	.03	-.16 †	.08	.01	.46	76
MPQ Negative Emotionality	.12	.15	.12	.15	-.28 **	.01	76
MPQ Constraint	-.09	.22	.01	.45	.03	.39	76
Socialization Scale	.18	.17	-.55 **	<.01	.38 *	.02	30
Sensation Seeking Scale Total	.20	.13	-.33 *	.03	.26 †	.08	31
Thrill & Adventure Seeking	-.01	.49	-.28 †	.06	.39 *	.01	30
Experience Seeking	.16	.19	-.23	.10	.16	.19	30
Disinhibition	.09	.32	.00	.49	.06	.38	30
Boredom Susceptibility	.06	.38	-.08	.33	.06	.38	30
Beck Depression Inventory	-.36 †	.08	.38 †	.06	-.19	.23	15
EASI Sociability	.12	.26	-.07	.35	-.07	.36	30
EASI Activity	.42 **	.01	-.09	.31	-.27 †	.07	30
EASI Impulsivity	.13	.25	.08	.34	-.09	.32	30
EASI Fearfulness	-.50 **	<.01	.44 **	.01	.01	.48	30
EASI Distress	-.21	.12	.42 **	.01	-.22	.11	30
EASI Anger	-.18	.16	.52 **	<.01	-.38 *	.02	30
IMPQ: Aggressive/antisocial	-.17 †	.06	.57 **	<.01	-.39 **	<.01	87
IMPQ: Inattention/hyperactivity	-.23 *	.01	.36 **	<.01	-.18 *	.05	87

† $p < .10$, * $p < .05$, ** $p < .01$ (one-tailed).

Table 18

Partial Correlations Controlling for the Factors of the Confidence Scale (Confidence and Difficulty).

Partialing out:	Primary		Secondary		Thrill-Seeking		
Two Confidence Factors							
Variables	***pr***	***p***	***pr***	***p***	***pr***	***p***	***df***
PCL-R total	-.02	.42	.17 †	.06	-.20 *	.03	87
PCL-R factor 1	.35 **	<.01	-.21 *	.02	-.16 †	.07	87
PCL-R factor 2	-.25 **	.01	.28 **	<.01	-.08	.24	87
Antisocial Personality Disorder	-.41 **	.01	.31 *	.03	.10	.28	37
Adult antisocial behaviors	-.06	.37	.24 †	.07	-.26 †	.06	37
Childhood antisocial behaviors	-.29 *	.04	.38 **	.01	-.18	.13	37
Childhood violent behaviors	-.28 *	.04	.33 *	.02	-.13	.22	37
Childhood abuse (records)	-.33 *	.02	.39 **	.01	-.21	.10	37
Childhood abuse (interview)	-.13	.21	.17	.16	-.15	.19	37
Age first charge	.28 *	.04	-.48 **	<.01	.28 *	.05	37
Total charges by 17	-.23 †	.09	.21	.11	-.03	.43	34
Nonviolent charges	-.08	.33	.06	.37	-.04	.40	37
Nonviolent institutional charges	-.13	.21	.18	.14	-.21	.11	36
Drinking Motives: Social	.01	.48	-.01	.48	.14	.21	36
Drinking Motives: Coping	-.01	.47	.07	.34	.06	.37	36
Drinking Motives: Enhancement	.11	.25	-.12	.24	.20	.11	36
SADU illicit drugs composite	-.12	.24	.02	.46	.16	.17	36
Anger Expression: Total	-.23	.10	.44 **	.01	-.33 *	.03	30
Anger In	-.33 *	.04	.39 *	.01	-.20	.13	30
Anger Out	-.10	.29	.32 *	.04	-.23	.11	30
Anger Control	.04	.41	-.28 †	.06	.37 *	.02	30
NEO-FFI Extraversion	.24 †	.10	-.30 †	.05	.21	.13	29
NEO-FFI Agreeableness	-.01	.48	-.22	.11	.27 †	.07	29
NEO-FFI Neuroticism	-.31 *	.05	.31 *	.05	-.11	.28	29
NEO-FFI Conscientiousness	.18	.16	-.08	.33	-.10	.29	29
NEO-FFI Openness	.16	.20	-.53 **	<.01	.56 **	<.01	29
PANAS Positive Affect	.53 *	.02	-.74 **	<.01	.29	.14	14
PANAS Negative Affect	-.06	.41	.39 †	.07	-.31	.12	14
MPQ Positive Emotionality	.23 *	.02	-.18 †	.06	.06	.30	75
MPQ Negative Emotionality	.11	.17	.05	.33	-.22 *	.03	75
MPQ Constraint	-.02	.42	.02	.43	-.03	.40	75
Socialization Scale	.17	.18	-.49 **	<.01	.42 **	.01	29
Sensation Seeking Scale Total	.16	.19	-.31 *	.04	.33 *	.03	30
Thrill & Adventure Seeking	.04	.43	-.20	.14	.24 †	.10	29
Experience Seeking	.16	.20	-.22	.12	.17	.19	29
Disinhibition	.04	.42	-.01	.48	.10	.30	29
Boredom Susceptibility	-.01	.47	-.10	.30	.24 †	.10	29
Beck Depression Inventory	-.47 *	.03	.25	.18	.13	.32	14
EASI Sociability	.05	.40	-.13	.24	.17	.18	29
EASI Activity	.34 *	.03	-.15	.21	-.05	.40	29
EASI Impulsivity	.11	.27	.11	.28	-.24 †	.10	29
EASI Fearfulness	-.48 **	<.01	.44 **	.01	-.11	.27	29
EASI Distress	-.26 †	.08	.43 **	.01	-.29 †	.06	29
EASI Anger	-.23	.10	.48 **	<.01	-.34 *	.03	29
IMPQ: Aggressive/antisocial	-.28 **	<.01	.54 **	<.01	-.30 **	<.01	
IMPQ: Inattention/hyperactivity	-.35 **	<.01	.37 **	<.01	-.11	.15	

† $p < .10$, * $p < .05$, ** $p < .01$ (one-tailed).

Table 19

Partial Correlations Controlling for the Interpersonal Measure of Psychopathy

Q-factor Loadings Controlling for IMP	Primary		Secondary		Thrill-Seeking		
Variables	***pr***	***p***	***pr***	***p***	***pr***	***p***	***df***
PCL-R total	-.02	.41	.18†	.05	-.18*	.04	88
PCL-R factor 1	.24*	.01	-.10	.17	-.08	.23	88
PCL-R factor 2	-.19*	.03	.23*	.01	-.13	.12	88
Antisocial Personality Disorder	-.35*	.01	.26†	.05	.04	.41	38
Adult antisocial behaviors	-.16	.16	.29*	.03	-.21†	.10	38
Childhood antisocial behaviors	-.26†	.06	.41**	<.01	-.33*	.02	38
Childhood violent behaviors	-.26†	.05	.39**	.01	-.33*	.02	38
Childhood abuse (records)	-.30*	.03	.45**	<.01	-.39**	.01	38
Childhood abuse (interview)	-.17	.15	.26†	.05	-.27*	.05	38
Age first charge	.31*	.03	-.42**	<.01	.15	.18	38
Total charges by 17	-.20	.11	.10	.28	.05	.38	35
Nonviolent charges	-.05	.38	-.04	.41	.08	.31	38
Nonviolent institutional charges	-.40**	.01	.28*	.04	-.06	.36	37
Drinking Motives: Social	.09	.29	.02	.44	-.03	.43	37
Drinking Motives: Coping	-.01	.47	.16	.17	-.12	.24	37
Drinking Motives: Enhancement	.13	.22	-.02	.46	-.01	.48	37
SADU illicit drugs composite	-.12	.24	-.02	.45	.14	.19	37
Anger Expression: Total	-.18	.15	.45**	<.01	-.40*	.01	31
Anger In	-.31*	.04	.39*	.01	-.27†	.06	31
Anger Out	-.06	.37	.33*	.03	-.27†	.07	31
Anger Control	.00	.50	-.30*	.04	.41**	.01	31
NEO-FFI Extraversion	.19	.15	-.14	.22	.04	.41	30
NEO-FFI Agreeableness	-.04	.42	-.23	.10	.25†	.09	30
NEO-FFI Neuroticism	-.23	.10	.24†	.09	-.14	.23	30
NEO-FFI Conscientiousness	-.01	.48	.01	.48	.04	.41	30
NEO-FFI Openness	.43**	.01	-.61**	<.01	.30†	.05	30
PANAS Positive Affect	.49*	.02	-.60**	.01	.16	.27	15
PANAS Negative Affect	-.06	.42	.40†	.06	-.29	.13	15
MPQ Positive Emotionality	.24*	.02	-.16†	.09	.04	.36	76
MPQ Negative Emotionality	.11	.17	.13	.13	-.30**	<.01	76
MPQ Constraint	-.13	.13	.02	.42	.09	.23	76
Socialization Scale	.22	.11	-.54**	<.01	.45**	.01	30
Sensation Seeking Scale Total	.30*	.05	-.32*	.03	.17	.17	31
Thrill & Adventure Seeking	.14	.23	-.30*	.05	.27†	.07	30
Experience Seeking	.22	.11	-.23	.10	.13	.25	30
Disinhibition	.12	.26	-.01	.47	.00	.50	30
Boredom Susceptibility	.09	.31	-.09	.32	.05	.39	30
Beck Depression Inventory	-.37†	.07	.35†	.09	-.30	.12	15
EASI Sociability	.01	.48	-.04	.42	.04	.43	30
EASI Activity	.35*	.03	-.04	.41	-.16	.20	30
EASI Impulsivity	.13	.24	.07	.35	-.12	.26	30
EASI Fearfulness	-.52**	<.01	.40*	.01	-.10	.30	30
EASI Distress	-.26†	.08	.42**	.01	-.27†	.07	30
EASI Anger	-.24†	.09	.52**	<.01	-.40*	.01	30
IMPQ: Aggressive/antisocial	-.20*	.03	.57**	<.01	-.49**	<.01	87
IMPQ: Inattention/hyperactivity	-.42**	<.01	.40**	<.01	-.12	.12	87

† $p < .10$, * $p < .05$, ** $p < .01$ (one-tailed).

Table 20

Partial Correlations Controlling for the IAS-R Dimensions of Dominance and Hostility.

Controlling for IAS-R Factors	Primary		Secondary		Thrill-Seeking		
Variables	***pr***	***p***	***pr***	***p***	***pr***	***p***	***df***
PCL-R total	-.17†	.06	.13	.12	.03	.38	87
PCL-R factor 1	.22*	.02	-.10	.19	-.10	.18	87
PCL-R factor 2	-.26**	.01	.23*	.01	-.03	.39	87
Antisocial Personality Disorder	-.23†	.08	.23†	.08	-.02	.45	37
Adult antisocial behaviors	-.12	.23	.30*	.03	-.21†	.10	37
Childhood antisocial behaviors	-.19	.13	.34*	.02	-.22†	.09	37
Childhood violent behaviors	-.36*	.01	.38**	.01	-.18	.14	37
Childhood abuse (records)	-.13	.22	.40**	.01	-.40**	.01	37
Childhood abuse (interview)	-.16	.16	.34*	.02	-.35*	.02	37
Age first charge	-.04	.40	-.33*	.02	.24†	.07	37
Total charges by 17	-.05	.38	-.10	.28	.19	.13	34
Nonviolent charges	-.05	.39	-.11	.25	.16	.17	37
Nonviolent institutional charges	-.23†	.09	.21	.10	-.15	.19	36
Drinking Motives: Social	-.03	.42	.10	.27	.00	.50	36
Drinking Motives: Coping	.02	.45	.13	.21	-.09	.31	36
Drinking Motives: Enhancement	.01	.47	.07	.34	-.01	.47	36
SADU illicit drugs composite	-.04	.40	-.16	.18	.24†	.08	36
Anger Expression: Total	.23	.10	.28†	.06	-.41**	.01	30
Anger In	.17	.18	.14	.22	-.29†	.05	30
Anger Out	.15	.21	.24†	.10	-.24†	.09	30
Anger Control	-.24†	.09	-.25†	.08	.45**	.01	30
NEO-FFI Extraversion	.31*	.05	-.08	.34	-.18	.17	29
NEO-FFI Agreeableness	-.06	.38	-.23	.10	.20	.14	29
NEO-FFI Neuroticism	-.06	.38	.09	.32	-.04	.42	29
NEO-FFI Conscientiousness	-.12	.26	.14	.23	-.06	.37	29
NEO-FFI Openness	-.11	.28	-.42**	.01	.43**	.01	29
PANAS Positive Affect	.24	.18	-.46*	.04	.05	.44	14
PANAS Negative Affect	.29	.14	.35†	.09	-.39†	.07	14
MPQ Positive Emotionality	.02	.42	-.08	.23	.13	.12	75
MPQ Negative Emotionality	-.04	.35	.22*	.03	-.23*	.02	75
MPQ Constraint	.04	.36	-.04	.35	.01	.48	75
Socialization Scale	.11	.28	-.49**	<.01	.36*	.02	29
Sensation Seeking Scale Total	-.06	.38	-.15	.20	.23	.10	30
Thrill & Adventure Seeking	-.10	.29	-.21	.13	.31*	.05	29
Experience Seeking	-.20	.14	-.02	.45	.19	.15	29
Disinhibition	-.07	.37	.07	.35	.07	.36	29
Boredom Susceptibility	-.27†	.07	.07	.36	.16	.20	29
Beck Depression Inventory	-.21	.21	.09	.38	-.11	.34	14
EASI Sociability	-.02	.46	.10	.29	-.14	.24	29
EASI Activity	.45**	.01	.00	.49	-.26†	.08	29
EASI Impulsivity	.27†	.07	.08	.33	-.19	.16	29
EASI Fearfulness	-.23	.10	.16	.20	-.02	.46	29
EASI Distress	.14	.22	.30*	.05	-.37*	.02	29
EASI Anger	.01	.47	.50**	<.01	-.48**	<.01	29
IMPQ: Aggressive/antisocial	-.30**	<.01	.58**	<.01	-.32**	<.01	86
IMPQ: Inattention/hyperactivity	-.20*	.03	.44**	<.01	-.34**	<.01	86

† $p < .10$, * $p < .05$, ** $p < .01$ (one-tailed).

Table 21

Associations between Participants' SWAP-II Profiles' Degree of Match to the Three Psychopathy Subtypes and the Five Factors of the Impulsivity Questionnaire (N = 90).

	Primary		Secondary		Thrill-Seeking		
Impulsivity Factor	*r*	*p*	*r*	*p*	*r*	*p*	*N*
Aggressive / antisocial	-.17	.11	.57 **	<.01	-.40 **	<.01	90
Immediate gratification	-.15	.15	.52 **	<.01	-.29 **	.01	90
Inattention / hyperactivity	-.23 *	.03	.36 **	<.01	-.18 †	.08	90
Cognitive / affective impulsivity	.20 †	.06	.38 **	<.01	-.68 **	.00	90
Socialized / unrestrained	-.26 *	.01	.21 *	.05	.02	.88	90

† $p < .10$, * $p < .05$, ** $p < .01$ (one-tailed).

Table 22

Patterns of Association between Participants' Loadings on the Three Q-factors (Psychopathy Subtypes) and Validity Scales of the MPQ (N = 79)

	Primary		Secondary		Thrill-Seeking	
	r	***p***	***r***	***p***	***r***	***p***
Unlikely Virtues	-.06	.31	.15	.09	-.10	.19
Drin	.04	.42	-.11	.27	.06	.37
Trin	-.07	.28	.14	.12	-.04	.38
Vrin	-.22*	.03	.01	.45	.20*	.04

* $p < .05$ (one-tailed), N=79.

Table 23
Partial Correlations Controlling for the MPQ Vrin Scale

Q-factor Loadings Controlling for MPQ Vrin	Primary		Secondary		Thrill-Seeking		
Variables	***pr***	***p***	***pr***	***p***	***pr***	***p***	***df***
PCL-R total	-.04	.38	.20*	.04	-.14	.11	76
PCL-R factor 1	.40**	.00	-.12	.14	-.28**	.01	76
PCL-R factor 2	-.27**	.01	.26*	.01	.01	.48	76
Antisocial Personality Disorder	-.21	.13	.25†	.08	-.01	.47	29
Adult antisocial behaviors	-.13	.24	.28†	.06	-.18	.17	29
Childhood antisocial behaviors	-.24†	.10	.42**	.01	-.29†	.06	29
Childhood violent behaviors	-.26†	.08	.38*	.02	-.27†	.07	29
Childhood abuse (records)	-.26†	.08	.43**	.01	-.34*	.03	29
Childhood abuse (interview)	-.11	.27	.23	.11	-.29†	.05	29
Age first charge	.19	.15	-.46**	.00	.17	.18	29
Total charges by 17	-.30†	.06	.13	.25	.21	.15	26
Nonviolent charges	-.09	.32	-.02	.45	.11	.27	29
Nonviolent institutional charges	-.12	.27	.21	.14	-.27†	.07	28
Drinking Motives: Social	.12	.26	.04	.42	-.04	.42	29
Drinking Motives: Coping	.07	.35	.16	.20	-.16	.20	29
Drinking Motives: Enhancement	.22	.12	-.02	.46	-.09	.31	29
SADU illicit drugs composite	-.13	.25	-.01	.49	.17	.18	29
Anger Expression: Total	-.14	.24	.48**	.00	-.37*	.02	28
Anger In	-.33*	.04	.40*	.02	-.17	.18	28
Anger Out	.06	.37	.35*	.03	-.30†	.05	28
Anger Control	.01	.47	-.32*	.04	.35*	.03	28
NEO-FFI Extraversion	.35*	.03	-.17	.18	-.16	.20	28
NEO-FFI Agreeableness	-.15	.21	-.23	.11	.30†	.05	28
NEO-FFI Neuroticism	-.33*	.04	.26†	.08	.02	.46	28
NEO-FFI Conscientiousness	.18	.18	-.04	.43	-.14	.24	28
NEO-FFI Openness	.11	.28	-.55**	.00	.43**	.01	28
PANAS Positive Affect	.58**	.01	-.58**	.01	.00	.49	14
PANAS Negative Affect	-.05	.43	.42†	.05	-.24	.19	14
MPQ Positive Emotionality	.14	.23	-.57**	.00	.43**	.01	28
MPQ Negative Emotionality	.23	.11	-.30†	.05	.17	.18	28
MPQ Constraint	.07	.36	-.29†	.06	.29†	.06	28
Socialization Scale	.16	.19	-.21	.13	.13	.25	28
Sensation Seeking Scale Total	.13	.25	.01	.48	.01	.49	28
Thrill & Adventure Seeking	.07	.36	-.08	.34	.06	.37	28
Experience Seeking	-.36†	.10	.32	.12	-.27	.17	13
Disinhibition	.04	.41	-.05	.39	-.01	.48	28
Boredom Susceptibility	.41*	.01	-.04	.41	-.22	.12	28
Beck Depression Inventory	.20	.14	.09	.31	-.15	.21	28
EASI Sociability	-.48**	.00	.39*	.02	-.05	.40	28
EASI Activity	-.17	.19	.44**	.01	-.28†	.07	28
EASI Impulsivity	-.12	.26	.54**	.00	-.42*	.01	28
EASI Fearfulness	.15†	.10	-.15	.10	.11	.18	76
EASI Distress	.12	.14	.14	.11	-.29**	.00	76
EASI Anger	-.11	.16	.01	.46	.08	.25	76
IMPQ: Aggressive/antisocial	-.21*	.03	.58**	.00	-.38**	.00	75
IMPQ: Inattention/hyperactivity	-.20*	.04	.37**	.00	-.23*	.02	75

† $p < .10$, * $p < .05$, ** $p < .01$ (one-tailed).

Table 24

Associations between SWAP-II Psychopathy Subtypes and External Validations Variables while Controlling for Corresponding PCL-R Factors

Q-factor Loadings	Primary		Secondary		
Controlling for PCL-R…	Factor 1		Factor 2		
Variables	***pr***	***p***	***pr***	***p***	***df***
Antisocial Personality Disorder	-.13	.22	.16	.17	38
Adult antisocial behaviors	-.12	.24	.23 †	.08	38
Childhood antisocial behaviors	-.19	.12	.33 *	.02	38
Childhood violent behaviors	-.17	.15	.30 *	.03	38
Childhood abuse (records)	-.28 *	.04	.40 **	<.00	38
Childhood abuse (interview)	-.10	.28	.20	.11	38
Age first charge	.12	.22	-.37 **	.01	38
Total charges by 17	-.25 †	.07	.10	.28	35
Nonviolent charges	-.04	.41	-.01	.48	38
Nonviolent institutional charges	-.11	.25	.18	.14	37
Drinking Motives: Social	.17	.15	-.01	.49	37
Drinking Motives: Coping	.11	.24	.11	.26	37
Drinking Motives: Enhancement	.22 †	.09	-.05	.39	37
SADU illicit drugs composite	-.07	.34	-.06	.36	37
Anger Expression: Total	-.14	.22	.42 **	.01	31
Anger In	-.37 *	.02	.34 *	.02	31
Anger Out	.11	.28	.30 *	.04	31
Anger Control	-.02	.47	-.27 †	.07	31
NEO-FFI Extraversion	.34 *	.03	-.08	.34	30
NEO-FFI Agreeableness	-.10	.30	-.17	.18	30
NEO-FFI Neuroticism	-.36 *	.02	.25 †	.08	30
NEO-FFI Conscientiousness	.25 †	.08	.00	.49	30
NEO-FFI Openness	.14	.23	-.50 **	<.00	30
PANAS Positive Affect	.60 **	.01	-.55 *	.01	15
PANAS Negative Affect	.03	.46	.36 †	.08	15
MPQ Positive Emotionality	.18 †	.06	-.11	.16	76
MPQ Negative Emotionality	.13	.13	.09	.21	76
MPQ Constraint	-.16 †	.09	.02	.43	76
Socialization Scale	.17	.17	-.52 **	<.00	30
Sensation Seeking Scale Total	.27 †	.07	-.29 *	.05	31
Thrill & Adventure Seeking	.08	.34	-.27 †	.07	30
Experience Seeking	.15	.20	-.16	.19	30
Disinhibition	.09	.32	.05	.40	30
Boredom Susceptibility	.12	.25	-.10	.28	30
Beck Depression Inventory	-.41 *	.05	.24	.18	15
EASI Sociability	.14	.23	-.03	.44	30
EASI Activity	.49 **	.00	.00	.50	30
EASI Impulsivity	.21	.13	.09	.31	30
EASI Fearfulness	-.49 **	<.00	.31 *	.04	30
EASI Distress	-.19	.15	.40 *	.01	30
EASI Anger	-.06	.36	.47 **	<.00	30
IMPQ: Aggressive/antisocial	-.21 *	.02	.52 **	<.00	87
IMPQ: Inattention/hyperactivity	-.22 *	.02	.36 **	<.00	87

† $p < .10$, * $p < .05$, ** $p < .01$ (one-tailed).

Appendix A

Confidence Scale

The questions below describe ways in which raters may experience describing an individual with items from such instruments as the SWAP-II. Please, rate your experience of using the items of the SWAP-II to describe this particular individual.

1	2	3	4	5
Never	Rarely	Sometimes	Often	Always

1. I think that I had enough information to rank the items.
2. Generally, I felt that I understood this person well enough to describe him well.
3. In general, I felt confident about my rankings of the items.
4. My decisions about the ranks of some items may not have been accurate.
5. I ranked some items high only because I had to fill the top piles.
6. Judging the extent to which items applied to this person was easy.
7. I had doubts about the accuracy of my rankings.
8. I gave some items high ranks although I was unsure how well they described the person.
9. My decisions about the ranks of some items are probably accurate.
10. Generally, I did not feel confident about my rankings of the items.
11. I ranked some items lower because there wasn't enough space in the top piles.
12. It was difficult for me to decide to what extent certain items described this person.
13. I gave some items low ranks although I thought they might describe the person well.
14. In general, my understanding of this person was not sufficient to describe him well.
15. There wasn't enough information to rank certain items.
16. When I was ranking the items, I had relatively little doubt in my decisions.

Appendix B

Impulsivity Questionnaire

Please rate the extent to which the following items are descriptive of the participant's enduring personality characteristics, where 1 = not true at all, 4 = somewhat true, and 7 = very true. (If the participant is manic or hypomanic, do not describe what s/he is like during these states, unless these are enduring personality characteristics present most of the time when not in episode.)

1-------2------3------4------5------6------7
Not True Somewhat Very True

1. Tends to abuse illicit drugs.
2. Tends to live "in the moment"; does not think or worry much about the future.
3. Tends to jump to conclusions in interpersonal situations.
4. Quickly lays blame elsewhere, rather than thinking about his/her contributions to adverse events.
5. When distressed, tends to act without thinking.
6. Often "blurts things bout" without thinking.
7. Is prone to angry outbursts or temper-tantrums in response to interpersonal disappointments or frustrations.
8. Tends to be distractible.
9. Tends not to finish what she/he starts; has minimal persistence.
10. Tends to become suicidal or to threaten suicide when distressed.
11. Tends to make up his/her mind very quickly.
12. Tends to get into fights or psychically assault others.
13. Lacks long-term plans or clear ideas about where she or he wants to be and how to get there.
14. Tends to jump to conclusions when solving problems, rather than carefully considering the data.
15. Tends to be "grabbed" by one aspect of a situation, rather than considering its complexity.
16. Gives up easily when frustrated; tends to avoid trying when faced with possible failure.
17. Tends to become verbally abusive when angry.
18. Has difficulty sacrificing current pleasure for future gains; needs immediate gratification.
19. Tends to make major life choices quickly or without adequate forethought.
20. Has difficulty inhibiting inappropriate, reckless, or self-destructive acts when others in his/her peer group are committing them.
21. His/her own perspective seems to immediate and powerful that he/she has trouble imagining other points of view.
22. Has difficulty tolerating unpleasant feelings; acts quickly to escape them even when doing so is manifestly self-destructive or self-defeating.
23. Has trouble imagining the likely emotional consequences of different courses of action; has trouble "picturing" what the impact of a decision might be on future well-being.
24. Can imagine the emotional consequences of his/her action but has difficulty using these feelings to guide behavior.
25. Tends to act without thinking, even when not distressed.
26. Has difficulty concentrating or maintaining focus on tasks or problems, even when mood is relatively calm.
27. Tends to binge and then compensating by purging (deliberately vomiting, taking laxatives, etc.)
28. Tends to respond with aggression when feels shamed, humiliated, or “dissed.”
29. Commits crimes or antisocial acts (e.g., stealing, assault) on the spur of the moment.

30. Tends to have unprotected sex.
31. Tends to interrupt; has difficulty taking turns in conversation.
32. Tends to abuse alcohol.
33. Has difficulty breaking problems down into manageable pieces, even when mood is relatively calm.
34. Appears undeterred from criminal or antisocial acts by threats or punishments; seems impervious to consequences.
35. Tends to get so “carried away” by a plan, scheme, or idea that s/he fails to see its possible "snags."
36. Is promiscuous.
37. Commits antisocial or criminal acts to impress peers, without consideration of consequences.
38. Is unable to restrain him/herself from engaging in compulsive behaviors (e.g., buying sprees, gambling, kleptomania, perverse sexual activity) despite serious adverse effects on relationships, finances, etc.
39. Tends to have difficulty sitting still.
40. Tends to jump into relationships quickly and intensely.
41. Has insight into own behavior but only “after the fact”; seems unable to draw upon insight in the moment to regulate behavior.
42. Has trouble using “self-talk” (e.g., “she didn’t really mean it”) to inhibit immediate response when angry or upset.
43. Tends to end relationships abruptly in the face of conflict, discomfort, or anger.
44. Tends to break things when angry.
45. Tends to act on global impressions; pays little attention to details.
46. Has difficulty inhibiting aggression when provoked, even when doing so would be in own interest.
47. Expresses guilt, shame, or remorse after behaving badly, but cannot use these emotions to refrain from acting.
48. Tends to engage in thrill-seeking behavior.
49. Is unable to stop self from becoming emotionally involved with people s/he knows are “trouble.”
50. Tends to analyze situations in superficial ways.

Appendix C

Structure of the Impulsivity Questionnaire

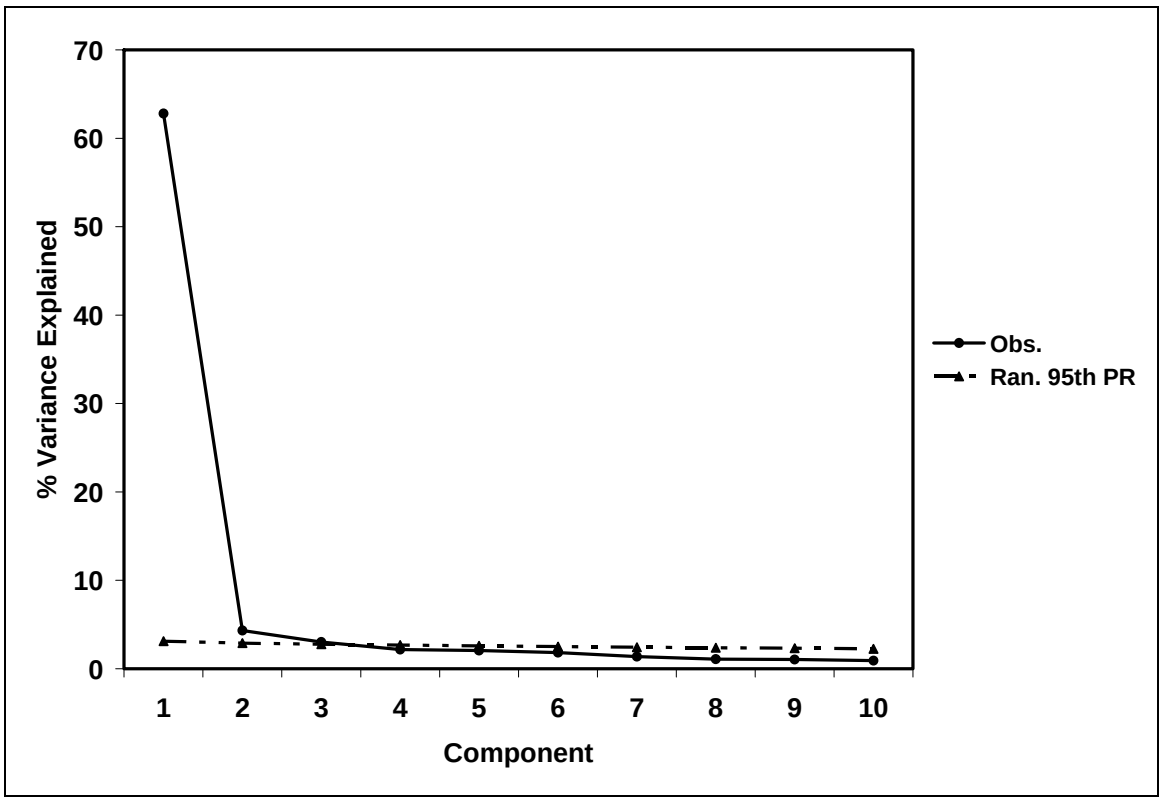
Pattern matrix following an Unweighted Least Squares extraction of five factors with Promax rotation (κ = 4). Factor 1: Aggressive/antisocial behavior, Factor 2: Immediate gratification, Factor 3: Inattention/hyperactivity, Factor 4: Cognitive/affective impulsivity, and Factor 5: Behavioral dyscontrol.

	Item	1	2	3	4	5
12	Tends to get into fights or physically assault others.	.97				
28	Tends to respond with aggression when feels shamed, humiliated, or "dissed."	.95				
46	Has difficulty inhibiting aggression when provoked, even when doing so would be in own interest.	.88				
7	Is prone to angry outbursts or temper-tantrums in response to interpersonal disappointments or frustrations.	.88				
17	Tends to become verbally abusive when angry.	.71				
44	Tends to break things when angry.	.58				
5	When distressed, tends to act without thinking.	.47				.31
42	Has trouble using "self-talk" (e.g., "she didn't really mean it") to inhibit immediate response when angry or upset.	.47				
37	Commits antisocial or criminal acts to impress peers, without consideration of consequences.	.44				
20	Has difficulty inhibiting inappropriate, reckless, or self-destructive acts when others in his/her peer group are committing them.	.42			-.39	
32	Tends to abuse alcohol.	.39	.31			
29	Commits crimes or antisocial acts (e.g., stealing, assault) on the spur of the moment.	.32				
13	Lacks long-term plans or clear ideas about where she or he wants to be and how to get there.		.81			
2	Tends to live "in the moment"; does not think or worry much about the future.		.74			
16	Gives up easily when frustrated; tends to avoid trying when faced with possible failure.		.68			
18	Has difficulty sacrificing current pleasure for future gains; needs immediate gratification.		.64			
34	Appears undeterred from criminal or antisocial acts by threats or punishments; seems impervious to consequences.		.61			
9	Tends not to finish what she/he starts; has minimal persistence.		.59			
19	Tends to make major life choices quickly or without adequate forethought.		.53			
1	Tends to abuse illicit drugs.	.31	.50			
23	Has trouble imagining the likely emotional consequences of different courses of action; has trouble "picturing" what the impact of a decision might be on future well-being.		.46			
45	Tends to act on global impressions; pays little attention to details.		.41			-.37
38	Is unable to restrain him/herself from engaging in compulsive behaviors (e.g., buying sprees, gambling, kleptomania, perverse sexual activity) despite serious adverse effects on relationships, finances, etc.		.34		.32	.33
8	Tends to be distractible.			.84		
26	Has difficulty concentrating or maintaining focus on tasks or problems, even when mood is relatively calm.			.83		
33	Has difficulty breaking problems down into manageable pieces, even when mood is relatively calm.		.45	.56		

6	Often "blurts things out" without thinking.	.47			
39	Tends to have difficulty sitting still.	.44			
14	Tends to jump to conclusions when solving problems, rather than carefully considering the data.	.38			
25	Tends to act without thinking, even when not distressed.	.32			
31	Tends to interrupt; has difficulty taking turns in conversation.			.74	
21	His/her own perspective seems so immediate and powerful that he/she has trouble imagining other points of view.			.72	-.31
4	Quickly lays blame elsewhere, rather than thinking about his/her contributions to adverse events.			.58	-.34
15	Tends to be "grabbed" by one aspect of a situation, rather than considering its complexity.			.48	
11	Tends to make up his/her mind very quickly.			.48	
22	Has difficulty tolerating unpleasant feelings; acts quickly to escape them even when doing so is manifestly self-destructive or self-defeating.			.39	
35	Tends to get so “carried away” by a plan, scheme, or idea that s/he fails to see its possible "snags."			.39	
43	Tends to end relationships abruptly in the face of conflict, discomfort, or anger.			.34	
3	Tends to jump to conclusions in interpersonal situations.			.34	
40	Tends to jump into relationships quickly and intensely.			.31	
27	Tends to binge and then compensating by purging (deliberately vomiting, taking laxatives, etc.)				
47	Expresses guilt, shame, or remorse after behaving badly, but cannot use these emotions to refrain from acting.				.67
24	Can imagine the emotional consequences of his/her action but has difficulty using these feelings to guide behavior.				.65
41	Has insight into own behavior but only “after the fact”; seems unable to draw upon insight in the moment to regulate behavior.				.57
49	Is unable to stop self from becoming emotionally involved with people s/he knows are “trouble.”				.34
50	Tends to analyze situations in superficial ways.	.33	.31		-.33
10	Tends to become suicidal or to threaten suicide when distressed.				
36	Is promiscuous.				
48	Tends to engage in thrill-seeking behavior.				
30	Tends to have unprotected sex.				

Appendix D

Parallel Analysis for the Unweighted Least Squares Q-factor Extraction (Observed Eigenvalues Expressed as Percent Variance Explained Plotted with the 95th Percentile of the Eigenvalues from Pseudorandom Simulated SWAP-II Data) Suggested Retaining Two to Three Q-factors.



Appendix E

Pattern Matrix for the Optimal Q-factor Analysis Solution for the SWAP-II Data

Pattern Matrix for the Unweighted Least Squares Solution with a Promax Rotation (κ=2) with Keiser Normalization (Rotation Converged after 27 Iterations)

Q-factor Loadings								
1	2	3	1	2	3	1	2	3
.84			.56	.39			.60	
.84			.55			.55	.58	
.75			.54			.41	.58	
.74			.53	.36			.56	
.74			.53	.43			.56	
.73			.53			.40	.54	
.71			.51		.35		.53	
.70			.51		.43		.52	.39
.68			.49			.45	.51	
.68			.49	.42			.51	
.68			.49				.50	.40
.66			.48		.36	.36	.49	
.66			.45				.47	.36
.66			.43	.41			.46	
.66			.42	.36		.45	.46	
.66			.41				.45	
.65			.38				.44	
.64			.36		.35	.35	.43	
.64			.36				.41	.41
.63				.82		.37	.41	
.63	.37			.75				.68
.63				.72				.63
.63				.71				.57
.62		.44		.70				.57
.62		.35		.69		.43		.54
.61				.68			.35	.52
.61	.35			.66			.46	.47
.60				.65				.44
.60	.44			.63				.36
.59	.44			.63				
.58				.60				