# AN INVESTIGATION OF PSYCHOPATHY IN A FEMALE JAIL SAMPLE: A STUDY OF CONVERGENT AND DISCRIMINANT VALIDITY

THESIS

Presented to the Graduate Council of the
University of North Texas in Partial
Fulfillment of the Requirements

For the Degree of

MASTER OF SCIENCE

By

Randall T. Salekin, B.A.
Denton, Texas

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The present study was designed to assess both the construct of psychopathy in a female jail sample as well as the quality of the measures that have been employed to assess this personality style. Utilizing the multitrait-multimethod matrix proposed by Campbell and Fiske (1959), the construct of psychopathy was measured via three instruments: (a) the Antisocial Scale of the Personality Assessment Inventory, (b) the Psychopathy Checklist - Revised, and (c) the Antisocial Scale of the Personality Disorder Examination. In addition, the predictive validity of each of these measures of psychopathy was evaluated to determine their ability to predict institutional violence and non-compliance. The results revealed significant convergence and divergence across the three instruments supporting the construct of psychopathy in a female jail sample. In addition, the measures of psychopathy demonstrated moderate predictive validity.

## Acknowledgements

This project is dedicated to my father (Earl Salekin, 1933-1996) who passed away shortly after its completion. He truly was an inspiration and if not for his foresight and support in getting me started in education and philosophizing about human behavior at an early age, I likely would not of had such an opportunity to complete a Masters of Science in Clinical Psychology. He always encouraged me to reach for, and aspire to higher levels. Thanks Dad for the inspiration and encouragement, among other things!! I dedicate this important step in my education in memory of you.

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# CHAPTER I

## INTRODUCTION

Phillippe Pinel first introduced the concept of the psychopathic personality approximately two hundred years ago (Stone, 1993). Since that time, considerable theoretical and empirical attention has been directed toward understanding the psychopathic personality characteristics and behaviors. While the debate continues over whether psychopathy represents a behavioral or personality based construct (e.g., Lilienfeld, 1994), most contemporary conceptualizations are linked, at least in part, to the work of Cleckley and his book The Mask of Sanity. Cleckley's extensive clinical descriptions of the most dominant characteristics of psychopathy have received widespread acceptance as typifying the concept of psychopathy.

An important development since Cleckley has been the construction of the Psychopathy Checklist (PCL; Hare, 1985, 1991). Hare and his colleagues (Hare, 1991; Hart, & Hare, 1993) developed the PCL by adapting components of the Cleckley conception of the psychopath. As a result of these research efforts, considerable empirical evidence exists regarding the nature of the psychopath within criminal

institutions. Much of this research indicates that psychopaths are prone to violent and non-violent recidivism (Hart, Kropp, & Hare, 1988).

Several other diagnostic procedures for the assessment of psychopathy have appeared in the literature which include clinical diagnosis, behavioral ratings, semi-structured interviews (e.g., PDE; Loranger, 1988), and self-report multiscale inventories (e.g., MMPI; Hathaway & McKinley, 1943; PAI; Morey, 1991). These measures typically include, or assess exclusively, the psychopathy construct. Although they may represent the core features of the syndrome somewhat differently, all but one of these measures have received extensive attention primarily with male forensic populations; the exception is the MMPI which was researched primarily with juvenile delinquents.

Although investigators generally agree on the fundamental characteristics of psychopaths and its relationship to criminal and violent behavior, few studies have examined psychopathy in female populations. Given that psychopathy is a crucial diagnosis for psychologists who evaluate and treat individuals in contact with the law (Rogers, 1995), it is surprising that few researchers have examined the construct in female populations. The two existing studies (Neary, 1990; Strachman, Williamson, & Hare, 1990) found lower mean total PCL-R scores suggesting that the construct may not be as salient in female samples.

In sum, little information is available for psychologists regarding psychopathy and Antisocial Personality Disorder (APD) in females. The recent accumulation of psychopathy measures affords the opportunity to evaluate the construct validity of this diagnostic concept in a female jail sample. The purpose of this study, then, is to examine the relations between three measures of the psychopathy construct with this sample. Before describing each of the measures in detail, an account of the historical trends of the defining features of the syndrome are reviewed to provide a better understanding regarding any differences in conceptualizations that exist.

## Historical Conceptualizations of Psychopathy

Descriptions of the psychopathic personality have undergone changes over the last two centuries. As mentioned previously, Pinel described the person who habitually exhibited asocial and antisocial actions but did not manifest signs of "mental illness" as it was then conceptualized (Stone, 1993). Pinel coined the term manie sans delerie (mania without delirium) to describe the behavior disorder, that included such features as cruelty, irresponsibility, and immorality. Subsequently, Pritchard (1837) renamed a similar constellation of symptoms "moral insanity," presuming that they manifested a "derangement" and a failure to abide by society's expectations of religious, ethical, and cultural conduct. Later, Koch

(1888) presented his beliefs that this syndrome was constitutional, inbred by a genetic strain which produced a basic flaw in one's personality and thus replaced "moral insanity" with the term "psychopathic inferiority" (cited in Batrol & Batrol, 1986).

Kraepelin (1913) offered further refinement with his delineation of seven categories of psychopaths. These types were the excitable, the unstable, the impulsive, the eccentric, the liars and the swindlers, the quarrelsome, and the unrepentant. All these categories, according to Kraepelin, represented constitutional predispositions, but they were not all psychopathic as many researchers and clinicians view the term today. Perhaps the unrepentant type comes closest to the contemporary notion of the psychopath as characterized by callousness and lack of remorse for acts hurtful to others. As an alternative, Partridge (1930) proposed the term "sociopath" to emphasize the social rather than the mental nature of the syndrome. Thus, the transition from psychopath as a general term for someone with a disturbed mind to the contemporary, more specific usage of sociopath was thought to better represent the callousness and proneness to socially offensive behavior of these individuals (Stone, 1993).

Karpman (1941) was also concerned with differentiating the psychopathic personality from other forms of mental disturbance in which antisocial behavior was secondary to

another type of emotional disorder. Karpman's distinction between primary and secondary psychopaths explicitly recognized a class of individuals who exhibited antisocial and aggressive acts for which they were often labelled as psychopaths but were actually suffering from emotional distress or other conflicts. According to Karpman, primary psychopaths were organized into two subtypes: the aggressive-predatory (i.e., constant aggression with no regard for the rights of others) and the passive-parasitic (i.e., taking advantage of others to satisfy their own needs without remorse or guilt). In contrast, secondary psychopaths (also called symptomatic psychopaths) were defined by Karpman as persons who manifested "psychopathic-like" behaviors that were the result of some other disorder.

One of the most detailed and influential clinical accounts of the psychopath was offered by Cleckley in his 1941 book, The Mask of Sanity. The characteristics considered by Cleckley to be typical of the psychopath are as follows: (a) superficial charm and good intelligence; (b) absence of delusions and other signs of irrational thinking; (c) absence of "nervousness" or psychoneurotic manifestations; (d) unreliability; (e) untruthfulness and insincerity; (f) lack of remorse or shame; (g) inadequately motivated antisocial behavior; (h) poor judgment and failure to learn by experience; (i) pathologic egocentricity and incapacity for love; (j) general poverty in major affective

reactions; (k) specific loss of insight; (l) unresponsiveness in general interpersonal relations; (m) fantastic and uninviting behavior with drink and sometimes without; (n) suicide rarely carried out; (o) sex life impersonal, trivial, and poorly integrated; (p) and failure to follow any life plan. Cleckley's description of the psychopath appealed to clinicians and researchers alike (e.g., Buss, 1966; Hare, 1985; Hare & Cox, 1978; Hart & Hare, 1992; McCord & McCord, 1964).

McCord and McCord (1964) described the psychopath as maladjusted and primarily dangerous with two central characteristics: inability to love and inability to experience guilt, as indicated by their lack of empathy and remorse. Additional characteristics included aggressiveness, impulsivity, and lack of planning. These characteristics were thought to be the result of primitive desires and an exaggerated craving for excitement. They emphasized that psychopaths seek only the satisfaction of their own desires.

Buss (1966) described the psychopath in terms of two distinct components. The first component consisted of the following symptoms and characteristics: (a) thrill seeking behavior and disregard of conventions, (b) disregard for authority, (c) impulsivity, (d) poor judgement about behavior but good judgment about abstract situations, (e) failure to learn from punished behavior, (f) pathological

lying, and (g) asocial or antisocial behavior. The second component consisted of the following personality traits: (a) defective personal relationships or incapacity for love, (b) lack of insight, (c) lack of guilt or shame, (d) a facade of competence or maturity, and (e) inconsistency and unreliability.

Interestingly, the first edition of the Diagnostic and Statistical Manual of Mental Disorders (DSM-I; American Psychiatric Association, 1952) did not include the term "psychopath" rather the committee decided upon "Sociopathic Personality Disturbance, Antisocial Reaction." To date, none of the DSMs have employed the term psychopath; however, the description provided in the DSM-II (American Psychiatric Association, 1968) most closely resembled Cleckley's conceptualization, including such traits as selfishness, callousness, lack of guilt, impulsivity, lack of loyalty, low frustration tolerance, and propensity to blame others.

Following Cleckley's delineation of the psychopath, the majority of researchers (e.g., Cleckley, 1941; Hare, 1970, 1985b; Karpman, 1941; Lykken, 1984; McCord & McCord, 1964) viewed the syndrome primarily as a constellation of personality traits. Other authors have offered somewhat different defining features, such as lack of guilt, and lack of love (McCord & McCord, 1964) as well as lack of affection and lack of foresight (Craft, 1965); however, they generally overlap with Cleckley's core criteria.

Cleckley (1941) and other advocates of the personality based approach (e.g., Karpman, 1941; Lykken, 1984; Millon, 1981) emphasized the distinction between psychopathy and chronic antisocial behavior. For example, Cleckley argued that many psychopaths have no history of antisocial behavior, and sometimes have valued positions in our society (e.g., politics and entertainment). Moreover, most proponents of the Cleckley conceptualization of psychopathy have argued that individuals with chronic antisocial behavior are not necessarily psychopaths. In sum, personality traits were thought to be the core of psychopathy and researchers felt that antisocial behaviors were of secondary diagnostic importance and were only evident in some psychopaths.

Two important developments in the delineation of psychopathy have been observed since Cleckley's description. These important developments include the descriptive model found in the DSM-III version of Antisocial Personality Disorder (APD), and the development of the Psychopathy Checklist (PCL; Hare, 1985b, 1990) with its two factor model of psychopathy (Harpur, Hare, & Hakstian, 1989). The DSM-III version of APD is reviewed below while the PCL-R is reviewed under the Assessment of Psychopathy section.

### The DSM-III Related Construct of APD

The third revision of the DSM (DSM-III; American Psychiatric Association, 1980) introduced a related disorder

known as Antisocial Personality Disorder (APD). In contrast to the DSM-II description of sociopathic personality disturbance, which was primarily composed of personality traits, DSM-III described APD as a syndrome "in which there is a history of continuous and chronic antisocial behavior in which the rights of others are violated" (American Psychiatric Association, 1980; pp. 317-318). The diagnostic criteria for APD underwent changes in the revision of the DSM-III (DSM-III-R) and attention was focused on violent criminal acts, particularly those which emerged prior to adulthood. In the development of the DSM-IV (American Psychiatric Association, 1994), APD again has undergone several changes: (a) the expansion of conduct disorder symptoms to be more applicable to females as a prerequisite, and (b) the simplification of the adult criteria.

The DSM changes in nomenclature are significant in that they reflected a move away from a classification based on less observable personality traits to a diagnosis based primarily on overt behaviors. A number of authors (e.g., Cloninger, 1978; Klerman, 1984; Robins, 1978; Spitzer et al., 1975) argued that the Cleckley criteria and related criteria sets required too much inference, resulting in less than optimal inter-rater reliability. Therefore, inter-rater reliability was likely to improve with the adoption of a more behaviorally oriented classification, since observable behaviors were more amenable to

operationalization than personality traits. This change was largely the result of the development of two research classification systems: the St. Louis Criteria (Feighner et al., 1972) and the Research Diagnostic Criteria (RDC; Spitzer et al., 1975). Both systems have adopted chronic antisocial behavior as the cornerstone for the diagnosis of the syndrome. Moreover, St. Louis Criteria and the RDC served as the primary basis for both the DSM-III and the DSM-III-R delineation of APD. Feigner et al. (1972) and Spitzer et al. (1975) did not necessarily question that the personality traits put forth by Cleckley and other personality proponents were related to the syndrome or even at the core of the syndrome, but rather they chose to measure behaviors as a method of improving diagnostic reliability. In contrast, other researchers disagree with whether this behavioral focus has achieved its desired results -- namely, improved inter-rater reliability (Rogers, Dion, & Lynett, 1992; Widiger & Frances, 1987).

## The Relationship Between APD and Psychopathy

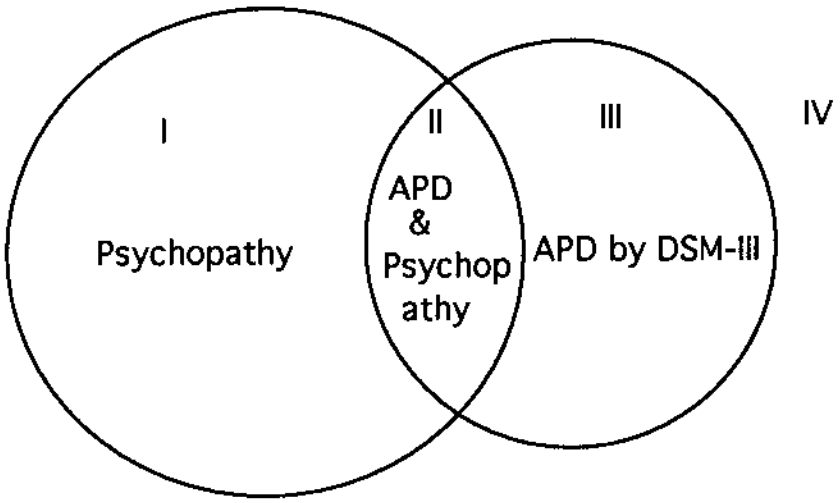
The adoption of a behavioral emphasis to APD may have broadened, inadvertently, the range of populations for which psychopathy can or should be applicable. For example, the heavy emphasis placed on antisocial behaviors has resulted in a large percentage of inmates satisfying the criteria for APD. Initially, Guze (1976) reported that approximately 80% of inmates satisfied St. Louis Criteria for sociopathy.

More recently, Hare (1990) reported that the base rate for APD typically ranges from 50 - 80% in forensic settings. These percentages are higher than those generally reported for psychopathy. As noted by Hare (1983), between 28% and 30% of inmates in a maximum security prison satisfied a consensus diagnoses (i.e., two raters making Cleckley based ratings of psychopathy, as described in Hare & Cox, 1978) of psychopathy. For forensic settings in general, Hare (1991) has suggested that the base rate for psychopathy can range from 15 - 30% and is generally less than the base rate for APD. This finding suggests that behavior-based criteria, more than personality-based criteria, are highly associated with criminality. A number of critics (e.g., Hare, 1983, 1990; Lilienfeld, 1994; Lykken, 1984) have argued that the DSM-IV and related criteria sets for APD have sacrificed construct validity for the sake of reliability (see Figure 1).

Rogers, Dion, and Lynett's (1992) review of the diagnostic reliability and validity of APD indicated that the DSM criteria for APD have not shown high reliability. Specifically, Rogers et al. found only one of eight studies to meet the DSM-III benchmark of good agreement (kappas $\geq$ 70; American Psychiatric Association, 1980, p. 468).

Figure 1

The Relationship between Psychopathy and APD




| Criteria Fulfilled | I | II | III | IV |
|---|---|---|---|---|
| DSM-APD | - | + | + | - |
| Psychopathy | + | + | - | - |

Note. Region I persons who manifest psychopathic traits but not Antisocial acts. Region II persons who manifest psychopathic traits and commit antisocial acts. Region III persons who commit antisocial acts but do not have psychopathic personality traits. Region IV persons who have neither psychopathic personality traits nor antisocial behaviors.

In addition, despite some researchers, (Pfohl, Coryell, Zimmerman, & Stangl, 1986) belief that structured interviews for personality disorders are generating higher reliabilities, Rogers et al. found mixed results. For instance, reliabilities of APD diagnosis derived from the Diagnostic Interview Schedule (DIS; Robins, Helzer, Croughan, & Ratcliff, 1981) ranged from kappas of .54 to .65 (.43 for a computerized version). For the Structured Interview of DSM-III Personality Disorders (SIDP; Stangel, Pfohl, Zimmerman, Bowers, & Corenthal, 1985), a kappa of .66 was found for APD in a non-patient sample. With use of the Personality Disorder Examination (PDE), Rogers et al. reported a kappa of .70, but this result was based on a sample of only seven individuals. Given that only one of the kappas meets the benchmark put forth by APA, even structured interviews seem limited in their ability to accomplish good agreement between raters.

Lilienfeld (1994) has argued, assuming that the personality-based approach is correct, that clinicians may be making two types of errors in diagnosing psychopathy from a primarily behaviorally-based approach. First, clinicians may be overinclusive, thus misclassifying etiologically related syndromes (i.e., false positives) as true psychopaths. As previously mentioned, Karpman (1941) referred to these individuals as "secondary" (or symptomatic) psychopaths. That is, they are persons who

manifest "psychopathic-like" behaviors that are secondary to some other disorder, including neurotic, dyssocial, and schizoid psychopathy (Hetson, 1966). Second, clinicians may be underinclusive and not including individuals who are truly psychopathic. The underinclusive problem of the behavioral approach is the exclusion of primary psychopaths, who for such reasons as high intelligence and extensive socialization, have avoided repeated contact with the legal system (i.e., false negatives). According to Lilienfeld, behavior based criteria, such as APD, focus too heavily upon unsuccessful psychopaths, and insufficiently on high functioning psychopaths.

The difference between psychopathy and APD diagnoses appears to be narrowing slightly. In a response to criticisms of the DSM-III diagnosis of APD, the authors of the DSM-III-R added the criterion "lacks remorse" in order to assess the lack of guilt believed by many to be central to the psychopathy construct (Lilienfeld, 1994). Other classic personality based items of the DSM-III-R APD include conning and manipulativeness, impulsivity or failure to plan ahead, and irresponsibility. These criteria have remained in the fourth version of the DSM, and the DSM-IV authors have also referred to this pattern of traits and behaviors as not only APD but as psychopathic too, implying that they are the same, or at least a similar, construct. Hare and Hart (in press) still feel that the criteria continue to be

weighted too heavily toward antisocial acts. Nevertheless, these researchers include a number of behavioral criteria such as antisocial acts in their definitions (Hare, 1991; Morey, 1991).

Rogers, Duncan, Lynett, and Sewell (1994) asked 331 forensic psychiatrists to make prototypic ratings of the successive DSM versions (DSM-II, DSM-III, DSM-III-R, and DSM-IV), PCL-R, and ICD-10 (International Classification of Diseases and Related Health Problems; World Health Organization, 1990) diagnosis relevant to psychopathy (dyssocial personality disorder) in hopes to further elucidate the construct. According to Broughton (1990), prototypical analysis is best applied to ambiguous constructs that are difficult to explicate. Four distinct factors emerged in the Rogers et al. study which included: (a) unstable self image, unstable relationships, and irresponsibility, (b) manipulation and lack of guilt, (c) aggressive behavior, and (d) nonviolent delinquency. Among the adult symptoms, the eighteen highly and very highly prototypical items were distributed across the classifications. The PCL-R and ICD-10 contributed most of the highly prototypical items (eight and five respectively) while the DSM versions contributed only three.

The highly prototypical items for the adult are as follows: (a) fails to conform socially; (b) fails to honor financial obligations; (c) no regard for the truth; (d) lack

of remorse or guilt; (e) pathological lying; (f) conning/manipulative; (g) callous/lack of empathy; (h) does not accept responsibility; (i) incapable of significant loyalty; (j) blames others; (k) callous unconcern for others; (l) proneness to blame others; (m) attitude of irresponsibility; (n) criminal versatility; (o) deceitful and manipulative; and (p) adult antisocial behavior. This study provided was the first systematic investigation of forensic experts' understanding of psychopathy through prototypical analysis and clearly deviated from the DSM APD diagnosis suggesting that many professionals do not consider the criteria to be particularly related to the psychopathy syndrome. Rogers, Dion, and Lynett (1992) conducted an earlier prototypical analysis utilizing adult volunteers and found a highly similar factor structure.

## Assessment of Psychopathy

A number of instruments have been developed over the years for the assessment of psychopathy. In fact, clinicians are presented with several choices for assessing the syndrome. Such instruments include scales on multiscale inventories: (a) the Minnesota Multiphasic Personality Inventory (MMPI; McKinley & Hathaway, 1944) Psychopathic Deviate (Pd) Scale, (b) the Personality Assessment Inventory (Morey, 1991) Antisocial Scale, (c) the California Personality Inventory (CPI; Gough, 1960) Socialization (So) Scale, and (d) the Millon Clinical Multiaxial Inventory's

(MCMI; Millon, 1987) Antisocial scale. In addition, two measures were designed specifically to measure psychopathy: (a) the Psychopathic Personality Inventory (PPI; Lilienfeld, 1989), and (b) the Psychopathy Checklist (Hare, 1985, 1991, 1995) in its original, revised, and screening versions. Structured interviews also include sections on APD: (a) the Structured Interview for the DSM-III-R Personality Disorders (SIDP; Pfohl, Blum, Zimmerman, & Stangl, 1989), (b) the Personality Disorder Examination (PDE; Loranger, 1988), and (c) the Structured Clinical Interview for DSM-III-R for Axis II disorders (SCID-II).

Significant correlations are found among several of these measures, although the magnitude of the association is often quite modest. The results of three studies (i.e., Hare, 1985a; Hart & Hare, 1991; Windom & Newman, 1985) indicated that measures of psychopathy typically exhibit low, or at best moderate, intercorrelations. For instance, Hare (1985a) found that commonly used self report psychopathy measures, such as the Pd scale on the MMPI and the So scale on the CPI, were correlated with each other at only $\underline{r} = -.34$. Moreover, both Hare (1985a) and Windom and Newman (1985) found that the levels of agreement were substantially lower when comparing self-report measures and interviews as opposed to the level of agreement within each domain.

Low correlations among these measures of psychopathy are likely to stem from a disagreement concerning which constellation of personality/behavior components compose the syndrome. While the issue regarding the core criteria of the syndrome is not completely settled, more recent measures appear to be including both behavioral and personality components to a similar degree. The most recent conceptualization, in which these two components are included is the PCL. Another measure which is also equally weighted between personality and behavioral components is the Antisocial scale of the PAI, in which Morey (1991) took into account the two-factor model demonstrated by Harpur, Hare, and Hakstian (1989). Thus, the personality and behavioral components are both assessed with this self-report measure.

Many clinicians continue to rely on the DSM-IV diagnosis of APD as a measure of psychopathy. The PDE is a measure of APD according to the DSM-III-R, and while it is heavily weighted with behaviorally based items, the PDE does include a number of personality traits that are thought to be at the core of the psychopathy concept. As previously mentioned, these traits include conning and manipulativeness, irresponsibility and failure to plan ahead, and a lack of remorse. Reviewed below are the PCL-R and PAI; two measures that reflect the more contemporary conceptualization of psychopathy as well as the PDE, which

is a semi-structured interview for the commonly used diagnosis of APD. Each is reviewed separately and the differences between the instruments are highlighted.

The Psychopathy Checklist

The PCL was developed by Hare (1985) at the University of British Columbia in Vancouver, British Columbia. According to Hare, the PCL was developed by generating characteristics, based on literature reviews and practical experience, that would differentiate between psychopathic and non-psychopathic inmates (Hart et al., 1992). The items were chosen based on four criteria: (a) uniqueness, (b) sufficiently correlated with Cleckley-based global ratings (Hare & Cox, 1978), no extremeness in base rates, and (d) reliability across samples. The PCL was then created by refining the resulting items based on their ability to discriminate psychopaths from non-psychopaths.

The PCL currently exists in three different versions: (a) the original 22-item PCL, (b) a revised 20-item version (PCL-R), and (c) the most recent, briefer 12-item scale known as the PCL-Screening Version (PCL-SV). Given that the majority of the validity studies have been conducted on either the PCL or the PCL-R and that the measures are very similar (i.e., only two items were deleted from the original PCL and only minor changes in the content of the remaining items), only the PCL-R will be reviewed below. However,

when discussing reliability and validity both the PCL and PCL-R studies will be discussed.

Table 1

Items on the Revised (20-item) Psychopathy Checklist

| |
|---|
| 1. Glibness/superficial charm |
| 2. Grandiose sense of self worth |
| 3. Need for stimulation/proneness to boredom |
| 4. Pathological lying |
| 5. Conning/manipulative |
| 6. Lack of remorse or guilt |
| 7. Shallow affect |
| 8. Callous/lack of empathy |
| 9. Parasitic lifestyle |
| 10. Poor behavioral controls |
| 11. Promiscuous sexual behavior |
| 12. Early behavior problems |
| 13. Lack of realistic long term goals |
| 14. Impulsivity |
| 15. Irresponsibility |
| 16. Failure to accept responsibility for own actions |
| 17. Many short-term marital relationships |
| 18. Juvenile delinquency |
| 19. Revocation of conditional release |
| 20. Criminal Versatility |

The 20 items of the PCL-R are designed to assess a range of personality traits and behaviors relevant to Hare's description of the syndrome (see Table 1). These items are rated using a three-point scale based on the degree to which the personality/behavior of the individual matches the description of the item in the manual: 0 = "no", 1 = "maybe/in some respects," and 2 = "yes". The total score can range from 0 to 40 representing the degree to which an individual resembles the prototypical psychopath, according

to Hare (1991). For classificatory purposes, a score of 30 or above is considered to be indicative of psychopathy; this cutting score of 30 has a sensitivity of .72 and a specificity of .93 (Hare, 1990).

Hart and Hare (1993) define psychopathy as "a cluster of personality traits and socially deviant behaviors: a glib and superficial charm; egocentricity; selfishness; lack of empathy, guilt, and remorse; deceitfulness and manipulativeness; lack of enduring attachments to people, principles, or goals; impulsive and irresponsible behavior; and a tendency to violate explicit social norms" (p. 104). Thus, the PCL incorporates items representing the central personality traits of psychopathy as well as items representing a history of antisocial behaviors and an antisocial lifestyle. Two studies (Hare, Harpur, Hakstian, Hart, & Newman, 1990; Harpur, Hakstian, & Hare, 1988) have supported these two dimensions.

Hare (1991) described the two factors as $F_1$, which is characterized by selfish, callous, and remorseless use of others, and $F_2$, which includes items that relate to chronically unstable, antisocial, and socially deviant lifestyles. Harpur et al. (1988) factor analyzed data from six samples of male prison inmates (combined $\underline{N}$ = 1,119) obtained in Canada, the United States, and England. Each of the six samples produced the two-factor solution consistent with the above description. Hare et al. (1990) factor

analyzed data from five prison samples (combined $\underline{N}$ = 925) and three psychiatric samples (combined $\underline{N}$ = 356) of the PCL-R version. They reported findings that the PCL-R factor structure is similar to the PCL. These researchers have found that $F_1$ is weakly to moderately correlated with of APD, whereas $F_2$ is highly correlated with these ratings.

In an attempt to further evaluate the construct validity of the PCL, Harpur et al. (1989) examined the relationship of the two PCL factors with several self report indices relevant to psychopathy. These indices include the MMPI Pd and Mania (Ma) scales, the So scale, Eysenck and Eysenck's (1975) Psychoticism scale, the Sensation Seeking Scale, and Hare's Self-Report Psychopathy Scale. These measures yielded moderate correlations with $F_2$ (median $\underline{r}$ = .32); however, they showed only low correlations with $F_1$ (median $\underline{r}$ = .12). Harpur et al. (1989) contended that a potential problem shared by most self-report indices of psychopathy is that they typically only assess one component of the construct. They believe that distinguishing between personality and behavior-based conceptualizations is of particular import and that self report measures which evaluate only one of these components may not be appropriate for the assessment of psychopathy.

Lilienfeld (1994) has pointed out that Harpur et al.'s (1989) distinction between personality traits and antisocial behaviors may not be as straightforward as the authors have

suggested. For instance, he noted that several personality variables, in Harpur et al.'s study, loaded primarily upon $F_2$, suggesting that the factor assesses more than antisocial behavior. Specifically, the Psychoticism scale of the Eysenck Personality Questionnaire (EPQ) and the PCL items, which assess lack of long term planning and impulsivity, loaded primarily on $F_2$.

Rogers and Bagby (1994) re-examined the factor solutions of the PCL-R and suggested several modifications. Based on the Hare et al. (1990) data, they noted that the factor descriptions did not capture several of the highest loadings. Specifically, Rogers and Bagby suggested that $F_1$ should include dimensions of glibness and grandiosity while $F_2$ should incorporate dimensions of impulsivity and sensation seeking. These authors contend that these refinements increase the interpretability of the two-factor model of the PCL-R.

The PCL/PCL-R has only been found to correlate modestly with other measures of psychopathy (Hare, 1985). For instance, Hare found that the PCL only correlated modestly with the MMPI Pd Scale ($\underline{r}$ = .29). Interestingly however, the MMPI Pd Scale and the diagnosis of APD only showed a modest correlation as well ($\underline{r}$ = .26) which indicates that all the indices are measuring substantially different constructs. In comparison with the PCL, Hare (1985) found the Socialization (So) scale of the CPI negatively

correlated with the PCL only moderately ($r$ = -.26). An equally modest correlation was found between the MMPI scale 4 and the So scale of the CPI ($r$ = -.34). Again, the lack of high correlations here indicate that the instruments are measuring different constructs to some extent.

Eysenck's Personality Questionnaire (EPQ; Eysenck & Eysenck, 1975) offers an additional operationalization of psychopathy as reflecting a constellation of extraversion, emotional lability, and tough mindedness (Rogers et al., 1991). The EPQ's conceptualization of the syndrome differs drastically from most other descriptions of the psychopath (Cleckley, 1976; Hare, 1991, Morey, 1991). According to Eysenck and Eysenck, three scales of the EPQ are thought to be related to the syndrome. Eysenck and Eysenck postulated that psychopaths would score high on Extraversion (E), Neuroticism (N), and Psychoticism (P). Not surprisingly, Hare (1982) tested the prediction of high P scale in a large sample of male inmates and found low correlations between scores on the PCL and N, E, and P: $r$s of .02, .11, and .14 respectively. Similarly, Kosson, Smith, and Newman (1990) in samples of 166 Anglo American and 89 African American inmates also found low correlations between PCL and EPQ scales ($r$s of N = .09, -.02, E = -.01, .22, P = .34, .04 respectively). In addition, the EPQ has little resemblance to the MMPI Scale 4, both in factors and criterion groups.

Hart, Forth, and Hare (1991) examined the concurrent validity of the MCMI-II (a second version of the MCMI) with respect to the PCL-R criteria for psychopathy and the DSM-III-R criteria for APD in 119 male inmates. Several MCMI-II scales were significantly correlated with measures of psychopathy and APD. Positive correlations were found for the Antisocial scale ($\underline{r}$ = .45), and the Aggressive-Sadistic scale ($\underline{r}$ = .36) to the PCL-R total score. Hart et al. found that the Antisocial scale adequately measured APD traits, but less adequately measured psychopathy as defined by the PCL-R (for $F_1$ $\underline{r}$ = .24; $F_2$ $\underline{r}$ = .51). These results, however, are obtenerated by similar correlations on five additional scales: narcissism, paranoia, drug dependence, thought disorder, and delusional disorder (i.e., $\underline{r}$s > .30).

Hare and his colleagues have demonstrated high inter-rater reliability ($\underline{r}$s from .82 to .93) for the PCL and PCL-R total scores when applied to male prisoners (Hare et al., 1990; Schroeder, Schroeder, & Hare, 1983). Hare (1991) provided a summary of inter-rater reliabilities for total PCL-R scores in four inmate and two forensic-psychiatric samples including the above mentioned study (combined $\underline{N}$ = 1632). The overall ICCs were relatively high across the four inmate samples (ranging from .78 to .89 with a median of .84). The ICCs for individual items were more variable ranging from .42 to .89 with a median of .84.

The test-retest reliability of the PCL-R has been examined in two recent studies. First, Cacciola, Rutherford, and Alterman (1990) examined the test-retest reliability of the PCL-R in a sample of 10 male opiate addicts attending a methadone clinic. Ratings completed independently by two interviewers at a month interval revealed good test-retest reliability ($r$ = .94). Second, Alterman, Cacciola, and Rutherford (1993) examined the 1-month test-retest reliability for four raters of ten prisoners. They found that the PCL-R demonstrated good test-retest reliability ($r$ = .84) for all four raters of both the ten prisoners as well as ten pilot subjects. It is not known exactly how the PCL-R attains such high reliabilities for personality traits, given that this has been considered one of the major problems of the assessment of early personality-based conceptualizations of the syndrome. One unsettling limitation to these reliability estimates is that detailed summaries of the PCL-R related case material were made available to participating clinicians in several studies. This procedure may inflate the level of agreement given that such documentation is not typically available in clinical practice.

Albeit in anecdotal form, the relationship between psychopathy and criminal violence and behavior has been shown in the past (Cleckley, 1976; McCord & McCord, 1964). With regard to the PCL, empirically based research has shown

a relationship between psychopathy and violent and criminal behavior of inmates (Hare & McPherson, 1984, Serin, 1994; Wong, 1984). Hart and Hare (1992) provided a thorough review of studies that show empirical support for its ability to predict future violence, institutional violence/aggression, and nonviolent recidivism.

Salekin, Rogers, and Sewell (in press) performed a meta-analysis of 15 studies in order to quantitatively examine the psychopathy-recidivism relationship. Specifically, they evaluated the PCL/PCL-R's performance in three areas: (a) predictions of violent recidivism and institutional violence, (b) predictions of general recidivism, and (c) predictions of sexual sadism and deviant sexual arousal. Effect sizes when violence was used as the primary outcome ranged from $\underline{d}$ = .42 to $\underline{d}$ = 1.92 with a mean effect size of $\underline{d}$ = .79. When general recidivism was used as the outcome, effect sizes were substantially lower and ranged from $\underline{d}$ = .27 to $\underline{d}$ = .93 with a mean effect size of $\underline{d}$ = .56. Finally, when the two studies which addressed deviant sexual arousal and sexual sadism were used as the primary outcome, effect sizes of $\underline{d}$ = .77 and $\underline{d}$ = .58 were obtained with a mean of $\underline{d}$ = .68. The magnitude of these effect sizes indicate that psychopathy is moderately associated with an increased risk for criminal and violent behavior in male offenders. In addition, other researchers employing the PCL/PCL-R have shown that the instrument is

better than DSM-III-R diagnosis of APD or other personality self report measures at predicting future violence (Hare, 1980, 1990; Simourd, Bonta, Andrews, & Hoge, 1990).

Shortcomings of the PCL include limits on its generalizability as well as the possibility that differing constellations of the syndrome may represent quite different levels of risk. These shortcomings have received relatively little attention, despite being of paramount importance in validating the construct of psychopathy.

To date, the generalizability of the PCL-R to diverse populations and clinical settings remains largely untested. Reliability and validity of the PCL-R are evaluated almost exclusively in forensic populations within the Canadian criminal justice system. This population is primarily composed of Anglo Canadian males which has resulted in limited information regarding the applicability of the construct of psychopathy with female offenders or minority populations. With the exception of the original validation studies, the PCL/PCL-R has not been evaluated with a female population. Thus far, normative data on female offenders have suggested somewhat lower scores on the PCL/PCL-R than were attained with male offenders (Hare, 1991). Clearly, the generalizability of the PCL-R to a female offender population, as well as minorities, requires formal investigations. Furthermore, how the PCL-R scores relate to institutional violence, verbal aggression, and non-compliant

behaviors and recidivism has not been investigated with a female population and few studies have examined these relations with minorities.

Rogers (1995) has suggested that different combinations of the PCL-R characteristics may not necessarily represent the same level of risk. For instance Rogers has calculated more than 15,000 possible variations of psychopathy for scores equal to or greater than 30. As a polythetic model, classification rests on the assumption that the 20 criteria of the PCL-R should be accorded equal weight and that any combination of the criteria that exceeds the predetermined cutting score ($\geq$ 30) is sufficient to warrant the diagnosis of psychopathy.

Unfortunately, Hare and his colleagues do not provide a consistent description on how psychologists could make differential use of the factor scores in their assessment of psychopathy. For instance, Hart, Hare, and Forth (1992) suggest that predictions of dangerousness extend beyond $F_2$ items and that $F_1$ items are as predictive, and in some cases more predictive, of violence and social deviance than $F_2$ items. Conversely, Harpur et al. (1989) found that those inmates classified as violent were best discriminated by $F_2$ items. Clearly, this lack of consensus regarding differential use of the factor scores is a limitation of the PCL-R.

Personality Assessment Inventory

The PAI is a self administered, multiscale inventory of adult personality designed to provide information on critical clinical variables. The PAI contains 344 items which comprise 22 non-overlapping full scales (Morey, 1991). The scales include: four validity scales, eleven clinical scales, five treatment scales, and two interpersonal scales. Ten of the full scales contain conceptually derived subscales designed to facilitate interpretation and coverage of the full breadth of complex clinical constructs (Morey, 1991). The PAI has several advantages over the MMPI-2: (a) easy reading comprehension, (b) gradations of item responses on a four point scale, (c) relatively brief administration time, and (d) non-overlapping clinical scales (Rogers, Sewell, Ustad, Reinhardt, & Edwards, 1995).

The clinical syndromes assessed on the PAI were selected on the basis of two criteria: (a) their history of importance within the nosology of mental disorder and (b) their significance in contemporary diagnostic practice (Morey, 1991). Scores on the PAI are presented in the form of linear T scores that have a mean score of 50T and a standard score of 10T. The T score transformations are calibrated with reference to a national census-matched community sample of 1,000 adults stratified according to age, ethnicity, and gender. Extensive data were also

gathered for representative samples of clinical subjects (N = 1,246) and college students (N = 1,051).

The PAI has been shown to have good psychometric properties (Morey, 1991). With respect to internal consistency the original studies conducted on the PAI produced consistently high values for the PAI full scales, with median alphas of .81, .86, and .82, for the normative, clinical, and college samples, respectively. In addition, test-retest reliability correlations for he PAI full scales were also good ranging from .29 to .91 with a median of .85. The test-retest reliability of correlations for the PAI subscales in a combined community/college sample were also high ranging from .68 to .85 with a median of .78.

The scale measuring psychopathy on the PAI sets it apart from other self report measures with its more contemporary theoretical base. Along the lines of Harpur, Hare, and Hakstian (1989), the Antisocial scale (ANT) of the PAI provides an assessment of personality and behavior features relevant to the constructs of antisocial personality and psychopathy as defined by Cleckley (1944). The item content ranges from indicators of egocentricity, adventuresomeness, and lack of empathy, to items that address antisocial attitudes as well as behaviors. The scale is made up of three subscales tapping different facets of the syndrome. They are Antisocial Behaviors (ANT-A), Egocentricity (ANT-E), and Stimulus Seeking (ANT-S). Two of

these components represent personality aspects of the psychopathic character, while the third component measures what are thought by Morey to be characteristic antisocial behaviors.

The ANT-E subscale was conceptualized to include the pathological egocentricity and narcissism. A second psychopathic personality element was addressed by the ANT-S subscale characteristic which involves a tendency to seek excitement and thrills and low boredom tolerance that are often thought to be hallmarks of the psychopath. Last, the ANT-A subscale represents a construct similar to the conduct problems that characterize the DSM definition of the antisocial concept (see Appendix A).

Preliminary data for the Antisocial scale are based on a group of 75 prisoners/patients who were given a primary diagnosis of APD. The mean age of this sample was 31.9 years, 5.3% were females, 12.5% were inpatients. The APD sample achieved a higher mean T-score (T = 68) on the Antisocial scale than any other diagnostic or behavioral subgroup in the standardization sample. The antisocial group was also distinguished by elevations on all three subscales (Morey, 1991).

Construct validity has been evidenced for the PAI Antisocial scale with regard to other measures of the disorder. The ANT scale demonstrated its largest correlations with the Hare Self-Report Scale (college

students $\underline{r}$ = .82; alcohol and drug program sample $\underline{r}$ = .54) and the MMPI Antisocial personality disorder scale (MMPI-PD; Morey, Waugh, & Blashfield, 1985; clinical sample $\underline{r}$ = .60; community sample $\underline{r}$ = .77). Other correlates include the Wiggins Hostility ($\underline{r}$ = .57) and Family Problems ($\underline{r}$ = .52) content scales, the NEO-PI (Costa & McCrae, 1985) Excitement Seeking scale ($\underline{r}$ = .56), and the Interpersonal Adjective Scale - Revised (IAS-R; Trapnell & Wiggins, 1990) "cold" interpersonal octant (community sample $\underline{r}$ = .45; college student sample $\underline{r}$ = .42). Morey indicated that this pattern of relationships suggests that the personality, interpersonal, and behavioral elements are addressed by this scale. The correlation with the MMPI Pd scale was positive but not impressive, which indicates that the two scales represent the core features of the syndrome somewhat differently.

No studies were found regarding the predictive validity of the PAI ANT scale with regard to violent and non-violent criminal activity. As well, only a relatively small portion of the APD group were females (4 or 5.3%), thus limiting the generalizability of the scales to groups other than males.

Personality Disorder Examination

The PDE (Loranger, 1988; Loranger et al., 1987) is an extensive semi-structured interview for the assessment of personality disorders. Structured questions are organized by DSM-III-R criteria. Typically, interviewers make several

clinical inquiries which form the basis for making a decision regarding each criterion. The response to clinical inquiries are rated on a three-point scale: 0 when the behavior is absent or not clinically significant, 1 when the behavior is present but of uncertain clinical significance, and 2 when the behavior is present and clinically significant (Rogers, 1995). The PDE is designed for both categorical and dimensional scoring. Categorical scoring is related to the DSM-III-R inclusion criteria. When inclusion criteria are met, then the specific disorder is diagnosed. Dimensional scoring consists of two parts: (a) the summing of clinical inquiries for each of the eleven personality disorders, and (b) the transformation of these raw scores into T scores ($\underline{M}$ = 50, $\underline{SD}$ = 10).

The PDE has shown good to superb coefficients of inter-rater agreement (Rogers, 1995). The ICCs for the dimensional scales were uniformally high with a median of .97 and a range of .84 to .99. Inter-rater categorical diagnosis was also highly reliable with a kappa of .78 (Loranger, 1988). Furthermore, studies examining test-retest reliability suggest a moderate level of consistency over time (Loranger, 1988; Pilkonis, Heape, Ruddy, & Serrao, 1991). Rogers (1995) has highlighted the advantages of the PDE in the assessment of Axis II disorders some of which include: (a) ease of use, (b) high inter-rater reliability, (c) dimensional and categorical scores, and (d) an

international version with translations making the PDE highly generalizable.

The Antisocial scale of the PDE is composed entirely of DSM-III-R criteria. The PDE attempts to measure a pattern of irresponsible and antisocial behavior from childhood or early adolescence into adulthood. The diagnosis requires that the person be at least 18 years of age and have a history of Conduct disorder before the age of 15. In terms of childhood signs, the PDE measures lying, stealing, truancy, vandalism, initiating fights, running away from home, and physical cruelty. For adulthood, the PDE measures such characteristics as failures to honor financial obligations, failure to plan ahead and function as a responsible parent, and an inability to sustain consistent work behavior. The PDE also measures adult physical fighting, recklessness without the regard for personal safety (e.g., frequently driving while intoxicated), promiscuity, lack of remorse, and manipulativeness.

Concurrent validity of the PDE with regard to psychopathy has shown reasonable convergent and discriminant validity. Hart, Hare, and Forth (in press) found the PDE Antisocial scale correlated highly with the PCL-SV ($r$ = .83) as well as the MCMI-II ($r$ = .68) Antisocial scale in a male correctional sample. The heterotrait-heteromethod coefficients for the PDE and PCL-SV were substantially lower

(mean $r$ = .37) than the convergent coefficients, thus indicating good discriminant validity.

Hyler, Skodal, Kellman, Oldham, and Rosnick (1990) compared the PDE with the SCID-II, and the PDQ-R in psychiatric inpatients, many of whom warranted Axis I diagnoses of mood, anxiety, substance abuse, and anxiety disorders. A moderate to high level of agreement was found between the PDE and SCID-II when examining APD ($\kappa$ = .64). With the PDQ-R, the PDE only showed a low to moderate level of agreement ($\kappa$ = .36) with APD diagnosis. To put this latter finding in perspective, these authors pointed out that the PDQ-R acts more as a screen which generally results in a larger number of false positives and thus a lower level of agreement is evidenced between the two measures.

Hunt and Andrews (1992), in examining the relation between the PDE and the PDQ-R with regard to APD, found the correlation to be modest (ICC = .57). Again, as expected of a screening measure, the PDQ-R elicited a much higher level of symptom endorsement than the PDE. Overall, the APD correlation was relatively high given that correlations between the measures when other personality disorders (e.g., paranoid) were considered modest (ICC = .25).

The PDE has been compared in several studies to the MCMI-I personality disorders. For instance, Hart, Dutton, and Newlove (1993) found that the APD scales of the two measures correlated at $r$ = .41 while also evidencing good

convergent validity (M heterotrait-heteromethod coefficient was .18). Similarly, Soldz, Budman, Demby, and Merry (1993) found that the two measures of APD correlated at r = .40 while discriminant validity was good (M heterotrait-heteromethod coefficient was .16).

No studies could be found that specifically addressed the PDE's predictive power with regard to violent or non-violent criminal behavior. More globally, Simourd, Bonta, Andrews, and Hoge (1990) have suggested that APD-like scales (e.g., Pd scale) are less effective than the PCL-R total score and So scale of the CPI with regard to predictive validity. These authors found that the So scale of the CPI and the total score of the PCL-R were slightly better predictors of violent and non-violent outcomes than diagnoses more similar to that of DSM APD.

## The Present Study

Existing research on the construct and predictive validity of psychopathy have focused primarily on male forensic populations; what is not known is the extent to which the construct is applicable to a female forensic population. Furthermore, the predictive validity of the syndrome with female offenders is unknown, given that no research is published on this topic. The purpose of the present study was to expand the research on psychopathy by examining the most recent conceptualizations of the syndrome as well as the diagnosis of APD in a female jail sample.

Toward this end, female offenders were administered a battery of psychological measures that included the PAI, the PCL-R and the PDE, each of which includes a measure of psychopathy.

The present investigation uses concurrent data from these three measures with a sample of female inmates to address hypotheses regarding the convergence of different measures of psychopathy, their divergence from different but related traits (specifically, borderline and paranoid personality), and their independence from variance due to method. Construct validity was examined via a multitrait-multimethod matrix using the criteria outlined by Campbell and Fiske (1959). The coefficients of the matrix were evaluated via factor analysis. These procedures can be informative both to the quality of the measurement instruments and to the validity of the psychopathy construct. As put forth by Cronbach and Meehl (1955), the construct validation process entails repeated concurrent evaluation of latent constructs and observable measurement in the absence of true standard criterion. Thus, questions of construct validity and instrument quality are inextricably related, but both issues may be addressed simultaneously in a multitrait-multimethod analysis, such as the one performed in this study.

In addition, the predictive validity of these three measures of psychopathy were investigated to further our

understanding of the construct. To this end, we asked correctional officers to make independent ratings of the inmates' behavior during the course of their stay in the jail. Specifically, this study evaluated three research questions empirically. They are:

1. What is the prevalence rate(s) for psychopathy in a female jail sample?
2. To what extent can convergent and discriminant validity be demonstrated between measures of psychopathy and other personality disorders (i.e., borderline and paranoid personality disorders)?
3. Is any one measure of psychopathy more effective than the other measures at predicting institutional violence, verbal aggression, non-compliant behavior, manipulativeness, lack of remorse, and overall dangerousness?

Specific Hypotheses Related to the Research Questions

Prevalence

Based on Nealy (1990) and Strachman et al.'s (1990) research, it was hypothesized that female psychopaths would be less prevalent than that observed in past research with the PCL involving Anglo American males. Neary (1990) administered the PCL-R to 120 female inmates (60 African American and 60 Anglo American) of a federal prison in Missouri. The mean score for the entire sample was 21.1 (SD = 6.5). In another study, Strachman et al. (1990)

administered the PCL-R to 40 inmates at a correctional institute in the province of British Columbia as part of a study on the personality and criminal correlates of female psychopathy. They found the mean total score to be 24.9 (SD = 7.2). In both samples lower mean total scores were found suggesting that the construct may not be as prevalent in female samples. Based on a cutting score of $\geq$ 30 approximately 20% of the sample will be classified as psychopaths (Strachman et al., 1990). Lower cutting scores have been used to classify psychopaths (Rice, Harris, & Quinsey, 1991) and, of course, the prevalence is likely to increase with more liberal cutting scores.

No data exist on the prevalence of psychopathy within female populations based on the Antisocial scale of the PAI. Given the scales similarity in content to the PCL-R two factor model, it was expected that the prevalence rate for the syndrome would be very similar to that of the PCL-R.

Lastly, it was hypothesized that prevalence rate of APD when utilizing the PDE as a measure of psychopathy would be substantially higher in this sample, given previous research of APD involving male inmates. For instance, Hare (1991) has reported that the base rate for APD typically ranges from 50-80% compared to 20% with the PCL-R (Hare, 1991).

Convergent and Discriminant Validity

With regard to the second research question, the multitrait-multimethod correlation matrix was employed in

which three personality disorders from each of the three measures were used to determine the extent to which these disorders converge and diverge. Specifically, Borderline Personality Disorder (BDL), Antisocial Personality Disorder (APD), and Paranoid Personality Disorder (PRN) were included in the analysis. It was hypothesized that measures of similar constructs would have high correlations whereas measures of dissimilar constructs would have low correlations. The multitrait-multimethod technique is further explained in the Results section.

Although previously investigated self report measures have not been highly correlated with the PCL or the PCL-R, the more recently developed PAI may be an exception. The PAI is unique from other self report measures in that, as mentioned, the ANT scale includes three subscales that appear to be closely related to the two-factor construct of psychopathy of the PCL. Thus, with respect to convergent and discriminant validity, the PCL-R and the PAI may significantly correlate in a more theoretically meaningful way in the multitrait-multimethod correlation matrix than other self report measures of the disorder. The PDE was also expected to correlate with the PCL-R and the PAI positively, although likely not as highly as these measures do with each other.

Other hypotheses regarding convergent validity include relations between the subscales of the PAI ANT scale and the

factor scores of the PCL-R. More specifically, the ANT-E scale was expected to correlate to a high degree with $F_1$ of the PCL-R. It was also hypothesized that the Sensation Seeking (ANT-S) subscale would correlate moderately high with the $F_2$ score of the PCL-R. Finally, it was hypothesized that the ANT-A scale would correlate highly with $F_2$. All subscales are expected to correlate moderately with total PCL-R total scores while it was predicted that the overall PAI Antisocial scale would correlate highly with the PCL-R total score.

The PDE Antisocial section, included to provide a third method of assessing psychopathy, would likely have other personality disorders that correlate with the subscales of the other two measures. Specifically, it was hypothesized that the diagnosis of APD, based on this semi-structured interview, would be highly correlated with $F_2$ and the total score of the PCL-R as well as the ANT-A subscale on the PAI. It was also hypothesized that the Narcissistic Personality Disorder (NPD) on the PDE would correlate highly with $F_1$ of the PCL-R, given that this result has been found in male samples (Hart et al., in press). Only modest correlations were expected between PCL-R total scores and APD and NPD sections of the PDE.

In addition to the Antisocial scales of the PAI, other scales on this measure were expected to correlate with the PCL-R based on their theoretical constructs. The scales

that most closely resemble the items on the PCL-R are the Mania scale, the Aggression scale, the Dominance scale, the Treatment Rejection scale, and the Warmth scale. Although these measures are not included in the multitrait-multimethod correlation matrix, it was expected that they will provide further evidence of construct validity. Specifically, it was hypothesized that high scores on the PCL-R would be related to elevations on the following scales: Mania, Aggression, Dominance, and Treatment Rejection scales. It was also hypothesized that low scores would be expected on the Warmth Scale of participants scoring high on the psychopathy measures.

Predictive Validity

It was hypothesized that individuals scoring high on psychopathy measures would score high on institutional violence, verbal aggression, non-compliant behavior, manipulativeness, lack of remorse and overall dangerousness (e.g., the more psychopathic the individual, the more likely they will be to engage in violence). In terms of predictive validity, it was hypothesized that the PCL-R total score and the PAI Antisocial scale would be better overall predictors of the criterion than meeting the criteria for APD on the PDE. However, it was hypothesized that APD and $F_2$ would be better predictors than $F_1$, but that $F_1$ would help in the overall predictive ability of these measures.

# CHAPTER II

# METHOD

## Participants

The sample was composed of 103 female inmates at the Tarrant County Jail in Fort Worth, Texas. The participants had a mean age of 30.47 years (*SD* = 7.47) and an average of 11.19 years (*SD* = 1.96) of education. The racial composition of the sample was 58 (56.3%) Anglo Americans, 33 (32.0%) African Americans, 11 (10.7%) Hispanic Americans, and 1 (1.0%) Native American.

## Procedure

Inmates were approached by a researcher and individually asked to participate in the study. Participants who gave informed consent, in accordance with University of North Texas and Tarrant County ethic/review board guidelines, were evaluated during a single session, typically three to four hours in duration. The evaluations were conducted on an individual basis. Participation involved completing three personality measures, namely the PAI, PCL-R, and PDE.

All psychological measures were administered according to standard instructions. In order to establish rapport, an

interview based measure (PDE) was administered first. The participants then completed the PAI, followed by a second structured interview (PCL-R). Correctional officers were then asked to complete a rating form regarding the inmate's level of violence, verbal aggression, non-compliance, manipulativeness, lack of remorse, and overall dangerousness. The procedures for the assessment with the above mentioned measures are described in the following paragraphs.

PCL-R Assessments. A trained graduate student conducted the interviews. This student had completed a course in structured interviewing, and attended a PCL-R training workshop. The participants were rated on the 20 personality and behavioral characteristics related to psychopathy, using 3 point scales (0, 1, or 2). Item scores were summed to yield a total score that ranged from 0 to 40. Time to complete the assessment was approximately 50 minutes.

PAI Assessments. Each participant completed the PAI during the administration of the test battery. Participants were given a test booklet and were asked to make their responses on a PAI hand scoring answer form; average administration time was approximately 50 minutes.

PDE Assessments. A trained graduate student conducted the PDE interviews. Interview information was used to rate the 126 personality criteria of the PDE. Three point scales

(0, 1, or 2) were utilized. Item scores were summed to determine whether or not participants met the criteria for one or more personality disorders. Administration time was approximately 60 minutes.

Staff Rating Form. Following the evaluation, each participant was evaluated by a correctional officer who regularly worked on the unit and was familiar with the inmate. The correctional officers were asked to independently assess the inmate on a staff rating form (see Appendix A) that assessed six specific behaviors: (a) violent behavior, (b) verbal aggression, (c) non-compliant behavior, (d) remorse, (e) manipulativeness, and (f) overall dangerousness. The raters were masked with respect to all test scores. Likewise, the personality measure ratings were completed independently of the correctional officers' ratings.

# CHAPTER III

# RESULTS

## Prevalence and Concordance

A low prevalence rate for female psychopathy was found in comparison to past research with male samples (Hare, 1991). Of the 103 females tested, only 16 (15.5%) scored above the cut off designated by Hare (1991) as psychopathic (>30) whereas in male samples, typically 25-30% of the sample will score above this cutoff. This result is similar to that of Neary's (1990) findings in his examination of PCL-R scores with a female sample. When employing the PAI as a measure of psychopathy with a cutoff of T > 70, a substantially larger number of psychopaths were found in the present sample; 34 of the 103 inmates were classified as psychopathic (33.0%). However, only 8 individuals scored high on both the PCL-R and the PAI. Although the PCL-R and the PAI identified relatively lower numbers of psychopathic personality styles, the PDE identified a substantially larger percentage of individuals as antisocial ($n$ = 58 or 56.3%). When examining the PAI high scorers, all but two also scored high on the PDE. Similarly, almost all the PCL-R high scorers also scored high on the PDE. Again two of the high scorers on the PCL-R were not identified by the PDE.

Table 2

Proportion of Agreement Among Three Psychopathy Measures

| | N | PCL-R | PAI | PDE |
|---|---|---|---|---|
| PCL-R | 16 | -- | .50 | .89 |
| PAI | 34 | .24 | -- | .94 |
| PDE | 58 | .24 | .55 | -- |

Note. PCL-R = Psychopathy Checklist - Revised; PAI = Personality Assessment Inventory; PDE = Personality Assessment Inventory.

## Construct Validity

A multitrait-multimethod matrix was produced in order to examine the convergent and discriminant validity (Campbell & Fiske, 1959) of psychopathy using Pearson product-moment correlations. The multitrait-multimethod matrix allowed for the comparison of the relative strength of validity coefficients (monotrait-heteromethod) to other correlations for the same measure (i.e., heterotrait-monomethod) and across measures (heterotrait-heteromethod). Convergent validity was examined by determining whether the validity coefficients were significantly different from zero and significant in magnitude (Byrne & Goffin, 1993). Fiske and Campbell (1992) indicated that successful validity coefficients were often modest, typically in the .30 to .50

range. However, Browne (1989) has suggested that successful validity coefficients should be greater than .50.

By these standards, strong evidence of convergent validity for the antisocial scales (.68), as well as for paranoid (.61), and borderline (.60) personality scales was found in the present study. To examine discriminant validity, convergent validities should be higher than both heterotrait-heteromethod and heterotrait-monomethod correlations (see Table 3).

Consistent with Bagozzi and Yi (1991) and Byrne and Goffin (1993), we imposed a priori criteria for interpretation. These researchers suggested that a high degree of discriminant validity would be represented by < 5% comparison violations and 6 to 33% violations would constitute moderate discriminant validity while > 33% would constitute low evidence of discriminant validity. They defined a comparison violation as any instance in which a coefficient associated with discriminant validity exceeds a coefficient associated with convergent validity. In this study, the convergent validity of the psychopathy (.68), paranoid (.61), and borderline (.60) scales exceeded the heterotrait-heteromethod coefficients (range from .03 to .43; $\underline{M}$ = .24). In addition, convergent validities also exceeded heterotrait-monomethod coefficients (range from .21 to .40; $\underline{M}$ = .30). No violations were evidenced for any of

Table 3

Convergent and Discriminant Validity of Psychopathy Measures: Multitrait-Multimethod Correlation Matrix

| | PAI | | | PDE | | | PCL-R | | |
|---|---|---|---|---|---|---|---|---|---|
| | ANT | BOR | PAR | ATS | BOR | PAR | Total | F1 | F2 |
| PAI | | | | | | | | | |
| ANT | (.91) | | | | | | | | |
| BOR | .40* | (.89) | | | | | | | |
| PAR | .21 | .38* | (.80) | | | | | | |
| PDE | | | | | | | | | |
| ATS | .78* | .43* | .27* | (.87) | | | | | |
| BOR | .25 | .60* | .18 | .35* | (.80) | | | | |
| PAR | .03 | .25 | .61* | .22 | .25 | (.74) | | | |
| PCL-R | | | | | | | | | |
| Tot | .53* | .22 | .18 | .72* | .38* | .24 | (.90) | | |
| F1 | .39* | .08 | .07 | .52* | .25 | .22 | .87* | (.88) | |
| F2 | .56* | .28* | .21 | .77* | .43* | .23 | .92* | .63* | (.85) |

Note. PAI = Personality Assessment Inventory; PDE = Personality Disorder Examination; PCL-R = Psychopathy Checklist - Revised. For the PAI, ANT = Antisocial; BOR = Borderline; PAR = Paranoid. For the PDE scales, ATS = Antisocial; BDL = Borderline; PRN = Paranoid. For the PCL-R, Tot = Total score; F1 = Factor 1 score; F2 = Factor 2 score. Following the convention of Campbell and Fiske (1959), validity coefficients (monotrait-heteromethod) are the underlined numbers; alpha coefficients (monotrait-monomethod) are the numbers in parentheses on the principal diagonal. * significant at the .01 level.

the comparisons using both Bagozzi and Yi (1991) as well as Byrne and Goffin's (1993) criteria.

Exploratory Factor Analysis of the Multitrait-Multimethod Matrix. Exploratory factor analysis of the multitrait-multimethod matrix was conducted using a number of different extraction and rotation methods. Findings were invariant to the specific method used. A principle components extraction with a varimax rotation extracted three factors accounting for a total of 76.7% of the variance. In the rotated factor matrix, only substantial loadings ($\geq$ .40) were considered. Interpretation of these loadings indicated that each of the eight subscales loaded on only one of these three factors.

The first factor, Psychopathy, had an eigenvalue of 3.57, which accounted for 44.6% of the variance and loaded on $F_1$ of the PCL-R (.82), $F_2$ of the PCL-R (.86), ANT of the PAI (.73), and APD of the PDE (.84). The second factor, Borderline Personality, had an eigenvalue of 1.50, accounted for an additional 18.8% of the variance and loaded on BOR of the PAI (.89) and BDL of the PDE (.77). The third factor, Paranoid Personality, had an eigenvalue of 1.06, accounted for an additional 13.3% of the variance and loaded on PAR of the PAI (.84) and PRN of the PDE (.91). Extracting additional constructs resulted in factors with no apparent theoretical meaning with eigenvalues below 1.00.

Table 4

Method Effects for the Personality Assessment Inventory, Personality Disorder Examination, and Psychopathy Checklist-Revised

| | | Discriminant Validity | |
|---|---|---|---|
| Measure | Convergent Validity | Heterotrait-Monomethod | Heterotrait-Heteromethod |
| PAI | .63 | .33 | .23 |
| PCL-R | .63 | -- | .26 |
| PDE | .68 | .27 | .25 |

Note. PAI = Personality Assessment Inventory, PCL-R = Psychopathy Checklist-Revised, PDE = Personality Disorder Examination. Construct validity was examined on Borderline, Paranoid, and Psychopath/Antisocial Personality Disorders. Heterotrait-Monomethod could not be calculated for the PCL-R since it is a single-disorder instrument.

Although these results show support for the overall construct, the relative validity (convergent and discriminant) of individual measures were also examined. In order to meet this objective, mean validity coefficients for the PAI were compared to those of the PDE and the PCL-R as a test of method effects (Marsh, 1990). For the PAI, the mean validity coefficients were significant for convergent validity (.63) and good discriminant validity was evidenced when examining the intercorrelations of the PAI (heterotrait-monomethod coefficients averaged .33 and heterotrait-heteromethod coefficients averaged .23). Slightly better results were obtained for the PDE; the mean validity coefficients for convergent validity were again significant (.68) and intercorrelations among its scales averaged .27, while heterotrait-heteromethod coefficients averaged .25. The PCL-R also evidenced good convergent validity with the mean validity coefficients being significant (.63) as well as good discriminant validity (mean heterotrait-heteromethod coefficients = .26).

A second multitrait-multimethod correlation matrix was produced to examine the convergent and discriminant validity of the different variables associated with psychopathy. Although this method is not completely appropriate for these traits, given that they are expected to intercorrelate, it does provide a useful way to examine the coefficients and

Table 5

Subscales for the PCL-R and the Antisocial Scale of the Personality Assessment Inventory and Related Personality Disorders on the PDE (NCS, ATS)

| | PCL | | PDE | | PAI | | |
|---|---|---|---|---|---|---|---|
| | F1 | F2 | NCS | ATS | ANT-E | ANT-A | ANT-S |
| PCL | | | | | | | |
| F1 | (.88) | | | | | | |
| F2 | .63 | (.85) | | | | | |
| PDE | | | | | | | |
| NCS | .49 | .49 | (.72) | | | | |
| ATS | .52 | .77 | .53 | (.87) | | | |
| PAI | | | | | | | |
| ANT-E | .34 | .46 | .43 | .62 | (.87) | | |
| ANT-A | .37 | .51 | .43 | .75 | .66 | (.81) | |
| ANT-S | .32 | .53 | .47 | .72 | .74 | .70 | (.84) |

Note. PCL = Psychopathy Checklist-Revised; F1 = Factor 1; F2 = Factor 2; PDE = Personality Disorder Examination; NCS = Narcissistic personality disorder; ATS = Antisocial personality disorder; PAI = Personality Assessment Inventory; ANT-E = Egocentricity; ANT-A = Antisocial behaviors; ANT-S = Stimulus seeking. Following the convention of Campbell and Fiske (1959), validity coefficients (monotrait-heteromethod) are the underlined numbers; alpha coefficients (monotrait-monomethod) are the numbers in parentheses on the principal diagonal. All coefficients are significant at the .01 level.

make comparisons between the subscales with respect to convergent and discriminant analyses.

Evidence of convergent validity was found for both $F_1$ (.42) and $F_2$ (.66) using the criteria put forth by Fiske and Campbell (1992), but only for $F_2$ when the criteria set forth by Browne (1989) were utilized. As mentioned, Browne (1989) suggested that convergent validity coefficients should be greater than .50; Fiske and Campbell proposed that successful validity coefficients could range from > .30 to .50. With regard to discriminant validity, only $F_2$ met the standard set by Bagozzi and Yi (1991) for good discriminant validity, while $F_1$ had numerous violations.

Exploratory Factor Analysis of the PCL-R for a Female Jail Sample. Supplementary analysis were conducted to investigate the discrepant results found for the two factors of psychopathy in the above matrix. Given that high intercorrelations were found between these two factors of psychopathy, an exploratory factor analysis was necessary to investigate the two-factor theory of psychopathy put forth by Hare, Harpur, Hakstian, Forth, Hart, and Newman (1990) in order to determine its applicability to a female sample.

The PCL-R was factor analyzed using principal axis factoring with varimax rotation. The relative suitability of the two-factor solution was assessed using a scree test, eigenvalues greater than one, and interpretability of the solution. Table 6 delineates the factor structure outlined

by Hare et al. (1990) and that identified in the present study. As evident in Table 6, the two factor structures are moderately similar when evaluating items with factor loading greater than .40. Of Hare et al.'s eight items on $F_1$, seven were unique and replicated loadings in the present study.

Table 6

Factor Structure of the PCL-R: Hare et al. (1990) and the Present Study

| | Hare et al. (1990) | | Current Study | |
|---|---|---|---|---|
| | F1 | F2 | F1 | F2 |
| Item | | | | |
| 1 | .86 | -.25 | .67* | .10 |
| 2 | .76 | -.16 | .66* | .21 |
| 3 | .09 | .56 | .60 | .38 |
| 4 | .62 | .03 | .69* | .24 |
| 5 | .59 | .10 | .75* | .13 |
| 6 | .53 | .11 | .77* | .31 |
| 7 | .57 | .10 | .47* | .24 |
| 8 | .53 | .22 | .79* | .29 |
| 9 | -.00 | .56 | .20 | .49* |
| 10 | .14 | .44 | .47 | .56 |
| 11 | .35 | .08 | .15 | .46 |
| 12 | -.01 | .56 | .13 | .82* |
| 13 | .10 | .56 | .39 | .40* |
| 14 | .01 | .66 | .53 | .43 |
| 15 | .16 | .51 | .43 | .34 |
| 16 | .47 | .02 | .31 | .01 |
| 17 | .18 | .18 | .11 | .10 |
| 18 | -.18 | .59 | -.02 | .78* |
| 19 | -.00 | .44 | .35 | .11 |
| 20 | .15 | .33 | .29 | .50 |
| Variance Accounted For | | | 34.0% | 7.3% |

Note. Unique and replicated loadings with regard to the Hare et al. (1990) factor analysis are astericked.

However, $F_2$ did not fare so well; only four of Hare et al.'s nine loadings were replicated.

The primary difference is that the current sample displays substantially more overlap among the two factors than does the original. For instance, poor behavioral conrol (item 10), lack of realistic goals (item 13) and impulsivity (item 14) cross loaded. Items failure to accept responsibility (item 16), many short-term relationships (item 17), and revocation of conditional release (item 19), failed to load above .40. Of these, only item 17 failed to load above .40 in the Hare et al. (1990) study.

Several items loaded in the opposite direction that what was expected according to Hare et al.'s (1990) factor structure of the PCL-R. Specifically, items that were reversed included need for stimulation/proneness to boredom (item 3), impulsivity (item 14), and irresponsibility (item 15). In general, it appears as though the current factor structure loosely resembles the two-factor structure put forth by Hare et al. (1990) although $F_2$ in particular is clearly not as well defined as the factor structure obtained in male samples (Harpur, Hakstian, & Hare, 1988).

Relations Between Theoretically Related Scales of the PAI and Measures of Psychopathy. Psychopathy scores were also related to the Warmth, Dominance, Aggression, Mania and Treatment scales of the PAI (see Table 7). Dominance,

Table 7

Correlations Between Theoretically Related Scales of the PAI and Measures of Psychopathy

| | PAI | | | | |
|---|---|---|---|---|---|
| | AGG | DOM | MAN | WRM | RXR |
| PCL-R | .49** | .12 | .31** | -.18 | .04 |
| PAI | .74** | .28** | .56** | -.35** | .06 |
| PDE | .72** | .21* | .49** | -.25* | -.08 |

Note. AGG = Aggression scale; DOM = Dominance scale; MAN = Mania scale; WRM = Warmth scale; RXR = Treatment scale; PCL = Psychopathy Checklist - Revised; PAI = Personality Assessment Inventory; PDE = Personality Disorder Examination.

Aggression, and Mania were correlated positively with high scores on the psychopathy measures whereas the Warmth scale correlated negatively with these measures.

It should be noted that the PCL-R evidenced negligible correlations with the Dominance scale and Warmth scales. All three measures of psychopathy were relatively unrelated to the Treatment Scale. Contrary to expectations, the mean T score of 39.27 (SD = 10.79) for the entire sample indicated that most inmates were amenable to treatment according to the interpretation of the RXR scale.

Accuracy of Psychopathy Components for Predicting External Criteria

The predictive validity of each of the psychopathy components was also examined to further evaluate the syndrome from a construct validation perspective. Utilizing the staff rating form, six step-wise discriminant function analyses were conducted to determine separately the best predictors of institutional violence, verbal aggression, non-compliant behavior, manipulativeness, remorse, and overall dangerousness.

Given that the scale was dimensional ranging from 0 to 100 the scale was trichotomized; subsequent analyses were restricted to high (top 33%) and low scorers (bottom 33%) of the sample. Specifically, those scoring above the 66 were considered to have met the criterion (e.g., considered violent) and those scoring below 34 were considered to have not met the criterion (e.g., non-violent). The predictor variables included $F_1$ and $F_2$ of the PCL-R, ANT-E, ANT-A, and ANT-S of the PAI, and the ATS scale of the PDE.

First, when examining the violent criterion, a stepwise discriminant analysis yielded a Wilks' lambda = .76, $\chi^2$ (3, 51) = 7.50, $p$ = .06. This finding was non-significant and may capitalize on chance variation. The canonical correlation was .49, indicating that the components of the psychopathy measures accounted for 24.0% of the variance in violence status. The overall

Table 8

Predictions of Criterion Variables: Discriminant Analysis Combining the Components of the Psychopathy Measures

| Predictions | Canonical Correlation | Wilks' Lambda | HR | Sens | Spec | PPP | NPP |
|---|---|---|---|---|---|---|---|
| Violence | .49 | .76 | 77 | .76 | .71 | .90 | .50 |
| Verbal aggression | .62 | .62** | 85 | .83 | .91 | .95 | .71 |
| Non-compliance | .45 | .79 | 66 | .65 | .67 | .72 | .59 |
| Manipulative | .71 | .49** | 80 | .82 | .75 | .88 | .67 |
| Remorse | .57 | .67* | 87 | .85 | 1.00 | 1.00 | .50 |
| Dangerousness | .68 | .53** | 82 | .84 | .90 | .94 | .75 |

Note. HR = hit rate (% correctly classified); sens = sensitivity; spec = specificity; PPP = positive predictive power; NPP = negative predictive power.

* = $p < .05$, ** = $p < .01$.

classification rate was moderate for these predictors with 72.4% of the inmates being correctly classified. When limited to only one step ANT-A of the PAI was found to account for the most variance of all the components but dropped in overall hit rate to 64.5% of the inmates.

Second, a stepwise discriminant analysis using the components of the psychopathy measures as prediction variables of verbal aggression yielded a Wilks' lambda = .62, $\chi^2$ (3, 55) = 14.74 $p < .001$. The canonical correlation was .62, indicating that the components of psychopathy accounted for a total of 38.4% of the variance in verbal aggression status. The overall classification rate for these predictors 85.3%. When limiting the analysis to one step, the ANT-A was found to account for most of the variance. However, the classification rate dropped significantly with ANT-A correctly classifying 73.5% of the inmates.

Third, when non-compliant behavior was the criterion variable, a stepwise discriminant analysis using the components of the psychopathy measures as predictor variables resulted in a Wilks' lambda = .79, $\chi^2$ (55, 2) = 7.16, $p = .13$. This finding was non-significant and may capitalize on chance variation. The canonical correlation was .45, indicating that the components of psychopathy accounted for a total of 20.2% of the variance in non-compliance status. The overall classification for these

predictors was 65.7%. When limiting this function to one step, the ATS scale of the PDE was found to account for the most variance and classification remained the same with 65.7% of the inmates being correctly classified.

Fourth, a stepwise discriminant analysis using the components of the psychopathy measures as predictor variables and manipulativeness as a criterion variable yielded a Wilks' lambda = .49, $\chi^2$ (3, 48) = 15.45, $p < .001$. The canonical correlation was .71, indicating that the psychopathy components accounted for a total of 50.4% of the variance. The overall classification rate was 80.0% for these predictors when manipulativeness was the criterion. Accounting for most of the variance for manipulativeness was the ANT-A scale of the PAI. The ANT-A scale on its own improved overall classification with 84.0% of the inmates being correctly classified.

Fifth, utilizing the components of the psychopathy measures as predictor variables and remorse as the criterion variable a discriminant analysis resulted in a Wilks' lambda = .67, $\chi^2$ (2, 43) = 7.79, $p = .05$. The canonical correlation was .57, indicating that the psychopathy measures accounted for a total of 32.5% of the variance in remorse status. The overall classification rate was 87.0%. Accounting for most of the variance for lack of remorse was the ANT-A scale of the PAI. The overall classification was not improved by the inclusion of the other predictor

variables. The ANT-A correctly classified 78.3% of the inmates.

Lastly, when overall dangerousness was used as the criterion variable and the psychopathy measures as predictor variables a discriminant analysis resulted in a Wilks' lambda = .53, $\chi^2$ (3, 49) = 15.34, $p < .01$. The canonical correlation was .68, indicating that the psychopathy measures accounted for a total of 46.2% of the variance. The overall classification rate was 86.2%. Accounting for most of the variance was the ANT-A scale which correctly classified 75.9% of the inmates; the addition of other predictor variables improved the classification rate of the ANT-A by approximately 10%.

Accuracy of the instruments were also measured by calculating sensitivity, specificity, positive predictive power (PPP), and negative predictive power (NPP) for each instruments in relation with the criterion measures. In the case of this study, sensitivity is the proportion of inmates who score high on a criterion measure (e.g., a high rating on violence) that obtain a score above the cutoff on a psychopathy measure. Whereas specificity is the proportion of inmates who score low on a criterion measure that obtain normal range scores (below cutoff) on a psychopathy measure. PPP is the likelihood that a person above the cutoff on a psychopathy measure actually has a high score on a criterion measure. On the other hand, NPP is the likelihood that a

person with a normal score on a measure (below the cutoff) scores low on a given criterion. Accuracy of the measures was first examined by the suggested cutting scores put forth in the manuals of each of the psychopathy instruments (see Table 9).

When a cutoff of T > 70 was used a for the PAI Antisocial scale the mean sensitivity for the criterion variables was .52, specificity was .80, PPP was .83, and NPP was .38 for an overall hit rate of .56. In comparison, the PCL-R, when utilizing a cutting score of > 30, attained a mean sensitivity of .15, a specificity of .97, PPP .93, and NPP of .32 resulting in an overall hit rate of .39. Finally, the PDE Antisocial scale evidenced a mean sensitivity of .93, specificity of .23, PPP of .79, and NPP of .53.

Table 9

Predictions of Criterion Variables: A Comparison of Three Measures

| Predictor | Cutting | HR | Sens | Spec | PPP | NPP |
|---|---|---|---|---|---|---|
| PAI-ANT | >70 | | | | | |
| violence | | 48 | .71 | .71 | .83 | .26 |
| verbal aggression | | 56 | .48 | .73 | .79 | .40 |
| non-compliance | | 57 | .50 | .67 | .67 | .50 |
| manipulative | | 64 | .53 | .88 | .90 | .47 |
| remorse | | 57 | .50 | 1.00 | 1.00 | .23 |
| dangerousness | | 55 | .42 | .80 | .80 | .42 |
| PDE-ATS | >2 on conduct symptoms and >3 on adult symptoms | | | | | |
| violence | | 75 | .89 | .33 | .80 | .50 |
| verbal aggression | | 73 | .94 | .17 | .75 | .50 |
| non-compliance | | 71 | 1.00 | .30 | .67 | 1.00 |
| manipulative | | 75 | .92 | .75 | .79 | .50 |
| remorse | | 88 | .93 | .00 | .93 | .00 |
| dangerousness | | 74 | .92 | .33 | .75 | .67 |
| PCL-R | >25 | | | | | |
| violence | | 32 | .17 | .86 | .80 | .23 |
| verbal aggression | | 44 | .17 | 1.00 | 1.00 | .37 |
| non-compliance | | 51 | .20 | .93 | .80 | .47 |
| manipulative | | 36 | .06 | 1.00 | 1.00 | .33 |
| remorse | | 26 | .15 | 1.00 | 1.00 | .15 |
| dangerousness | | 45 | .16 | 1.00 | 1.00 | .38 |

Note. PAI-ANT = Personality Assessment Inventory-Antisocial scale, PDE-ATS = Personality Disorder Examination-Antisocial scale, PCL-R = Psychopathy Checklist - Revised; HR = % correctly classified, Sens = sensitivity, Spec = specificity, PPP = positive predictive power, NPP = negative predictive power.

# CHAPTER IV

# DISCUSSION

Psychopathy has received extensive evaluation with male correctional populations, but few studies have addressed whether the psychopathy construct is applicable to female populations. Typically, clinicians and researchers report case histories and provide other anecdotes in gender specific terms (e.g., "he" is conning and manipulative). Thus, it is unknown to what extent, if any, the psychopathy construct is applicable to female populations. The present study is an attempt to investigate psychopathy in a female jail sample from the construct validation approach put forth by Campbell and Fiske (1959) and Cronbach and Meehl (1955). To this end, the present study evaluated the construct validity of psychopathy in a female jail sample using the PAI Antisocial scale, the PCL-R, and the PDE Antisocial scale concurrently.

## Prevalence

The first hypothesis of this study was that female psychopathy would be less prevalent than that of male psychopathy. Based on the studies of Neary (1990) and Strachman et al. (1990), which showed lower PCL-R scores with females, it was reasoned that high scores on the PCL-R and/or the PAI ANT would still produce scores that were

lower than that found in male samples. Similarly, it was hypothesized that the prevalence of APD would be lower than that found in male samples (typically 80%). The differences found between the measures were as predicted with the exception of the PAI ANT scale which resulted in a larger group of high scorers than expected.

Sixteen percent of the sample was found to be psychopathic when utilizing the PCL-R cutting score suggested by Hare ($\geq$ 30; Hare, 1991). This result is similar to that of Neary and lower than that of Strachman et al. indicating that psychopathy, at least as defined by the PCL-R, is not as common among females as it is in males (male inmate prevalence is typically 25%). Using a cutting score of 70 on the PAI ANT scale, a substantially larger group of high scorers were identified ($n$ = 34). This finding suggests that the construct of psychopathy, as defined by the PAI ANT scale incorporates a broader range of symptoms than does the PCL-R depiction. Interestingly, only eight of these inmates scored high on both the PCL-R and the PAI ANT scale providing further evidence that there are differences in the way the measures classify psychopathy among women. As expected, the PDE classified a larger number of individuals as APD by the DSM criteria than did either the PCL-R or the PAI ANT scale ($n$ = 58). Again, the prevalence rate of APD (56.3%) is less than that typically

found in male forensic samples which report DSM-III-R APD criteria.

Individuals who scored high on both the PCL-R and PAI ANT scale also scored high on the PDE Antisocial scale with the exception of two inmates for each of the measures. That is, of the 16 high PCL-R scorers, 14 also scored high on the PDE. Likewise, of the 34 high scorers on the PAI, 32 also scored high on the PDE Antisocial scale. At first glance, this finding appears to be promising in terms of concordance; however, the finding is obtenerated by the fact that over half of the inmates scored high on the PDE Antisocial scale and were not accounted for by either the PCL-R or ANT. It is likely that the PDE Antisocial scale resulted in this higher percentage of inmates due to the scale's heavy emphasis on antisocial behaviors. Given that diagnostic reliability was the primary impetus for changing APD from an emphasis on personality traits to observable behaviors, it appears that the construct was unintentionally broadened by this altered definition.

Convergent and Discriminant Validity

The primary hypothesis of this study was that convergent and discriminant validity would be demonstrated among and between measures of psychopathy and other personality disorders (i.e., borderline and paranoid personality disorders). When using the multitrait-multimethod matrix proposed by Campbell and Fiske (1959),

the psychopathy construct for this sample was strongly supported. First, monotrait-heteromethod coefficients were significantly different from zero and sufficiently large in magnitude (i.e., > .50; Browne, 1989). Second, monotrait-heteromethod values were higher than correlations between different traits assessed by (a) different methods (heterotrait-heteromethod) and (b) the same method (heterotrait-monomethod). Lastly, a similar pattern of trait intercorrelations should be apparent in the heterotrait-monomethod submatrices and the heterotrait-heteromethod submatrices. However, it should be noted that the PDE accounted for more overall variance than either the PCL-R or the PAI. Specifically, the PDE with a convergent validity coefficient of .68 accounted for 46.2% of the variance whereas the PAI and the PCL-R each accounted for 39.7%. Thus, while all measures evidenced good convergent and discriminant validity, differences were observed in the extent to which they related to other measures of the disorder with the PDE being the most related and the PCL-R and PAI being the least related. Nevertheless, the results of this multitrait-multimethod matrix indicate that the PAI, PCL-R, and PDE appear to be measuring a similar construct.

Two Factor Conceptualization of Psychopathy

Interestingly, the subscales on the PAI and the Factor scores of the PCL-R did not evidence convergent and discriminant validity to the extent expected. Three scales

of the PAI loaded to a very similar degree on $F_1$ and $F_2$ of the PCL-R. Unexpectedly, the ANT-A subscale correlated higher on $F_1$ than did that of ANT-E. Based on previous research, PCL-R factors were expected to correlate differentially with the PDE diagnoses of APD and NCS. Thus, $F_1$ of the PCL-R, which is characterized by selfish, callous, and remorseless use of others, was very similarly related to both NPD and APD on the PDE and the correlations were even slightly in the opposite direction of what was expected. This finding differs from that of Hart, Forth, and Hare (in press) in which male psychopaths typically have high correlations between $F_1$ and NCS and lower correlations between $F_1$ and APD. Moreover, Hart et al. have found that $F_2$, which includes items that relate to chronically unstable, antisocial, and socially deviant lifestyles, correlates highly with APD but not with NCS of the PDE. The present results revealed that these variables were highly intercorrelated.

Theoretically, these findings suggest that the two-factor conceptualization of psychopathy is not well suited for female inmates, and possibly female populations in general. The PAI subscales, the PCL-R factor scores, and the PDE personality disorders (NCS and APD) correlations did not differ in theoretically consistent ways. The similarity between these scales on the PAI, factors of the PCL-R, and personality disorders of the PDE call into the question the

two factor-model of psychopathy put forth by Harpur, Hare, and Hakstian (1989) at least as applied to this female sample. There appears to be minimal differentiation between the criteria based on the two factors mentioned above, thus a two-factor model of psychopathy may not be the appropriate conceptualization for female psychopathy. Based on these discrepant results, a factor analysis of the PCL-R items was conducted.

To date, factor analytic studies on the PCL-R have been conducted with male inmate samples only. This study is the first to examine the factor structure of the PCL-R within a female jail sample. Examination and comparison of the factor structure of the PCL-R in the current study revealed good correspondence with only $F_1$ of the Hare et al. (1990) factor structure. In addition, three items cross-loaded and three items loaded in the opposite direction of that which was expected. These findings from this study suggest that the factors identified in male inmate samples may be less stable in a female inmate sample. With regard to making interpretations, psychologists would want to be careful when making distinctions between the factor scores given that they do not appear to be as well defined as they are in male inmate samples (Hare et al., 1990; Harpur et al., 1988) Whether the two-factor solution of psychopathy found in male inmates is well suited for female inmates will

need further investigation given the small sample in which this analysis was conducted.

Other Personality Traits Associated With Psychopathy

Additional support for the psychopathy construct is derived from several other convergent and discriminant correlates. For instance, most psychopathy researchers have theorized that the psychopath is cold-hearted, loveless, or lacking in interpersonal closeness (Hare, 1991; Hart & Hare, 1994; Rogers et al. 1994; Trapnell & Wiggins, 1990). Convergent findings based on the PAI scales supported this hypothesis. More specifically, all three psychopathy measures were correlated negatively with the Warmth scale of the PAI indicating that psychopaths are not particularly warm, empathetic, or interpersonally caring individuals. This finding is consistent to the Hart and Hare (1994) results from examining the Big 5 personality factors in relation to the PCL-SV.

The psychopathy measures showed convergent validity with two other scales of the PAI, thought to be theoretically related to psychopathy: the Dominance scale and the Mania scale. When examining the big five personality factors in relation to the PCL-SV, Hart and Hare (1994) found that dominance was highly associated with PCL-SV scores. Based on these findings, all psychopathy measures in this study were correlated with the Dominance scale of the PAI and found that all measures were positively

related. However, the magnitude of the correlations was very modest for the PDE and ANT (range from .12 to .28) and nonsignificant for the PCL-R.

Finally, mania is considered to be theoretically related to the way in which several researchers have described the syndrome. For example, many researchers and clinicians feel that both the Pd scale of the MMPI and the Hypomania (Ma) scale should be included in the assessment of psychopathy (e.g., Wong, 1984). Hare (1991) included boredom/need for stimulation as a criteria. Morey (1991) has included sensation seeking as a subscale to psychopathy. These scales are likely to assess different elements associated with mania. Again, all three measures of psychopathy evidenced strong association with the PAI Mania scale. Thus, the results in the present study are consistent with that of previous work that has been conducted with male inmates.

Aggressive behavior. One of the four factors that emerged from the Rogers et al. (1994) prototypical analysis of psychopathy/APD was aggressive behavior. Thus, aggressive behavior is thought by many psychologists and psychiatrists to be a component of psychopathy (e.g., Hare, 1991, Hart & Hare, 1991; Rogers et al., 1994). The pattern of results in the present study strongly supported the relationship between psychopathy and aggression. More specifically, the PAI Aggression scale was highly related to

all three measures of the syndrome. It was highly related to the PAI-ANT and PDE ATS scales (*rs* > .70) and moderately related to the PCL-R (*r* = .49).

Psychopathy and Amenability to Treatment. Investigators (e.g., Ogloff, Wong, & Greenwood, 1992) have suggested that psychopaths are not particularly good candidates for treatment. In the present study, however, no relationship was found between level of psychopathy and amenability for treatment. While preliminary, these results suggest that psychopathy among female inmates does not indicate less willingness to receive treatment.

Criterion Based Validity

An important aspect of the psychopathy construct is its relation to violent and nonviolent criminal behavior. In order to further investigate the construct validity of psychopathy, the criterion variables were examined in relation to the different components of the psychopathy measures. The results indicated that behavioral criteria such as violence, verbal aggression, and overall dangerousness are represented by behavioral components of the measures such as $F_2$ of the PCL, ANT-A of the PAI, and ATS of the PDE (see Appendix B). The discriminant function analysis identified the ANT-A scale as the best predictor of violence, verbal aggression, manipulativeness, remorse, and overall dangerousness, and the PDE ATS scale as the best predictor of noncompliance. Interestingly, the ANT-A scale

best predicted the two personality criteria, manipulativeness and lack of remorse, rated by the correctional officers. This latter finding is counterintuitive given that $F_1$ of the PCL-R and ANT-E of the PAI are thought to more closely represent the personality components of the disorder.

Several reasons may account for why behaviorally based criteria, as opposed to the personality variables, were better predictors of the personality ratings made by the correctional officers. First, inmates may have been willing to endorse items that, on the self-report measure, were behaviorally based (e.g., criminal behavior), given that these behaviors do not necessarily say much about their personality and thus inmates could make external attribution for their incarceration (behaviors). In contrast, endorsing items such as lack of remorse, conning and manipulative behavior might cause inmates to make internal attributions and result in negative and blaming feelings toward oneself. Similarly, during the structured interviews, the inmates may have been willing to admit to the behaviorally based items whereas their presentation may have been biased in the direction of presenting themselves as interpersonally favorable.

A second explanation for this counterintuitive finding is that correctional officers may have rated the inmates on these two personality characteristics based on the way in

which they acted rather than the actual personality characteristics requested. For instance, if an inmate was verbally aggressive or violent, then the correctional officers may have made an inference, implicitly or explicitly, that they were also manipulative and lacking in remorse. This inference might explain the pattern of results which generally showed high intercorrelations between the criterion variables.

Overall, the accuracy of the measures used to identify individuals who were rated as violent, verbally aggressive, non-compliant, manipulative, remorseless, or dangerous was found to be poor. When the PAI was used as a measure of psychopathy, the mean PPP was .83 while NPP was .38. In other words, while the majority (83%) of PAI high scorers were considered by the correctional officers to be violent, verbally aggressive, non-compliant, manipulative, lacking in remorse, or dangerous they also considered the majority (62%) of non-high scorers to meet these criteria as well. Remorse was predicted better than the other criterion variables. A PPP of 1.00 was evidenced, which means that none of the non-compliant inmates as rated by the correctional officer were missed by this measure of psychopathy. However, NPP was extremely low at .23 which means that most (77%) of low scorers were also considered to be lacking in remorse.

Similarly, the PCL-R evidenced poor classification accuracy. Specifically, the mean PPP was .93 and NPP was .32. Nine in ten problematic inmates (i.e., violence, verbal aggression, non-compliance, manipulativeness, lack of remorse, and dangerousness) were identified by the PCL-R. Again the problem was with a low NPP of .32, which means that 68% of the low scorers were also rated high on the criterion variables. Among the criterion variables the PCL-R best predicted verbal aggression with a PPP of 1.00. Rather unsettling though is the NPP of .37, which means that of the low scorers on the PCL-R, 53% were rated to also have been violent.

The PDE also evidenced poor classification accuracy. For the criterion variables, the mean sensitivity was .93, specificity was .23, while the mean PPP was .79, and NPP was .53. The problem is that the NPP indicated that 47% of the inmates were classified as meeting some ctiteria when they had actually not. The PDE had a high PPP for violence at .80. Again, the problem is that half of the low scorers on the PDE Antisocial scale were rated to be violent. The PDE also was a good predictor of remorse with a PPP of 1.00; however all of the low scorers were also rated to be lacking in remorse.

In summary, this study provides strong support for the psychopathy construct. However, the differing rates of prevalence of the syndrome is problematic. Given that the

PCL-R classifies the least number of psychopaths and the PDE the most, it is difficult to know which classification system is most accurate. Compounding this problem is the fact that there was low agreement among the instruments regarding which individuals are psychopathic. For instance, an inmate could be classified as a psychopath on the PAI but not so on the PCL-R. The most common classification in this sample was APD on the PDE with relatively less psychopathy classifications being made on the PAI and PCL-R. These differences in classification likely resulted from the disparate conceptualizations of the disorder. Additionally, the use of standard cutting scores may have contributed to the problem and thus, adjustment of the cutting scores may improve the concordance as well as predictive validity of psychopathy.

Rogers (1995) suggested that the polythetic nature of the PCL-R, the PAI, and the PDE may lead to problems in diagnostic classification. For instance, the PCL-R has more than 15,000 possible variations of psychopathy for scores equal to or greater than 30. Perhaps even more troubling, Rogers and Dion (1991) calculated the possible variations of the DSM-III and DSM-III-R APD at $3.4 \times 10^{8}$ for the criteria alone and $2.9 \times 10^{10}$ when each subcriterion is also considered. The classification rests on the intrinsic assumption that the 20 criteria of the PCL-R for example, should be accorded equal weight and that any combination of

the criteria that exceeds the predetermined cutting score ($\geq$ 30) is sufficient to warrant the diagnosis of psychopathy. According to this analysis, the pattern of high correlations evidenced amongst the psychopathy measures could be present despite differences in the conceptualization of psychopathy.

Given the wide-ranging judgments that are made about psychopaths on matters such as dangerousness, recidivism, and treatability, the possibility that different combinations of characteristics may not necessarily represent the same risk is cause for concern. In the present study a behaviorally based subscale (ANT-A) and the Antisocial scale of the PDE were better predictors of such criteria than the personality based criterion ($F_1$) provided by the PCL-R or ANT-E subscale of the PAI. For example, the discriminant function analysis showed that when predicting violence and other criteria rated by the correctional officers, the ANT-A generally accounted for the most variance. In other words, of the ANT-A correctly classified the majority inmates rated by the correctional officers to be high on criteria (e.g., violence). Based on this finding the ANT-A scale is indicated when making decisions regarding acting out behavior such as violence, non-compliance, verbal aggression, and mannipulativeness. Thus, it is recommended that the ANT-A and antisocial scale of the PDE be utilized when making predictions.

Regarding psychopathy classifications, the present study indicates that psychologists can choose among the three measures when conducting evaluations with female forensic populations. Each measure provides a general indication of psychopathy but requires an understanding that each instrument provides related but somewhat different information. When examining method effects, the PDE stood out from the other two measures in that it accounted for more of the variance in psychopathy classifications as well as predicted criteria more accurately than the PCL-R. That is, while all methods evidenced both good convergent validity and discriminant validity, the PAI ANT-A scale and the PDE ATS scale were the better predictors of criteria and also evidenced higher convergent validity coefficients.

An unresolved issue involves the lack of a clear consensus on what criteria make up the psychopathy syndrome. As a result, psychologists may have different opinions as to the usefulness of each of the psychopathy measures. Based on the Rogers et al. (1994) prototypical analysis study, most psychiatrists rated the personality characteristics to be an important component to the disorder. In addition, most researchers have gone back to Cleckley's (1944) original description of psychopaths, at least to some extent, which consisted primarily of a constellation of personality characteristics that were not necessarily antisocial in nature (Hare, 1991; Morey, 1991). Given these

considerations, psychologists, who make psychopathy classifications, may prefer to use measures that are more theoretically grounded to the Cleckley psychopath, such as the PAI ANT scale or the PCL-R. However, when looking at predictions of violent behavior or other outcome criterion in female inmates, psychologists may prefer to use behaviorally based conceptualizations, such as the ANT-A subscale of the PAI, the ATS scale of the PDE, or $F_2$ of the PCL-R.

Psychologists are also confronted with the bandwidth-fidelity issue when choosing among the psychopathy measures, this is otherwise known as the "breadth versus depth" dilemma (Rogers, 1995). The PCL-R is more useful in gaining in-depth coverage of psychopathy; the measure devotes more questions to each rating and includes multiple ratings for each of psychopathic characteristic. As a result, the PCL-R provides comprehensive coverage, but with a very narrow focus. In contrast, the PDE and PAI provide a much broader evaluation of psychopathology with less in-depth coverage of psychopathy. The PDE covers all of the DSM-III-R personality disorders and the PAI has four validity scales and eleven clinical scales for adult personality. Each measure, however, generally limits its inquiry to one or two queries per inclusion criteria. In choosing among these measures, psychologists will need to weigh competing demands

for depth and breadth in the selection of the most appropriate measure.

Limitations of the Current Study

Several limitations should be noted with respect to the present study. Clearly, one limitation of this study is the lack of objective criterion variables. The ratings made by correctional officers were based on their opinions after having observed the inmates in the pods. Given that these ratings were partly subjective and not grounded to recorded behaviors, the results of this study should be thought of as preliminary until further research can examine these relations in follow-up recidivism studies.

Another limitation of the study is the lack of collateral information for the PCL-R assessments. This constraint may have affected the accuracy of the PCL-R assessments. However, an emphasis on thoroughness in conducting the interviews likely improved the overall accuracy of the assessment information. As further research is conducted, the generalizability of these measures will shed light on their applicability to other female populations and settings. Future research should concentrate on making comparisons between these measures in relation to predictive validity in order to indicate whether any one measure out-performs the others.

Most importantly, further delineation of the psychopathy construct is needed. Rogers and his colleagues

(1992, 1994) have taken an important first step in this process and have attempted to narrow the constellation of personality characteristics and behaviors related to the construct. Until further distillation of the syndrome occurs researchers and clinicians are likely to be confronted with a bewildering number of symptoms when considering all the conceptualizations of the syndrome. Researchers and clinicians also need to determine whether violent and other antisocial behaviors are necessarily related to the syndrome. According to Cleckley (1944), violence and antisocial behavior are not necessary for a diagnosis of psychopathy. However, according to more recent conceptualizations such as the DSM APD, ANT scale of the PAI, and even the PCL-R, antisocial behavior is considered to be a central component of the syndrome. Thus, the definition in some ways works against itself. For instance, given that conning and manipulativeness have been enduring characteristics of the psychopathy definitions and thus considered hallmarks of the syndrome, it would seem that basing the definition partially on antisocial and criminal behavior would inevitably exclude some psychopaths for such reasons as their avoidance of apprehension as well as acumen in manipulation and ability to con. Clearly, until further refinement of the psychopathy construct occurs, there will be limits to which the differing conceptualizations converge

to the extent that they are representing a unitary construct.

# APPENDIX A

## CORRECTIONAL STAFF RATING FORM

# Correctional Staff Rating Form

Inmate: _____

We are interested in how you would describe this inmate on six different personality/behavioral levels. Listed below are six rating scales: (a) level of institutional violence (i.e., fights, assaults), (b) level of verbal aggression (towards inmates or staff), (c) level of non-compliant behavior toward staff, (d) level of overall dangerousness, (d) level of manipulativeness, and (e) level to which the inmate lacks remorse for her behaviors. These ratings should be made on how you feel the inmate acts compared to other female inmates. For example, an inmate who is far more violent than other female inmates might be rated at 90% which indicates that she is more violent than ~ 90% of other female inmates. On the other hand, an inmate who hardly ever engages in violent behavior might be rated at 10% which would indicate that she is far below average in this behavior and therefore 90% of female inmates are more violent than her. Because of your interaction with the inmates and your experience with the criminal justice system we are interested in your views.

**Fighting or assaultiveness**

Compared to other female inmates, this inmate rates in the _____ percentage? Please write your percentage in the space above as well as make a mark by the appropriate percentage below.

0 10 20 30 40 50 60 70 80 90 100

**Verbal Aggression**

Compared to other female inmates, this inmate rates in the _____ percentage? Please write your percentage in the space above as well as make a mark by the appropriate percentage below.

0 10 20 30 40 50 60 70 80 90 100

**Non-Compliant Behavior**

Compared to other female inmates, this inmate rates in the _____ percentage? Please write your percentage in the space above as well as make a mark by the appropriate percentage below.

0 10 20 30 40 50 60 70 80 90 100

**Overall Dangerousness** (potential dangerousness)

Compared to other female inmates, this inmate rates in the _____ percentage? Please write your percentage in the space above as well as make a mark by the appropriate percentage below.

0 10 20 30 40 50 60 70 80 90 100

**Manipulative Behavior**

Compared to other female inmates, this inmate rates in the _____ percentage? Please write your percentage in the space above as well as make a mark by the appropriate percentage below.

0 10 20 30 40 50 60 70 80 90 100

**Lacks Remorse**

Compared to other female inmates, this inmate rates in the _____ percentage? Please write your percentage in the space above as well as make a mark by the appropriate percentage below.

0 10 20 30 40 50 60 70 80 90 100

# APPENDIX B

## POOLED CORRELATIONS TO DISCRIMINANT FUNCTIONS FOR SIX STEPWISE DISCRIMINANT FUNCTIONS

Pooled Correlations to Discriminant Functions for Six Stepwise Discriminant Functions

| | Separate Stepwise Discriminant Analyses | | | | | |
|---|---|---|---|---|---|---|
| | Violence | Verb Aggress | Non-Comp | Manipul | Remorse | Danger |
| ANT-A | .49 | .68 | .60 | .92 | .80 | .66 |
| ANT-E | -.24 | .26 | .02 | .33 | .44 | .13 |
| ANT-S | .15 | .12 | .12 | .29 | .50 | .16 |
| ATS | .40 | .56 | .63 | .51 | .80 | .54 |
| PCL-$F_1$ | .17 | .26 | .36 | .03 | -.06 | .40 |
| PCL-$F_2$ | .26 | .38 | .44 | .27 | .21 | .24 |

Note. Verb agress = verbal aggression, Non-Comp = non-compliance, Manipul = manipulation.

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