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# The Subtypes of Psychopathy and Their Relationship to Hostile and Instrumental Aggression

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The Subtypes of Psychopathy and Their Relationship to Hostile and Instrumental  
Aggression.

by

Diana M. Falkenbach

A dissertation submitted in partial fulfillment  
of the requirements for the degree of  
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## DEDICATION

Finishing this dissertation would not have been possible without the loving support of so many people. Essentially, I dedicate this dissertation to those who have read it – all my editors:

***To my mom and dad** - who showed me how to love and live life to the fullest, told me I could be anything and do anything I wanted to, and have provided endless support in all areas of my life.*

***To my Dad** who, despite my constant argumentativeness as a kid, is my hero. He taught me resolve and determination, and most of all how to think for myself. Thanks, Daddy. You're the best!*

***To my Mom**- my friend, therapist, assistant, and so much more - who gave me the beautiful, loving, open and trusting model of life that I live to this day. She is the "wind beneath [all of our] wings". Mom, you are there for everyone, everyday. I love you.*

***To my sister Joanna**-who always makes me feel connected to family even when I am far away (physically and mentally). Jo, your constant smile and unconditional love always brings joy to my life.*

***To my niece Delaney**, whose scribbles on my drafts kept me from taking everything too seriously, and who, as an infant, kept me company through long hours of writing.*

***To Mama and Papa**-who have always been my biggest fans. Mama, though Papa has passed on, the footprint you both left on my life is forever enduring.*

***To all my friends** – who just never stopped giving of themselves in countless ways and who put up with all my craziness. Your friendships make me the luckiest person alive!*

***Finally to Scott** –Whose unfailing support and belief in me got me through the many stages of grad school and this dissertation. Scott, you truly bring out the best in me in all I do. You have gone through a very tough time with me and carried most of the burden. Despite that, you remain my sun on a cloudy day. You are there for me all the times when I need you. You are my best friend, and so much more!*

Today I finally join real life again with all of you. THANK YOU SO MUCH!

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# The Subtypes of Psychopathy and Their Relationship to Hostile and Instrumental Aggression

Diana M. Falkenbach

## ABSTRACT

Psychopathy is not a diagnostic category, however theories of psychopathy have been discussed throughout psychological history. While the construct of psychopathy is associated with important psychological outcomes, there are inconsistencies in the literature with regard to correlates, etiology and treatment. These inconsistencies suggest that there may be several subtypes of psychopathy. This paper discusses the heterogeneity of psychopathy and considers the existence of psychopathic traits in nonclinical populations. Measures of etiology (Behavioral Activation System and Behavioral Inhibition System; Gray, 1985), psychopathy (Levenson's psychopathy measure; Levenson, Keihl, & Fitzpatrick, 1995) and anxiety (State Trait Anxiety Inventory; Spielberger, Gorsuch & Lushene, 1970) were used in Model based cluster analysis to investigate the existence of subtypes analogous to primary and secondary psychopathy in college students. Four clusters emerged with cluster profiles differing in theoretically coherent ways. Two of the clusters were representative of subclinical primary and secondary psychopathy and the other two represented non-psychopathic groups. Research (Buss, 1961, Dodge, 1991) regarding aggression discriminates between two types of aggression: instrumental and

hostile. The current study considered whether the subjects in clusters created by psychopathy data differ in terms of the types of aggression used. As expected, the *Psychopathic Traits* groups used more aggression than the *Non-psychopathic Traits* groups, and the *Primary Psychopathic Traits* group used more instrumental aggression than the *Secondary Psychopathic Traits* group. Overall, these results support the existence of subclinical subtypes of psychopathy that resemble, in meaningful ways, hypothetical clinical variants. The results also suggest that subtyping may have clinical and forensic utility in risk assessment.

## INTRODUCTION

Psychopathy is not a diagnostic category, however theories of psychopathy have been discussed throughout psychological history. While the construct of psychopathy is associated with important psychological outcomes, there are inconsistencies in the literature with regard to correlates, etiology and treatment. These inconsistencies suggest that there may be several subtypes of psychopathy. This paper discusses the heterogeneity of psychopathy and considers the existence of psychopathic traits in nonclinical populations. The current study more closely scrutinizes psychopathy in a college population by considering various subclinical subtypes of psychopathy that may be identified through cluster analysis. The study will use measures of etiology (Behavioral Activation System and Behavioral Inhibition System; Gray, 1985), psychopathy (Levenson's psychopathy measure; Levenson, Keihl, & Fitzpatrick, 1995) and anxiety (State Trait Anxiety Inventory; Spielberger, Gorsuch & Lushene, 1970) to determine clusters or subtypes of psychopathy. Research (Buss, 1961, Dodge, 1991) regarding aggression discriminates between two types of aggression: instrumental and hostile. The current study will determine whether the subjects in clusters created by psychopathy data differ in terms of the types of aggression used in ways consistent with the theories governing such clusters.

## REVIEW OF THE LITERATURE

### Psychopathy

#### *Antisocial Personality Disorder and Psychopathy*

The diagnostic labeling of antisocial behavior has evolved through the decades using terms such as psychopath, sociopath, dissocial personality disorder and finally, Antisocial Personality Disorder (APD; Lykken, 1995; Rogers and Dion, 1991). Until recently, the terms psychopathy and antisocial personality were often used interchangeably. However, while psychopathy can be defined in terms of personality traits and behavioral features (Cleckley, 1976; Hare, 1980), as shown in Table 1, the current Diagnostic and Statistical Manual of Mental Disorders (DSM; APA, 1994) criteria for APD include mainly the behavioral features of psychopathy (Wilson, Frick, & Clements, 1999; Hare, 1996). By marginalizing personality features, the DSM "...fails to recognize that the same fundamental personality structure, with the characteristic pattern of ruthless and vindictive behavior, is often displayed in ways that are not socially disreputable, irresponsible, or illegal" (Millon and Davis, 1996, p. 443). The limitations imposed by marginalizing psychopathic personality features in diagnostic criteria is further evidenced by a strata within the criminal population that display a higher than average risk for negative outcomes such as violence, recidivism, institutional infractions and misconduct, and poor treatment responsiveness. The current research on

psychopathy indicates that this construct, with both personality and behavioral features, is a more reliable predictor of these negative outcomes than a diagnosis of APD (Cunningham & Reidy, 1998; Hart & Hare, 1998).

Table 1

*Comparison of APD, Cleckley's Psychopathy Criteria and PCL-R Items*

301.7 Antisocial Personality Disorder	Cleckley's Psychopathy Criteria	PCL-R items
<p>A. Pervasive pattern of disregard for and violation of the rights of others occurring since age 15, as indicated by three (or more) of the following:</p> <p>(1) Failure to conform to social norms with respect to lawful behaviors as indicated by repeatedly performing acts that are grounds for arrest.</p> <p>(2) Deceitfulness, as indicated by repeated lying, use of aliases, or conning others for personal profit or pleasure.</p> <p>(3) Impulsivity or failure to plan ahead.</p> <p>(4) Irritability and aggressiveness, as indicated by repeated physical fight or assaults.</p> <p>(5) Reckless disregard for the safety of self/others.</p> <p>(6) Consistent irresponsibility, as indicated by repeated failure to sustain consistent work behavior or honor financial obligations.</p> <p>(7) Lack of remorse, as indicated by being indifferent to or rationalizing having hurt, mistreated, or stolen from another</p> <p>B. Individual must be a least 18 years</p> <p>C. There is evidence of conduct disorder (CD) with onset before age 15 years.</p> <p>D. The occurrence of antisocial behavior is not exclusively during the course of Schizophrenia or Manic Episode</p>	<ol style="list-style-type: none"> <li>1. Superficial charm and good intelligence</li> <li>2. Absence of delusions and other signs of irrational thinking</li> <li>3. Absence of nervousness or psychoneurotic manifestations</li> <li>4. Unreliability</li> <li>5. Untruthfulness and insincerity</li> <li>6. Lack of remorse or shame</li> <li>7. Inadequately motivated antisocial behavior</li> <li>8. Poor judgment and failure to learn by experience</li> <li>9. Pathological egocentricity and incapacity for love</li> <li>10. General poverty in affective reactions</li> <li>11. Specific loss of insight</li> <li>12. Unresponsiveness in general interpersonal relations</li> <li>13. Fantastic and uninviting behavior with or without drink</li> <li>14. Suicide rarely carried out</li> <li>15. Sex life impersonal trivial and poorly integrated</li> <li>16. Failure to follow any life plan</li> </ol>	<p><u>Factor 1 (interpersonal/affective)</u></p> <p>Glibness/superficial charm  Grandiose sense of self-worth  Pathological lying  Conning/manipulative  Lack of remorse/guilt  Shallow affect  Callous/lack of empathy  Failure to accept responsibility for own actions</p> <p><u>Factor 2 (Behavioral/Lifestyle)</u></p> <p>Need for stimulation  Parasitic lifestyle  Poor behavioral controls  Early behavioral problems  Lack of realistic, long-term plans  Irresponsibility  Impulsivity  Juvenile delinquency  Revocation of conditional release</p>
(APA, 1994, pp 649-650)	Cleckley (1941, 1976)	Hare (1990)

### *Definition of Psychopathy and Correlates*

Psychopaths are often described as selfish and disrespectful of the rights and welfare of others, while simultaneously displaying a lack of guilt or concern for the consequences of their actions. They appear carefree and may act on a whim to satisfy their personal desires. They can be well liked, displaying superficial charm, but they are insincere and incapable of participating in sustained affective relationships with others. They may also be irresponsible and lack concern for their future. Consequently, they may not maintain consistent employment (Hare, et al, 1990).

The construct of psychopathy, while not a DSM diagnostic category, has a long-standing history in psychological theory. Lykken (1995) states: “since the beginnings of psychiatry in the early 19<sup>th</sup> century, it has been recognized that there are persons whose persistent antisocial behavior cannot be understood in terms of mental or emotional disorder, neurotic motivations, or incompetent parenting” (p. 113). Pinel (1806) first described psychopaths as people who display a deficit in affect as well as increased impulsivity (Bodholt, Richards, Gacano, 2000), without mental illness or intellectual deficits (Lykken, 1995). Kraepelin (1907) similarly described a group of criminals that were particularly immoral. The current conceptualization of psychopathy is based on Cleckley’s (1941, 1976) work. Cleckley used 16 (see Table 1) “interpersonal, affective, cognitive and behavioral [characteristics] associated with an impulsive, irresponsible, and deceitful lifestyle” to identify psychopathy (Bodholt et al., 2000, p.56). He described people with deficits of conscience who acted in ways unacceptable to society and showed

no concern for the consequences of their behavior (Lykken, 1995). It is generally believed that:

[the personality structure of the psychopath is first evident from an early age (Frick, O'Brian, Wooton & McBurnett, 1994), and is well defined by early adolescence (Forth, Hart & Hare, 1990). It is stable across time (Harpur & Hare, 1994), manifested across a broad range of situations and environments (for reviews see Hare 1996; Hart & Hare, 1997), and likely contributes to the maintenance of antisocial behaviors throughout the individual's lifespan" (Hemphill, Hare, & Wong, 1998, p. 140<sup>1</sup>).

For over a decade, studies have demonstrated that the construct of psychopathy is associated with a variety of outcomes important to psychology (Harris & Cormier, 1995; Hart & Hare, 1997; Serin 1996). Psychopathy is negatively related to startle potentiation (Patrick & Berthot, 1995), fear (Lykken, 1995), learning with negative consequences (Schmauk, 1970), inhibitions against aggression (Megargee 1982), time to re-offense (Serin, 1996, Serin & Amos 95), and the perpetration of murder (Williamson, Hare & Wong, 1987). There is empirical support for a positive relationship between psychopathy and violence convictions (Hare, 1983; Forth et al., 1990), violence and misconduct in prison (Harris, Rice & Cormier, 1991; Toch, Adams & Grant, 1989), and violence recidivism (Serin, 1996; Serin & Amos 1995). While only a small group of inmates cause problems within the prison system, those few consume a large amount of time and

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<sup>1</sup> Some contemporary researchers do not believe that sufficient evidence exists to indicate the existence of psychopathic traits early in childhood or adolescence.



resources, and commit a disproportionate amount of violent acts towards other inmates and staff (Blackburn & Coid, 1998). Psychopaths also commit crimes of a greater number, variety and severity (Hare & Jutai, 1983; Hare & McPherson, 1984; Blackburn & Coid, 1998). Toch, et al. (1989) looked at a sample of inmates and found that those with multiple misconducts received higher psychopathy scores. These authors found that psychopaths averaged 15.8 misconducts and non-psychopaths averaged 5.3 throughout their sentence periods. Hart, Kropp, & Hare (1988) measured psychopathy in male parolees. Psychopathy scores predicted outcome better than any other variables, including criminal history and demographics. Additionally, the higher the psychopathy score, the higher the percentage of criminals who violated the conditions of release; 23.5, 48.9, and 65.2, for low, medium, and high scorers, respectively. Those participants with high psychopathy scores caused more problems for parole supervisors than non-psychopathic offenders.

While consistent relationships have been found between psychopathy and some outcome variables, researchers have been less successful at understanding the relationship between psychopathy and correlates such as anxiety, fear and learning. For example, beginning with Cleckley (1976) psychopathy has been associated with low anxiety, however, evidence of a clear correlation is lacking. In fact Lykken (1957) found that psychopaths and non-psychopaths have comparable levels of anxiety, but psychopaths demonstrated less fear. Additionally, ambiguous findings have resulted from studies of physiological responses to anxiety provoking situations and neurological response systems (Fowles, 1980). Similarly, the ability of psychopaths to learn from

typical reward-punishment paradigms has been questioned (Wallace, Schmitt, Vitale & Newman, 2000).

### *PCL-R*

The gold standard for the measurement of psychopathy in adult male<sup>2</sup> forensic and correctional populations is the Psychopathy Checklist-Revised (PCL-R; Hare, 1991). The PCL-R assesses psychopathy in terms of several of Cleckley's original criteria. The measure has been shown to be reliable and valid (Hare, Harpur, Hakstain, Forth, Hart, & Newman, 1990; Hare 1991; 2003), and research indicates that it predicts recidivism, violence and criminal behavior better than APD, criminal history and personality variables (Harpur, et al., 1989; Hart & Hare, 1989; Kosson et al., 1990). While recent research has suggested the possibility of a three-factor solution, the PCL-R has traditionally been conceptualized as possessing an internal structure comprised of two factors (Hare, 1991; Hare, et al., 1990)<sup>3</sup>. The two factors are referred to herein as Factor 1 and Factor 2. The two-factor conceptualization is emphasized in this paper as the subtyping theories were developed based on research discussing the correlates of the two-

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<sup>2</sup> Research is underway assessing the psychometric characteristics of the PCL-R in female populations, see Vitale, Stevens, Brinkley & Newman, 2002; Hare 2003).

<sup>3</sup> More recent research indicates that a three-factor model may better fit the data (Cooke & Michie, 2001; Skeem, Mulvey, & Grisso, 2003, Hare, 2003). This three-factor conceptualization still places emphasis on the affective, interpersonal, and behavioral aspects of the disorder. Research exploring that model is underway; however, Hare (2003) maintains that the three factors actually are subfactors of the two primary factors.

factors of the PCL-R. Diagnostically, “psychopathy” is traditionally defined as a PCL-R score greater than 29. In general, for someone to score high enough to be diagnosed with psychopathy they must demonstrate both the behavioral and personality features of psychopathy (Wilson, Frick, & Clements, 1999; Harpur, Hare, & Hakstain, 1989).

### *Factors of Psychopathy*

Factor 1 and Factor 2 of the PCL-R correspond to the personality and behavioral features of psychopathy, respectively (see Table 1). Factor 1, or the personality-based items (Lilienfeld & Andrews, 1996), describes the affective and interpersonal aspects. As Cleckley (1941, 1976) and others (Karpman, 1948; McCord & McCord, 1964) noted, antisocial behaviors are not a necessary component of psychopathy (Wilson, et al., 1999), therefore, these personality features are currently believed to be the core features of psychopathy. Factor 1 includes superficial charm, grandiosity, manipulation, callousness, lack of empathy and guilt, and lack of respect or care for others. Factor 2 of the PCL-R is composed of behavior-based items and is similar to the criteria for APD (Lilienfeld & Andrews, 1996; Lilienfeld, 1994; Widiger & Corbitt, 1993). Factor 2 reflects chronically antisocial or socially deviant behavior, juvenile delinquency, impulsivity, and criminal versatility. While the two factors are highly correlated (.50; Harpur, Hakstain, Hare, 1988), they have different external correlates (Harpur et al., 1989).

### *Subtypes*

There is some controversy in the psychopathy literature with regard to correlates, etiology and treatment. These inconsistencies suggest that there may be several variants of psychopathy. For instance, while there are psychopaths in the prison system, many

psychopathic inmates do not reoffend after release (Hemphill, et al., 1998). Additionally, there are those psychopaths that never find their way into a cell, due to different life situations, luck or skill (Lykken, 1995). The multiple factor structure of the PCL-R also indicates that there may be numerous groupings within the construct of psychopathy; some people tend to exhibit more personality features, others demonstrate more behavioral features of psychopathy, while yet others may score high on both factors. Qualitative differences exist among psychopaths and this heterogeneity within psychopathy might be clarified by the exploration of subtypes. The clinical literature is rich with descriptions of different theoretical "variants" of psychopath. These theoretical descriptions can guide empirical exploration of subtypes and may clarify some inconsistent findings regarding correlates. A clearer understanding of the variants of psychopathy may also lead to better outcome and prediction, as well as improved modalities for the treatment of psychopathy.

### *History of Subtypes*

Although several subtyping theories have been proposed (for a review see Skeem, Poythress, Edens, Lilienfeld, & Cale, 2003), this paper focuses solely on theories based on modern conceptions and measures of psychopathy, those that conceptualize psychopathy in terms of personality and behavioral features, and those that demonstrate some empirical support in the literature. While Cleckley's criteria initially defined *primary* psychopathy, (Karpman, 1948) others have proposed the existence of another type of psychopath; the *secondary* psychopath (Hare, 1991, Harpur et al., 1988; Harpur et al., 1989, Karpman, 1948; Lykken, 1995). The theories of Karpman and Lykken are in

the forefront in terms conceptualizing psychopathy as consisting of primary and secondary variants.

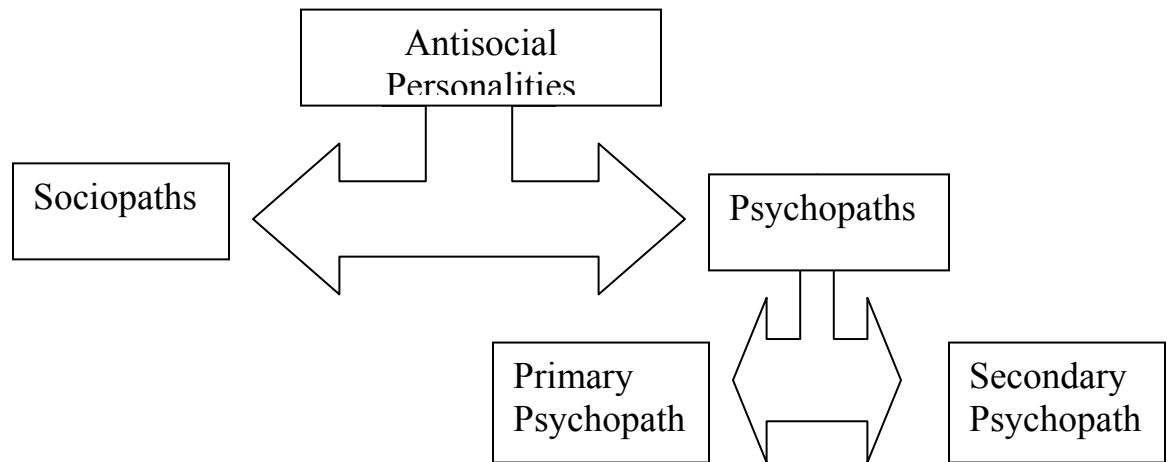
*Karpman*— One of the first subtyping theories, and arguably the basis for current typology theories (Skeem et al., 2003) is that of Karpman (1941; 1955). Karpman (1948) made a clear distinction between primary and secondary psychopathy. Behaviorally the two types of psychopaths are similarly antisocial, aggressive and amoral, and both display a lack of regard for the feelings of others. Despite these similarities, Karpman (1948) indicated etiological and motivational differences between primary and secondary psychopaths. He described the primary psychopath as the “true psychopath”, with a constitutional deficit of conscience that allows for a tendency towards callous, manipulative, glib, selfish and untruthful behavior. Secondary psychopaths display similar characteristics, however etilogically their behavior results from an underlying emotional problem that includes impulsivity and elevated anxiety related to neuroticism (Lynam, Whiteside, & Jones, 1999; Levenson, Kiehl, & Fitzpatrick., 1995; Karpman, 1955). He described primary psychopaths as planful, purposeful, and goal directed, as well as selfish and unconcerned about the feelings or thoughts of others. Secondary psychopaths were described as hastier, emotionally reactive (Blackburn & Maybury, 1985), and more environmentally influenced (due to poor parenting). Secondary psychopaths experience some emotions such as guilt and love, and appear at times to seek the affections of others (Karpman, 1941; Skeem et al., 2003).

*Lykken*— As shown in Figure1, Lykken (1995) discussed several variants of antisocial personality including the sociopath and the psychopath. He described these

variants in terms of differences in temperament versus parenting resources. APD is more prevalent in inner cities where Lykken believes greater exposure to bad parenting and poor socialization causes the number of criminals within lower Socio Economic Status (SES) groups to increase; “unsocialized people tend to do a poor job of socializing their own children” (Lykken, 1995, p.11). These antisocial individuals with normal temperaments and unsocialized parents are Lykken’s *sociopaths*. There is a second set of amoral individuals; psychopaths, who come from any SES and do not necessarily have a history of “bad childhoods”. Their poor behavior and aggression is hypothesized to be related to difficult temperaments rather than poor parenting. In other words, a “psychopath [is] an individual in whom the normal processes of socialization have failed to produce the mechanisms of conscience and habits of law-abidingness that normally constrain antisocial impulses” (Lykken, 1995, p. 6). He proposes a constitutional deficit or biological basis for psychopathic behavior. This theory is supported by Livesley’s (1995) research that found a higher concordance of self-reported psychopathic traits between monozygotic twins than dizygotic twins (Livesley, 1995).

Lykken (1995) asserts that psychopaths engage in antisocial behavior because their lack of conscience, or indifference towards punishment, allows them that liberty. Psychopaths seem to be difficult children to raise, and “lack conscience, moral values, and habits of good conduct because of some peculiarity in themselves rather than in their upbringing” (p.134). Lykken (1995) believes that it is a deficit in fearfulness that puts people at risk for psychopathic behaviors. The idea that psychopaths are less fearful is supported by research indicating that people with high psychopathy scores display less

Figure 1. Lykken's Antisocial Personalities (1995)<sup>4</sup>



autonomic responses (e.g., lower GSR in anticipation of electric shock), and lower startle response to fear inducing imagery (Patrick, 1995; Patrick, Bradley, & Lang, 1993).

Typically, children are punished for yielding to “immoral” impulses and acting in an antisocial manner, and therefore learn to act in appropriate ways. Those that are indifferent to punishment, Lykken (1995) argues, are “unlikely to develop an effective conscience” (p. 62). Children low in fearfulness are at higher risk for behavior problems because they are not as intimidated by punishments. Those less concerned with punishment and the opinions of others do not experience guilt, and social conformities are not internalized (Lykken, 1995).

An interaction exists between environment and biology. Parenting plays a role but research also supports a constitutional component to antisocial behavior (Wilson &

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<sup>4</sup> Lykken does not limit his description of antisocial personality variants to what is noted in this table. See Lykken (1995) for a discussion of several other, more speculative, variants.

Herrnstein, 1985). Research has identified genetic components for many characteristics related to psychopathy, such as aggression and fearlessness. These characteristics have also been identified in infants and are quite stable throughout life (Kagen, 1992; Eron & Huesman, 1990; Huesman, Eron, Lefkowitz & Walder, 1984). Glueck & Glueck (1950) conducted a study with 500 delinquent and 500 non-delinquent Boston boys matched on age, race, IQ and SES. Sampson & Laub (1993) utilized this data and found that delinquent youth were more difficult from infancy and engaged in more temper tantrums. Longitudinal research (Loeber, 1982) indicates a connection between childhood behavior problems and psychopathy in adults. Huesman et al.'s, (1984) study indicated a relationship between aggression in parents at age 8 and that of their children at age 8 ( $r=.65$ ). Also, individual differences in levels of fear can be exaggerated through interaction with environment. Those youths who experience less fear may become involved in more daring and riskier activities, and success in those situations allows them to be even less concerned for consequences (Lykken , 1995).

Lykken (1995), like Karpman, distinguishes between primary and secondary psychopathy. Primary psychopaths are believed to have constitutional deficit in the inhibition of behavioral responses in certain contexts. They are less sensitive and responsive to, and therefore may not inhibit their behavior in response to, cues for punishment or non-reward. Consequently, they may not feel anxiety or fear as others would in similar situations. Secondary psychopaths are thought to engage in excessive behavioral response. Their focus is on the attainment of goals, and they may continue reward-seeking behaviors despite adequate awareness of the consequences. Lykken



(1995) uses Gray and Fowles' concepts of the Behavioral Inhibition System (BIS) and Behavioral Activation System (BAS) as a theoretical framework for distinguishing separate etiologies for primary and secondary psychopathy. The concepts of BIS and BAS will be discussed further later in this paper.

#### *Research on Subtypes and Cluster Analyses*

Few empirical studies have attempted to identify the subtypes of psychopathy. However, the current theories of psychopathy suggest a constellation of traits that make up at least two variants. Further research and empirical evidence is needed to determine whether these subtypes exist beyond theoretical speculation (Blackburn, 1975). The PCL-R factors are a starting point for discussing the idea of variants within psychopathy. However, subtypes are not distinguished solely by considering the relationships between the factors and individual correlates; multiple traits and features need to be taken into account. Cluster analysis allows a population to be split into groups based on scores on multiple measures (Magnusson, 1988; Magnusson & Bergman, 1988; Haapasalo & Pulkkinen, 1992). Thus far two important cluster analysis studies have been conducted in adults looking at psychopathic traits<sup>5 6</sup>.

*Haapasalo & Pulkkinen.* In a study by Haapasalo & Pulkkinen (1992) PCL-R items were cluster analyzed for 92 nonviolent Swedish, adult male offenders. Outcome

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<sup>5</sup> Blackburn (1975) cluster analyzed male offenders using personality scales, however the clustering variables used are not consistent with the Hare/Cleckley conceptualization.

<sup>6</sup> Hervé, Ling, and Hare (2000) also conducted a cluster analysis study, however, clusters were based solely on the PCL-R and not related to any external variables.

variables included criminal behavior and personality scales such as the Minnesota Multiphasic Personality Indicator (MMPI) Scale 4 (Pd), California Personality Inventory (CPI) socialization scale (So) and sensation seeking. As shown in Table 2, analysis of the PCL items distinguished 3 groups: Cluster 1 were those participants with higher Factor 1 scores and this group may correspond with primary psychopathy. Subjects in Cluster 2 had higher Factor 2 scores and this group looks more like secondary psychopaths. Cluster 3 consisted of low scorers on both factors.

Most of the personality measures did not correlate with psychopathy scores, however, the MMPI scale 4 was positively related to Factor 2. “It might, not unreasonably, be assumed that the personality questionnaires have more to do with antisocial and criminal behavior starting in early life than with Cleckley’s description of the psychopath’s personality” (Haapasalo and Pulkkinen, 1992, p.326). While the clusters found by Haapasalo and Pulkkinen are in line with theories of the variants of psychopathy, these authors did not pose any a priori hypotheses about subgroup differences on the measures (Haapasalo & Pulkkinen, 1992).

*Alterman, McDermott, Cacciola, Rutherford, Boardman, McKay & Cook, 1998,* Alterman et al. (1998) used the PCL-R, measures of Conduct Disorder (CD) and APD symptoms, and the So scale of the CPI to cluster analyze 252 methadone patients. Due to difficulties distinguishing clusters based on the factor scores of the PCL-R, the second stage of cluster analysis used individual items of the PCL-R. Six clusters were revealed representing variants of antisocial behavior (see Table 3). External criterion validation was conducted using (among others) measures of anxiety, depression, hostility and guilt.

Table 2

*Three Clusters Derived by Haapasalo & Pulkkinen, (1992).*

Cluster 1 (n=27)	Higher on Factor 1 personality items, (glibness/charm, grandiosity, lying, conning and manipulative, lack of remorse, shallow affect, callous, lack of realistic long term goals, failure to accept responsibility). Received longest sentences. <b>Primary Psychopathy</b>
Cluster 2 (n=23)	Higher on Factor 2 targeting behavioral aspects such as early antisocial behavior and poor impulse control. Higher MMPI scale 4. Received more frequent convictions. <b>Secondary Psychopathy</b>
Cluster 2 (n=42)	Lower scores on all items, more impulsive than cluster 1 but not as criminally versatile or poorly controlled as Cluster 2. Fewer behavior problems than both of the other clusters. <b>Not Psychopathy</b>

Mean PCL-R scores are reported for each cluster as well as the percent of each cluster found to be psychopathic. It is important to note that the authors used a very liberal PCL-R cut-off score of greater or equal to 20 to determine psychopathy. Three groups were identified as psychopathic. All 3 groups had some antisocial behavior, yet scored differently on external criterions such as anxiety. Several of the groups have parallel score patterns (but PCL-R scores below 30) to the theoretical description of primary and secondary psychopathy. Group 5 is similar to primary psychopaths with antisocial behavior and no anxiety and Groups 1 and 2 are similar to secondary psychopaths with antisocial behavior, anxiety and depression. These findings support the idea of variants

within psychopathy (Alterman, et al., 1998). Additionally, this study lends support for the existence of variants in a population with subclinical levels of psychopathy as many of the participants did not meet criteria for diagnosis of psychopathy.

*Cluster Analysis Conclusions.* The two studies reviewed here use different samples and clustering variables. While this research is suggestive of the existence of variants, no consensus can be drawn as to which variables to include in the definition of subtypes. However, each study identified clusters of individuals that, descriptively, appear similar to the prototypes of primary and secondary psychopaths described in the literature. Haapasalo & Pulkkinen's Cluster 1, is indicative of primary psychopathy with higher scores on Factor 1 items and more severe sentences. Cluster 2 is representative of secondary psychopathy with higher scores on Factor 2 items, more frequent convictions and more antisocial behavior. Alterman et al.'s Type 5, is reflective of primary psychopathy with psychopathic behavior and low anxiety. Secondary psychopathy is seen in Type 1 and Type 2 with high anxiety and antisocial behavior.

#### *Subtypes-Factors Distinction and Correlates*

Some authors (e.g. Levenson et al., 1995) have suggested that the PCL-R factors themselves distinguish the two subtypes of psychopathy. Factor 1 items have been thought to be indicative of primary psychopathy and Factor 2 items are thought to be indicative of secondary psychopathy. Differences exist in the respective correlates of the two factors. For instance, some authors have considered impulsivity to be a core characteristic of psychopathy, however, Factor 1 does not correlate with impulsivity. The relationship between impulsivity and total psychopathy score is attributed to a correlation

Table 3

*Clusters Revealed by Alterman et al. (1998)*

Clusters	PCL-R mean; % psychopathic	Descriptors
Type 1 (n = 27)	21; 52% psychopathic	Early onset of antisocial behavior (high CD); high on antisocial behavior, anxiety, depression and hostility (assaultiveness, indirect, verbal). <b>Secondary psychopathy</b>
Type 2 (n = 30)	23; 70% psychopathic	Later onset of antisocial behavior (moderate CD); high antisocial behavior, anxiety and depression. <b>Secondary psychopathy</b>
Type 3 (n = 45)	17; 0% psychopathic	Emotionally unstable moderate antisocial behavior.
Type 4 (n = 42)	15; 0% psychopathic	Not antisocial; drug related adult antisocial behavior.
Type 5 (n = 38)	20; 47% psychopathic	Psychopathic criminal, moderate antisocial behavior. Lowest anxiety, depression and guilt. <b>Primary psychopathy</b>
Type 6 (n = 70)	9; 0% psychopathic	Low antisocial behavior.

with Factor 2 only (Harpur et al., 1989). Low anxiety levels have also been associated with psychopathy (Cleckley, 1976). Research considering the factors individually indicates that anxiety is either unrelated to the factors or positively related to Factor 2 and negatively related to Factor 1. Specifically, Hare (1991) and Harpur et al. (1989) considered this relationship and found that Factor 1 was negatively related to anxiety and neuroticism and Factor 2 was positively related. Patrick et al. (1993) reported that Factor 1 was negatively related to anxiety, fear, startle and distress responses. People with higher Factor 2 scores tended to experience more fear, distress, anger, anxiety, and negative affect.

While differences in the PCL-R factor scores provide a starting point for distinguishing the subtypes of psychopathy, a clearer distinction between primary and secondary psychopathy requires that additional criteria be considered. Lykken (1995) suggests “one way to segregate the primary psychopaths more clearly would be to try to identify patterns of two or more indicators that are characteristic of this group” (p.127). To this end, constructs such as anxiety, and fear, and indicators of Behavioral Inhibition System (BIS) and Behavioral Activation System (BAS) functioning have been identified as potential means for discriminating primary psychopathy from secondary psychopathy.

### *Learning*

Studies have found that psychopaths have impaired learning in response to punishment. Psychopaths are known for their quest for self-fulfillment even at the risk of punishment, and they appear to be insensitive to cues of impending adverse consequences (Patterson, & Newman, 1993; Newman, Widom, & Nathan, 1985). Lykken (1957)

showed that psychopaths did not inhibit behaviors for which they received shock as a punishment. In research that followed, Schmauk (1970) found that, while psychopaths did not learn as well from physical punishment, they performed as well as controls when there was a loss of a reward rather than a punishment to avoid. The authors indicated that psychopaths could use passive avoidance (the inhibition of behavior) when motivated.<sup>7</sup> Newman & Kossen (1986) used a go/no-go task to show that psychopaths have difficulty with passive avoidance because of an inability to shift attention from a dominant response style. They found that psychopaths worked towards rewards even at the risk of losing the rewards. When there were competing rewards and punishments psychopaths were deficient in avoiding punishments. However, psychopaths performed as well as non-psychopaths on punishment only tasks. Some researchers have interpreted these difficulties with traditional learning paradigms to imply that psychopaths display deficits in response modulation, due to problems either anticipating adverse consequences, learning from past punishments, or shifting attention from goal-directed behavior, or due to lack of fear and anxiety<sup>8</sup>.

### *Fear and Anxiety*

Cleckley believed that a lack of affective response was the essential deficit from which all psychopathic deficits follow, including perhaps their inability to modify and change their behaviors in response to punishments (Steuerwald & Kossen, 2000).

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<sup>7</sup> It is important to note that several of these studies used outdated measures of psychopathy (Newman & Schmitt, 1998).

<sup>8</sup> For more information on learning deficits in psychopathy see Newman (1998) or Wallace, et.al., (2000).

Cleckley (1976) and Karpman (1948) believed psychopathic deficits were associated with low anxiety, however, consistent empirical evidence of a negative correlation between psychopathy and anxiety is lacking. In fact Lykken (1957) found psychopaths and non-psychopaths to have comparable levels of anxiety, but psychopaths demonstrated less fear. Lykken's theory is similar to Cleckley's, however Lykken believed the basis for psychopathic deficits is a specific deficit in fearfulness. While the two terms are often used interchangeably, it is important to note that there are differences between fear and anxiety. "Fearfulness appears to be a sensitivity to cues of impending danger (Gray, 1982; Tellegen, 1978). In contrast, anxiety appears to be distress produced by the perception that danger and related consequences are inevitable (Tellegen 1978)" (Lilienfeld, 1994, p. 31).

Cleckley's, Karpman's and Lykken's theories appear to be supported by research examining biological responses to stressors. Fowles (1980) postulated that increased Heart Rate (HR) might result from an effort to cope with impending stress, while Hare (1978) suggested that increased Skin Conductance Levels (SCL) may be related to the subjective experience of anxiety. Several studies indicate a decreased physiological response to aversive stimuli in psychopaths, relative to non-psychopaths. For example, psychopaths display less of an increase in SCL under stress than non-psychopaths (Hare, Frazelle, & Cox, 1978). Anticipatory HR findings vary, with no difference between psychopaths and non-psychopaths in some studies (Hare & Quinn, 1971) while an increased HR was found for psychopaths in others (Hare et al., 1978). Dengerink & Bertilson (1975) measured SCL and HR in psychopaths and non-psychopaths while using



Buss Aggression Machine (Buss, 1961). They found that as aggression levels increased, palmer SCL increased in non-psychopaths but not in psychopaths, while HR was higher in psychopaths than non-psychopaths. The authors proposed that the higher HR and lower SCL of psychopaths in anticipation of shock demonstrate an active versus passive coping stance. Olgloff and Wong (1990), found the expected lower SCL in psychopaths, indicating lower levels of anxiety. They also found psychopaths to have an increase in HR in anticipation of an aversive stimulus but not when subjects were able to prevent the event from occurring. Taken together, psychopaths' physiological responses to impending aversive stimuli may indicate less subjective experiences of anxiety, or successful attempts to cope with aversive situations (less increase in SCL) while coping with and decreasing reactions to expected aversive situations (increased HR; Hare, 1978).

These studies are indicative of a relationship between psychopathy and anxiety and are consistent with the theories of Cleckley and Lykken positing that decreased fear or anxiety is an integral part of psychopathy. Interestingly, the research also indicates some uncertainty about the relationship between anxiety and total psychopathy score (Kossen, Smith, & Newman., 1990; Schmitt & Newman, 1999; Hare, 1991; Lilienfeld, 1994; Harpur et al., 1989). Schmitt and Newman (1999) conducted a replication of Lykken's (1957) research and found that psychopathy scores did not correlate with measures of anxiety or fear. The inconsistent results of the various studies may be due to the heterogeneity of psychopathy; the subgroups may experience fear and anxiety differently. As such, it may be possible to use fear and anxiety indicators to distinguish between primary and secondary psychopathy (Hicks, Markon, Patrick, Krueger, In

Press). Additionally, Lykken (1995) found:

If the low-fear hypothesis is valid then the Cleckley criteria or PCL-1-denominated psychopaths who are low in harm avoidance should constitute the purest group of primary psychopaths, whereas the prison inmates who are not psychopathic according to the PCL-1 and who are also high on harm avoidance should provide the greatest contrast. (p.127)

Lykken (1957) used institution staff-rated Cleckley psychopaths (n=19), neurotic sociopaths with traits similar to secondary psychopaths (n = 20) and a group of non-psychopaths (n=15). Using his Activity Preference Questionnaire (APQ), Lykken found that Cleckley's psychopaths scored lower than the other two groups on fearfulness. Primary psychopaths also showed less physiological response (lower SCL) to fear eliciting stimuli (a loud buzzer). Finally, primary psychopaths had more difficulty with passive learning tasks in response to shock.

In sum, Lykken's low fear hypothesis as well as Karpman's theory that primary psychopaths may be low anxious while secondary psychopaths may experience anxiety helps to reconcile some of the inconsistencies in the literature. However, while the distinction between primary and secondary psychopathy may help better explain the relationship between psychopathy and anxiety, research has yet to empirically test these theories.

*BAS/BIS*

Despite studies indicating a reduced response to punishment and a reduced physiological response (e.g. SCL and startle responses) to fear and anxiety (Hare, 1972;

Hinton & O'Neil, 1978) psychopaths may not be simply under responsive. Physiological research suggests that psychopaths' lack of response is a coping style that might help prevent the negative affect caused by aversive events and situations (Hare 1978; Ogloff & Wong, 1990). This coping style may be related to the BIS and the BAS (Gray, 1982; Fowles, 1980). The BIS is triggered by cues of punishment and aversive stimuli, and inhibits ongoing behaviors. It produces anxiety reactions (Patterson & Newman, 1993) and increased arousal following behavior interruption, and focuses attention on new environmental cues (Gray, 1982). In contrast, the BAS is enacted when reward opportunities are presented and shifts attention to goal-directed behavior. The BAS is related to impulsivity and behaviors associated with attaining a goal (Fowles, 1980). The BAS and BIS are each activated when a goal is presented. If systems are functioning properly, these systems conflict and provoke anxiety (Lykken, 1995). For example, when a person sees a forbidden goal, like money left out on a desk, the BAS is activated and they feel the desire to take the money. However, to the degree that guilt and punishment is anticipated for taking the money, the BIS is also activated and anxiety occurs. In well-socialized individual, the anxiety due to the BIS overrides the desire thus they do not take the money - inhibition wins out. The theory postulates that antisocial behavior (taking the money) may be a result of either an underactive BIS (in the case of primary psychopathy) or an overactive BAS (in the case of secondary psychopathy).

Through measures of HR and SCL, Fowles (1980) demonstrated that the physiological indicators of the BIS/BAS model explain psychopathic learning deficits. HR is believed to be reflective of the incentive effects of the BAS and SCL is related to

the BIS<sup>9</sup>. Gray (1982) suggested psychopathy was a result of a poorly developed BIS. This theory was supported by Fowles (1980) who demonstrated that the poor passive avoidance learning, lower anxiety levels, and low SCL in psychopaths were due to a weak BIS. Psychopaths have less of an increase in SCL in the presence of aversive stimuli, and Schmauk (1970) found psychopaths had no increase in SCL when awaiting shock punishments. Some psychopaths may also demonstrate an over active BAS as indicated by impulsivity and reward seeking behavior (Fowles, 1980). Once a response is established and a punishment contingency is added, psychopaths do not adjust their behavior as well as non-psychopaths. In other words, psychopaths are goal orientated, even at the risk of punishment (Patterson & Newman, 1993). Psychopaths also display an increase in HR with aversive stimuli that is indicative of more activity in the BAS (Fowles, 1980).

As a group, psychopaths do not appear to alter their behavior in new situations. They also demonstrate more of an increase in HR and less of an increase in SCL than non-psychopaths during aversive situations. Therefore, psychopathy may be related to either an overactive BAS which leads to extra focus and pursuance of reward (increased HR), and/or an under active BIS, or a lack of behavioral inhibition in response to punishment (decreased SCL; Patterson & Newman, 1993). Patrick, Cuthbert & Lang, (1994) examined this theory more closely. They studied psychological responses to

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<sup>9</sup> Erlich and Malmo (1967) found that the HR of psychopaths decreased during an extinction period even though their levels of responding did not change. Roberts (1974) demonstrated an electrodermal response to fear that was independent of HR and activity level.

imagined aversive stimuli in inmates. Those with high scores on both factors of psychopathy, as well as those with only high Factor 2 scores had lower SCL and HR than non-psychopaths. The lower HR associated with Factor 2 is consistent with a difference between primary and secondary psychopaths. Given that typology theorists have indicated differential anxiety and impulsivity for primary and secondary psychopaths, it has been posited (Lykken, 1995; Fowles, 1980) that a weak BIS may be indicative of primary psychopathy and the overactive BAS may be indicative of secondary psychopathy. A weak BIS relates to Cleckley's primary psychopath and Lykken's low fear hypothesis. The antisocial behaviors of a person with a weak BIS will have little anxiety consequences or accompaniments. A secondary psychopath, or someone with high BAS will actively seek rewards and act impulsively to achieve goals, but may still experience anxiety (Lykken, 1995).

#### *Implications for Subtyping*

The theory and research on psychopathy provides some evidence of the existence of primary and secondary psychopathy. Existing theories indicate specific etiological, personality, and behavioral differences between the variants of psychopathy. Future research must confirm these ideas and determine their clinical relevance. Psychopathy is a predictor of treatment non-compliance and failure (Ogloff, Wong, & Greenwood, 1990; Seto & Lalumiere, 2000), and many believe that a diagnosis of psychopathy is synonymous with being untreatable. Ogloff et al. (1990) considered the treatment outcome of male criminals. Psychopathic inmates improved less, were less motivated, and left treatment earlier than non-psychopathic inmates. Karpman (1946) specifically

referred to the primary psychopath as “incurable” and recommended permanent incarceration. A better understanding of the subtypes might help in the development of more specific and targeted treatment plans for psychopaths. Even if primary psychopathy is untreatable, the identification of subtypes may allow for better treatment of other variants. Secondary psychopaths’ experience of anxiety and reactive aggression may indicate the need for better coping strategies. Studies with aggressive children find that they can learn to moderate aggressive reactions. Additionally, perhaps fearless children can be taught more appropriate outlets for their adventurousness such as becoming firefighters or police officers (Lykken, 1995).

As mentioned earlier, in male offenders, psychopathic traits are associated with risks for negative outcomes such as violence, recidivism, diversity and severity of criminal behavior, and institution infractions (Hart & Hare, 1997; Hare & Jutai, 1983; Harris & Cormier, 1995; Forth et al., 1990; Hare & McPherson, 1984; Blackburn & Coid, 1998; Toch et al., 1989). In a meta-analytic study by Salekin, Rogers, & Sewell (1996) psychopathy (high PCL-R score) was strongly related to criminal behavior and violence, both previous and future. The ability to predict specific outcomes such as violent and aggressive behaviors may improve with the identification of subtypes. Accurate prediction may lead to research on the development of preventative techniques.

### Aggression

Violence is prevalent in psychopaths and aggression is a key element in understanding the relationship between psychopathy and violence. “Human aggression is any behavior directed toward another individual that is carried out with the proximate

(immediate) intent to cause harm. In addition, the perpetrator must believe that the behavior will harm that target and that the target is motivated to avoid the behavior” (Bushman & Anderson, 2001, p. 274). The etiology of aggression can not be explained by a single factor. A combination of environmental, psychological and biological factors probably best explains aggressive behavior. While aggression is important to study in adults, most of the research explaining the development of aggressive behavior has been conducted with youthful samples.

### *The Development of Aggressive Behavior*

#### *Frustration-Aggression Hypothesis*

Dollard, Doob, Miller, Mower, Sears, Ford, Hovland, & Sollenberger (1939) proposed that a reciprocal relationship exists between frustration and aggression where aggression can not occur without a preceding frustration and vice versa. This theory is known as the frustration-aggression hypothesis. Dollard and colleagues suggested that frustration results when goal-directed behavior is blocked. Aggression is an innate drive to injure another person or object in response to frustration. Although aggression is an automatic and necessary response it can be displaced. As such, aggression is not always directed at the person or object responsible for the frustration.

There are several criticisms of the frustration-aggression hypothesis. First, not every frustration is followed by aggression. Children whose level of aggression has been reduced through prior punishment do not resort to aggressive behavior in the face of frustration. If the frustration-aggression hypothesis held true then aggression in these children would not be diminished by punishment (Bandura, 1973). Miller (1941) later

modified the frustration-aggression hypothesis to state that all frustrations do not necessarily lead to aggressive behavior.

Another criticism of the frustration-aggression hypothesis is that the theory does not consider the cognitive and affective aspects of aggression. People have individual interpretations regarding frustrating events and these processes are not considered in the frustration-aggression hypothesis. Additionally, frustration is typically followed by an emotional reaction that can lead to aggression (Brown & Farber, 1951), and that emotional state is typically anger (Berkowitz, 1962). Anger is a fairly common emotion (Averill, 1982) that often occurs in relationships with others (Steuerwald, & Kosson, 2000). When anger is combined with appropriate stimulation, aggression can occur; anger can instigate aggression (Brown & Farber, 1951).

Finally, Berkowitz (1989) criticizes the frustration-aggression hypothesis because it focuses solely on aggression with the goal of injuring another person or object. The frustration-aggression hypothesis fails to consider aggression for alternative purposes. Berkowitz's (1989) modified frustration-aggression hypothesis posited that anger is included in the model as a mediator, that frustration produces anger which then leads to aggression. Berkowitz also notes that anger can occur without aggression. Additional modifications have broadened the definition of the mediator to include any negative affect (i.e. irritation, annoyance, sadness, anger), not just anger. "Certain kinds of appraisal or attributional beliefs can intensify or weaken the anger experience" (Berkowitz, 1990, p. 496). So affective response is a mediator in the relationship between frustration and aggression; the strength of the anger or affect produced by the



frustration is directly related to the motivation to act aggressively.

### *Social Learning Theory*

While the frustration-aggression hypothesis posits that aggression is an innate reaction, social learning theory proposes that aggression is a learned behavior. Bandura (1973) agreed with Berkowitz that frustration elicits an emotional response, but believed the arousal to be more generalized. Social learning theory indicates that arousal can lead to many responses, not just aggression. A person's previous learning and environment determine reactions to frustration. A person may have a biological predisposition to aggression, but the specific reaction, and the type, frequency and victim of aggression are learned through social experiences. Social experiences determine how the arousal is labeled (e.g., anger, sadness, etc.) and which responses are considered aggressive.

Bandura (1973) indicated that learning principles apply to the acquisition of aggressive behavior. For example, when a reward is presented for an aggressive act, the aggression will likely be repeated in a similar situation. Inversely, if one is punished for aggression, aggression is less likely to be used on another occasion. The use of aggressive behavior therefore, is typically shaped during upbringing. In most cases there is a need to be accepted by others. Reward is a child's indication that they are acting appropriately and they are accepted by society, while a punishment indicates they are not acting in accordance with societal rules. For appropriate socialization and behavioral shaping to occur, a child must possess a need for approval from others. Parenting plays a large role in this process. For example, a child who is inconsistently disciplined may not learn what behaviors are acceptable and aggressive behaviors may continue. If a child is

not cared for appropriately or rejected by a parent, they may never learn to desire acceptance and love of others. The feelings of rejection may also cause hostility and consequential aggressive behaviors (Bandura, 1973). Lykken (1995) describes a similar process for the development of sociopathy. Additionally, Lykken's primary psychopaths have less need for acceptance from others and are consequently difficult to socialize. Similarly, the children described by Bandura (1973) lack a need for approval and do not experience guilt or remorse for aggressive behaviors. Like Lykken, Bandura believes that poor parenting or disregard for the feelings of others, leads to deficiencies in learning to act appropriately and the development of an aggressive and antisocial repertoire.

#### *Hostile (Reactive) and Instrumental Aggression*

Social learning theorists address the overgeneralization of the frustration-aggression hypothesis by separating out hostile/reactive (the terms are used interchangeably) aggression from instrumental aggression. Many researchers discriminate between hostile aggression that is a reaction to provocation or threat, and instrumental or goal-directed aggression (Buss, 1961, Dodge, 1991, Feshback, 1964, Parke & Slaby, 1972). Reactive aggression is a reaction to a frustration or threat and is what is described in the frustration-aggression hypothesis. It is an angry reaction that is intended to cause harm (Bushman, & Anderson, 2001), typically to someone with whom a prior relationship exists (Cornell, Warren, Hawk, Stafford, Oram, & Pine, 1996). Instrumental aggression is aimed at attaining a particular goal and is not generally directed at harming another person for the sake of doing harm. "Instrumental aggression is premeditated, calculated behavior that is motivated by some other goal (e.g., obtain

money, restore one's image, restore justice)" (Cornell et al., 1996, p. 274). For instance, when a person attacks someone to obtain his watch, the purpose of the attack is not to injure the other person but to obtain the watch. Several characteristics of an aggressive act seem to distinguish instrumental from reactive aggression. Instrumental acts typically are planned (or at least require some thought prior to action) and motivated by an incentive or goal, and are not in response to provocation (Cornell et al., 1996). While reactive aggression is usually aimed at a person with whom a prior relationship exists, and involves some level of arousal and provocation.

The hostile and instrumental aggression distinction is theoretical. People commit both hostile and instrument aggression, and Berkowitz (1989) cautioned that individuals can exhibit both types of aggression throughout their life. Some acts can be conceptualized as combining instrumental and hostile features as most aggressive behaviors can be viewed as achieving some result for the aggressor as well as inflicting some harm on the victim. Bushman & Anderson (2001) suggests that the dichotomy of instrumental and hostile aggression may no longer be a useful distinction, stating that "specifically, the same motives can drive either type of aggression, different motives can drive the same aggressive behavior, and many aggressive behaviors are mixtures of hostile and instrumental aggression" (p. 276). Because several contributing factors and motivations for aggressive behavior exist, dichotomizing types of aggression is somewhat artificial. However, while the distinction between hostile and instrumental aggression can be problematic, these problems are inherent in research in general. It is these inherent problems that lend importance to this study. The problem is not as simple as

determining whether a distinction between instrumental and hostile aggression exists or not. To study constructs that exist in nature, creating clear distinctions and examining specific variables is often helpful and necessary. Such simplification is a common flaw in analog research because distinctions are created that are not obviously reflected in nature. The artificial distinction notwithstanding, such models aid our understanding of naturally occurring constructs. Additionally, as will be demonstrated below, empirical research does support the distinction between hostile and instrumental aggression.

### Psychopathy and Aggression Overlap

Psychopaths are at a higher risk for violent behaviors. The research on psychopathy and aggression will assist in the development of methods to determine which individuals are at higher risk for violent criminal behavior (Monahan, Steadman, Silver, Appelbaum, Clark Robbins, Mulvey, Roth, ,Grisso, & Banks, 2001; Tengstrom, Grann. Langsrom & Kullgren, 2000). As previously discussed, an overlap exists between psychopathy and aggression (Blackburn & Maybury, 1985; Leary, 1957; Forth et al., 1990; Hare & McPherson, 1984; Kossen et al, 1990; Rice, Harris, & Quincy 1990; Serin, 1991; Harris, Rice, & Cormier , 1991; Salekin et al., 1996).

Psychopathic aggression is related to something other than the experience of anger. The ability of psychopaths to experience anger is even up for debate. Cleckley (1976) believed that primary psychopaths do not experience anger, while McCord and McCord (1964) believed that in response to a deficit in ability to cope with frustrations of everyday life, psychopaths often become angry. More recent research is still unclear. Serin (1991) used the PCL to identify psychopathy in inmates. Using hypothetical

scenarios, those scoring high on psychopathy self-reported more anger in response to the vignettes of provocation. When film clips were used, the results were less clear (Forth, 1992). Forth (1992) used the PCL and measured self-reported anger, HR, SCL and facial expressions in response to anger evoking films, and found no differences between psychopaths and non-psychopaths. However, film clips and vignettes may be problematic and weak indicators of anger (Averill, 1982). Steuerwald, & Kosson (2000) indicate that:

the exclusive reliance on self reports and focus on hypothetical situations temper generalizations to emotional reactions in real life situations . . . psychopaths in these studies, could have reported what they thought they should feel instead of what they would actually feel had the scenarios been real. (p. 119-120)

Psychopaths may experience anger. However, the data is unclear, and more research is needed to gain a clearer understanding of anger and aggression in psychopaths.

Blackburn and Lee-Evans (1985) used the Special Hospitals Assessment of Personality and Socialization (SHAPS; Blackburn, 1979) to measure psychopathy. The SHAPS has four subscales; P) high psychopathy and low social withdrawal, S) high psychopathy and high social withdrawal, C) low psychopathy and low social withdrawal, and I) low psychopathy and high social withdrawal. The authors considered differences in aggressive reactions to various situations. Participants self-reported their level of reaction to situations presented to them. The psychopathic group reported stronger anger reactions than the non-psychopathic group (means = .96, and .67, respectively).

Additionally, those with higher levels of withdrawal had stronger reactions than the low

social withdrawal group (means = 0.97 and 0.66). Those subjects with the combination of psychopathy and high social withdrawal consistently reported strong reactions. Those psychopaths with low social withdrawal appeared to differ in their types of reactions, and they “respond with less arousal, but with similar levels of aggression and anger” (Blackburn & Lee-Evans, 1985, p.14). The measures used to determine psychopathy in this study are not consistent with the theories of Cleckley or Hare therefore these results should be considered with caution. However, it is possible to think of the high social withdrawal group as being similar to secondary psychopathy and the low social withdrawal group as being similar to primary psychopathy. If the aggression results are considered with this conceptualization, there is reason to think that different psychopathy profiles might differentially display aggression.

#### *PCL-R Factor Scores and Violence and Aggression*

The lack of clarity in the psychopathy and aggression literature may result from a failure to distinguish among variants (sub-types) of psychopathy. While research has not considered variants of psychopathy and aggression, the two factors of the PCL and PCL-R have been studied separately in respect to violence. Factor 1 and Factor 2 have each been found to predict violence (Harpur et al. 1989) independently as well as conjointly (Harpur & Hare, 1991). Serin (1996) found that Factor 1 was uniquely related to violent recidivism in 93 prison inmates. So while the behavioral aspects of psychopathy are related to general recidivism, the personality features are uniquely predictive of violent criminal behavior. Kosson, Kelly and White (1997) found that psychopathic traits, specifically Factor 1 of the PCL: Screening Version (SV), predicted sexual aggression in

college men. Blackburn & Coid, (1998) indicate that there is a slightly higher correlation between Factor 1 than Factor 2 with crimes of violence such as robbery and firearms charges. They found that Factor 2 was more related to general criminal behavior and non-violent property crimes. On the other hand, Harpur and Hare, (1991) found PCL-R Factors 1 and 2 to be more equally correlated with violent recidivism. Cornell et al. (1996) noted that those with violent histories would be more likely to score high on items assessing previous antisocial behavior (Factor 2). Hare and McPherson, (1984) used the PCL to discriminate between violent and nonviolent offenders and the items that discriminated the best were from Factor 2. Kosson et al., (1997) also found that Factor 2 of the PCL-R predicted violent offenses.

#### *Instrumental Versus Hostile Aggression Questions*

The various findings with regards to aggression and psychopathy may be a result of aggression being considered as a homogeneous construct when, in fact, different types of aggression may exist. As discussed earlier, aggression can be instrumental or hostile/reactive. Even research that does not directly measure the relationship between psychopathy and types of aggression, provides some evidence of a connection between the two constructs.

There is some evidence that “because of their insensitivity to social, moral, or emotional prohibitions against violence, psychopaths may be more willing to engage in violent behavior for instrumental purposes” (Cornell et al., 1996, p. 784). A study by Williamson et al. (1987) evaluated the types of crimes and victims of PCL rated psychopaths. Psychopaths tended to victimize people unknown to them, and their crimes

involved material gain. Non-psychopaths were more likely to know their victims and their crimes were indicative of a strong emotional reaction. Psychopaths were instrumental and non-psychopaths were more reactive. Other studies indicate a higher degree of weapons use (Hare & McPherson, 1984; Serin, 1991) among psychopaths than among non-psychopaths. Weapon use is a way to control others without physical attack, and can be threatening if used to obtain goals (Patrick & Zempolich, 1998).

Two studies by Cornell et al. (1996) looked at the relationship between psychopathy and types of aggression more directly by considering whether psychopathy could distinguish between instrumental and reactive offenders. The PCL-R and the PCL-SV were used but no cutoff scores were assigned; psychopathy scores were considered on a continuum. Three groups were formed based on types of offenses in the records: instrumental, reactive, and non-violent offenders. A coding system developed by the authors was used to rate the type of offense and determined instrumentality and reactivity, where one instrumental offense put the offender in the instrumental category. As would be expected, instrumental offenders used more plans and had specific goals. Reactive offenders more often knew their victim and acted in anger as a reaction to a perceived provocation. Even when length of time served was considered, the instrumental group had significantly higher psychopathy scores, than the other groups.

One problem with research on instrumental and hostile aggression is that offenders are not exclusively instrumental or reactive; no absolute distinction between the types of aggression exists. The authors note that some reactive offenders planned their aggressive acts and reported no anger or specific provocation. Some instrumental



offenders reported acting in a state of anger and in a more impulsive manner. Fewer people commit instrumental aggression than reactive aggression and it is possible that instrumental aggression is indicative of more serious pathology. Cornell and colleagues (1996) note “capacity to inflict serious injury on a person for goal-directed criminal purposes is made possible by the relative lack of well-internalized social standards and associated feelings of concern and respect for others that otherwise would inhibit the offender” (p. 788).

While these studies indicate a relationship between psychopathy and instrumental aggression, Serin (1991) found that PCL psychopaths were similar to non-psychopaths on hostility (Overcontrolled Hostility Scale; Megargee et al, 1967) and reactive anger (Novaco’s Anger Inventory; 1975). Psychopaths reported more anger in response to frustrating vignettes, but had the same attribution of hostile intent as non-psychopaths. Psychopathy also predicted the use of more instrumental aggression and threats, but less serious harm to victims and fatalities. Oddly, psychopaths appeared angrier than non-psychopaths but their aggression seemed to be more instrumental. Broad cut-off scores were used to determine psychopathy, but the higher anger reaction is inconsistent with previous studies. Toch et al. (1989) found a similar relationship between psychopathy and angry or reactive types of aggression. The authors coded “antiauthoritarian” (aggression when given an order, thwarted or chastised) as one of the most frequently committed types of misconduct of psychopaths.

Most research indicates that psychopathy is related to the use of instrumental aggression. Psychopaths use more threats and weapons than non-psychopaths and have

distinct motivations such as sadism, or money. Non-psychopathic offenders are more likely to be involved in sexual assault and to know their victims, and they are more commonly motivated by an angry reaction to perceived provocation or jealousy (Cornell et al. 1996; Meloy, 1988, 1992; Serin, 1991; Williamson et al. 1987). However, some inconsistency exists in that some studies have found increased reactive anger and reactive aggression in psychopaths.

#### *Interaction Between Psychopathy Type and Aggression Type*

Patrick & Zempolich (1998) stated that “[c]learer interpretation would be possible if studies...explicitly assessed both components of psychopathy” (p. 331). Research has not considered the relationship between the two types of psychopathy and the two types of aggression. The inconsistency in the literature suggests the possibility of an interaction effect. Primary psychopaths, posited to experience less emotionality, anxiety and fear, and to be more calculating, may utilize instrumental violence to a greater extent than secondary psychopaths. Secondary psychopaths, who experience more anxiety, impulsivity, and attachments to others, may be more inclined towards reactive violence.

No studies have specifically considered this interaction, but the little research that has considered aggression in relation to the factors of the PCL-R offers some support for this hypothesis. Factor 1 is related to conning and emotional detachment, so individuals with high Factor 1 scores should be less prone to angry and violent reactions and more likely to aggress for instrumental purposes. Factor 2 is related to anxiety, poor behavioral controls and impulsivity, suggesting a tendency to use reactive or angry aggression (Patrick & Zempolich, 1998). Hart and Dempster (1997) used hierarchical regression to

consider the unique relationship between the factors of the PCL-R and types of violent offenses. Factor 1 was related to instrumental offenses that were planned and goal-directed, while people high on Factor 2 committed more spontaneous offences against victims known to them. In the second study by Cornell et al. (1996) instrumental offenders had higher scores on both factors of the PCL-SV (the authors indicated conservative rating on the personality-based items such as “superficial charm” and “shallow-affect” so there may be less people with high factor 1 scores). In Pulkinnen’s (1987) study of juvenile offenders, offensive aggression (instrumental aggression) was more stable across time and more predictive of later criminal behavior than defensive (reactive) aggression. This study indicates that instrumental aggression may be related to personality traits and more indicative of serious pathology.

The studies that have considered the relationship between the factors of psychopathy and the types of aggression give rise to hypotheses about how primary and secondary psychopaths might differ in their use of aggression. It appears that instrumental aggression may be more related to the personality features of psychopathy as measured by Factor 1. It is reasonable to predict then that primary psychopaths, who are higher on Factor 1 than non-psychopaths and, demonstrate low anxiety and guilt, and a deficiency in the BIS, would be more likely to engage in aggressive behavior in the pursuit of personal goals. It is also reasonable to propose that secondary psychopaths, those with high Factor 2 scores, more anxiety and impulsivity, and an overactive BAS, might be more reactive to provocation and act aggressively out of anger.

## The Assessment of Psychopathy in Non-Institutionalized Samples

Multiple measures of psychopathy have been compared (Hare, 1985) and correlations between various indices of psychopathy tend to be low (Hare, 1985; Hundleby & Ross, 1977; Newman et al., 1985). The PCL-R is the gold standard for the measurement of psychopathy in correctional and forensic populations, but it is not without its shortcomings. The PCL-R is resource intensive, requires several hours for completion, requires specialized training and is limited to use with institutionalized populations for which there is access to files of past behaviors. The PCL-R was developed using incarcerated populations (Hare, 1991) and previous research has been limited to institutionalized samples and drug and alcohol abusers. There are questions about the applicability of PCL to non-institutionalized populations (Widom, 1977). The antisocial behavior features of Factor 2 were not part of Cleckley's original conceptualization of psychopathy and make the PCL-R ill-equipped to identify successful psychopaths lacking a criminal history (Lilienfeld & Andrews, 1996). The PCL-R's emphasis on items assessing criminality also makes criterion contamination an issue when scores on this measure are used to consider the relationship between psychopathy and violence (Patrick and Zempolich, 1998).

### *Self Report Measures*

Self-report measures alleviate the time and training issues of the PCL-R, but conventional measures are also problematic. Self-report indices from general personality inventories, such as the scale 4 (psychopathic deviate) and 9 (mania) of the MMPI and the [So] scale of the CPI, have been shown to be related primarily to Factor 2 of the PCL-

R (Harpur et al, 1989). However, these scales typically correlate poorly, or not at all, with Factor 1. In other words, they are inadequate measures of the core personality features of psychopathy identified by Cleckley (1976).

Newer self-report measures have been developed that are based on Cleckley's conceptualization of psychopathy and do not simply measure past antisocial behavior or violence. Several scales have been developed, including the Levenson's Psychopathy Scale (LPS; Levenson, Kiehl, & Fitzpatrick, 1995), the Psychopathic Personality Inventory (PPI; Lilienfeld and Andrews, 1996), the Psychopathy Checklist: Short Version (PCL:SV; Forth, Brown, Hart, & Hare, 1996), and Hare's (1985) Self Report Psychopathy Scale (SRP-II). Self-report measures, with the exception of the PCL:SV<sup>10</sup> conceptualize psychopathy as dimensional, where higher scores are indicative of more psychopathic traits. Using this methodology psychopathy can be investigated in non-institutionalized samples (Levenson et al., 1995; Zagon & Jackson, 1994).

#### *Studies of Psychopathy Using Non-Institutionalized Samples*

Several self-report measures of psychopathy have been developed using non-institutionalized samples. In developing the considered psychopathic traits in male and female college students and found a two-factor solution similar to the PCL-R. However, both scales have been found to correlate with antisocial behavior. Lilienfeld and Andrews (1996), developed a self-report measure of psychopathy and tested it on university samples as well. They used two male samples (n=241 and 253 respectively),

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<sup>10</sup> The PCL:SV requires a file review, similar to the PCL-R and therefore is not easily used in community samples.

and a combined gender sample (n=610). A factor analysis of the PPI indicated eight discrete dimensions of psychopathy. In a study by Forth, et al. (1996), using the PCL-SV with 150 college students, the two-factor solution was not identified. Less research is available with the SRP-II, however, Zagon and Jackson (1994) conducted a study to consider the construct validity of Hare's (1985) SRP-II. No factor analysis was conducted (Wilson et al., 1999), therefore this measure does not fit the two factor model proposed by theory.

Levenson, (1992) commented that one of the difficulties in developing a self-report measure of psychopathy is targeting Factor 1 traits in a sample that is unlikely to have a clinically significant level of these traits. The difficulties are consistent with the problems inherent in earlier measures of psychopathy by self-report. However, although the base-rate in college samples for some psychopathy items is low (especially Factor 1), studies have found enough responses and variability to allow for interpretation (Levenson et al 1995). With a low base-rate, these scales consider psychopathy on a continuum. In this manner, the relative strength of psychopathic traits is considered rather than assigning a cut-off score that deems someone psychopathic. So while the newer self-report measures of psychopathy have not alleviated the difficulties involved in the measurement of psychopathy in non-institutionalized samples, some of them appear to be adequate research measures of psychopathic features.

## CURRENT STUDY

This study used cluster analysis to identify groups of individuals who differ on psychopathic features and to investigate whether those groups differ in the use of instrumental versus hostile aggression. As this study utilized a non-institutionalized sample of college students, cluster analysis was used to identify sub-clinical variants of psychopathy within the sample.

Within the psychopathy literature, theories have been posited regarding the existence of subtypes with differing etiologies and correlates. Cleckley described primary psychopaths as lacking nervousness and Karpman (1941) described secondary psychopaths as having an underlying neurotic urge and a tendency to act impulsively. Primary psychopaths plan their behaviors whereas secondary psychopaths are more impulsive. Lykken (1995) postulated that a constitutional deficit exists for psychopaths, and Fowles (1980) related that deficit to Gray's (1985) BIS/BAS model. These authors believe that primary psychopaths may have an under active BIS and that secondary psychopaths may have an overactive BAS. The current study combined these theories into a model to use for cluster analysis. As such, the choice of clustering variables was dictated by the etiological theories proposed.

The LPS (Levenson et al, 1995), the BIS/BAS scales (Carver & White, 1994) and the State Trait Anxiety Inventory (STAI; Spielberger et al., 1970) trait scale were included as clustering variables to explore for subtypes analogous to primary and secondary psychopathy. It was not anticipated that there would be a large number of true clinical psychopaths within the sample, however, since psychopathy is measured dimensionally on the LPS, participants in

the sample could be identified that display sub-clinical levels of psychopathic traits. Existing data indicates the existence of psychopathy in correctional samples and most of the previous research has focused on examining psychopathy in correctional or forensic samples. However, while the literature discusses the existence psychopathy in non-institutionalized populations, there is little empirical evidence to support these theories. There are clinical anecdotes and a few studies that indicate the existence of a parallel construct in non-forensic groups.

Additionally, many theories of psychopathy indicate that there are “successful” psychopaths outside of forensic settings. For example, Lykken (1995) states that while psychopathic traits may incline someone towards criminal behavior, many factors may keep that person out of prison. The existence of psychopathy in non-institutionalized populations and the concept of the “successful” psychopath needed further exploration. The current study used college students in an effort to provide evidence of psychopathy in non-institutionalized populations and to identify subclinical or “successful” psychopaths.

Although several other self-report measures are available, the LPS was chosen for several reasons. Thus far, studies have not concentrated on the relationship between instrumental and reactive violence and the two aspects of psychopathy in student or community samples. Given the different correlates of the factors, more research is needed in this area (Harpur et al., 1989, Patrick, 1994, 1995, Kossen et al., 1997). The LPS is the only self-report measure that has reliably demonstrated a two-factor solution consistent with the theories for primary and secondary psychopathy<sup>11</sup>. Additionally, several studies have used this measure in

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<sup>11</sup> Since the proposal of this paper, Benning, Patrick, Hicks, Blonigen, & Krueger have found a two-factor



college samples and found it was similarly related to variables that have been correlated with the PCL-R in forensic samples (Lynam et al., 1999; McHoskey, Worzel, & Szyarto, 1998). The PPI was administered as a construct validation measure for the LPS, with the hope that there would be a significant positive correlation between the two measures to confirm that the LPS is measuring a construct analogous to psychopathy.

Most of the research on psychopathy has been conducted solely with male samples. Women were not used in this study because there is concern that the current conceptualization of psychopathy may not capture psychopathic features as they are manifest in women (Hamburger, Lilienfeld & Hogben, 1996). In previous studies of non-institutionalized samples (Lilienfeld & Andrews, 1996), that utilized men and women, men were found to have considerably higher levels of psychopathy (Levenson et al., 1995). Additionally, at the time that the earlier research was taking place, there was no research from which to base predictions or hypotheses for outcome with women. Due to these concerns and the possibility that additional variability due to gender may cause problems in the cluster analysis results, women were excluded from the study.

There is limited data regarding psychopathy and racially or ethnically diverse populations. For the most part, previous research has used racially homogeneous samples of Caucasian males. Therefore, it was difficult to predict how racially or ethnically diverse subjects would perform. However the LPS was developed using a racially heterogeneous group of student subjects (Levenson, et al., 1995). Since the university population is

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solution for the PPI.

heterogeneous, this study utilized whatever composition of subjects was available.

## Hypotheses

### *Cluster Analysis*

A person centered cluster analysis was conducted and was expected to yield 4-6 clusters. Upon examination, two clusters were expected to be representative of or similar to primary psychopathy and secondary psychopathy. Figure 2 depicts the expected variable profiles of these clusters.

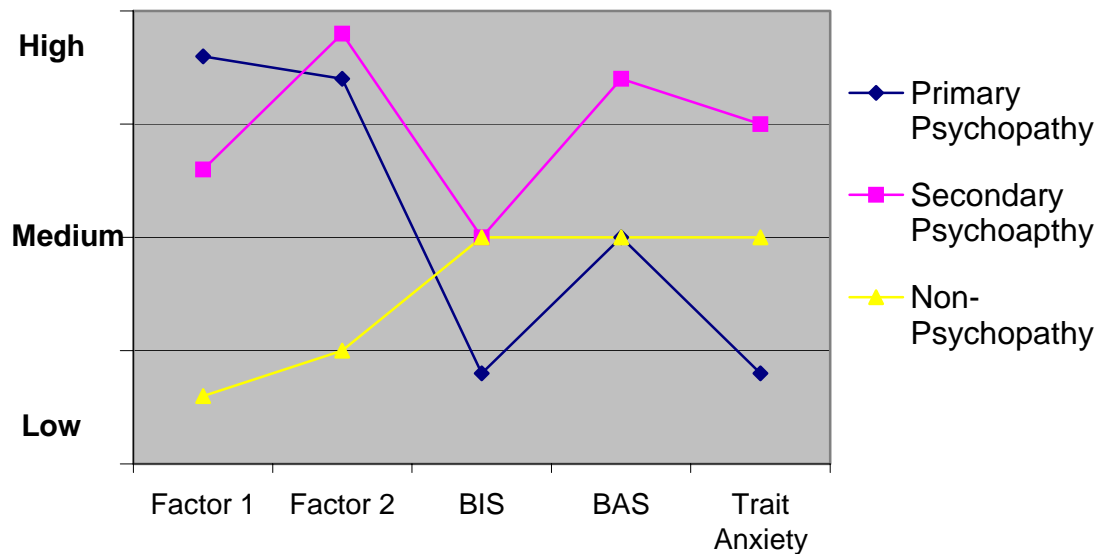


Figure 2. Profiles of the three main proposed clusters of psychopathy.

- a. LPS results - Those participants in both the psychopathy groups were expected to have higher scores on both Factors of the LPS than non-psychopathy groups. Those in the primary psychopathy group were expected to have high scores on Factor 1 and moderate to high scores on Factor 2 of the LPS. Those in the secondary psychopathy cluster were expected to have higher scores on Factor 2 than Factor 1 of the LPS.
- b. BIS/BAS results - The primary psychopathy group was expected to have low scores on the BIS scale and normal scores on the BAS measure. Those in the secondary psychopathy group were expected to have high scores on the BAS measure and normal scores on the BIS scales<sup>12</sup>.
- c. STAI trait scale results - Those participants in the primary psychopathy group were expected to have lower scores on the STAI trait scale, while those in the secondary group were expected to score higher on the STAI trait scale.

### *Aggression Hypotheses*

These empirically derived clusters were to be used to predict aggression as measured by the Aggression Questionnaire (AQ; Buss & Perry, 1992), and use of hostile and instrumental aggression using a modified version of the coding guide for violent incidents (Cornell et al., 1996). This coding guide is used to rate specific aggressive

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<sup>12</sup> McHoskey et al. (1998) found that college students with high scores on both the BIS and BAS scales had the highest secondary psychopathy scores on the LPS, so a secondary hypothesis was that the secondary psychopathy cluster may have high scores on both the BAS and the BIS scales.

events as primarily reactive or instrumental in nature. The particular hypotheses were as follows:

- a. Higher aggression scores on the AQ for the psychopathy clusters than the non-psychopathy clusters.
- b. The primary psychopathy group, because of their cunning and manipulative means of attaining their goals, were expected to be rated as using more instrumental aggression. The secondary group, because of their greater susceptibility to stress and higher degree of impulsivity were expected to use more hostile or reactive aggression. No research is available on type of aggression expected by the non-psychopathy groups, however given the hypothesis that instrumental aggression is indicative of more severe pathology, it is expected that the non-psychopathic groups will use more hostile aggression.

## Methods

### *Participants*

The participants were 96 male college students in psychology classes from the University of South Florida who participated in the study for extra credit points. The ages of the participants ranged from 18 to 46 years old (M: 21.46, SD: 4.56). The sample was racially diverse with 59.4 % (n=57) Caucasians, 20.8 % (n=20) African Americans, 19.8 % (n=19) from other racial backgrounds, and 1% who did not indicate their racial group. As for ethnicity, 12.4% (n=12) of the sample was Hispanic, 54.6% (n=53) categorized

themselves as other, and 33% (n=32) of the sample did not specify their ethnic group. Most of the participants were single, (93.8%, n=90), 4.1% (n= 4) were married, and 2.1% (n=2) were divorced. The sample's socio-economic status was skewed toward the upper range of the spectrum with 48.5% (n=47) belonging to families with incomes of \$60,000 or more, and 59.8% (n=58) of whose family income was over \$40,000. On the other extreme, a total of 19.6% (n=19) of participants came from families with incomes under \$19,000, including 11.3% (n=11) of the sample who reported incomes under \$9,000, which put them under the poverty level.

### *Measures*

Basic demographic information on each participant was obtained from a self-report demographics form. This form included psychosocial history data (see Appendix A).

#### Predictor and Clustering Measures

*Levenson's Psychopathy Scale (LPS; Appendix B)*. Levenson et al. (1995) created the 26-item Primary (16 items) and Secondary (10 items) psychopathy scales in order to assess Factor 1 and Factor 2, respectively, of the PCL-R in non-institutionalized groups. The Primary scale measures callous, selfish and manipulative attitudes and the Secondary scale targets more behavioral features such as impulsivity, lack of long term goals, low frustration tolerance and self-defeating tendencies. The factor analytically-derived scales consider psychopathic traits and behaviors that non-forensic samples might endorse.

Levenson and colleagues (1995) developed their measure using 487 undergraduate students. The two scales were correlated at  $r = .40$  (consistent with Hare's

findings with the PCL-R;  $r = .50$ ) and the coefficient alphas for the scales were .82 (Primary) and .63 (Secondary). Both scales were significantly correlated with antisocial behavior at .44 (Primary) and .29 (Secondary). As hypothesized, primary psychopathy was weakly related to trait anxiety and Secondary Psychopathy was significantly correlated with trait anxiety. Both scales were significantly related to disinhibition and proneness to boredom, with no correlations with sensation seeking. These findings have been replicated by McHoskey et al. (1998) and Lynam et al. (1999). Lynam and colleagues (1999) found that high scorers on the LPS reported more serious, and a greater variety of, antisocial behaviors over their lifetime as well as over the previous year. Test-retest reliability over an average interval of eight weeks was .83. With minor modifications, the two-factor solution was replicated in college students (Lynam et al., 1999).

*Behavioral Inhibition System/Behavioral Activation System Scales (BIS/BAS; Appendix C).* Carver and White (1994) began the development of the BIS/BAS scale by generating a pool of items reflecting BIS or BAS sensitivity and the role of these systems in generating emotional responses. BIS items consisted of asking people about responses to potentially punishing events. BAS scale items ask about “strong pursuit of appetitive goals...responsiveness to reward...a tendency to seek out new and potentially rewarding experiences” (p.322). Factor analysis of responses by 732 university students revealed four scales: the BIS scale, consisting of 7 items and three-BAS related scales — Drive (4 items); Reward Responsiveness (5 items); and Fun Seeking (4 items).

Correlations between the BIS and the three BAS scales were low, providing support for

the independence of the systems (-.12, -.08, .28). At the same time, the three BAS scales were positively correlated with each other, ranging from .34 to .41. Internal consistency as measured by coefficient alpha ranged from .66-.76, and test-retest reliability (8 week interval) ranged from .59 (Reward Responsiveness) to .69 (Fun Seeking). In the current study, as in McHoskey et al. (1998) the BAS scale total was calculated by summing scores for the three BAS scales.

*State-Trait Anxiety Inventory (STAI; Spielberger et al., 1970; Appendix D).* The STAI consists of two 20-item scales. The state scale examines the current anxiety functioning and asks people about how they feel at the time they are completing the questionnaire. The trait scale considers long-term manifestations of anxiety and asks people about how they typically feel. A study by Gaudry, Vagg, & Spielberger (1975) indicated excellent internal consistency, high retest reliability, and construct validation. Concurrent validity for the trait anxiety scale is demonstrated by the correlations from .70-.85 (college students and neuropsychiatric patients) with the Taylor Manifest Anxiety Scale (Taylor, 1953) and the Anxiety Scale Questionnaire (Cattell & Scheier, 1963). Patients with anxiety neurosis also had higher scores on the trait scale than other types of patients (Spielberger, 1985). Similarly, those in stressful situations score higher than when they are relaxed (Spielberger et al., 1970).

#### *Validation Measures*

*Aggression Questionnaire (AQ; Appendix E).* Buss and Perry (1992) developed the AQ in an effort to address the weaknesses of the older Buss Durkee Hostility Inventory (BDHI; Buss & Durkee, 1957). Most importantly, Buss and Perry noted that

the standards for constructing questionnaires at the time the BDHI was developed were less stringent than today's standards. The AQ item set was administered to three groups of college students (612 men and 641 women) who rated the items on a scale from 1 (extremely uncharacteristic of me) to 5 (extremely characteristic of me). Factor analyses of these initial samples resulted in a four factor solution for the AQ: physical aggression, verbal aggression, anger, and hostility. Twenty-nine items were retained which met the criteria of loading above .35 on one factor and less than .35 on the other factors. The internal consistencies of the total score and the individual factors were evaluated using coefficient alpha and found to be satisfactory (Total score, .89; Physical Aggression, .85; Verbal Aggression, .72; Anger, .83; and Hostility, .77). Satisfactory test-retest correlations (.72-.80) for 372 of the original subjects were obtained over a 9-week interval.

*Aggressive Incidents Coding Form (Adapted from Cornell et al., 1996; Appendix F).* Previous research on the relationship between psychopathy and hostile versus instrumental aggression has been conducted using only forensic populations. The outcome measure in those studies was the type of crime committed, and the rating scale developed by Cornell et al. (1996) was used to determine whether an aggressive act was instrumental or hostile/reactive. In the current study, participants reported acts of aggression and trained raters assessed these incidents on five different aspects of aggression that are believed to be related to instrumental and hostile aggression: Planning, Goal Directedness, Provocation, Arousal, and Relationship to Victim. Raters



used these scales to classify each past aggressive incident as either reactive or instrumental.

*Psychopathic Personality Inventory (Lilienfeld & Andrews, 1996; Appendix G).*

The PPI was developed to measure the core personality features of psychopathy in non-institutional populations. A literature review revealed 24 focal constructs relevant to psychopathy, and all were included in the original items of the scale. A series of studies with undergraduates yielded the final 187-item measure. Items are rated on a four point Likert-type scale with 1 being false, 2 being mostly false, 3 being mostly true, and 4 being true. Factor analysis revealed the eight subscales shown in Table 4, plus three validity scales designed to assess response styles. The Variable Response Inconsistency scale (VRIN) assesses how consistently respondents answer items that have similar content. The Deviant Responding (DR) scale is designed to consider random or careless responding, which is thought to be indicative of malingering. The Unlikely Virtues scale is from Tellegen's Multidimensional Personality Questionnaire (MPQ, 1982), which assesses impression management and social desirability in responding.

In multiple samples the PPI has demonstrated excellent psychometric properties. Internal consistency was excellent for both the total (from .90-.93) and the subscales (.70-.90). Test-retest reliability was also very good. With an average of 26 days between testing, the correlations for the subscales ranged from .82-.94 and for the test-retest reliability for the Total scale was .95. The construct validity has been demonstrated through positive correlations (.37-.91) with other self-report psychopathy measures, and

interview-based as well as interview rated measures of antisocial personality features (.59, .60, respectively).

Table 4

*Subscales of the PPI*

Machiavellian Egocentricity	An orientation of “ruthless practicality” and manipulateness in relationships with others
Social Potency	A tendency to be charming and adeptness at influencing others
Cold-heartedness	A propensity toward callousness, guiltlessness, and unsentimentality
Carefree Nonplanfulness	The nonplanning component of impulsivity
Fearlessness	Absence of anticipatory anxiety concerning harm, and eagerness to take risks
Blame Externalization	Tendency to blame others for one’s difficulties and to rationalize one’s misbehavior
Impulsive Nonconformity	Reckless lack of concern regarding social mores
Stress Immunity	Absence of marked reactions to anxiety provoking events

*Procedures*

Students in classes offering extra credit points for research study participation were invited to volunteer for the current study. Consent of participants was obtained using procedures approved by the University Institutional Review Board. The consent form explained the procedures of the study and provided information about confidentiality and the voluntary nature of the study. Upon recruitment into the study each student completed the demographics form first. The personality and psychopathy measures were given next (LPS, PPI, BIS/BAS scale, STAI). The aggression questionnaires were

administered last so that the aggression questions did not influence the answers on the psychopathy questionnaires. The final questionnaires were the AQ, and the aggression incidents reporting form, given in that order. The AQ asks specific questions about aggression and it was anticipated that those questions would prime the participants to think of aggressive incidents from their past, and therefore help them in completing the aggression reporting form. Administration time took approximately 1 hour.

Participants were next asked to report on previous acts of aggression. After reporting past acts of general aggression, participants were specifically asked to report any acts of instrumental aggression. For the purpose of this study instrumental aggression was defined as an act committed “for a clearly identifiable purpose other than responding to provocation or frustration.” (Cornell, et. al, 1996, p. 785), while reactive/angry aggression was defined as an act that was considered a “reaction to a dispute or interpersonal conflict with the victim” (Cornell, et. al, 1996, p. 785).

Cornell et al, (1996) distinguished between various aggression characteristics relevant to the distinction between instrumental and reactive aggression. The characteristics were, (a) planning, (b) goal-directedness, (c) provocation, (d) anger, and (e) victim relationship.

Three raters (undergraduate and graduate research assistants in a research lab focusing on aggression) were trained on the rating scale designed by Cornell et al (1996). Three pilot cases were chosen for training the raters and all raters agreed on the ratings for the test cases. Participants were classified as instrumental or reactive aggressors based on their report of past aggressive incidents. The coding scheme that was

established for this study (based on Cornell et al, 1996) had raters code each act on five characteristics, which were used to help inform the decision about reactivity versus instrumentality. Based on previous research (Cornell et al., 1996), instrumental aggression is presumed to be a rare occurrence, and therefore any subject who reported instrumental aggression was placed in the Instrumental Group. If all reported acts were rated as reactive then the participant was placed in the Reactive group. Two raters independently rated all participants as Instrumental aggressors or Reactive aggressors, and a third rater was employed as a tie breaker for the cases where the primary raters did not agree.

## Analysis

### *Cluster Analysis*

The software package *mclust*, which is integrated into the computer program S-Plus, was utilized for cluster analyses (Fraley, 1998). The Statistical Package for the Social Sciences (SPSS/Graduate Pack 11.0 for Windows) was used for all preliminary and follow-up analyses.

Cluster analysis identifies patterns of association among variables and creates subgroups in samples. Cluster analysis is indicated when correlations alone may not capture the “true underlying structure of the data” (Rapkin & Luke, 1993, p. 252). Cluster analysis identifies cases in a sample with similar scores on all variables of interest and puts them together to form clusters or subgroups of cases (Rapkin & Luke, 1993). The clusters that emerge can be characterized by their profile of mean scores on each variable (Aldenderfer & Blashfield, 1984). Cluster analysis places no restrictions on the

number of variables used to create the profiles, suggesting that the selection of five variables for the present study was acceptable.

The cluster analysis was conducted following a series of steps suggested in the literature (see Rapkin & Luke, 1993). First, the scores on the predictor variables were standardized. An agglomerative hierarchical method was used with this data. This method was selected as it does not require pre-specification of the number of clusters to be considered for the analysis. The agglomerative hierarchical approach initially treats all cases as separate. Cases are combined (or agglomerated) into clusters based on their similarity of ratings on all five of the predictor variables. This method produces non-overlapping clusters (Blashfield & Aldenderfer, 1988; Rapkin & Luke, 1993). The hierarchical agglomerative method can use different methods to determine the structure of the data. Model-based cluster analysis is a type of hierarchical clustering that is based on the “assumption that the data are generated by a mixture of underlying probability distributions;” (Insightful Corporation, 1988-2001, p. 141) where each person is assumed to belong to a number of subpopulations. A fit criterion is used to estimate how many subpopulations exist within the sample population, which participants belong to which clusters, and the mean vector and covariance matrix for each subpopulation. Multiple models are generated, each with different assumptions about the size, shape, distribution and orientation of clusters. In order to determine the best model, an index of fit is calculated and goodness of fit is determined (Average Weight of Evidence; AWE statistic).

Six different models are tested in model based clustering, each with different

assumptions about the covariance matrices, and the assumptions determine the characteristics that determine the shape and structure of the data (see Fraley, 1998 for a more detailed discussion of the assumptions). One characteristic, the *size* of the distribution, which is indicated by the largest eigenvalue, specifies the variances and covariances of the covariance matrix. The second characteristic specifies the *shape* of the distribution, and is ratio of the eigenvalues to the highest eigenvalue. The eigenvectors of the covariance matrix, specify the third characteristic; *orientation* (Insightful Corporation, 1988-2001, p. 142).

The six alternative models are determined by variably constraining these characteristics. As shown in Table 5, the Sum of Squares model assumes the distributions of the clusters are all the same size and are spherical in shape. The Spherical model allows the size to vary across clusters, but again holds the shape constant as spherical. The Determinant model constrains the size and orientation of the clusters, and restricts the shape to be ellipsoidal. The S model holds the size constant and constrains the shape to ellipsoidal, but allows the clusters to differ in orientation. The S\* model assumes ellipsoidal shape but allows the orientation and size to vary across clusters. Finally, the Unconstrained model allows the size, shape, and orientation of the clusters to vary.

In order to determine the best number of clusters for a sample, the fit of each model is evaluated by using the Bayesian Information Criterion (BIC) which specifies the odds that one model is the best fit compared to the other models. There are several benefits of using a goodness-of-fit index such as BIC, including the ability to select the

Table 5

*Model-based clustering criteria with corresponding assumptions*

Criterion	Reference	Shape	Orientation	Size
Sum of Squares	Ward (1963)	Spherical	None	Same
Spherical	Banfield and Raferty (1992)	Spherical	None	Different
Determinant	Friedman and rubin (1967)	Ellipsoidal	Same	Same
S	Murtagh and Raferty (1984)	Ellipsoidal	Different	Same
S*	Banfield and Raferty (1992)	Ellipsoidal	Different	Different
Unconstrained	Scott and Symons (1971)	Ellipsoidal (can vary)	Different	Different

Note. Table adopted from S-Plus 6 for Windows Guide to Statistics (Insightful Corporation, 1988-2001).

optimal solution, removing much of the subjectivity otherwise involved in selecting a cluster solution, and allowing for testing multiple models without the models having to be nested. The AWE statistic is an approximation of the BIC factor, and larger AWE values indicate more evidence for that particular number of clusters. Negative values indicate

no evidence for that particular number of clusters. The difference between AWE values relates to the posterior odds, or the ratio of the probability that one model is correct over the probability that another model is correct. A difference of 10 indicates that the odds are 150:1 that the model with the higher value is the better fitting model. Raftery (1995) suggests that a difference of 10 is a very strong indicator that the model with the higher values is a better fit.

Whereas some clustering programs attempt to force all subjects into clusters, *mclust* includes a “robust clustering” option (Noise T) that permits individual “outliers” to be identified and to remain apart (i.e., as 1-member clusters) from primary clusters in seeking the optimal solution. In the present study, an initial analysis using robust clustering revealed that no individuals were considered to be outliers. Therefore, the standard *mclust* method (Noise F) for clustering participants was used to derive clusters. The five clustering variables (LPS Primary, LPS Secondary, BIS, BAS, and STAI) were used for the cluster analysis and all six models were fit. Participants with similar scores on all of the variables were grouped together in the same cluster.

A one-way MANOVA was conducted as a follow-up to the cluster analysis to consider the differences between the clusters on the clustering variables. ANOVA were used as follow-up tests to consider the between-groups effects on the individual variables. Post hoc analyses of the univariate ANOVA were conducted using the Bonferoni method to compare the clusters on each of the clustering variables.

#### *Aggression Analyses*

Once the sample was combined into the appropriate clusters, a series of analyses



were conducted comparing the profiles/clusters on the dependent/outcome variables: self-reported aggression (AQ scores), and type of aggression perpetrated (hostile or instrumental aggression). A one-way ANOVA was used to consider the between-cluster differences on aggression. Post hoc analyses of the univariate ANOVA were conducted using the Bonferoni method. A 2 by 2 contingency table analysis was used to evaluate if a statistical relationship exists between type of aggression and subtype of psychopathy. The two types of aggression, reactive and instrumental, were represented in the two columns of the table. The number of rows was determined by the number of clusters that indicate psychopathic traits. A Chi-square analysis evaluated the heterogeneity of the clusters, by considering the proportion of participants in the different clusters that have committed instrumental versus reactive aggressive acts. Follow-up tests, or pair-wise comparisons, that are conceptually similar to post hoc tests for Analysis of Variance, were conducted for closer analyses on the differences detected between the clusters (Green, Salkind, & Akey, 2000).

## RESULTS

The Statistical Package for the Social Sciences (SPSS/Graduate Pack 11.0 for Windows) was used for all preliminary and follow-up analyses. The software package *mclust*, which is integrated into the S-Plus statistical package, was utilized for cluster analyses (Fraley, 1998).

For clarity, the results section is divided into three main sections -- preliminary analyses, aggression coding and primary analyses. Preliminary analyses included the assessment of protocol validity, a description of the scales and the interrelationships between the variables used in the study. The next section of the results includes the coding of aggressive acts and comparisons between the aggression groups on Levenson's Psychopathy Scale (LPS) and subscales (Primary psychopathy and Secondary psychopathy). The primary analyses are divided into three parts: a) The cluster analysis section presents results from the first hypothesis regarding the number of clusters resulting from the model-based cluster analyses; b) The cluster comparisons section presents results from the sub-hypotheses regarding how the clusters compare on the clustering variables of the LPS Primary scale, LPS Secondary Scale, Behavioral Inhibition System Scale (BIS), Behavioral Activation System Scale (BAS) and Trait Anxiety as measured by the State Trait Anxiety Inventory (STAI); and c) The aggression analyses section addresses hypotheses regarding the relationship between the psychopathy clusters and aggression. First, scores on the Aggression Questionnaire (AQ)

Are compared across clusters. Then the prevalence of instrumental (versus reactive) aggression across clusters with different patterns of psychopathic features is examined.

### Preliminary Analyses

#### *Validity*

Protocol validity was determined by using the validity scales of the PPI. Lilienfeld (personal communication, 2002) suggested a cut off point of three standard deviations above the sample mean, where any score above this cut off would be considered invalid. All participants in this sample met this standard and were included in the analyses.

The PPI was developed to measure the core personality traits of psychopathy and was used in this study as a construct validation measure for the LPS. As shown in Table 6, as predicted, the pattern of correlations between these PPI Total and the LPS Total, Primary and Secondary scales respectively, were in the positive direction, ( $r = .49, .49,$  and  $.23$ ).

Table 6.

Pearson Correlations Between all Study Measures

	<b>LPS Total</b>	<b>LPS Primary</b>	<b>LPS Secondary</b>	<b>PPI Total</b>	<b>BIS Total</b>	<b>BAS Total</b>	<b>STAI Trait</b>	<b>AQ Total</b>
<b>LPS Total</b>	1							
<b>LPS Primary</b>	.88**	1						
<b>LPS Secondary</b>	.66*	.23*	1					
<b>PPI Total</b>	.49**	.49**	.23*	1				
<b>BIS Total</b>	.01	-.13	.24*	-.28**	1			
<b>BAS Total</b>	-.02	-.07	.07	.16	.15	1		
<b>STAI Total</b>	.49**	.29**	.55**	.18	.42**	-.03	1	
<b>AQ Total</b>	.58**	.41**	.56**	.38**	.28**	.17	.54**	1

Note: \*Correlation is significant at the 0.05 level (1-tailed).

\*\*Correlation is significant at the 0.01 level (1-tailed).

*Scale Descriptions*

Table 7 presents the means, standard deviations, and ranges of scores on all measures. The scores and distributions obtained in the current study were comparable with those reported in other studies with college student samples for the PPI (Lilienfeld, S.O., personal communication, September 30, 2004), LPS (Levenson, et al., 1995), BIS/BAS (Carver & White, 1994), STAI (Gaudry et al., 1975), and AQ (Buss and Perry, 1992).

Table 7

*Means, Standard Deviations, and Ranges on Measures*

<b>SCALE</b>	<b>Mean</b>	<b>Std. Deviation</b>	<b>Range</b>
<b>PPI</b>	449.84	35.23	373–533 (160)
<b>LPS</b>	52.70	9.45	32–72 (40)
<b>Primary</b>	31.54	7.31	18–47 (29)
<b>Secondary</b>	21.16	4.54	10–33 (23)
<b>BIS</b>	19.29	3.21	12–28 (16)
<b>BAS</b>	41.53	4.58	31–52 (21)
<b>STAI</b>	40.03	9.93	22–66 (44)
<b>AQ</b>	64.65	13.32	37–94 (57)

*Correlation Analyses*

Correlations were calculated among all the measures, and are presented in Table 6. One-tailed tests of significance were used as there were directional hypotheses for specific correlations. Both zero-order and partial correlations were calculated. The Primary and Secondary psychopathy scales of the LPS were significantly correlated with each other ( $r = .23$ ,  $p < .05$ ), but they were expected to have different associations with some criterion measures (e.g., BIS/BAS, STAI). Statistical suppression obscures the differences in the relationships between two related scales and other variables. Therefore, as shown in table 8, to consider the unique sources of variance in the relationships between the psychopathy scales and other variables, partial correlations were conducted controlling for the relationship between the LPS Primary and LPS Secondary scales (McHoskey et al., 1998). Next, T-tests were used to compare

correlations, and differences between relations of the LPS subscales to clustering and aggression variables were calculated (see table 8).

Table 8

*Zero Order and Partial Correlations, and Differences between Correlations*

Measure	LPS Primary Zero Order (Partial)	LPS Secondary Zero Order (Partial)	Test For Differences Between Zero Order Correlations
BIS Total	-.13 (-.20*)	.24* (.28**)	$t(93) = 3.02^{**}$
BAS Total	-.07 (-.09)	.07 (.09)	$t(93) = -1.09$
STAI Trait	.29** (.20)	.55** (.52**)	$t(93) = 2.40^*$
AQ Total	.40** (.33**)	.56** (.53**)	$t(93) = 1.53$

Note: \*Correlation is significant at the 0.05 level (1-tailed).  
 \*\*Correlation is significant at the 0.01 level (1-tailed).

Following the research considering the theories discussed earlier regarding the factors of psychopathy, it was expected that the LPS Primary scale would be negatively correlated with the BIS and unrelated to the BAS. This pattern of correlations was obtained, although the zero-order correlation with the BIS was not significant. However, when the effect of the LPS Secondary scale was removed, the LPS Primary's negative correlation with the BIS became significant. Counter to Hare (1990) and Harpur et al. (1989) findings that Factor 1 was negatively related to anxiety, there was a significant positive correlation between the LPS Primary and the STAI. Removing the effects of LPS Secondary reduced this association from .29 to .20, although this partial correlation

approached significance ( $p = .053$ ). The positive correlation with the AQ scale was consistent with expectations that Factor 1 traits are related to aggressive behavior (Cornell, 1996).

The correlations for the LPS Secondary with the BIS and the BAS did not conform to theoretical expectations. A significant positive association with BAS was not obtained even when the effect of the LPS Primary scale was controlled. The significant positive correlations for LPS Secondary scale with measures of trait anxiety and aggression were positive, as expected, although the positive association with the BIS was not consistent with theory.

Finally, as shown in the right hand column of Table 8, tests for differences between correlations with LPS Primary and LPS Secondary were as expected except for BAS, where the anticipated higher correlation for LPS Secondary was not obtained.

### Aggression

#### *Aggression Coding*

When participants were asked to report acts of aggression, all ninety-six participants reported at least one aggressive act. About 98% ( $N = 94$ ) reported 2 acts, 91% ( $N = 87$ ) reported 3 acts, 70% ( $N = 67$ ) reported 4 acts, and 33% ( $N = 32$ ) reported 5 acts. After reporting past acts of general aggression, participants were specifically asked to report any acts of instrumental aggression, and 51% ( $N = 50$ ) of the participants

reported an additional act of aggression<sup>13</sup>. All reported aggressive acts were determined to be Instrumental or Reactive based on the ratings of two independent judges. When the aggressive acts were coded and rated as either instrumental or reactive aggression, one subject did not provide enough information to be rated and was dropped from the aggression analyses. Of the remaining 95 participants, 38.5% (n=37) of subjects were determined to have used instrumental aggression (Instrumental Aggressors) and 60.4% (n=58) were classified as Reactive Aggressors. Instrumental acts typically took place when “trying to earn the respect” of peer groups, but also were reported for more severe incidents as well. Typically, reactive incidents were arguments with significant others, family members or disputes with strangers or acquaintances. The percent agreement for the two independent raters was 85%, with a Kappa coefficient of .70, indicating a substantial agreement (Landis & Koch, 1977). A third rater was employed as a tie breaker for the cases where the primary raters did not agree.

The two aggression groups were compared on demographic characteristics in order to determine the existence of any potentially confounding variables. Descriptively, the instrumental group was composed of 70.3% (n=26) Caucasians, 18.9% (n=7) African Americans, and 10.8% (n=4) other. The mean age of the instrumental group was 22 years (SD =5.82, range 18-46). One person in the Reactive group did not report his racial group. Of the 57 participants that reported race, the Reactive group consisted of 50% (n=29) Caucasians, 23% (n=13) African Americans, and 26% (n=15) other. Only 57

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<sup>13</sup>Not all of these acts were actually coded as instrumental. Only those that fit the criteria for an instrumental act were coded as instrumental.



participants (98%) in this group reported their age, and of that group the mean age was 21 years (SD = 3.5, range 18-34). Analyses indicated no group differences on age,  $F(1,93) = 1.2$ ,  $p < .28$ , or on racial background,  $\chi^2(1, N = 94) = 4.27$ ,  $p = .12$ , Cramer's  $V = .213$ .

## Primary Analyses

### *Cluster Analyses*

The LPS subscales, together with STAI trait anxiety scale and BAS/BIS variables, were subjected to model-based cluster analyses. Whereas some clustering programs attempt to force all subjects into clusters, *mclust* includes a “robust clustering” option (Noise T) that permits individual “outliers” to be identified and to remain apart (i.e., as 1-member clusters) from primary clusters in seeking the optimal solution. An initial analysis using robust clustering revealed that no individuals were considered to be outliers. Therefore, the standard *mclust* method (Noise F) for clustering all participants was used in calculating the cluster analysis.

Table 9 presents the AWE statistics from the model-based cluster analysis. The best solution was obtained using model S, which assumes the clusters to be elliptical, and lets the orientation vary while holding the size and shape constant. The best fitting model was the four cluster solution (AWE = 602.184). The difference between the AWE values communicates the posterior odds, that is, given the data, the probability that the second model is correct, over the probability that the first model is correct. A difference of at least 10 is very strong evidence of the best fitting model Raferty (1995). This difference reflects an odds ration of 150:1 where the more positive AWE value represents the better

Table 9

*AWE Values for Alternative Cluster Models*

Cluster Characteristics				Number of Clusters								
Model	Shape	Volume	Orientation	1	2	3	4	5	6	7	8	9
S	Ellipsoidal	Same	Different	0	353.93	585.22	602.18	525.72	579.41	428.92	337.42	293.13
Sum of Squares	Spherical	Same	None	0	48.15	43.44	38.94	26.05	13.62	1.02	-18.63	-45.66
Determinant	Ellipsoidal	Same	Same	0	-12.74	3.71	-9.57	-11.23	-32.93	-48.18	-77.12	-106.07
S*	Ellipsoidal	Different	Different	0	-52.41	-100.92	-151.09	-204.06	-262.52	-328.21	-399.6	-465.02
Spherical	Spherical	Different	None	0	-70.94	-144.25	-212.66	-277.16	-342.60	-410.18	-475.42	-536.63
Unconstrained	Different	Different	Different	0	-188.75	-378.78	557.65	-723.33	-890.00	-1058.52	-1221.41	-1373.41

fitting model. In the current study, all other solutions were represented by significantly lower AWE scores ( $AWE < 585.218; -16.966$ ).

Table 10 presents standardized Z-scores ( $m=0, SD = 1$ ) and raw score means for each of the clustering variables, as well as the results of a MANOVA comparing the clusters on each of the clustering variables. Figure 3 illustrates the relative level and shape of the mean z-score profiles for each of the four clusters.

Relative to other participants, those in Cluster 1 had relatively higher scores on the LPS Primary scale, moderate scores on the LPS Secondary scale, and about average scores on the BIS, BAS, and STAI. Although the BIS score is somewhat higher than would be required for a clear match with the theoretical Primary psychopathy profile pattern shown in Figure 1, this group still has the second lowest mean BIS score and the profile is otherwise suggestive of that subtype. Accordingly, those participants were referred to as the *Primary Psychopathic Traits* group. Relative to the other groups, those in Cluster 2 had average scores on the LPS Primary scale and higher scores on the LPS Secondary scale. They also had relatively higher scores on the BIS, BAS, and STAI. The elevated BIS score is inconsistent with the theoretical Secondary Psychopathy profile shown in Figure 2<sup>14</sup>. Accordingly, this group was referred to as the *Secondary Psychopathic Traits* group. The participants in Cluster 3 had relatively lower scores on both psychopathy scales, BIS, BAS, and the STAI, and this group was referred to as the *No Psychopathic Traits–Low Anxiety* group. Finally, those in Cluster 4 had relatively low

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<sup>14</sup> Although, consistent with these data, in a previous study with college students, McHoskey et al. (1998) reported that the highest LPS Secondary scores were associated with elevations on *both* BIS and BAS.

scores on both psychopathy measures, moderate to high scores on the BIS and BAS, but lower scores on the STAI, and were called the *No Psychopathic Traits–Normal Temperament* group.

Table 10

*Differences between the Clusters on Clustering Variables*

Type	Psychopathic Traits				No Psychopathic Traits				F values
	Primary (N=41)		Secondary (N=16)		Low Anxiety (N=13)		Normal Temperament (N=26)		
	Z	raw	Z	raw	Z	raw	Z	raw	
<b>LPS Primary</b>									
M	.69	36.56	-.01	31.44	-.32	29.23	-.92	24.85	F(3,92) = 24.77**, eta square = .45
SD	.74	5.4	1.04	7.60	.81	5.9	.51	3.72	
<b>LPS Secondary</b>									
M	.32	22.61	.68	24.25	-.90	17.08	-.48	19.00	F(3,92) = 12.84**, eta square = .30
SD	.87	3.9	.79	3.6	.91	4.1	.84	3.8	
<b>BIS Total</b>									
M	-.17	18.73	1.06	22.69	-1.17	15.54	.21	19.96	F(3,93) = 20.39**, eta square = .40
SD	.77	2.5	.71	2.3	.84	2.7	.84	2.7	
<b>BAS Total</b>									
M	-.09	41.10	.53	43.94	-.45	39.46	.05	41.77	F(3,93) = 2.63, p = .06, eta square = .08
SD	.98	4.5	1.0	4.7	.76	3.5	1.03	4.7	
<b>STAI Trait Anxiety</b>									
M	.13	41.32	1.13	51.25	-.92	30.92	-.44	35.65	F(3,93) = 19.64**, eta square = .39
SD	.69	6.9	1.04	10.3	.65	6.4	.84	8.3	

Note: \*Significant at the 0.05 level.  
 \*\*Significant at the 0.01 level

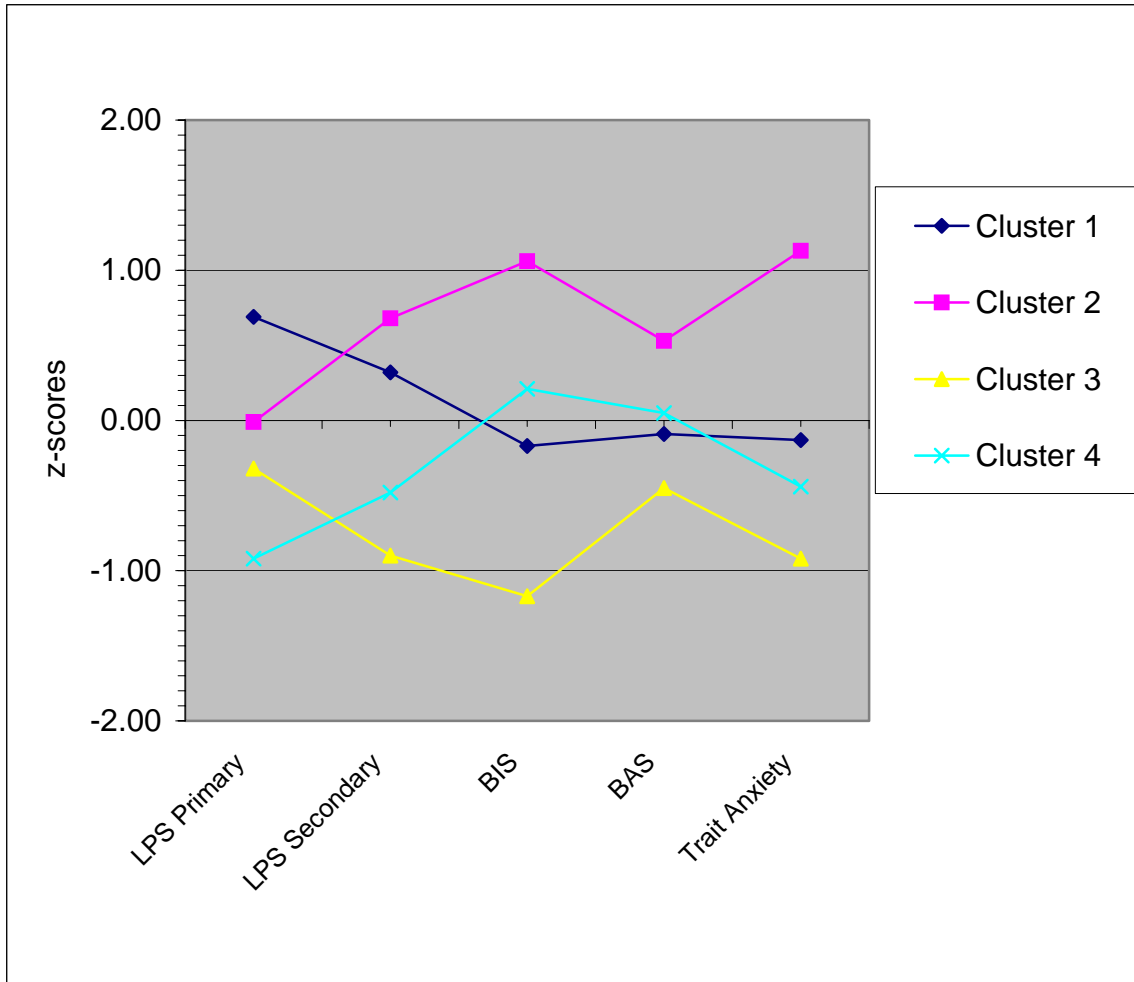


Figure 3. Mean Z-Scores for Four Clusters

Table 11 reflects the demographic characteristics of the four clusters. The *No Psychopathic Traits–Low Anxiety* ( $n = 13$ ) had one participant that did not report his racial group and in the *No Psychopathic Traits–Normal Temperament* ( $n=26$ ), one participant did not report his age. Also, as shown in Table 11, the 4 clusters were compared on demographic characteristics. ANOVA results indicated no group differences on age,  $F(3,94) = .336, p = .80$ . However, there were differences in racial diversity,  $\chi^2(6, N = 95) = .13.06, p = .042$ , Cramer's  $\underline{V} = .26$ , with different racial

compositions between Clusters one and four  $\chi^2 (2, N = 67) = 7.09, p = .03$ , Cramer's  $\underline{V} = .33$ .

Table 11

*Demographic Characteristics of Four Clusters*

Cluster	N	Age	Race
<b>Primary Psychopathic Traits (cluster 1)</b>	41	Mean = 21.3 SD = 3.72 Range 18-34	Caucasian = 63.4% (n=26) African American = 26.8% (n=11) Other = 9.8% (n=4)
<b>Secondary Psychopathic Traits (cluster 2)</b>	16	Mean = 20.6 SD = 1.86 Range 18-25	Caucasian = 62.5% (n=10) African Americans = 6.3% (n= 1) Other = 31.3% (n=5)
<b>No Psychopathic Traits–Low Anxiety (Cluster 3)</b>	13	Mean = 21.6 SD = 6.27 Range 18-42	Caucasians = 46.2% (n=6) African American = 38.5% (n=5) Other = 7.7% (n=1)
<b>No Psychopathic Traits–Normal Temperament (Cluster 4)</b>	26	Mean = 22 SD = 5.94 Range 18-46	Caucasian = 53.8% (n=14) African American = 11.5% (n= 3) Other = 34.6% (n=9)
		F(3,94) = .336, p = .80	$\chi^2 (6, N = 95) = .13.06, p = .042$ , Cramer's $\underline{V} = .26$ ,

A one-way MANOVA was conducted to consider the differences between the clusters on the dependant variables, LPS Primary, LPS Secondary, BIS, BAS, and STAI. The omnibus test showed significant differences between the clusters on the dependant variables, Wilks' = .214,  $F (15,243) = 12.14, p < .001$ , eta squared = .40. ANOVA were used as follow-up tests to consider the between-groups effects on the individual variables. Post hoc analyses of the univariate ANOVA were conducted using the Bonferoni method

to compare the clusters on each of the clustering variables. As shown in Table 10, all main effects were significant except for the BAS. The main effect for LPS Primary was significant,  $F(3,92) = 24.77$ ,  $p < .001$ ,  $\eta^2 = .45$ , where the *Primary Psychopathic Traits* group had a higher mean than all other clusters. The *Secondary Psychopathic Traits* group was statistically similar to the *No Psychopathic Traits–Low Anxiety* group. The *No Psychopathic Traits–Normal Temperment* group was significantly lower than the other clusters on the LPS Primary scale.

The main effect for the LPS Secondary was significant,  $F(3,92) = 12.84$ ,  $p < .001$ ,  $\eta^2 = .30$ . However, unlike the LPS Primary, there was no significant difference between the *Primary Psychopathic Traits* group and the *Secondary Psychopathic Traits* group. The *No Psychopathic Traits* groups were also statistically similar to each other, but they were significantly lower than the *Psychopathic Traits* groups.

The ANOVA results for the BIS were significant  $F(3,92) = 20.39$ ,  $p < .001$ ,  $\eta^2 = .40$ . Post hoc analyses revealed that the *Secondary Psychopathic Traits* group had the highest BIS scores. The *No Psychopathic Traits–Normal Temperment* and the *Primary Psychopathic Traits* group were similar to each other, and significantly lower than the *Secondary Psychopathic Traits* group. The *No Psychopathic Trait – Low Anxiety* group was significantly lower than all the other groups. No significant main effects emerged on the BAS scale,  $F(3,92) = 2.6$ ,  $p = .06$ ,  $\eta^2 = .40$ .

There were significant difference between the clusters on the STAI,  $F(3,92) = 19.64$ ,  $p < .001$ ,  $\eta^2 = .39$ . The *Secondary Psychopathic Traits* group had the

highest STAI scores. The *Primary Psychopathic Traits* group's STAI scores were significantly lower. While the two *No Psychopathic Traits* groups were lower than the *Psychopathic Traits* groups, they were not statistically different from each other.

#### *Aggression Analyses*

Next cluster differences on the AQ were examined. As shown in Table 12, a one-way ANOVA indicated there were significant differences,  $F(3,92)=9.72$ ,  $p < .001$ , eta squared = .24. For the AQ Total there was no significant difference between the Primary Psychopathic Traits group and the Secondary Psychopathic Traits group. There was a

Table 12

#### *Differences between the Clusters on Aggression*

Group	AQ Total		Number of Aggressive Acts	
	M	SD	M	SD
Primary Psychopathic Traits	68.27 <sup>a</sup>	12.18	4.10	1.02
Secondary Psychopathic Traits	73.25 <sup>a</sup>	14.03	3.81	.98
Nonpsychopathic Traits – Low Anxiety	53.85 <sup>b</sup>	9.57	3.92	1.12
Nonpsychopathic Traits – Normal Temperment	59.04 <sup>b</sup>	10.61	3.69	.97
F Values	$F(3,92)=9.72$ , $p < .001$ , eta squared = .24		$F(3,92)=.942$ , $p = .436$ , eta squared = .03	

*Note.* Means that share superscripts are not significantly different and those that have differing superscripts differ at  $p < .05$  using Bonferoni as a post hoc test.



significant difference between the *Psychopathic Traits* groups and the *No-Psychopathic Traits* groups. While lower than the *Psychopathic* groups, the *No Psychopathic Traits* groups were also statistically similar to each other.

All participants were asked to describe at least three aggressive acts. They were then specifically asked about Instrumental aggression. When the reported number of acts were compared across clusters, there were no differences found (see Table 12).

Figure 4 displays the proportion of individuals in the two psychopathic traits groups who were classified as instrumental versus reactive aggressors. A Chi-square analysis revealed that the groups differed significantly, Pearson  $\chi^2(1, N = 57) = 4.98$ ,  $p = .026$ , Cramer's  $V = .30$ . Consistent with the final hypothesis, instrumental aggression was preferentially associated with a cluster of individuals identified as the *Primary Psychopathic Traits* group, whereas proportionately fewer individuals (18.8% versus 51.2%) from the *Secondary Psychopathic Traits* group self-reported involvement in instrumental aggression. Similar to the *Secondary Psychopathic Traits* group, instrumental aggression was rare among members of the *No-Psychopathic-Normal Temperament* cluster (32%) and the *Non-psychopathic-Low Anxiety* cluster (38.5%).

**Percent of Instrumental and Reactive Aggressors in Each Cluster**

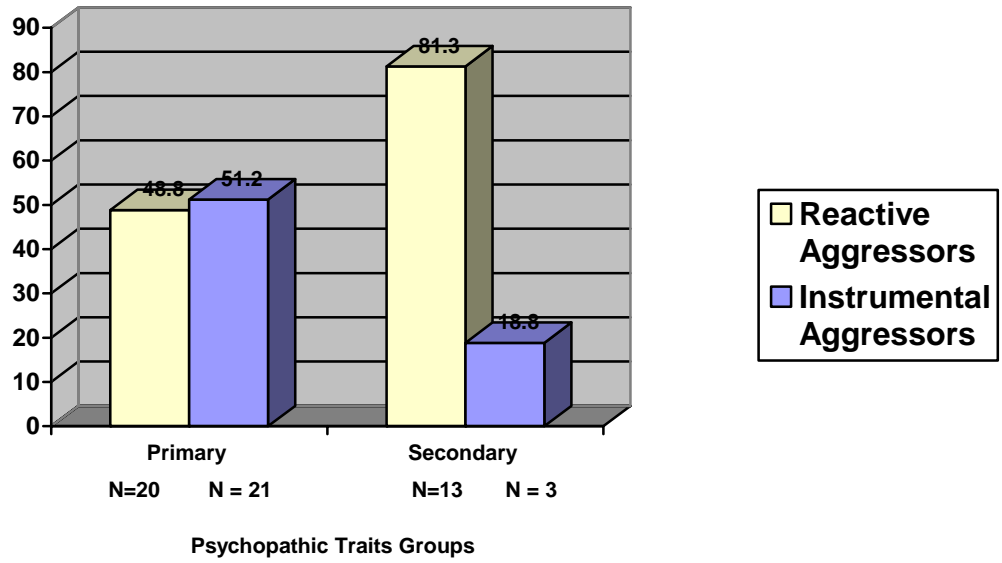


Figure 4. Proportions of Instrumental Versus Reactive Aggression for Psychopathic Traits Groups

## DISCUSSION

The construct of psychopathy has a long-standing history in the psychological literature. Psychopathy has been found to be related to many important social outcomes, such as poor treatment amenability, violence and recidivism (Cunningham & Reidy, 1998; Hart & Hare, 1998). However, inconsistencies have been found in the research regarding correlates, etiology, and treatment of psychopathy. These inconsistencies, along with theoretical writings and the multifactor structure of instruments designed to assess the construct, indicate that psychopathy is essentially a heterogeneous construct. Although theoretical writings have indicated the existence of subtypes of psychopathy, to date, little empirical research has been conducted to confirm the existence of these subtypes.

The current study represents the first known attempt to empirically test the validity of the subtypes of psychopathy in an adult population. More specifically, the aim of the study was to determine if the construct of psychopathy is better understood as a unitary construct, or as two distinct subtypes referred to as Primary and Secondary Psychopathy (Cleckley, 1941, Karpman, 1948, Lykken, 1995), and if those subtypes use different types of aggression. In order to test these hypotheses, theoretical writings on subtypes were used as a basis for determining the specific variables that would best discriminate between variants: scores that assess different facets of phenotypic psychopathy (i.e., LPS Primary and Secondary scales), indicators of temperament (i.e., the BIS and BAS scales), and anxiety (i.e., the STAI). Model-based cluster analysis was

then used to investigate the existence of subtypes analogous to Primary and Secondary psychopathy in college students.

In order to evaluate the construct validity of the emerging subtypes, several results were expected; a) Higher scores on both scales of the LPS for the *Psychopathy* groups than the *Non-psychopathy* groups. Those in the *Primary Psychopathy* group would have high scores on the LPS Primary scale and moderate to high scores on the LPS Secondary scale. Those in the *Secondary Psychopathy* cluster would have higher scores on the LPS Secondary scale than the LPS Primary scale; b) Low scores on the BIS scale and normal scores on the BAS measure for the *Primary Psychopathy* group. High scores on the BAS measure and normal to high scores on the BIS scales for the *Secondary Psychopathy* group were; c) Low scores on the STAI trait scale for the *Primary Psychopathy* group, and high for the *Secondary Psychopathy* group; d) Higher aggression scores on the AQ for the psychopathy clusters than the non-psychopathy clusters; e) A higher proportion of instrumental aggression to hostile aggression used by the *Primary Psychopathy* group, then the *Secondary Psychopathy* group and the *Non-Psychopathic groups*.

Four clusters emerged with cluster profiles differing in theoretically coherent ways. Two of the clusters were representative of sub-clinical Primary and Secondary psychopathy and the other two represented non-psychopathic groups. As expected, the *Psychopathic Traits* groups used more aggression than the *Non-psychopathic traits* groups, and the *Primary Psychopathic Traits* group used more instrumental aggression than the *Secondary Psychopathic Traits* group. Overall, these results support the

existence of sub-clinical subtypes of psychopathy that resemble, in meaningful ways, hypothetical clinical variants. The results also suggest that subtyping may have clinical and forensic utility in risk assessment.

### Primary Psychopathic Traits Group

Primary psychopaths have been theorized to have more personality traits of psychopathy (i.e., grandiosity, lack of emotions, lack of guilt, manipulativeness, deficit in conscience, lack of empathy), have some behavioral traits of psychopathy (i.e. irresponsibility, failure to follow a life plan), have a deficit in the ability to inhibit behaviors, and not experience anxiety (Cleckley, 1941; Karpman, 1945; Lykken, 1995). The results of the cluster analysis found a statistically significant difference in the reported psychopathic traits in the different clusters. For example, participants in the *Primary Psychopathic Traits* group were more likely to report egocentric and entitled attitudes, and were more callous, selfish, and manipulative than the other groups. Additionally, members of this cluster reported moderate to higher levels of impulsivity and irresponsibility.

The theories of Lykken (1995), Karpman (1941), and Cleckley (1941) all posit that primary psychopaths do not manifest trait anxiety. In contrast, anxiety may be common in secondary psychopathy. Congruent with this idea, participants in the *Primary Psychopathic Traits* group had less trait anxiety than those in the *Secondary Psychopathic Traits* group. However, somewhat unexpectedly, those in the *Primary*

*Psychopathic Traits* group did experience some level of anxiety compared to the *Non-psychopathic Traits* groups.

Research has not been consistent in indicating a negative correlation between psychopathy and anxiety. Theory suggests that these inconsistent results are due to the heterogeneity of psychopathic populations, and it is hypothesized that subgroups may experience fear and anxiety differently. Recent research by Hicks et al. (In Print) supports this distinction. Hicks and colleagues (In Print) conducted a cluster analysis study and found subtypes that resembled Primary and Secondary psychopathic groups. Their Stable psychopath group (more like Primary psychopathy) showed little anxiety or otherwise negative emotionality, while their Aggressive group (more like Secondary psychopathy) was very high on negative emotionality. Other research has indicated that anxiety is negatively related to Factor 1 and positively related to Factor 2 (Hare, 1991; Harpur et al., 1989; Patrick et al., 1993; and Levenson et al., 1995). In the current study, consistent with Hicks et al. (In press) no relationship was found with anxiety (partial correlations). One possible reason that the correlation was not negative could be related to the measure of psychopathy used in this study. In studies with offenders (Brinkley et al., 2001) and college students (Levenson, et al., 1995) both LPS scales correlated positively with PCLR Factor 2 or the behavioral traits of psychopathy, which more often correlate positively with anxiety or other negative emotions. Thus the LPS Primary scale may not be an optimal measure of the personality traits of primary psychopathy. Finally, it is possible that primary psychopaths experience some level of anxiety, and what actually distinguishes them from the other groups is a low level of fear (Lykken, 1995).

The BIS is activated when cues for punishment are detected, eliciting an anxiety reaction and consequential inhibition of ongoing behaviors (Patterson & Newman, 1993; Gray, 1982). Theory predicts that, while Primary psychopaths may experience a normal level of behavioral response, and therefore a normal BAS (as was shown in this sample); they have a constitutional deficit in the BIS and are less sensitive to cues for punishments or nonreward (Lykken, 1995; Fowles, 1980). The findings in this study lend empirical validity to this theory; the *Primary Psychopathic Traits* group experienced less behavioral inhibition than the *Secondary Psychopathic Traits* group. Given a reduced sensitivity to punishment, one would expect the *Primary Psychopathic Traits* group to have the least ability to inhibit behavior than all other groups, however, when compared to the *Non-psychopathic Traits* groups, the *Primary Psychopathic Traits* group had more behavioral inhibition.

Previous research (Fowles, 1980; Gray, 1982) suggests that a relationship exists between Primary psychopathy and the BIS. The LPS scale was designed with that relationship in mind, therefore a negative correlation between the LPS Primary scale and the BIS scale would be expected. In the current study, partial correlations revealed a negative relationship between BIS and LPS primary. Previous research indicates that both the LPS subscales are related to antisocial behavior (Levenson, et al., 1995), and thus there may not be a precise enough distinction between the subscales. Partialling out the interrelationship between the scales clarified the correlates of the separate constructs.

Overall the *Primary Psychopathic Traits* group displayed higher psychopathic personality traits, a normal level of behavioral activation, and some deficit in the

inhibition of behavior, lending empirical support to the theories of Lykken (1995), Cleckley (1941) and Karpman (1941). Counter to theories of Primary psychopathy, this sample seems to experience some degree of anxiety and behavioral inhibition. While the levels of these traits are still lower than in the *Secondary Psychopathic Traits* groups, they are slightly higher than the levels for groups who do not have any psychopathic traits. One reason for these findings could be related to the sample used. This study measured sub-clinical levels of psychopathic traits and therefore the sample is considered a “normal” population that was not actually psychopathic. In forensic settings those with psychopathic traits have actually engaged in antisocial behaviors demonstrating a lack of inhibition. In this “normal” population there is no antisocial behavior and therefore automatically higher levels of inhibition than found in forensic samples. Perhaps the distinction between sub-clinical and clinical may help explain why these subjects showed some level of anxiety and consequently more behavioral inhibition than would be expected.

#### Secondary Psychopathic Traits Group

Secondary psychopaths are hypothesized to display more of the behavioral aspects (e.g., impulsivity, social deviance, emotional reactivity) of psychopathy than Primary psychopaths without necessarily possessing the same personality traits such as glibness and charm (Lynam, Whiteside, & Jones, 1999; Levenson, et al., 1995). They are also believed to experience anxiety and an overactive behavioral activation system (Karpman, 1941; Lykken, 1995). The current results validate theory in that those in the



*Secondary Psychopathic Traits* group did demonstrate more behavior features of psychopathy, including impulsivity, lack of long-term goals, and low frustration tolerance, while exhibiting moderate levels of personality features, such as a tendency to lie, callousness and lack of remorse.

Consistent with the research indicating that anxiety is more strongly associated with PCL-R Factor 2 than Factor 1 (Hare, 1991; Harpur et al., 1989; Patrick et al., 1993; Levenson et al., 1995), the current study found a stronger relationship between anxiety and LPS Secondary psychopathy, a scale designed to capture the behavioral features associated with Factor 2. Etiologically, researchers have posited that Secondary psychopathy stems from an underlying emotional problem that includes elevated anxiety (Lykken, 1995; Karpman, 1941; Lynam, et al., 1999; Levenson, et al., 1995). In the current study, those participants in the *Secondary Psychopathic Traits* group indeed had higher levels of anxiety than the other groups.

Secondary psychopaths, despite their increased level of anxiety, are thought to be extremely goal-directed and to engage in excessive approach behavior even in the face of punishment (Lykken, 1995; Fowles, 1980). This overactive BAS was not found in the current study. Those participants in the *Secondary Psychopathic Traits* group had relatively higher levels of behavioral activation, but statistically there were no differences among the groups. While Carver and White (1994) indicated that the BAS can be considered as a unified construct, the BAS Total scale was not satisfactory in discriminating between the factors of psychopathy or the subtypes. Additionally, in post hoc analyses considering the subscales of the BAS, no relationship was found between

the LPS Secondary scale and the BAS subscales of Drive (pursuit of desired goals) or Reward (the positive response to the anticipation and occurrence of rewards). However, those who had higher scores on the LPS Secondary scale tended to have more desire for novel rewards and a willingness to spontaneously pursue those rewards (Fun-seeking scale). Carver and White (1994) indicate it is “unclear at present whether any specific manifestation of BAS functioning is more important than others” (p. 324), and Lykken (1995) believes that a Secondary psychopath will act impulsively to achieve goals. While in this study, the Fun-seeking scale is the only discriminating subscale, the designers of the LPS scale (Levenson et al, 1995) used a measure of sensation seeking as an indicator of discriminant validity for the scale, as they believed there should be no relationship between psychopathy and sensation seeking. To the extent that fun seeking and sensation seeking are similar constructs, there is some evidence that this scale should not be considered to be the critical manifestation of BAS

Lykken (1995) stated that Secondary psychopaths will actively seek rewards, but still experience anxiety and normal levels of behavioral inhibition. In the current study, those in the *Secondary Psychopathic Traits* group not only experienced behavioral inhibition, but also had higher levels than all other groups. Blackburn and Lee-Evens (1985) proposed that a strong BAS (impulsivity) and strong BIS (anxiety) were each necessary features of Secondary psychopathy (McHoskey et al., 1998). The current findings are consistent with the McHoskey et al. (1998) findings that college students with high scores on both the BIS and BAS scales had the highest scores on the LPS Secondary scale.

While traditional models of Secondary psychopathy do not indicate elevated levels of behavioral inhibition, the elevated levels seen in the current study are understandable given that the BIS is associated with anxiety reactions. Significant positive associations were found between the LPS Secondary scale, anxiety, and the BIS. Secondary psychopathy, the LPS Secondary scale and Factor 2 of the PCL-R have all been associated with anxiety, so it follows that behavioral inhibition is positively correlated with anxiety. Additionally, McHoskey et al. (1998) provided a rationale for Secondary features being associated with *both* high BAS and high BIS that is consistent with the findings in the current study. They theorized that Secondary psychopaths are conflicted by strong drive (BAS) that pushes them to test the limits of their internal constraints (high BIS), which may be associated with expressions of frustration. This theory might be particularly the case in student or community samples, whose members are generally better socialized and to have more developed internal constraints (i.e., conscience) than would be found in offender samples.

The *Secondary Psychopathic Traits group's* behavioral activation is not as uniquely high as predicted. However, this study measured psychopathic traits with a “normal” population. Therefore, this group may not show either a uniquely high level of behavioral activation or reduction in BIS that would be found in a more heterogeneous population.

#### Clusters Conclusions

Overall this study provided empirical support for the previously only theoretical distinction between Primary and Secondary psychopathy that has been postulated in the

literature. This study used etiological variables and showed that psychopathy indeed is a heterogeneous construct. Additionally, the clusters generated by model-based cluster analysis in this study indicate that even in “normal” populations there are viable sub-clinical variants of psychopathy whose patterns on clustering variables substantially parallel those hypothesized in the literature. The results found in this research are an important first step in developing a clearer understanding of psychopathy and its causes, which is a necessary step in developing more specified and appropriate treatment modalities.

### Aggression

Comparisons of the clusters on measures of aggression validated the sub-clinical variants of psychopathy by predicting the types of aggression different types of psychopaths may use. The results of this study lend further support to the existing literature that has consistently found a positive association between psychopathy in general and aggression (Blackburn & Maybury, 1985; Leary, 1957; Forth et al., 1990; Hare & McPherson, 1984; Kosson et al, 1990; Rice, Harris, & Quinsey 1990; Serin, 1991; Harris, Rice, & Cormier, 1991; Salekin et al., 1996), by finding, as predicted, that participants in the *Psychopathic* clusters were more aggressive than those in the *Non-psychopathic* clusters.

Primary psychopaths are described as cunning, manipulative, nonanxious, guilt free, and they are believed to have a deficit in behavior inhibition. They often display a narcissistic sense of entitlement and a tendency to use others to satisfy their needs. Given these traits, Primary psychopaths are theorized to employ more instrumental aggression

than the other groups. Secondary psychopaths, who have more anxiety, impulsivity and an overactive BAS, are believed to be more reactive to provocation and to act aggressively out of anger. Therefore, because of their greater susceptibility to stress and higher degree of impulsivity, Secondary Psychopaths are believed to use more hostile aggression than instrumental aggression. Additionally, given that instrumental aggression is indicative of more severe pathology, non-psychopaths are thought to use more reactive rather than instrumental aggression. The results of the current study support these theories. There was a difference in the prevalence of instrumental versus reactive aggression used between the *Primary Psychopathic Traits* group and the *Secondary Psychopathic Traits* group, with the *Primary Psychopathic Traits* group using a greater proportion of instrumental aggression than the *Secondary Psychopathic Traits* group. Comparisons of the clusters on types of aggression is an important step in the study of the construct of aggression, but also in terms of validating the subtypes of psychopathy. The current study empirically validated the idea that subjects in clusters created by psychopathy data do indeed differ in terms of the types of aggression used, and such differences were consistent with the theories governing such clusters.

First, the results demonstrated that even in a “normal” sample there are viable sub-clinical variants of psychopathy, therefore providing some of the first empirical support for the understanding of psychopathy as a heterogeneous construct. Second, and more importantly, this was the first attempt to use etiological indicators along with Primary and Secondary psychopathy facet scores to empirically derive subtypes of psychopathy (previous research focused solely on the exploration of the correlates of the

psychopathy factors). This method, cluster analysis, permitted for actual derivation of multidimensional subtypes rather than limiting the research to the relationships to the factors alone. Considering a combination of variables also allowed for the ability to obtain potentially greater differentiation among the subtypes than would be possible with clustering on psychopathy facets alone.

Furthermore, the current study was the first to consider the specific types of aggression used by specific types of psychopaths, expanding the research by Cornell et al., (1996), who separated offenders into instrumental and hostile groups and considered the level of psychopathy used by each group. This study elaborated on Cornell's research by creating psychopathy clusters and using those clusters to consider differences in motivations for aggression in adults (see Christian, Frick, & Hill, 1997 and Vincent, Vitacco, & Grisso, 2003; for examples of cluster analytic studies on juvenile psychopathy).

Additionally, Wilson et al. (1999) criticized previous research that examined the two types of psychopathy for being limited to institutionalized samples. This was the first study of psychopathic features to use cluster analysis with a university population, which allowed for the opportunity to demonstrate the viability of subgroups that have mainly sub-clinical levels of psychopathic traits. Student populations are more comparable to the general population than are offender populations, which make the present findings potentially more generalizable to community samples. The use of the LPS self-report measure of psychopathic traits, which does not include items that explicitly assess tendencies toward violence or aggression, also reduced the problem of

criterion contamination that exists with some other measures. And unlike incarcerated samples, these participants were not subjected to the negative effects of institutionalized life (Widom, 1977).

In short, the current research is a pioneering effort to look at psychopathy in a non-institutionalized sample, to use variables that theoretically define psychopathy to define the clusters, and to consider the different types of aggressions used by those variants.

### Limitations and Future Research

While this study was able to utilize a non-clinical sample to consider psychopathic subtypes and types of aggression, there were certain limitations.

#### *Measurement Issues*

Originally several self-report measures of psychopathy were considered for inclusion in this research. The LPS was chosen because it had been used in several studies with student and community samples, and it offered the most promise given the objectives of the research. At the time of study design, it was the only self-report measure that reliably demonstrated a two-factor solution consistent with the theories of primary and secondary psychopathy (Lynam et al., 1999; McHoskey, et al., 1998). Although the results of the current research generally supported the hypotheses, the LPS scales did not always correlate with the other variables in the ways that would necessarily be expected and some of the relationships of the variables to the clusters did not clearly fit theory.

Previous research has indicated there are some limitations to the discriminant validity of the LPS scales (Lynam, et al., 1999; Levenson et al., 1995), where the Primary psychopathy scale seems to be a better measure of the behavioral and social deviance traits of psychopathy than of primary psychopathy. An alternative measure that future investigators might employ is the PPI (Lilienfeld & Andrews, 1996).

The PPI was designed to target the core personality traits of psychopathy (Lilienfeld, et al., 1996). In the current study, the PPI was administered as a validation measure, which allowed for some post hoc analyses to be performed. First, the PPI and LPS totals scores were correlated at  $r = .49$ , which is lower than what would be expected between two self-report measures of the same construct. A recent study by Lilienfeld and Skeem (2004) reported a correlation of  $r = .69$  between the LPS and PPI in a large offender sample, and similarly strong relationships have been found between self-report measures of psychopathic traits in juveniles ( $r = .80$ ,  $p < .01$ ; Falkenbach, Poythress, & Heide, 2003). When the relationship between the cluster variables and the PPI was considered, the results were consistent with theory. The PPI and the STAI were not correlated ( $r = .18$ , ns) and the expected negative relationship between the PPI and the BIS scale was found ( $r = -.21$ ,  $p < .05$ ). Perhaps the PPI captures better the features of primary psychopathy, as it appears to be a more effective means of discriminating the inhibitory and anxiety deficits associated with primary psychopathy than the LPS Primary psychopathy scale. Additionally, since this study was completed, Benning, Patrick, Hicks, Blonigen, and Krueger (2003) have structurally analyzed the PPI and found it to contain two factors (PPI-I and PPI-II). Lilienfeld and Skeem (2004) compared



the two factors of the PPI with the scales of the PCL-R and LPS. These authors found that the PPI-I displayed better discriminant validity for antisocial behavior than did the LPS Primary scale. They also found that the PPI-I, but not the LPS Primary scale, demonstrated the theoretical negative relationship with anxiety. Confirmatory factor analysis is needed for the PPI and a comparison of its utility for identifying psychopathy types to that of the LPS. However, based on the results of the current study, future researchers should consider that the PPI factors may be a better means of distinguishing Primary and Secondary psychopathy.

#### *Other Issues*

Previous research found adequate base rates of psychopathic traits in college students (Lynam, et al. 1999), however, the current study had several findings that were not as clear as anticipated. Specifically some of the relationships between the variables were not as expected.

Research findings are often easier to interpret when the base rates for the variables of interest are higher. While the evaluation of psychopathic traits and subtypes is important in non-forensic samples, the research on subtypes is relatively new. More research is needed in offender and forensic samples where there are higher base-rates and there is more available research on the relationships of the variables used. Additionally, perhaps some of the associations among variables differ across more socialized, “normal” samples and forensic groups. It will be interesting to compare correlates of clusters derived from non-clinical sample with those of clusters derived from offender samples in which clinically meaningful levels of psychopathic traits are more prevalent. Previous

research indicates that psychopathic traits are more common among men than women (Levenson, et al., 1995).

The current study utilized a male only sample in order to increase the likelihood of finding aggressive and psychopathic traits; however, there is a need to evaluate psychopathy and aggression in female populations. The constructs and relationships between the variables may be different across genders and future research should focus on both men and women.

## REFERENCES

- Aldenderfer, M.S. & Blashfield, R.K. (1984). *Cluster Analysis*. Beverly Hills: Sage Publications.
- Alterman, A. I., McDermott, P.A., Cacciola, J.S., Rutherford, M.J., Boardman, C.R., McKay, J.R., & Cook, T.G. (1998). A typology of antisociality in methadone patients. *Journal of Abnormal Psychology*, 107(3), 412-422.
- American Psychiatric Association (1994). *Diagnostic and Statistical Manual of Mental Disorders*. (Fourth ed.). Washington: American Psychiatric Association.
- Averill, L. A. (1982). Recollections of Clark's G, Stanley Hall. *Journal of the History of Behavioral Sciences*, 18(4), 341-346.
- Bandura (1973). *Aggression: A social learning analysis*. Englewood Cliffs, , NJ: Prentice Hall.
- Benning, S. D., Patrick, C. J., Hicks, B. M., Blonigen, D. M., & Krueger, R. F. (2003). Factor structure of the psychopathic personality inventory: Validity and implications for clinical assessment. *Psychological Assessment*, 15(3), 340-350.
- Berkowitz, L. (1962). *Aggression: A social psychological analysis*. New York: McGraw-Hill.
- Berkowitz, L. (1989). Frustration-aggression hypothesis: Examination and reformulation. *Psychological Bulletin*, 106, 59-73.
- Berkowitz, L. (1990). On the formation and regulation of anger and aggression: A cognitive-neoassociationistic analysis. *American Psychologist*, 45(4), 494-503.

Blackburn, R. (1975). An empirical classification of psychopathic personality. British Journal of Psychiatry, 127, 456-460.

Blackburn, R. (1979). Psychopathy and personality: The dimensionality of self-report and behavior ratings data in abnormal offenders. British Journal of Social and Clinical psychology, 18, 111-119.

Blackburn, R. & Coid, J.W. (1998). Psychopathy and the dimensions of personality disorder in violent offenders. Personality and Individual Differences, 25, 129-145.

Blackburn, R., Lee-Evans, J. Michael. (1985). Reactions of primary and secondary psychopaths to anger-evoking situations. British Journal of Clinical Psychology, 246(2), 93-100.

Blackburn, R., & Maybury, C. (1985). Identifying the psychopath: The relation of Cleckley's criteria to the interpersonal domain. Personality & Individual Differences, 6(3), 375-386.

Blashfield, R. K., Aldenderfer, Mark S. (1988). The methods and problems of cluster analysis. In J. R. Nesselroade, Raymond B. (Ed.), Handbook of multivariate experimental psychology (2nd ed.). Perspectives on individual differences. New York, NY: Plenum Press.

Bodholt, R.H., Richards, H.R., & Gacano, C.B. (2000). Assessing psychopathy in adults: The psychopathy checklist-revised and screening version. In C. B. Gacano (Ed.), The Clinical and Forensic Assessment of Psychopathy: A Practitioners Guide (pp. 111-136). Mahwah, NJ: Lawrence Erlbaum Associates.

Brinkley, C. A., Schmitt, W. A., Smith, S. S. ((2001). Construct validation of a self-report psychopathy scale: Does Levenson's self-report psychopathy scale measure the same constructs as Hare's Psychopathy Checklist-Revised? Personality & Individual Differences, 31(7), 1021-1038.

Brown, J. S., Farber, I. E. (1951). Emotions conceptualized as intervening variables--with suggestions toward a theory of frustration. Psychological Bulletin, 48, 465-495.

Bushman, B. J., Anderson, C.A. (2001). Is it time to pull the plug on hostile versus instrumental aggression dichotomy? Psychological Review, 108(1), 273-279.

Buss, A. H. (1961). The psychology of aggression. New York: John Wiley & Sons, Inc.

Buss, A. H., & Durkee, A. (1957). An inventory for assessing different kinds of hostility. Journal of Consulting Psychology, 21, 343-349.

Buss, A. H., Perry, M. (1992). The Aggression Questionnaire. Journal of Personality & Social Psychology, 63(3), 452-459.

Carver, C. S., White, T.L. (1994). Behavioral inhibition, behavioral activation, and affective responses to impending reward and punishment: The BIS/BAS Scales. Journal of Personality & Social Psychology, 67(2), 319-333.

Cattell, R.B., & Scheier, I.H. (1963). Handbook for the IPAT Anxiety Scale (2<sup>nd</sup> edition). Champaign, IL: Institute for Personality and Ability Testing.

Christian, R.E., Frick, P. J., Hill, N. L. (1997). Psychopathy and conduct problems in children: II. Implications for subtyping children with conduct problems. Journal of the "American Academy of Child & Adolescent Psychiatry 36(2), 233-241.

Cleckley. (1941). The mask of sanity; an attempt to reinterpret the so-called psychopathic personality. St. Louis: C.V. Mosby.

Cleckley. (1976). The mask of sanity; an attempt to reinterpret the so-called psychopathic personality (5<sup>th</sup> edition). St. Louis: C.V. Mosby.

Cooke, D. J., & Michie, C. (1997). An item response theory analysis of the Hare psychopathy checklist. Psychological Assessment, 9, 3-13.

Cooke, D. J., Kosson, D. S., & Michie, C. (2001). Psychopathy and ethnicity: Structural, item, and test generalizability of the Psychopathy Checklist-Revised (PCL-R) in Caucasian and African American participants. Psychological assessment, 13(4), 531-542.

Cornell, D. G., Warren, J., Hawk, G., Stafford, E., Oram, & Pine. (1996). Psychopathy in instrumental and reactive violent offenders. Journal of Consulting & Clinical Psychology, 64(4), 783-790.

Cunningham, M. D., & Reidy, T.J. (1998). Antisocial personality disorder and psychopathy: Diagnostic dilemmas in classifying patterns of antisocial behavior in sentencing evaluations. Behavioral Sciences and the Law, 16, 333-351.

Dengerink, H. A., Bertilson, ,H.S. (1975). Psychopathy and physiological arousal in an aggressive task. Psychophysiology, 12(6), 682-684.

Dodge, K. A. (1991). The structure and function of reactive and proactive aggression. In D. J. Pepler, Ed; Rubin, Kenneth H., Ed (Ed.), The development and treatment of childhood aggression (pp. 201-218). Hillsdale, NJ: Lawrence Erlbaum Associates, Inc.

Dollard, J., Doob, L. W. , Miller, N. E. , Mowrer, O. H. , Sears, R. R. , Ford, C. S., Hovland, C. I. , & Sollenberger, R. T. (1939). Frustration and aggression. New Haven: Yale University Press.

Erhlich, D.J. & Malmao, R.B. (1967) Electrophysiological concomitants of simple operant conditioning in the rat. Neuropsychologia, 5, 219-235.

Eron, L.D., & Huesman, L.R. (1990). The stability of aggressive behavior--even unto the third generation. In Lewis, M., Miller, S.M. (Eds). Handbook of developmental psychopathology. Perspectives in developmental psychology. New York: Plenum Press.

Falkenbach, D. M., Poythress, N. G., Heide, K.M. (2003). Psychopathic features in a juvenile diversion population: Reliability and predictive validity of two self-report measures. Behavioral Sciences & the Law, 21(6), 787-805.

Feshback. (1964). The function of aggression and the regulation of the aggressive drive. Psychological Review, 71, 257-272.

Forth (1992). Emotion and Psychopathy: A Three Component Analysis. Unpublished Doctoral Dissertation, University of British Columbia, Vancouver, Canada.

Forth, A. E., Brown, S.L., Hart, S.D., & Hare, R.D. (1996). The assessment of psychopathy in male and female noncriminals: Reliability and validity. Personality & Individual Differences, 20(5), 531-543.

Forth, A. F., Hart, S.D., & Hare, R.D. (1990). Assessment of psychopathy in male young offenders. Psychological Assessment, 2, 342-344.

Fowles, D. C. (1980). The three arousal model: Implications of Gray's two-factor learning theory for heart rate, electrodermal activity and psychopathy. Psychophysiology, 17, 87-104.

Fraley, C. (1998). Algorithms for model-based Gaussian hierarchical Clustering. SIAM Journal of Scientific Computing, 20(1), 270-281.

Frick, P.J., O'Brian, B.S., Wootton, J.M., McBurnett, K. (1994). Psychopathy and conduct problems in children. Journal of Abnormal Psychology, 103, 700-707.

Gaudry, E., Vagg, P.R., & Spielberger, C.D. (1975). Validation of the state-trait distinction in anxiety research. Multivariate Behavior Research, 10, 331-341.

Glueck, S., & Glueck, E. (1950). Unraveling Juvenile Delinquency. Oxford, England: Commonwealth Fund.

Gray, J. A. (1982). The Neuropsychology of Anxiety: an Enquiry into the Functions of the Septo-Hippocampal System. New York, NY: Clarendon Press/Oxford University Press, pp. 548.

Gray, J. A. (1985). The neuropsychology of anxiety. Issues in Mental Health Nursing, 7(1-4), 201-228.



- Green, S.B., Salkind, N.J., & Akey, T.M. (2000). Using SPSS for Windows: Analysing and Understanding Data. New Jersey: Prentice Hall.
- Haapasalo, J., & Pulkkinen, L. (1992). The psychopathy checklist and non-violent offender groups. Criminal Behaviour & Mental Health, 2(4), 315-328.
- Hamburger, M.E., Lilienfeld, S.O., & Hogben, M. (1996). Psychopathy, gender, and gender roles: Implications for antisocial and histrionic personality disorders. Journal of Personality Disorders, 10, 41-55.
- Hare, R. D. (1972). Psychopathy and physiological responses to adrenalin. Journal of Abnormal Psychology, 79(2), 138-147.
- Hare, R. D. (1978). Electrodermal and cardiovascular correlates of psychopathy. In R. D. Hare, and Schalling, D. (Ed.), Psychopathic disorder: approaches to research (pp. 107-144).
- Hare, R. D. (1980). A research scale for assessment of psychopathy in criminal population. Personality and Individual Differences, 1, 111-119.
- Hare, R. D. (1983). Diagnosis of antisocial personality disorder in two prison samples. American Journal of Psychiatry(149), 887-890.
- Hare, R.D. (1985). Comparison of procedures for the assessment of psychopathy. Journal of Consulting and Clinical Psychology, 53(1), 7-16.
- Hare, R.D. (1991). The Hare Psychopathy Checklist - Revised. Toronto: Multi-Health Systems.

- Hare, R. D. (1996). Psychopathy: A clinical construct whose time has come. Criminal Justice and Behavior, 23(1), 25-54.
- Hare, R.D. (2003). The Hare Psychopathy Checklist – Revised; Second Edition. Toronto: Multi-Health Systems.
- Hare, R. D., Frazelle, J., & Cox, D.N. (1978). Psychopathology and physiological responses to threats of an aversive stimulus. Psychophysiology, 15, 165-172.
- Hare, R. D., Harpur, T.J., Hakstain, A.R., Forth, A.E., & Hart, S.D., & Newman, J.P. (1990). The revised psychopathy checklist: Reliability and factor structure. Psychological Assessment: A Journal of Consulting and Clinical Psychology, 2(3), 338-341.
- Hare, R. D., and Jutai, J.W. (1983). Criminal history of the male psychopath: Some preliminary data. In K. Van Dusen & S. Mednick (Eds.), *Prospective Studies of Crime and Delinquency*. (pp. 23-32). Boston: Kluwer Mijhoff.
- Hare, R. D., & McPherson, L.M. (1984). Violent and aggressive behavior by criminal psychopaths. International Journal of Law & Psychiatry, 7(1), 35-50.
- Hare, R. D., & Quinn, M.J. (1971). Psychopathy and autonomic conditioning. Journal of Psychology, 77, 223-235.
- Harpur, T. J. Hakstain, A.R., Hare, R.D. (1988). Factor structure of the Psychopathy Checklist. Journal of Consulting & Clinical Psychology, 56(5), 741-747.
- Harpur, H., & Hare, R.D. (1991). Psychopathy and violent behavior: Two factors are better than one. August, Paper presented at the meeting of APA, San Francisco.

Harpur, T. J., & Hare, R.D. (1994). Assessment of psychopathy as a function of age. *Journal of Abnormal Psychology*, 103(4), 604-609.

Harpur, T. J., Hare, R.D., & Hakstain, A.R. (1989). Two factor conceptualization of psychopathy construct validity and assessment implications. *Psychological Assessment: A journal of Consulting and Clinical Psychology*, 1(1), 6-17.

Harris, G. T., Rice, M.E., and Cormier, C.A. (1991). Psychopathy and violent recidivism. *Law and Human Behavior*, 15(6), 625-637.

Harris, G. T., & Comier, M.E. (1995). The effectiveness of therapeutic communities for psychopath":Reply. *Therapeutic Communities: International Journal for Therapeutic & Supportive Organizations*, 16(2), 147-149.

Hart, S. D., & Dempster, R.J. (1997). Impulsivity and psychopathy. In C. D. Webster, Ed; Jackson, Margaret A., Ed (Ed.), *Impulsivity: Theory, assessment, and treatment*. (pp. 212-232). New York, NY: The Guilford Press.

Hart, S. D., & Hare, R.D. (1997). Psychopathy: Assessment and association with criminal conduct. In D. M. Stoff, Ed; Breiling, James, Ed; et al (Ed.), *Handbook of antisocial behavior*. (pp. 22-35). New York, NY, US: John Wiley & Sons, Inc.,

Hart, S. D., & Hare, R.D. (1998). Discrimination validity of the psychopathy checklist in a forensic psychiatric population. *Psychological Assessment*, 1(3), 211-218.

Hart, S. D., Kropp, P.R., & Hare, R.D. (1988). Performance of male psychopaths following conditional release from prison. *Journal of Consulting and Clinical Psychology*, 56(2), 227-232.

Hemphill, J. F., Hare, R.D., & Wong, S. (1998). Psychopathy and recidivism: A review. *Legal & Criminological Psychology*, 3(1), 139-170.

Herve, H. F., Yong hui Ling, J, Hare, R.D. (2000). Criminal Psychopathy and its subtypes. Paper presented at the American Psychology-Law Society, New Orleans, ,LA.

Hicks, B. M., Markon, K. E., Patrick, C. J., Krueger, R. F. (In Press). Identifying psychopathy subtypes based on personality structure. *Psychological Assessment*.

Hinton, J.W., O'Neill, M.T. (1978). Pilot research on psychophysiological response profiles of maximum security hospital patients. *British Journal of Social & Clinical Psychology*, 17(1), p 103.

Huesman, L.R., Eron, L.D., Lefkowitz,,M.M., & Walder, L.O. (1984). Stability of aggression over time and generations. *Developmental Psychology*, 20(6), 1120-1134

Hundleby, J. D., & Ross, B.E. (1977). Comparison of measures of psychopathy. *Journal of Consulting & Clinical Psychology*, 45(4), 702-703.

Kagan, J. (1992). Yesterday's premises, tomorrow's promises. *Developmental Psychology*, 28(6), 990-997

Karpman, B. (1941). On the need for separating psychopathy into two distinct clinical types: symptomatic and idiopathic. *Journal of Criminology and Psychopathology*, 3, 112-137.

Karpman, B. (1946). Psychopathy and the scheme of human typology. *The Journal of Nervous and Mental Disease*, 103, 276-288..

Karpman, B. (1948) The myth of psychopathic personality. *American Journal of Psychiatry*, 104, 523-535

Karpman, B. (1955). Criminal psychodynamics: a platform. *Archives of Criminal Psychodynamics*, 1, 3-100.

Kosson, D. S., Kelly, D.S., White, J.W. (1997). Psychopathy related traits predict self reported sexual aggression among college men. *Journal of Interpersonal Violence*, 12(2), 241-254.

Kosson, D. S., Smith, S.S., & Newman, J.P. (1990). Evaluating the construct validity of psychopathy in Black and White male inmates: Three preliminary studies. *Journal of Abnormal Psychology*, 99(3), 250-259.

Kraepelin. (1907). *Clinical Psychiatry*. (A.R. Diefendorf, Trans.) New York: Macmillan.

Landis, J.R. & Koch, G.G. (1977). The measurement of observer agreement for categorical data. *Biometrics*, 33, 159-174.

Leary, T. (1957). Interpersonal diagnosis of personality; a functional theory and methodology for personality evaluation.

Levenson, M. R. (1992). Rethinking psychopathy. *Theory & Psychology*, 2(1), 51-71.

Levenson, M. R., Kiehl, K.A., & Fitzpatrick, C.M. (1995). Assessing psychopathic attributes in a noninstitutionalized population. *Journal of Personality and Social Psychology*, 68(1), 151-158.

Lilienfeld, S. O. (1994). Conceptual problems in the assessment of psychopathy. *Clinical Psychology Review*, 14(1), 17-38.

Lilienfeld, S. O., & Andrews, B.P. (1996). Development and preliminary validation of a self-report measure of psychopathic personality traits in noncriminal populations. *Journal of Personality Assessment*, 66(3), 488-524.

Lilienfeld, S.O., & Skeem, J.L. (2004, March). Psychometric properties of self-report measures of psychopathy. In N.G. Poythress (Chair), *Contemporary Issues in Psychopathy Research*. Symposium conducted at the meeting of the American Psychology-Law Society, Scottsdale, AZ.

Livesley, W.J. (1995). Phenotypic and genotypic structure of psychopathic traits. Paper presented at the NATO Advances Study Institute of Psychopathy, Alvor, Portugal. In Millon, T et al (eds). *Psychopathy Antisocial, Criminal, and Violent Behavior*, p. 260.

Loeber, R. (1982). The stability of antisocial and delinquent child behavior: A review. *Child Development*, 53(6), 1431-1446.

Lykken, D. T. (1957). A study of anxiety in the sociopathic personality. *Journal of Abnormal & Social Psychology*. 55, 6-10.

Lykken, D. T. (1995). *The Antisocial Personalities*. Hillsdale, NJ: Lawrence Erlbaum.

Lynam, D.R., Whiteside, S. & Jones, S. (1999). Self-reported psychopathy: A validation study. *Journal of Personality Assessment*, 73(1), 110-132.

Magnusson, B. (1988). *Individual development from an interactional perspective: A longitudinal Study*. Hillsdale, NJ: Erlbaum.

Magnusson, B., & Bergman, L.R. (1988). Individual and variable based approaches to longitudinal research on early risk factors. In Rutter, Ed. *Studies of Psychosocial Risk. The Power of Longitudinal Data*, pp. 45-61. Cambridge: Cambridge University Press.

McCord, W., & McCord, J. (1964). *The Psychopath: an Essay on the Criminal Mind*. Oxford, England: D Van Nostrand, xi, pp. 223.

McHoskey, J. W., Worzel, W., & Szyarto, C. (1998). Machiavellianism and psychopathy. *Journal of Personality & Social Psychology*, 74(1), 192-210.

Megargee, E.I. (1967). Development and validation of an MMPI scale of assaultiveness in overcontrolled individuals. *Journal of Abnormal Psychology*, 72(6), 519-528.

Megargee, E. I. (1982). Psychological determinants and correlates of criminal violence. in M. E. W. N. A., Weiner (Ed.), *Criminal Violence* (pp. 81-170). London: Cassel.

Meloy, J. R. (1988). *The Psychopathic Mind: Origins, Dynamics, and Treatment*. Northvale, NJ: Jason Aronson, Inc., xix, pp. 474.

Meloy, J.R. (1992). On the predictability of violent behavior: Considerations and guidelines: Discussion. *Journal of Forensic Sciences*, 37(4), 949-950.

Miller, N.E. (1941). The frustration-aggression hypothesis. *Psychological Review*, 48, 337-342.

Millon, T., & Davis, R.D. (1996). *Disorders of Personality: DSM-IV and Beyond* (2nd Edition). New York: Wiley.

Monahan, J., Steadman, H.J., Silver, E., Appelbaum, P.S., Clark Robbins, P., Mulvey, E.P., Roth, L.H., Grisso, T., & Banks, S. (2001). *Rethinking Risk Assessment: The MacArthur Study of Mental Disorder and Violence*. Oxford: Oxford University Press.

Newman, J. P., & Kosson, D.S. (1986). Passive avoidance learning in psychopathic and nonpsychopathic offenders. *Journal of Abnormal Psychology*, 95(3), 252-256.

Newman, J. P., & Schmitt, W.A. (1998). Passive avoidance in psychopathic offenders: A replication and extension. *Journal of Abnormal Behavior*, 107(3), 527-532.

Newman, J. P., Widom, C.S., & Nathan, S. (1985). Passive avoidance in syndromes of disinhibition: Psychopathy and extraversion. *Journal of Personality & Social Psychology*, 48(5), 1316-1327.

Novoco 1975 (hostility scale)

Ogloff, J. R., & Wong, S. (1990). Electrodermal and cardiovascular evidence of a coping response in psychopaths. *Criminal Justice and Behavior*, 17, 231-245.

Ogloff, J. R., Wong, S., Greenwood, A. (1990). Treating criminal psychopaths in a therapeutic community program. *Behavior Sciences and the Law*, 8, 181-190.

Overall, J.E., & Magee, K.N. (1992). Replication as a rule for determining the number of clusters in hierarchical cluster analysis. *Applied Psychological Measurement*, 16, 119-128.

Parke, R. D., Ewall, W., Slaby, R. G., (1972). Hostile and helpful verbalizations as regulators of nonverbal aggression. *Journal of Personality & Social Psychology*,



23(2), 243-248.

Parke, S. & Slaby (1983). Hostile and helpful verbalizations as regulators of nonverbal aggression. *Journal of Personality & Social Psychology*, 23(2), p 243-248.

Patrick, C.J. (1994). Emotion and Psychopathy: Startling new insights. *Psychophysiology*, 31, 415-428.

Patrick, C.J. (1995). Emotion and temperament in Psychopathy. *Clinical science*, fall 5-*Psychophysiology*, 31, 415-428.

Patrick, C. J. Berthot, B.D. (1995). Startle potentiation during anticipation of a noxious stimulus. Active vs. passive response sets. *Psychophysiology*, 32, 72-80.

Patrick, C. J., Bradley, M.M., & Lang, P.J. (1993). Emotion in the criminal psychopath: Startle reflex modulation. *Journal of Abnormal Psychology*, 102, 82-92.

Patrick, C.J., Cuthbert, B.N., & Lang, P.J. (1994). Emotion in the criminal psychopath: Fear image processing. *Journal of Abnormal Psychology*, 103(3), 523-534.

Patrick, C. J., & Zempolich, K.A. (1998). Emotion and aggression in the psychopathic personality. *Aggression & Violent Behavior*, 3(4), 030-338.

Patterson, M. C., Newman, J.P. (1993). Reflexivity and learning form aversive events: toward a psychological mechanism for the syndromes of disinhibition.

*Psychological Review*, 100, 716-736.

Pinel. (1806). *A Treatise on Insanity*. (D. Davis translator) New York: Hafner.

Pulkkinen, L. (1987). Offensive and defensive aggression in humans: A longitudinal perspective. *Aggressive Behavior*, 13(4), 197-212

Raftery, A. (1995). Bayesian model selection in social research. *Sociological Methodology*, 25, 111-163.

Rapkin, B. D., & Luke, D.A. (1993). Cluster analysis in community research: Epistemology and practice. *American Journal of Community Psychology*, 21(2), 247-277.

Rice, M. E., Harris, G.T., & Quincy, V.L. (1990). A follow-up of rapists assessed in a maximum-security psychiatric facility. *Journal of Interpersonal Violence* Dec 1990, 5(4), 435-448.

Roberts, L. (1974). Comparative psychophysiology of the electrodermal and cardiac control systems. In P.A. Obrist, A.H. Black, J. Brener, & L.V. DiCara (Eds.). *Cardiovascular Psychophysiology-Current Issues in Response Mechanisms, Biofeedback and Methodology*. Chicago: Aldine.

Rogers, R., & Dion, K.L. (1991). Rethinking the DSM III--R diagnosis of antisocial personality disorder. *Bulletin of the American Academy of Psychiatry & the Law*, 19(1), 21-31.

Salekin, R. T., Rogers, R., & Sewell, K.W. (1996). A review and meta-analysis of the Psychopathy Checklist and Psychopathy Checklist--Revised: Predictive validity of dangerousness. *Clinical Psychology: Science & Practice*, 3(3), 203-215.

Sampson, R. J., & Laub, J.H. (1993). *Crime in the making: Pathways and turning points through life*.

Schmauk, F. J. (1970). Punishment, arousal, and avoidance learning in sociopaths. *Journal of Abnormal Psychology*, 76, 325-335.

Schmitt, W.A., & Newman, J.P. (1999). Are all psychopathic individuals low anxious? *Journal of Abnormal Psychology*, 108(2), 353-358.

Serin, R. C. (1991). Psychopathy and violence in criminals. *Journal of Interpersonal Violence*, 6(4), 423-431.

Serin, R. C. (1996). Violent recidivism in criminal psychopaths. *Law and Human Behavior*(20), 207-217.

Serin, R. & Amos, N.L. (1995). The role of Psychopathy in the assessment of dangerousness. *International Journal of Law and Behavior*, 18, 231-238.

Seto, M.C. & Lalumiere (2000). Psychopathy and sexual Guide (pp. 87-109). Mahwah, NJ: Lawrence Erlbaum Associates. aggression. In C. B. Gacono (Ed.), *The Clinical and Forensic Assessment of Psychopathy: A Practitioners*

Skeem, J. L., Mulvey, E.P, Grisso, T. (2003). Applicability of traditional and revised models of psychopathy to the Psychopathy Checklist: Screening Version. *Psychological Assessment* 15(1),41-55.

Skeem, J. L., Poythress, N., Edens, J.F., Lilienfeld, S.O., & Cale, E.M. (2003). Psychopathic personality or personalities? Exploring potential variants of psychopathy and their implications for risk assessment. *Aggression & Violent Behavior*. Vol 8(5), 513-546.

Speilberger, C.D. (1985). Assessment of state and trait anxiety: Conceptual and methodological issues. *The Southern Psychologist*, 2, 6-16.

Speilberger, C.D., Gorsuch, R.L., & Lushene, R.D. (1970). STAI Manual for the State –Trait Anxiety Inventory (“Self-Evaluation Questionnaire”). Palo Alto, CA: Consulting Psychologists Press.

Steuerwald, B. L., Kossen, D.S. (2000). Emotional experiences of the psychopath. In C. B. Gacano (Ed.), *The Clinical and Forensic Assessment of Psychopathy: A Practitioners Guide* (pp. 111-136). Mahwah, NJ: Lawrence Erlbaum Associates.

Taylor, J.A. (1953). A personality scale of manifest anxiety. *Journal of Abnormal Social Psychology*, 53, 303-320.

Tellegen, A. (1978/1982). *Brief Manual for the Multidimensional Personality Questionnaire*. University of Minnesota.

Tengstrom, A., Grann, M., Langstrom, N., Kullgren, G. (2000). Psychopathy (PCL-R) as a predictor of violent recidivism among criminal offenders with schizophrenia. *Law and Human Behavior*, 24(1), 45-57.

Toch, H., Adams, K. & Grant, J.D. (1989). *Coping: Maladaptation in prisons*. New Brunswick, NJ: Transaction Publishers, xxxi, pp 288.

Tryon, R.C. & Baily, D.E. (1970). *Cluster Analysis*. New York: McGraw-Hill.

Vincent, G. M., Vitacco, M. J., Grisso, T. (2003). Subtypes of adolescent offenders: Affective traits and antisocial behavior patterns. *Behavioral Sciences & the Law*, 21(6), 6985-712.

Vitale, J.E., Smith, S.S., Brinkley, C.A., Newman, J.P. (2002). The Reliability and Validity of the Psychopathy Checklist-Revised in a Sample of Female Offenders. *Criminal Justice and Behavior*, vol. 29, no. 2, pp. 202-231.

Wallace, J.F., Schmitt, W.A., Vitale, J.E., & Newman, J.P. (2000). Experimental investigations of information-processing deficiencies in psychopaths: Implications for diagnosis and treatment. In C. B. Gacano (Ed.), *The Clinical and Forensic Assessment of Psychopathy: A Practitioners Guide* (pp. 87-109). Mahwah, NJ: Lawrence Erlbaum Associates.

Widiger, T.A., & Corbitt, E.M. (1993). Antisocial personality disorder: Proposals for DSM-IV. *Journal of Personality Disorders*, 7(1), 63-77.

Widom, C.S. (1977). A methodology for studying non institutionalized psychopaths. *Journal of Consulting & Clinical Psychology*, 45(4), 674-68

Williamson, S. E., Hare, R., & Wong, S. (1987). Violence: Criminal psychopaths and their victims. *Canadian Journal of Behavioral Sciences*, 19, 454-462.

Wilson, D. L., Frick, P.J., & Clements, C.B. (1999). Gender, somatization and psychopathic traits in a college sample. *Journal of Psychopathology and Behavioral Assessment*, 21(3), 221-235.

Wilson, J.Q. & Herrnstein, R.J. (1985). *Crime and Human Nature*. New York, NY: Simon & Schuster, pp. 639.

Zagon, I. K., & Jackson, H. J. (1994). Construct validity of a psychopathy measure. *Personality & Individual Differences*, 17(125-135).

## APPENDICIES

Appendix A

*Demographics*

What is your gender?     Male                       Female

What is your marital status?  
 Single                       Divorced                       Married                       Separated

What is your age? \_\_\_\_\_

What is your race? (Check all that apply)  
 African American     Caucasian     Other (please specify) \_\_\_\_\_

What is your ethnicity?  
 Hispanic                       other (please specify) \_\_\_\_\_

What is your average family income per year?  
 \$0-\$9,999                       \$10,000-19,000  
 \$20,000-29,999                       \$30,000-39,999  
 \$40,000-59,999                       \$60,000 and higher

Do you currently drink?     yes                       no  
If you answered yes, what age did you start drinking? \_\_\_\_\_  
How many drinks per week? \_\_\_\_\_ per month? \_\_\_\_\_

Do you currently use drugs?     yes                       no  
Have you ever used drugs?     yes                       no  
If you answered yes, what age did you start using drugs? \_\_\_\_\_  
How much do you consume per week? \_\_\_\_\_ per month? \_\_\_\_\_

Have you ever been arrested?     yes                       no  
How much time did you spend in jail? \_\_\_\_\_  
Have you been convicted of a crime?     yes                       no

Do you have any psychiatric/psychological history?  
 Inpatient hospitalization  
 Outpatient care or services  
 No psychiatric/psychological history

Appendix B

*LPS*

Directions: **A number of statements are given below. Read each statement and then circle the answer that indicates your level of agreement with that statement (Rate statements according to the scale provided below). There are no right or wrong answers. Do not spend too much time on any one statement.**

1. Success is based on survival of the fittest; I am not concerned about the losers.  
Disagree      Disagree      Agree      Agree  
Strongly      Somewhat      Somewhat      Strongly
2. For me, what's right is whatever I can get away with.  
Disagree      Disagree      Agree      Agree  
Strongly      Somewhat      Somewhat      Strongly
3. In today's world, I feel justified in doing anything I can get away with to succeed.  
Disagree      Disagree      Agree      Agree  
Strongly      Somewhat      Somewhat      Strongly
4. My main purpose in life is getting as many goodies as I can.  
Disagree      Disagree      Agree      Agree  
Strongly      Somewhat      Somewhat      Strongly
5. Making a lot of money is my most important goal.  
Disagree      Disagree      Agree      Agree  
Strongly      Somewhat      Somewhat      Strongly
6. I let others worry about higher values; my main concern is with the bottom line  
Disagree      Disagree      Agree      Agree  
Strongly      Somewhat      Somewhat      Strongly
7. People who are stupid enough to get ripped off usually deserve it.  
Disagree      Disagree      Agree      Agree  
Strongly      Somewhat      Somewhat      Strongly
8. Looking out for myself is my top priority.  
Disagree      Disagree      Agree      Agree  
Strongly      Somewhat      Somewhat      Strongly



9. I tell other people what they want to hear so that they will do what I want them to do.

Disagree	Disagree	Agree	Agree
Strongly	Somewhat	Somewhat	Strongly

10. I would be upset if my success came at someone else's expense.

Disagree	Disagree	Agree	Agree
Strongly	Somewhat	Somewhat	Strongly

11. I often admire a really clever scam.

Disagree	Disagree	Agree	Agree
Strongly	Somewhat	Somewhat	Strongly

12. I make a point of trying not to hurt others in pursuit of my goals.

Disagree	Disagree	Agree	Agree
Strongly	Somewhat	Somewhat	Strongly

13. I feel bad if my words or actions cause someone else to feel emotional pain.

Disagree	Disagree	Agree	Agree
Strongly	Somewhat	Somewhat	Strongly

14. Even if I were trying very hard to sell something, I wouldn't lie about it.

Disagree	Disagree	Agree	Agree
Strongly	Somewhat	Somewhat	Strongly

15. Cheating is not justified because it is unfair to others.

Disagree	Disagree	Agree	Agree
Strongly	Somewhat	Somewhat	Strongly

16. I find myself in the same kinds of trouble, time after time.

Disagree	Disagree	Agree	Agree
Strongly	Somewhat	Somewhat	Strongly

17. I am often bored.

Disagree	Disagree	Agree	Agree
Strongly	Somewhat	Somewhat	Strongly

18. I find that I am able to pursue one goal for a long time.

Disagree	Disagree	Agree	Agree
Strongly	Somewhat	Somewhat	Strongly

19. I don't plan anything very far in advance.
- |          |          |          |          |
|----------|----------|----------|----------|
| Disagree | Disagree | Agree    | Agree    |
| Strongly | Somewhat | Somewhat | Strongly |
20. I quickly lose interest in tasks I start.
- |          |          |          |          |
|----------|----------|----------|----------|
| Disagree | Disagree | Agree    | Agree    |
| Strongly | Somewhat | Somewhat | Strongly |
21. Most of my problems are due to the fact that other people just don't understand me.
- |          |          |          |          |
|----------|----------|----------|----------|
| Disagree | Disagree | Agree    | Agree    |
| Strongly | Somewhat | Somewhat | Strongly |
22. Before I do anything, I carefully consider the possible consequences.
- |          |          |          |          |
|----------|----------|----------|----------|
| Disagree | Disagree | Agree    | Agree    |
| Strongly | Somewhat | Somewhat | Strongly |
23. I have been in a lot of shouting matches with other people.
- |          |          |          |          |
|----------|----------|----------|----------|
| Disagree | Disagree | Agree    | Agree    |
| Strongly | Somewhat | Somewhat | Strongly |
24. When I get frustrated, I often "let off steam" by blowing my top.
- |          |          |          |          |
|----------|----------|----------|----------|
| Disagree | Disagree | Agree    | Agree    |
| Strongly | Somewhat | Somewhat | Strongly |
25. Love is overrated.
- |          |          |          |          |
|----------|----------|----------|----------|
| Disagree | Disagree | Agree    | Agree    |
| Strongly | Somewhat | Somewhat | Strongly |
26. I enjoy manipulating other people's feelings
- |          |          |          |          |
|----------|----------|----------|----------|
| Disagree | Disagree | Agree    | Agree    |
| Strongly | Somewhat | Somewhat | Strongly |

## Appendix C

### *BIS/BAS Scales*

**Directions:** A number of statements are given below. Read each statement and then circle the answer that indicates your level of agreement with that statement (Rate statements according to the scale provided below). There are no right or wrong answers. Do not spend too much time on any one statement.

1. If I think something unpleasant is going to happen I usually get pretty “worked up.”

Disagree	Disagree	Agree	Agree
Strongly	Somewhat	Somewhat	Strongly
2. I worry about making mistakes.

Disagree	Disagree	Agree	Agree
Strongly	Somewhat	Somewhat	Strongly
3. Criticism or scolding hurts me quite a lot.

Disagree	Disagree	Agree	Agree
Strongly	Somewhat	Somewhat	Strongly
4. I feel pretty worried or upset when I think or know somebody is angry at me.

Disagree	Disagree	Agree	Agree
Strongly	Somewhat	Somewhat	Strongly
5. Even if something bad is about to happen to me, I rarely experience fear or nervousness.

Disagree	Disagree	Agree	Agree
Strongly	Somewhat	Somewhat	Strongly
6. I feel worried when I think I have done poorly at something.

Disagree	Disagree	Agree	Agree
Strongly	Somewhat	Somewhat	Strongly
7. I have very few fears compared to my friends.

Disagree	Disagree	Agree	Agree
Strongly	Somewhat	Somewhat	Strongly
8. When I get something I want, I feel excited and energized.

Disagree	Disagree	Agree	Agree
Strongly	Somewhat	Somewhat	Strongly

9. When I'm doing well at something, I love to keep at it.  
 Disagree Disagree Agree Agree  
 Strongly Somewhat Somewhat Strongly
10. When good things happen to me, it affects me strongly.  
 Disagree Disagree Agree Agree  
 Strongly Somewhat Somewhat Strongly
11. It would excite me to win a contest.  
 Disagree Disagree Agree Agree  
 Strongly Somewhat Somewhat Strongly
12. When I see an opportunity for something I like, I get excited right away.  
 Disagree Disagree Agree Agree  
 Strongly Somewhat Somewhat Strongly
13. When I want something g, I usually go all-out to get it.  
 Disagree Disagree Agree Agree  
 Strongly Somewhat Somewhat Strongly
14. I go out of my way to get things I want.  
 Disagree Disagree Agree Agree  
 Strongly Somewhat Somewhat Strongly
15. If I see a chance to get something I want, I move on it right away.  
 Disagree Disagree Agree Agree  
 Strongly Somewhat Somewhat Strongly
16. When I go after something I use a "no holds barred" approach  
 Disagree Disagree Agree Agree  
 Strongly Somewhat Somewhat Strongly
17. I will often do things for no other reason than that they might be fun.  
 Disagree Disagree Agree Agree  
 Strongly Somewhat Somewhat Strongly
18. I crave excitement and new sensations.  
 Disagree Disagree Agree Agree  
 Strongly Somewhat Somewhat Strongly

19. I'm always willing to try something new if I think it will be fun

Disagree	Disagree	Agree	Agree
Strongly	Somewhat	Somewhat	Strongly

20. I often act on the spur of the moment.

Disagree	Disagree	Agree	Agree
Strongly	Somewhat	Somewhat	Strongly

Appendix D

STAI

Self-Evaluation Questionnaire      STAI Form Y-1

**Directions:** A number of statements which people have used to describe themselves are given below. Read each statement and then circle the appropriate number to the right of the statement to indicate how you feel right now, that is, at this moment (Rate statements according to the scale provided below). There are no right or wrong answers. Do not spend too much time on any one statement but give the answer, which seems to describe your present feelings best.

1= not at all      2=somewhat      3=moderately so      4=very much so

- |   |   |   |   |   |
|---|---|---|---|---|
| 1. I feel calm.....                                       | 1 | 2 | 3 | 4 |
| 2. I feel secure.....                                     | 1 | 2 | 3 | 4 |
| 3. I am tense.....  | 1 | 2 | 3 | 4 |
| 4. I feel strained.....                                   | 1 | 2 | 3 | 4 |
| 5. I feel at ease.....                                    | 1 | 2 | 3 | 4 |
| 6. I feel upset.....                                      | 1 | 2 | 3 | 4 |
| 7. I am presently worrying over possible misfortunes..... | 1 | 2 | 3 | 4 |
| 8. I feel satisfied.....                                  | 1 | 2 | 3 | 4 |
| 9. I feel frightened.....                                 | 1 | 2 | 3 | 4 |
| 10. I feel comfortable.....                               | 1 | 2 | 3 | 4 |
| 11. I feel self-confident.....                            | 1 | 2 | 3 | 4 |
| 12. I feel nervous.....                                   | 1 | 2 | 3 | 4 |
| 13. I am jittery.....                                     | 1 | 2 | 3 | 4 |
| 14. I feel indecisive.....                                | 1 | 2 | 3 | 4 |
| 15. I am relaxed.....                                     | 1 | 2 | 3 | 4 |
| 16. I feel content.....                                   | 1 | 2 | 3 | 4 |
| 17. I am worried .....                                    | 1 | 2 | 3 | 4 |
| 18. I feel confused.....                                  | 1 | 2 | 3 | 4 |

38. I take disappointments so keenly that I can't put them out of my mind.. 1 2 3 4
39. I am a steady person..... 1 2 3 4
40. I get in a state of tension or turmoils as I think over my recent  
concern and interests..... 1 2 3 4

Directions: A number of statements which people have used to describe themselves are given below. Read each statement and then circle the appropriate number to the right of the statement to indicate how you generally feel (Rate statements according to the scale provided below). There are no right or wrong answers. Do not spend too much time on any one statement but give the answer which seems to describe how you generally feel.

**1=almost never    2=sometimes    3=often    4=almost always**

- |   |   |   |   |   |
|---|---|---|---|---|
| 1. I feel pleasant.....   | 1 | 2 | 3 | 4 |
| 2. I feel nervous and restless.....   | 1 | 2 | 3 | 4 |
| 3. I feel satisfied with myself.....  | 1 | 2 | 3 | 4 |
| 4. I wish I could be as happy as others seem to be.....   | 1 | 2 | 3 | 4 |
| 5. I feel like a failure.....   | 1 | 2 | 3 | 4 |
| 6. I feel rested.....   | 1 | 2 | 3 | 4 |
| 7. I am "calm, cool, and collected".....  | 1 | 2 | 3 | 4 |
| 8. I feel that difficulties are piling up so that I cannot overcome them....                        | 1 | 2 | 3 | 4 |
| 9. I worry too much over something that really doesn't matter.....                                  | 1 | 2 | 3 | 4 |
| 10. I am happy.....   | 1 | 2 | 3 | 4 |
| 11. I have disturbing thoughts.....   | 1 | 2 | 3 | 4 |
| 12. I lack self-confidence.....   | 1 | 2 | 3 | 4 |
| 13. I feel secure.....  | 1 | 2 | 3 | 4 |
| 14. I make decisions easily.....  | 1 | 2 | 3 | 4 |
| 15. I feel inadequate.....  | 1 | 2 | 3 | 4 |
| 16. I am content.....   | 1 | 2 | 3 | 4 |
| 17. Some unimportant thought runs through my mind and bothers me...                                 | 1 | 2 | 3 | 4 |
| 18. I take disappointments so keenly that I can't put them out of my mind..                         | 1 | 2 | 3 | 4 |
| 19. I am a steady person.....   | 1 | 2 | 3 | 4 |
| 20. I get in a state of tension or turmoils as I think over my recent<br>concern and interests..... | 1 | 2 | 3 | 4 |



## Appendix E

### *Aggression Questionnaire*

**Directions:** Read each statement and then circle the appropriate number to the right of the statement to indicate whether the statement describes you or not. Rate statements according to the scale provided below. There are no right or wrong answers. Do not spend too much time on any one statement but give the answer, which seems to describe you best.

**1= extremely uncharacteristic of me**

**2=mostly uncharacteristic of me**

**3=somewhat characteristic of me**

**4=extremely characteristic of me**

- |   |   |   |   |   |   |
|---|---|---|---|---|---|
| 1. When people annoy me, I may tell them what I think of them.....        | 1 | 2 | 3 | 4 | 5 |
| 2. I have trouble controlling my temper.....                              | 1 | 2 | 3 | 4 | 5 |
| 3. I have threatened people I know.....                                   | 1 | 2 | 3 | 4 | 5 |
| 4. At times I feel I have gotten a raw deal out of life.....              | 1 | 2 | 3 | 4 | 5 |
| 5. Once in a while I can't control the urge to strike another person..... | 1 | 2 | 3 | 4 | 5 |
| 6. My friends say that I'm somewhat argumentative.....                    | 1 | 2 | 3 | 4 | 5 |
| 7. When frustrated, I let my irritation show.....                         | 1 | 2 | 3 | 4 | 5 |
| 8. I am sometimes eaten up with jealousy.....                             | 1 | 2 | 3 | 4 | 5 |
| 9. I can't help getting into arguments when people disagree with me...    | 1 | 2 | 3 | 4 | 5 |
| 10. I get into fights a little more than the average person.....          | 1 | 2 | 3 | 4 | 5 |
| 11. Some of my friends think I'm a hothead.....                           | 1 | 2 | 3 | 4 | 5 |
| 12. When people are especially nice, I wonder what they want.....         | 1 | 2 | 3 | 4 | 5 |
| 13. I tell my friends openly when I disagree with them.....               | 1 | 2 | 3 | 4 | 5 |
| 14. Given enough provocation, I may hit another person.....               | 1 | 2 | 3 | 4 | 5 |
| 15. I wonder why sometimes I feel so bitter about things.....             | 1 | 2 | 3 | 4 | 5 |
| 16. I flare up quickly but get over it quickly.....                       | 1 | 2 | 3 | 4 | 5 |
| 17. If somebody hit me, I hit back.....                                   | 1 | 2 | 3 | 4 | 5 |
| 18. I know that "friends" talk about me behind my back.....               | 1 | 2 | 3 | 4 | 5 |
| 19. I have become so mad that I have broken things.....                   | 1 | 2 | 3 | 4 | 5 |
| 20. I am an even-tempered person.....                                     | 1 | 2 | 3 | 4 | 5 |

- |   |   |   |   |   |   |
|---|---|---|---|---|---|
| 21. Other people always seem to get the breaks.....                   | 1 | 2 | 3 | 4 | 5 |
| 22. I often find myself disagreeing with people.....                  | 1 | 2 | 3 | 4 | 5 |
| 23. There are people who pushed me so far that we came to blows...    | 1 | 2 | 3 | 4 | 5 |
| 24. I sometimes feel that people are laughing at me behind my back... | 1 | 2 | 3 | 4 | 5 |
| 25. I sometimes feel like a powder keg ready to explode.....          | 1 | 2 | 3 | 4 | 5 |
| 26. If I have to resort to violence to protect my rights, I will..... | 1 | 2 | 3 | 4 | 5 |
| 27. I am suspicious of overly friendly strangers.....                 | 1 | 2 | 3 | 4 | 5 |
| 28. Sometimes I fly off the handle for no good reason.....            | 1 | 2 | 3 | 4 | 5 |
| 29. I can think of no good reason for ever hitting a person.....      | 1 | 2 | 3 | 4 | 5 |

## Appendix F

### *Aggressive Incidents Report form and Coding Form*

#### Appendix F **Aggressive Form**

Think of the times when you were aggressive towards someone. Using the following definition for aggression, please describe at least three of your most aggressive actions (more space is provided on the back of the page). For each act include a brief description of the behaviors, the motivation, who it was against, and your age at the time of the incident.

Aggression: any physical (e.g. shoving, hitting) or verbal (e.g. arguing, shouting, screaming) behavior carried out with the intention of delivering an unpleasant action to someone else (e.g. Family members, significant other, friend, stranger, etc.). Aggressive acts can be in response to a provocation, including insults, threats, or other acts that cause frustration or anger, or aggression can be to obtain a goal such as power, money, sexual gratification, or some other objective beyond inflicting injury on the victim.

Aggressive example # 1:

Relationship: Stranger	Age: 19
------------------------	---------

I wanted tickets to a concert so I waited in line for several hours. When they opened the ticket counter up it got a little chaotic. I was worried that I would not get the tickets so I shoved someone in line for concert tickets in order to get to the front of the line.

Aggressive example # 2:

Relationship: Stranger	Age: 24
------------------------	---------

I was driving on the highway and I was cut off by another car. I got angry and began to curse at the driver in the other car when they cut me off.

Aggressive example # 3:

Relationship: Player on opposite team	Age: 15
---------------------------------------	---------

I was playing in a team softball game and we down by one run. I was on third base and I kept thinking that I had to score no matter what in order for us to tie the game up. When the batter hit the ball, I ran and the catcher was in the way of home plate. I ran right into her and knocked her over to get to home plate and score.

Aggressive example # 4:

Relationship: girlfriend	Age: 22
--------------------------	---------

I was arguing with my girlfriend and we were both saying some pretty mean things. She started calling me "stupid" and it really pissed me off. I grabbed her arm and she hit me with her other hand. I was so pissed that I hit her in the arm. Finally I just left and slammed the door.

1. Please describe your most aggressive incident (please continue on back of page if you need more space):

Relationship:	Age:
---------------	------

a. What motivated you to act aggressively? What happened just before you acted aggressively? Was your aggressive behavior in response to anything? Please explain.

b. Did you plan or prepare for the aggressive action, or was it more spontaneous? Please explain.

c. How did you feel at the time of the aggressive act? What, if any emotions did you experience?

2. Please describe your second most aggressive incident:

Relationship:	Age:
---------------	------

a. What motivated you to act aggressively? What happened just before you acted aggressively? Was your aggressive behavior in response to anything? Please explain.

b. Did you plan or prepare for the aggressive action, or was it more spontaneous? Please explain.

c. How did you feel at the time of the aggressive act? What, if any emotions did you experience?

3. Please describe your third most aggressive incident (please continue on back of page if you need more space):

Relationship:	Age:
---------------	------

- a. What motivated you to act aggressively? What happened just before you acted aggressively? Was your aggressive behavior in response to anything? Please explain.
- b. Did you plan or prepare for the aggressive action, or was it more spontaneous? Please explain.
- c. How did you feel at the time of the aggressive act? What, if any emotions did you experience?

4. Please describe any other aggressive incidents:

Relationship:	Age:
---------------	------

a. What motivated you to act aggressively? What happened just before you acted aggressively? Was your aggressive behavior in response to anything? Please explain.

b. Did you plan or prepare for the aggressive action, or was it more spontaneous? Please explain.

c. How did you feel at the time of the aggressive act? What, if any emotions did you experience?





**On the Answer Sheet (p. 3), rate your aggressive behaviors on the specific aspects of aggression described below. Within the parentheses are examples of each level, but these examples do not exhaust the possibilities. Rate each aspect of aggression independently, regardless of scores on the other aspects.**

### **Planning**

How much did you plan or prepare for the aggressive action? Consider both the length of time involved in preparation and the amount of preparatory activity.

- 4 – Extensive Planning (detailed plan or preparation, rehearsal)
- 3 - Moderate planning (contemplation of action for more than 24 hours)
- 2 – Some planning (action within 24 hours, some plan or preparation)
- 1 – Very little or no planning (act during argument or fight, no preparation)

Assign a (1) to actions which are part of a contiguous event, such as a brief pause during an argument. Assign a (2) if there is a break in the argument where you leave the scene of an argument and return later in the day.

### **Goal-Directedness**

How much were you motivated by an external incentive, goal, or objective beyond just responding to provocation or threat? Readily apparent goals include money, power, sexual gratification, or some other external goal or benefit. Do not include such goals as self defense, escaping harm, taking revenge for previous aggression, or acting out of frustration.

- 4 – unequivocal goal-directedness
- 3 – Primary goal-directedness with presence of other motives
- 2 – Secondary goal-directedness, in presence of other primary motives
- 1 – No apparent goal-directedness (motive to injure victim, retaliate, defend)

### **Provocation**

Did the victims actions provoke your aggression? Include provocation that occurred prior to the incident (e.g. prior abusive treatment or confrontation)

- 6 – Exceptionally strong provocation (repeated assault, severe abuse)
- 5 – Very strong provocation (assault)
- 4 – Strong provocation (breakup of a romantic relationship, threat of major life change)
- 3 – Moderate Provocation (serious argument or dispute, threat of assault)
- 2 – Mild provocation (insult, minor argument, confrontation with others)
- 1 – No apparent provocation

### **Arousal**

How much arousal, especially anger, did you experience at the time of the aggressive act? Just code your mental state, not attitude towards the victim.

- 4 – Enraged, furious, described as “out of control” or “irrational”
- 3 – Angry, mad, extremely frightened
- 2 – Excited, very nervous, anxious
- 1 – Calm or tense at most

Arousal at the (4) level is extraordinary, and should be short duration

### **Relationship with Victim**

Code the degree of contact or closeness between you and the victim. Code based on duration and closeness of relationship.

- 5 – Very close relationship (immediate family member, romantic partner)
- 4 – Close relationship (friend, relative, dating partner, etc.)
- 3 – Specific relationship (co-worker, person in one of your classes, etc.)
- 2 – Acquaintance
- 1 – Stranger

*Please complete the following ratings of your aggressive acts. Circle the most appropriate level of each aspect of aggression based on the descriptions listed below.*

Aggressive Act	Planning	Goal-Directedness	Provocation	Arousal	Relationship with Victim
Act #1	4 3 2 1	4 3 2 1	6 5 4 3 2 1	4 3 2 1	5 4 3 2 1
Act #2	4 3 2 1	4 3 2 1	6 5 4 3 2 1	4 3 2 1	5 4 3 2 1
Act #3	4 3 2 1	4 3 2 1	6 5 4 3 2 1	4 3 2 1	5 4 3 2 1
Act #4	4 3 2 1	4 3 2 1	6 5 4 3 2 1	4 3 2 1	5 4 3 2 1
Act #5	4 3 2 1	4 3 2 1	6 5 4 3 2 1	4 3 2 1	5 4 3 2 1

Please complete the following ratings of your aggressive acts. Circle the most appropriate level of each aspect of aggression based on the descriptions listed below.

Aggressive Act	Planning	Goal-Directedness	Provocation	Arousal	Relationship with Victim
Act #1	4 3 2 1	4 3 2 1	6 5 4 3 2 1	4 3 2 1	5 4 3 2 1
Act #2	4 3 2 1	4 3 2 1	6 5 4 3 2 1	4 3 2 1	5 4 3 2 1
Act #3	4 3 2 1	4 3 2 1	6 5 4 3 2 1	4 3 2 1	5 4 3 2 1
Act #4	4 3 2 1	4 3 2 1	6 5 4 3 2 1	4 3 2 1	5 4 3 2 1
Act #5	4 3 2 1	4 3 2 1	6 5 4 3 2 1	4 3 2 1	5 4 3 2 1

Please complete the following ratings of your aggressive acts. Circle the most appropriate level of each aspect of aggression based on the descriptions listed below.

Aggressive Act	Planning	Goal-Directedness	Provocation	Arousal	Relationship with Victim
Act #1	4 3 2 1	4 3 2 1	6 5 4 3 2 1	4 3 2 1	5 4 3 2 1
Act #2	4 3 2 1	4 3 2 1	6 5 4 3 2 1	4 3 2 1	5 4 3 2 1
Act #3	4 3 2 1	4 3 2 1	6 5 4 3 2 1	4 3 2 1	5 4 3 2 1
Act #4	4 3 2 1	4 3 2 1	6 5 4 3 2 1	4 3 2 1	5 4 3 2 1
Act #5	4 3 2 1	4 3 2 1	6 5 4 3 2 1	4 3 2 1	5 4 3 2 1

## Appendix G

### *PPI*

#### *PERSONALITY STYLES INVENTORY*

This test measures differences in personality characteristics among people—that is, how people differ from each other in their personality styles. Beginning on the next page, read each item carefully, and decide to what extent it is false or true as applied to you. Then mark your answer in the space provided to the left of each item using the scale provided below.

**1) False            2) Mostly False            3) Mostly True            4) True**

Even if you feel that an item is neither false nor true as applied to you, or if you are unsure about what response to make, try to make some response in every case. If you cannot make up your mind about the item, select the choice that is closest to your opinion about whether it is false or true as applied to you. Here's a sample item.

\_\_\_\_\_ I enjoy going to movies.

If it is true that you enjoy going to movies, place a 4 on the line to the left of the item, as shown below.

4 I enjoy going to movies.

If it is mostly false that you enjoy going to movies, place a 2 on the line to the left of the item, and so on. Try to be as honest as you can, and be sure to give your own opinion about whether each item is false or true as applied to you.

---

\_\_\_\_\_ 1. With one smile, I can often make someone I've just met interested in getting to know me better.

\_\_\_\_\_ 2. I like my life to be unpredictable, even a little surprising.

\_\_\_\_\_ 3. Members of the opposite sex find me "sexy" and appealing.

\_\_\_\_\_ 4. I am very careful and cautious when doing work involving detail.

- \_\_\_\_\_ 5. Physically dangerous activities, such as sky-diving or climbing atop high places, frighten me more than they do most other people.
- \_\_\_\_\_ 6. I tend to have a short temper when I am under stress.
- \_\_\_\_\_ 7. Even when others are upset with me, I can usually win them over with my charm.
- \_\_\_\_\_ 8. My table manners are not always perfect.
- \_\_\_\_\_ 9. If I'm at a dull party or social gathering, I like to stir things up
- \_\_\_\_\_ 10. I weigh the pros and cons of major decisions carefully before making them.
- \_\_\_\_\_ 11. Being rich is much less important to me than enjoying the work I do.
- \_\_\_\_\_ 12. I've always considered myself to be something of a rebel.
- \_\_\_\_\_ 13. I sometimes worry about whether I might have accidentally hurt someone's feelings.
- \_\_\_\_\_ 14. I find it difficult to make small talk with people I do not know well.
- \_\_\_\_\_ 15. I think a fair amount about my long-term career goals.
- \_\_\_\_\_ 16. I would not mind wearing my hair in a "mohawk."
- \_\_\_\_\_ 17. I occasionally forget my name.
- \_\_\_\_\_ 18. I rarely find myself being the center of attention in social situations.
- \_\_\_\_\_ 19. It might be fun to belong to a group of "bikers" (motorcyclists) who travel around the country and raise some hell.
- \_\_\_\_\_ 20. I tell many "white lies"
- \_\_\_\_\_ 21. I often hold on to old objects or letters just for their sentimental value.
- \_\_\_\_\_ 22. I am a good conversationalist.

- \_\_\_\_\_ 23. A lot of people in my life have tried to stab me in the back.
- \_\_\_\_\_ 24. I am so moved by certain experiences (e.g., watching a beautiful sunset, listening to a favorite piece of music) that I feel emotions that are beyond words.
- \_\_\_\_\_ 25. I often find myself resenting people who give me orders.
- \_\_\_\_\_ 26. I would find the job of movie stunt person exciting.
- \_\_\_\_\_ 27. I have always been extremely courageous in facing difficult situations.
- \_\_\_\_\_ 28. I hate having to tell people bad news.
- \_\_\_\_\_ 29. I think that it should be against the law to seriously injure another person intentionally.
- \_\_\_\_\_ 30. I would be more successful in life had I not received so many bad breaks.
- \_\_\_\_\_ 31. It bothers me (or it would bother me) quite a bit to speak in front of a large group of strangers.
- \_\_\_\_\_ 32. When I am faced with a decision involving moral matters, I often ask myself, “Am I doing the right thing?”
- \_\_\_\_\_ 33. From time to time I really “blow up” at other people.
- \_\_\_\_\_ 34. Many people think of me as a daredevil.
- \_\_\_\_\_ 35. It takes me a long time to get over embarrassing or humiliating experiences.
- \_\_\_\_\_ 36. I usually feel that people give me the credit I deserve.
- \_\_\_\_\_ 37. I’ve never really cared much about society’s so-called “values of right and wrong”.
- \_\_\_\_\_ 38. If someone mistreats me, I’d rather try to forgive him or her than get even.

- \_\_\_\_\_ 39. It would bother me to cheat on an examination or assignment even if no-one got hurt in the process.
- \_\_\_\_\_ 40. I become deeply upset when I see photographs of starving people in Africa.
- \_\_\_\_\_ 41. I rarely monopolize conversations.
- \_\_\_\_\_ 42. Making a parachute jump really frighten me.
- \_\_\_\_\_ 43. At times I have been envious of someone.
- \_\_\_\_\_ 44. I become very angry if I do not receive special favors or privileges I feel I deserve.
- \_\_\_\_\_ 45. I often find myself worrying when a friend is having serious personal problems.
- \_\_\_\_\_ 46. I pride myself on being offbeat and unconventional.
- \_\_\_\_\_ 47. Keeping in touch with old friends is very important to me.
- \_\_\_\_\_ 48. I usually strive to be the best at whatever I do.
- \_\_\_\_\_ 49. I almost always feel very sure of myself when I'm around other people.
- \_\_\_\_\_ 50. I look down at the ground whenever I hear an airplane flying above my head.
- \_\_\_\_\_ 51. I could make an effective "con artist" if the situation required it.
- \_\_\_\_\_ 52. I wouldn't mind spending my life in a commune and writing poetry.
- \_\_\_\_\_ 53. I have had "crushes" on people that were so intense that they were painful.
- \_\_\_\_\_ 54. I like to stand out in a crowd.
- \_\_\_\_\_ 55. I'm not intimidated by anyone.
- \_\_\_\_\_ 56. Before I say something, I first like to think about it for a while.



- \_\_\_\_\_ 57. I would enjoy hitch-hiking my way across the United States with no prearranged plans.
- \_\_\_\_\_ 58. I am a guilt-prone person.
- \_\_\_\_\_ 59. I bet that it would be fun to pilot a small airplane alone.
- \_\_\_\_\_ 60. When I want to, I can usually put fears and worries out of my mind.
- \_\_\_\_\_ 61. Never in my whole life have I wished for anything that I was not entitled to.
- \_\_\_\_\_ 62. I generally prefer to act first and think later.
- \_\_\_\_\_ 63. I am easily flustered in pressured situations.
- \_\_\_\_\_ 64. I often make the same errors in judgment over and over again.
- \_\_\_\_\_ 65. I always look out for my own interests before e worrying about those of the other guy.
- \_\_\_\_\_ 66. I smile at a funny joke at least once in a while.
- \_\_\_\_\_ 67. People have often criticized me unjustly (unfairly).
- \_\_\_\_\_ 68. I almost always promptly return items that I have borrowed room others.
- \_\_\_\_\_ 69. I sometimes have difficulty standing up for my rights in social situations.
- \_\_\_\_\_ 70. If I want to, I can influence other people without their realizing they are being manipulated.
- \_\_\_\_\_ 71. My opinions are always completely reasonable.
- \_\_\_\_\_ 72. I become embarrassed more easily than most people.
- \_\_\_\_\_ 73. When I'm in a frightening situation, I can "turn off" my fear almost at will.
- \_\_\_\_\_ 74. It bothers me greatly when I see someone crying.
- \_\_\_\_\_ 75. Frankly, I believe that I am more important than most people.

- \_\_\_\_ 76. I frequently have disturbing thought that become so intense and overpowering that I think I can hear claps of thunder or crashes of cymbals inside my head.
- \_\_\_\_ 77. If I do something that causes me trouble, I'm sure to avoid doing it again.
- \_\_\_\_ 78. I often place my friends' needs above my own.
- \_\_\_\_ 79. I like having my vacations carefully planned out.
- \_\_\_\_ 80. People whom I have trusted have often ended up "double-crossing" me.
- \_\_\_\_ 81. I often become deeply attached to people I like.
- \_\_\_\_ 82. I've been the victim of a lot of bad luck in my life.
- \_\_\_\_ 83. I have at times eaten too much.
- \_\_\_\_ 84. I sometimes question authority figures, "just for the hell of it."
- \_\_\_\_ 85. When my life becomes boring, I like to take some chances to make things interesting.
- \_\_\_\_ 86. I tend to be "thin-skinned" and overly sensitive to criticism.
- \_\_\_\_ 87. I've quickly learned from my major mistake in life.
- \_\_\_\_ 88. When some one is hurt by something I say or do, I usually consider that to be their problem.
- \_\_\_\_ 89. I like to dress differently from other people.
- \_\_\_\_ 90. If I really wanted to, I could convince most people of just about anything.
- \_\_\_\_ 91. I get restless and dissatisfied if my life becomes too routine.
- \_\_\_\_ 92. I generally feel that life has treated me fairly.
- \_\_\_\_ 93. Ending a friendship is (or would be) very painful for me.

- \_\_\_\_ 94. When I am under stress, I often see large, red, rectangular shapes moving in front of my eyes.
- \_\_\_\_ 95. I often do favors for people even when I know that I will probably never see them again.
- \_\_\_\_ 96. I have sometimes "stood up" a date or a friend because something that sounded like more fun came up.
- \_\_\_\_ 97. I haven't thought much about what I want to do with my life.
- \_\_\_\_ 98. Looking down from a high place gives me "the jitters."
- \_\_\_\_ 99. I feel that few people in my life have taken advantage of me.
- \_\_\_\_ 100. I can't imagine being sexually involved with more than one person at the same time.
- \_\_\_\_ 101. I'm never concerned about whether I'm following the "rules" in social situations; I just make my own rules.
- \_\_\_\_ 102. I find it easy to go up to someone I've never met and introduce myself.
- \_\_\_\_ 103. I often feel very nostalgic when I think back to peaceful moments in my childhood.
- \_\_\_\_ 104. When I go to a restaurant, I carefully look over the menu before deciding what to order.
- \_\_\_\_ 105. Some people seem to have gone out of their way to make life difficult for me.
- \_\_\_\_ 106. I have always been completely fair to others.
- \_\_\_\_ 107. I get a kick out of startling or scaring other people.

- \_\_\_\_\_ 108. I generally try to pay attention when someone important speaks to me directly.
- \_\_\_\_\_ 109. I feel very bad about myself after telling a lie.
- \_\_\_\_\_ 110. I enjoy watching violent scenes in movies.
- \_\_\_\_\_ 111. I would not enjoy being a race-car driver.
- \_\_\_\_\_ 112. I am very careful about my manners when other people are around.
- \_\_\_\_\_ 113. I feel that very few people have ever understood me.
- \_\_\_\_\_ 114. I'm hardly ever the "life of the party."
- \_\_\_\_\_ 115. I have occasionally felt discouraged about something.
- \_\_\_\_\_ 116. I agree with the motto, "If you are bored with life, risk it."
- \_\_\_\_\_ 117. I am a squeamish person.
- \_\_\_\_\_ 118. I enjoy (or I would enjoy) participating in sports involving a lot of physical contact (e.g., football, wrestling).
- \_\_\_\_\_ 119. I do not enjoy loud, wild parties and get-togethers.
- \_\_\_\_\_ 120. I often push myself to my limits in my work.
- \_\_\_\_\_ 121. I am easily "rattled" at critical moments.
- \_\_\_\_\_ 122. In school or at work, I sometimes try to "stretch" the rules a little bit just to see how much I can get away with.
- \_\_\_\_\_ 123. On occasion, I've had to restrain myself from punching someone.
- \_\_\_\_\_ 124. I wouldn't mind belonging to a group of people who "drift" from city to city, with no permanent home.
- \_\_\_\_\_ 125. I have at times been angry with someone.

- \_\_\_\_\_ 126. If I were growing up during the 1960's, I probably would have been a "hippie" (Or, I was a "hippie" during the 1960's).
- \_\_\_\_\_ 127. When a friend says hello to me, I generally either wave or say something back.
- \_\_\_\_\_ 128. While watching a sporting event on TV, I sometimes wince when I see an athlete get badly injured.
- \_\_\_\_\_ 129. I'm good at flattering important people when it's useful to do so.
- \_\_\_\_\_ 130. I sometimes become deeply angry when I hear about some the injustices going on in the world.
- \_\_\_\_\_ 131. I'm not very good at talking people into doing favors for me.
- \_\_\_\_\_ 132. Seeing a poor or homeless person walking the streets at night would really break my heart.
- \_\_\_\_\_ 133. When someone tells me what to do, I often feel like doing exactly the opposite just to spite them.
- \_\_\_\_\_ 134. I always tell the entire truth.
- \_\_\_\_\_ 135. I prefer rude, but exciting people to nice, but boring people.
- \_\_\_\_\_ 136. I can remain calm in situations that would make many other people panic.
- \_\_\_\_\_ 137. I usually enjoy seeing someone I don't like get into trouble.
- \_\_\_\_\_ 138. When I'm in a group of people who do something wrong, somehow it seems that I'm usually the one who ends up getting blamed.
- \_\_\_\_\_ 139. People are almost always impressed with me after they first meet me.
- \_\_\_\_\_ 140. I like to (or would like to) wear expensive, "showy" clothing.

- \_\_\_\_\_ 141. In the past, people who were supposed to be my "friends" ended up getting me in trouble.
- \_\_\_\_\_ 142. I might enjoy flying across the Atlantic in a hot-air balloon.
- \_\_\_\_\_ 143. I don't take advantage of other people even when it's clearly to my benefit.
- \_\_\_\_\_ 144. I'm the kind of person who gets "stressed out" pretty easily.
- \_\_\_\_\_ 145. Sometimes I'm a bit lazy.
- \_\_\_\_\_ 146. I sometimes like to "thumb my nose" at established traditions.
- \_\_\_\_\_ 147. During the day, I generally see the world in color rather than in black-and-white.
- \_\_\_\_\_ 148. When I am doing something important (e.g., taking a test, doing my taxes) I usually check it over at least once or twice to make sure it is correct.
- \_\_\_\_\_ 149. When I'm among a group of people, I rarely end up being the leader.
- \_\_\_\_\_ 150. To be perfectly honest, I usually try not to help people unless I think there's some way that they can help me later.
- \_\_\_\_\_ 151. Many people probably think of my political beliefs as "radical".
- \_\_\_\_\_ 152. I sometimes lie just to see if I can get someone to believe me.
- \_\_\_\_\_ 153. I have to admit that I'm a bit of a materialist.
- \_\_\_\_\_ 154. I think that it might almost be exciting to be a passenger on a plane that appeared certain to crash, yet somehow managed to land safely.
- \_\_\_\_\_ 155. In social situations, I sometimes act the same way everyone else does because I don't want to appear too different.
- \_\_\_\_\_ 156. Never in my whole life have I taken advantage of anyone.

- \_\_\_\_ 157. I can hold up my end of a conversation even if the topic is something I know almost nothing about.
- \_\_\_\_ 158. I often tell people only the part of the truth they want to hear.
- \_\_\_\_ 159. When I'm with a group of people who are having a serious conversation, I occasionally like to say something wild or outrageous just to be noticed.
- \_\_\_\_ 160. I tend to get crabby and irritable when I have too many things to do.
- \_\_\_\_ 161. I'm sure that some people would be pleased to see me fail in life.
- \_\_\_\_ 162. I frequently find that the way that others react to my behavior is very different from what I had expected.
- \_\_\_\_ 163. Some people probably think of me as a "hopeless romantic."
- \_\_\_\_ 164. When a task gets too difficult, I don't mind dropping it and moving on to something else.
- \_\_\_\_ 165. I often get blamed for things that aren't my fault.
- \_\_\_\_ 166. I often lose my patience with people to whom I have to keep explaining things.
- \_\_\_\_ 167. Some people have made up stories about me to get me in trouble.
- \_\_\_\_ 168. I occasionally have periods of several days or more during which I am uncertain whether I am awake or asleep.
- \_\_\_\_ 169. I sometimes get myself into a state of tension and turmoil as I think of the day's events.
- \_\_\_\_ 170. To be honest, how much I like someone depends a lot on how useful that person is to me.

- \_\_\_\_\_ 171. I have sometimes felt slightly hesitant about helping someone who asked me to.
- \_\_\_\_\_ 172. I occasionally do something dangerous because someone has dared me to do it.
- \_\_\_\_\_ 173. I sometimes try to get others to "bend the rules" for me if I can't change them any other way.
- \_\_\_\_\_ 174. I am a "freewheeling", spontaneous person.
- \_\_\_\_\_ 175. I sometimes become so involved in my daydreams or fantasies that I momentarily forget about everything else.
- \_\_\_\_\_ 176. Some people have told me that I make too many excuses for myself.
- \_\_\_\_\_ 177. I am an ambitious person.
- \_\_\_\_\_ 178. Fitting in and having things in common with other people my age has always been important to me.
- \_\_\_\_\_ 179. I quickly become very annoyed at people who do not give me what I want.
- \_\_\_\_\_ 180. I have never felt that I was better than someone else.
- \_\_\_\_\_ 181. If I were a fire-fighter, I think that I might actually enjoy the excitement of trying to rescue someone from the top floor of a burning building.
- \_\_\_\_\_ 182. I will sometimes break a promise if it turns out to be inconvenient to keep.
- \_\_\_\_\_ 183. People who know me well regard me as reliable, dependable, and trustworthy.
- \_\_\_\_\_ 184. I watch my finances closely.
- \_\_\_\_\_ 185. I think that I would make a very good actor.



\_\_\_\_\_ 186. I often put off doing fun things so that I can finish my work.

\_\_\_\_\_ 187. I think that holding the some job for most of my life would be dull.

## ABOUT THE AUTHOR

Diana Falkenbach is currently an assistant professor on faculty in the psychology department of John Jay College of Criminal Justice. She received her Bachelor's degree in psychology from Emory University, and a Master's degree in Counseling from Georgia State University. Dr. Falkenbach completed her Doctoral studies in clinical psychology at the University of South Florida. She completed her internship at NYU-Bellevue Hospital Center and Kirby Psychiatric Forensic Hospital, where she worked in the field of forensic psychology, conducting evaluations of dangerousness, competency and insanity with mentally ill prisoners. Her current area of research involves considering psychopathy and aggression with a specific focus on the subtypes of psychopathy. Dr. Falkenbach is particularly interested in the assessment of psychopathy via self-report measures, which allows her to study psychopathic traits in nonclinical samples and juveniles.