9-1-2010

Validity Study of the Psychopathic Personality Inventory in a Noncriminal Population

Julie Madeleine Woltil
Loma Linda University

Follow this and additional works at: http://scholarsrepository.llu.edu/etd

Part of the Clinical Psychology Commons

Recommended Citation
Woltil, Julie Madeleine, "Validity Study of the Psychopathic Personality Inventory in a Noncriminal Population" (2010). Loma Linda University Electronic Theses, Dissertations & Projects. 13.
http://scholarsrepository.llu.edu/etd/13

This Dissertation is brought to you for free and open access by TheScholarsRepository@LLU: Digital Archive of Research, Scholarship & Creative Works. It has been accepted for inclusion in Loma Linda University Electronic Theses, Dissertations & Projects by an authorized administrator of TheScholarsRepository@LLU: Digital Archive of Research, Scholarship & Creative Works. For more information, please contact scholarsrepository@llu.edu.
Validity Study of the Psychopathic Personality Inventory in a Noncriminal Population

by

Julie Madeleine Woltil

A Dissertation in Partial Fulfillment of the requirements for the degree of Doctor of Philosophy in Clinical Psychology

September, 2010
CONTENTS

Approval Page........................................................................................................... iii

Table of Contents...................................................................................................... iv

List of Tables ............................................................................................................... vi

Abstract.................................................................................................................... vii

Chapter

1. Introduction and Literature Review.................................................................... 1

   Psychopathy's History ......................................................................................... 1
   Research on Etiology of Psychopathy ................................................................. 2

      Social Theories .................................................................................................. 2
      Emotional Theories ............................................................................................ 6
      Biological Theories ............................................................................................. 7
   Overview of Etiological Research ......................................................................... 11

   Gender Differences .............................................................................................. 11
   Assessing Psychopathy ......................................................................................... 11

      Factor Structure of the PPI .............................................................................. 16
      Validity of the PPI ............................................................................................. 20

   Aim ....................................................................................................................... 21

      Hypothesis 1 ......................................................................................................
      Hypothesis 2 ......................................................................................................
      Hypothesis 3 ......................................................................................................
      Hypothesis 4 ......................................................................................................

2. Methods ............................................................................................................... 24

      Participants ......................................................................................................
      Surveys ..............................................................................................................

3. Results ................................................................................................................. 28

4. Discussion ............................................................................................................. 31

      Concurrent Validity ........................................................................................... 31
Construct Validity ................................................................. 32
Gender Differences ............................................................. 35
Ethnic Differences ............................................................. 35
Religious Differences .......................................................... 37
Limitations .............................................................................. 37
Future Studies ........................................................................ 38
Conclusions ............................................................................ 39

References ............................................................................. 44

Appendices
   A. Self-Report Psychopathy Scale ...................................... 49
   B. Driving Anger Scale ...................................................... 53
   C. Arnett Inventory of Sensation Seeking .......................... 54
   D. Interpersonal Reactivity Index ..................................... 56
   E. Psychopathic Personality Inventory ............................. 58
   F. Information Sheet .......................................................... 69
<table>
<thead>
<tr>
<th>Tables</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Factor Structure of the PPI</td>
<td>21</td>
</tr>
<tr>
<td>2. Demographic Variables</td>
<td>24</td>
</tr>
<tr>
<td>3. Correlation Matrix of the PPI, SRP-II, DAS, AISS and IRI</td>
<td>28</td>
</tr>
</tbody>
</table>
The Psychopathic Personality Inventory (PPI) is a self-report measure which was created by Lilienfeld and Andrews (1996) to identify the personality traits of psychopathy in noncriminal populations. These personality traits were grouped into eight subscales in the PPI including Machiavellian Egocentricity, Social Potency, Coldheartedness, Carefree Nonplanfulness, Fearlessness, Blame Externalization, Impulsive Nonconformity and Stress Immunity. In this study, the relationship between the PPI and four theoretically related concepts (psychopathy, empathy, sensation seeking and driving anger) were examined to evaluate its concurrent and construct validity. A positive correlation was found between the PPI and the Self-Report Psychopathy Scale, the Driving Anger Scale, the Arnett Inventory of Sensation Seeking and the Interpersonal Reactivity Index. Contrastingly, a negative correlation was found between the PPI’s Coldheartedness Subscale and the Interpersonal Reactivity Index. The results of this study have helped to further the conceptualization of the successful psychopath and the validity of the PPI in its assessment.
Introduction and Literature Review

Psychopathy’s History

The study and diagnosis of psychopathy began in the early days of psychology with Philippe Pinel. In 1801, Pinel identified a similar disorder to psychopathy and called it “la manie sans delire”, where patients showed signs of aberrant affect and impulsivity (Sutker & Allain, 2001). The first to operationalize the concept of psychopathy was Cleckley. In his book The Mask of Sanity (1941), Cleckley described many of his cases to show the basis of the disorder. He portrayed his patients as being hot tempered, narcissistic, callous, irritable, remorseless, unable to learn from past experiences and maladjusted towards law and order. Based on his research and clinical practice, Cleckley identified 16 criteria to be used in the diagnosis of psychopathy. In Cleckley’s research he also showed the differentiation between two groups of psychopaths: the unsuccessful and the successful psychopath (1941). The unsuccessful psychopaths are labeled as such because they exhibit psychopathic behaviors which lead them to incarceration or institutionalization in a mental hospital. According to research, prevalence rates of psychopathy in both prisons and mental hospitals are much lower than Antisocial Personality Disorder (ASPD) rates. In fact, only 15% of male prisoners, 7.5% of female prisoners, 10% of forensic psychiatric male patients and less than 1% of the general community meet the criteria for psychopathy, according to the Psychopathy Checklist Revised (PCL-R; Hare, 1991).

On the other hand, the successful psychopaths are still within the community, engaging in psychopathic behaviors of lower severity which have not yet caught the attention of the authorities. Although the reported prevalence rate of the successful
psychopath falls at less than 1%, it is difficult to determine whether this is accurate due to the limitations of testing on individuals who are not incarcerated. Cleckley found this population especially fascinating especially because these individuals were high functioning—some were doctors, scientists, lawyers, business men and even psychiatrists. Their behaviors were mostly manipulative and fraudulent as opposed to violent, but still considered serious in the eyes of their victims.

There have been many empirical studies done since Cleckley to define and explain the etiology of psychopathy and the potential environmental or biological characteristics which differentiate the psychopathic individuals from the normal population. Environmental factors which have been argued over the years include social modeling, family dynamics, common risk factors and personality development.

**Research on Etiology of Psychopathy**

**Social Theories.** One of the many theories is that children learn by modeling aggression from their environment—typically from parents (Bandura, Ross and Ross, 1961). In Bandura’s classic study of the Bobo doll, he demonstrated that children who were shown aggressive behaviors by an adult (punching the doll in the face, sitting on him, using the hammer to hit the doll) repeated those behaviors significantly more than children who had not been shown the modeled behaviors (1961). It has been shown in Bandura’s study that children can learn to model aggressive behaviors (1961), but learning the aggressive behavior is not enough to lead to a disorder. On the contrary, young children imitating their peers by biting or kicking is part of the normal development of a child, what becomes ‘abnormal’, or disorder-like, is the maintenance
of aggressive behaviors even after being taught not to repeat them. One theory of maintenance for aggressive behaviors was presented by Eron, Huesmann, Dubow, Romanoff and Yannel, in their 22 year longitudinal study (1987). Eron et al. concluded that children continue to behave aggressively because they are, in a way, rewarded for their behavior. One part of the study looked at the congruence between a child’s rating of his parents and the parents self-rating as far as parenting style. The authors described this variable as how much a child identified with both of their parents—the variable was broken down into low, medium and high level of identification. Boys who identified greatly with their fathers were found to have lower levels of aggression even in the presence of punishment (Eron et al.). Boys who had low or medium level of identification however, showed very high levels of aggression both at home and at school. They concluded that for those boys, the punishment had an instigating effect instead of an inhibitory effect (Eron et al.). A vicious cycle is then instilled because aggressive behaviors in children will be punished by parents. If some of those children find the punishment, often physical in nature, rewarding, then aggressive behaviors will continue to be present, which the researchers concluded often leads to a diagnosis of conduct disorder (Eron et al.).

Another important causal environmental factor is the role of the family dynamic. Luntz and Widom (1994) looked at a sample of abused and/or neglected children and compared them with a control group which was matched on demographic variables. They followed both groups into early adulthood and found that child abuse and neglect was a significant predictor of psychopathy in their sample. There are many long-lasting effects which stem from a child growing up in an environment where child abuse or
neglect is present. There have been other problematic family dynamics which have been found to lead to psychopathy, one of them being the role of parental rejection and emotional deprivation leading children to adopt some antisocial behaviors later in life (McCord and McCord, 1964). The parental rejection can lead children to seek attention in ways that are often antisocial in nature. In addition, children whose parents failed to provide them with the emotional support they needed can have stunted emotional development—this may lead to an inability to empathize with others, another hallmark of psychopathy. Another factor which was also shown to lead to antisocial behaviors was the presence of erratic and punitive behavior from parents (McCord and McCord). Although both McCord & McCord and Hare agree that those parental traits lead to antisocial behaviors, they emphasize the fact that not all children who have been in that type of home environment will later be diagnosed as psychopathic. They do, however, believe that it is a significant risk factor.

Some of the risk factors found in the psychopathy literature are also common risk factors for many mental disorders. The more stressors present within the family dynamic, the higher the risk of a child displaying behavioral problems, such as conduct disorder. The presence of conduct disorder then increases the likelihood of psychopathic traits being identified in adulthood. The most highly correlated risk factors are low socioeconomic status, stressful family environments, poor marital relations in parents and low social support (Shaw and Emery, 1988; Winslow, Shaw, Bruns, Kiebler, 1995; Renken, Egeland, Marvinney, Mangelsdorf, Stroufe, 1989). Due to the overall multicollinearity of the factors, there has not been a simple model which organized the predictive effects of all the identified risk factor in the development of psychopathy. As
can be imagined, those risk factors play an important role in the onset and vulnerability to many psychological disorders. Because these risks factors are common in many disorders, personality and resiliency play an intricate part in determining whether the stressors and risk factors develop into a mental disorder.

All the previously mentioned environmental factors can play an important role in the development of psychopathy in adulthood. However, one of the most important aspects of personality development is children’s ability to develop and use appropriate social information processing. If children learn to process environmental cues improperly, it will shape the way they view the world and become part of their personality process. In the discussion of psychopathy, the level of reactivity in social interactions is vital, especially because it has been shown that psychopaths have a higher degree of reactive aggression (Blair, Mitchell and Blair, 2005). It is important to examine the way in which psychopaths learned to process and interpret social information in a manner which leads to reactive aggression. The social information processing theory developed by Crick and Dodge (1996) postulated that children who act in aggressive ways do so due to a “series of sequential mental operations” (Dodge, 171). Most children have a competent social information processing (SIP) which allows them to adapt to social situations. Certain children, however, have inaccurate or ineffective SIP which leads to aggressive and antisocial behavior (Dodge and Coie, 1987). There are six steps in the SIP model: encoding of social cues, interpretation of social cues, clarification of goals, response access or construction, response evaluation and decision, and behavioral enactment (Crick and Dodge). An example of this type of processing can be seen in the following example. Suppose a child is standing in line at
the cafeteria and is suddenly pushed. First, the child must attend to the social cues—to do this, the child might look around to see how people are reacting towards him having been pushed. Second, an interpretation of the event must take place, such as 'the other boy must have done it on purpose!'. Third, a goal for the event must be decided, such as 'I am going to punch him in the face' or 'I am going to get even and push him back'. Fourth, the child evaluates whether this is an appropriate action—is it okay to push or punch someone? If the child evaluates the action positively, then he will enact the behavior and punch or push the child. For children who show aggressive or antisocial tendencies, the interpretation of the social cues is inappropriate, as it was in the example—most children will not evaluate the chosen action positively, and will instead inquire about the event, go to a teacher or simply ignore what has just happened. An aggressive child, however, might automatically assume that the boy who pushed him did it on purpose, which is called an hostile attributional bias (Nasby, Hayden and DePaulo, 1979). As children grow up, this SIP method remains with them and they continue interpreting social interactions with this hostile attributional bias, thereby increasing the chance of adopting psychopathic personality traits (Dodge, Price, Bachorowski and Newman, 1990).

In examining the role of childhood development, it is important to see its relationship to the adult development of disorders. An important link described when the Diagnostic and Statistical Manual of mental disorders (DSM-IV) added a new criteria to the diagnosis of antisocial personality disorder: the presence of a conduct disorder before the age of 15 is necessary to the diagnosis of antisocial personality disorder.
Emotional Theories. Although many find psychopathy to be synonymous with antisocial personality disorder, there is one key important difference, the emotional part of their disorder. In the book *The Psychopath: Emotion and the Brain*, the authors (Blair, Mitchell and Blair, 2005) argue that while the antisocial behaviors of patients with both disorders may be the same, the patients diagnosed with psychopathy exhibit an emotional dysfunction, leading them to act in antisocial ways. This emotional disorder leads to the patient showing more reactive aggression in addition to higher levels of instrumental aggression, two types of antisocial behaviors rarely seen in patients diagnosed with antisocial personality disorder (Blair et al., 2005). In addition, patients diagnosed with psychopathy rarely feel remorse or guilt over their actions and often fail to notice how their actions impact others—two traits which separate them from patients with antisocial personality disorder (Blair et al., 2005).

Biological Theories. There are also biological factors which act as precursors or predispositions to the onset of psychopathy. These factors will be evaluated in two regards: the role of genetics, and the biological differences of those diagnosed with psychopathy from the normal population.

Studies done with twins have suggested that psychopathy may be partially genetically based. Although many studies have reported percentage of concordance in monozygous and dizygous twins varies tremendously—in monozygous twins, the concordance for criminal conduct has been reported to be as low as 53% and as high as 70%; in dizygous twins, the concordance rate was as low as 13% and as high as 37% (Eysenck and Eysenck, 1978; Cloninger, Reich and Guze, 1978; Slutske, Heath, Dinwiddie, Madden, Buckholz, Dunne, Statham and Martin, 1997). Due to the high
concordance in both monozygous and dizygous twins, further research was done to determine what causes such high values. Carey (1992) asserted that there might be a confounding factor in the values found for criminal conduct concordance in twins. He believed that twins were prone to spend more time together, participate in similar activities and interact within the same circle of friends (Carey). He postulated that some of the criminal behaviors twins reported in the data he was analyzing (his research was based on the 1968 Christansen Danish study) was simply modeled behavior—either one twin was modeling the other or both twins were modeling behaviors from their peers. Carey concluded that heritability played a large part in the predisposition of psychopathic personality traits, but that sibling interaction was also crucial in the evolution of criminal and antisocial behaviors.

Some of the more important evidence of heritability of psychopathy come from studies of twins reared apart. Such a study was conducted to see whether there was a genetic component to antisocial behavior in adults (Grove, Eckert, Heston, Bouchard, Segal and Lykken, 1990). They interviewed twins who had been reared apart and sorted them based on them showing signs of antisocial personality disorder using criteria from the DSM-III. The results showed that there was significant heritability of antisocial behaviors at \( p \leq 0.01 \). A word of caution: as with most mental disorders, first degree relatives of those diagnosed with antisocial personality disorder are more likely to also be diagnosed—both based on the heritability of the disorder and because of the social interactions discussed by Carey (1992).

Psychophysiological abnormalities have also been identified in individuals diagnosed with psychopathy. One of the leading etiological theories is a prefrontal
cortical dysfunction. Raine (1997) explains that “damage to the frontal lobe can predispose antisocial and violent behavior” (297). Although most psychopaths do not show physical damage in their frontal lobe, brain imaging research has been able to identify dysfunctions within the prefrontal cortex (Raine, Buchsbaum, Stanley, Lottenberg, Abel and Stoddard, 1994). These differing patterns in functioning have been linked to the psychophysiological arousal and orienting deficits seen in that population (Raine et al.). PET studies on murderers diagnosed with psychopathy and age related controls (Raine et al.) found significantly reduced amounts of glucose metabolism in the prefrontal lobes. Other studies have buttressed the arguments by Raine et al. (1994) showing that reduced frontal glucose metabolism was related to violent and aggressive behavior (Goyer, Andreason, Semple, Clayton, King, Compton-Toth, Schulz and Cohen, 1994). The prefrontal lobe dysfunction also seems to address one of the key traits of psychopathy: lack of fear or anxiety. Studies have shown that people with lesions to the prefrontal cortex tend to have reduced anxiety levels and are less reactive to stressors (Stuss and Benson, 1986).

Psychophysiological difference between the psychopathy population compared to the general population has been noted in the study of cerebral blood flow. The leading experiment which addressed this issue looked at the cerebral blood flow of both a psychopathic and normal group as they were doing a semantic and affective task (Intrator, Hare, Stritzke, Brichtswein, Dorfman, Harpur, Bernstein, Handelsman, Schaefer, Keilp, Rosen and Machac, 1997). Subjects were asked to identify words and nonwords, where one set of words was neutral and the other was emotional. The control group stored greater activation during the presentation of the neutral words relative to
the emotional words (Intrator et al.). Psychopaths, however, showed greater activation during the presentation of the emotional words. Intrator et al. (1997) speculated that because psychopaths are often unemotional and lack empathy, there is a greater need for mental processing when shown words requiring emotional understanding. Similarly, another study by Blair et al. (2001) found that psychopaths had difficulty identifying faces showing emotions compared to controls. The participants were shown a neutral facial stimulus which they then morphed into an expression of fear. They found that the control group could identify the emotion of fear at a 65% morph, while the psychopathic participants needed the morph to be at 75% before being able to identify the expression as fear (Blair et al., 2001). Other studies have also shown that children and adults with psychopathic traits showed an impairment in identifying fearful vocal affect and even sad vocal affect (Blair et al., 2001; Stevens et al., 2001).

Overview of etiological research. Research suggests that environmental factors from early childhood paired with genetic predispositions towards violence are the main contributors in the development of psychopathy. This nature-nurture combination comes as no surprise since most psychological disorders show some risk factors in both domains. The psychophphysiological research identifies areas of differences between the psychopathic population and “normals” which can be used as collateral evidence for its diagnosis. This is an important finding in the research literature since assessing psychopathy has lacked standardization or agreement within the field. Although brain imaging is rarely done as the sole form of diagnosis, its use may be helpful in solidifying diagnosis.
The importance of the etiological research can be seen in how we assess psychopathy. Risk factors from childhood are incorporated in most testing instruments in the form of questions regarding antisocial behavior as a child and parental involvement in childrearing (Hare, 1991). In addition, research on social and emotional processing can also be seen in the psychopathy scales in terms of one’s ability to form close relationships and how one interprets others actions towards them (Hare, 1991; Lilienfeld & Andrews, 1996).

**Gender Differences**

Although research on psychopathy has yielded hundreds of studies, very few deal with women. As research evolved and more data emerged on psychopathy with men, clinicians often had to apply the results to female clients in trying to establish the diagnosis of psychopathy or in trying to understand it and treat it. There are, however, tremendous gender differences which need to be considered before applying the same guidelines to women when most of the standardization and research has only been with men. Recent studies on women and psychopathy found a major difference in some of the psychopathic behaviors women engaged in compared to men. Psychopathic women are more likely to engage in reactive aggression, whereas psychopathic men typically engaged in instrumental aggression (Warren et al., 2005). In the re-standardization of the Psychopathy Checklist Revised (PCL-R), Hare found that women averaged 4-6 points lower than men (1991). Some researchers believe that women may show some symptoms which are more typical of the diagnosis of histrionic personality disorder as
opposed to men who typically fulfill the criteria of antisocial personality disorder (Hamburger et al., 1996; Sutker et al., 2001).

Assessing Psychopathy

Thus, research seems to indicate that both environmental and biological factors play a hand in the onset of psychopathy. Scientists and clinicians' understanding of psychopathy remains minimal due to the within group differences—two individuals may show psychopathic traits but may be involved in completely different antisocial activity (i.e. murder versus fraud). This within-group difference addresses Cleckley's early conceptualization of the successful and unsuccessful psychopath. Research has focused on the unsuccessful psychopaths, those who have lengthy criminal records and engage in many antisocial behaviors, but research is scant on those who possess more psychopathic personality traits, rather than antisocial behaviors. Psychological research has not studied the successful psychopath, i.e. the deceitful politician or the manipulative CEO. Researching the successful psychopathic population is, however, important since they may possess the same level of emotional and interpersonal deficiency.

As discussed previously, antisocial personality disorder has very similar criteria as those first postulated by Cleckley in 1941. Since psychopathy, however, has not been identified by the DSM-IV as a psychiatric disorder, its assessment requires a separate tool. Building on research done by Cleckey, Hare (1991) advanced the study and diagnosis of psychopathy by creating a new assessment tool for diagnosing psychopathy called the PCL-R (Psychopathy Checklist Revised). The PCL-R is a twenty-item scale
which has shown to be highly effective in the diagnosis of psychopathy among criminal and institutionalized offenders. The scale is completed by the clinician via a lengthy interview with the client and the gathering of collateral data, such as the client’s criminal record and interviews with family members, to show evidence of psychopathy. Although the PCL-R is a great tool for assessing psychopathy among criminal or institutionalized offenders, it cannot be used for the evaluation of the “successful” psychopath, as described by Cleckley. One of the problems with using the PCL-R for non-forensic populations is its requirement for behavioral corroborating evidence, such as a criminal record, which is often absent in the general population. The need for an assessment tool for the non-institutionalized, non-forensic, ‘successful’ psychopath is crucial in understanding what differentiates them from the traditionally researched institutionalized criminal psychopaths.

The Psychopathic Personality Inventory (PPI) was created by Lilienfeld and Andrews (1996) to assess the personality traits associated with successful psychopaths. Both believe that the construct of psychopathy has been poorly conceptualized by its two main theorists, Cleckley and Hare (Lilienfeld & Andrews). Cleckley saw psychopathic features as being based in personality traits more than in behavioral characteristics—hence his definition of a successful psychopath, one who does not necessarily engage in the behavioral aspect of psychopathy. Hare, on the other hand, focused his assessment measures on the criminal behavior characteristics of psychopathy—impulsiveness and aggression. Because of this inconsistency in the conceptualization of psychopathy, Lilienfeld and Andrews decided to focus only on personality traits. The PPI was created around 24 main personality constructs which had
been outlined by Cleckley (1941), for a total of 187 items rated on a 4 point Likert scale—false, mostly false, mostly true and true (Lilienfeld & Andrews). The scale was divided into 8 subscales: Machiavellian Egocentricity, Social Potency, Coldheartedness, Carefree Nonplanfulness, Fearlessness, Blame Externalization, Impulsive Nonconformity and Stress Immunity (Lilienfeld & Andrews). Following is a brief description of each cluster along with an example of items associated with that scale.

- **Machiavellian Egocentricity** is the largest subscale of the PPI and it assesses narcissistic and exploitative attitudes in interpersonal functioning (e.g. “I always look out for my own interest before worrying about those of the other guy” -true).

- **Social Potency** is defined as one’s perceived ability to manipulate or influence others (e.g. “Even when others are upset with me, I can usually win them over with my charm” -true).

- **Coldheartedness** measures the presence callousness, guiltlessness and the absence of sentimentality (e.g. “I have had crushes on people that were so intense that they were painful” -false).

- **Carefree Nonplanfulness** assesses the absence of forethought and insensitivity to consequences that follows behaviors (“I often make the same error in judgment over and over again” -true).

- **Fearlessness** measures the absence of anxiety concerning harm and a willingness or desire to participate in risky activities (“Making a parachute jump would really frighten me” -false).

- **Blame Externalization** assesses the tendency to blame others or to rationalize one’s misbehavior (“I usually feel that people give me the credit I deserve” -false).
• **Impulsive Nonconformity** measures the lack of concern towards social rules ("I sometimes question authority figures just for the hell of it" –true).

• **Stress Immunity** is the smallest subscale and it assesses the absence of reactions to anxiety-provoking events ("I can remain calm in situations that would make many other people panic" –true).

In addition to the eight subscales, the PPI also includes three validity subscales. The three scales are Deviant Responding, Unlikely Virtues and Variable Response Inconsistency scored on a 4 point Likert scale (Lilienfeld & Andrews; Sandoval et al., 2000). Here is a brief description of the validity scales.

• **Deviant Responding**, was designed to detect any malingering, reading comprehension difficulties or careless responding. The deviant responding scale includes items like “During the day, I see the world in color rather than in black and white”. A response of false would alert the examiner that the results of the PPI might not be valid.

• The **Unlikely Virtues** validity scale includes items based on the Multidimensional Personality Questionnaire developed by Tellegen in 1978. These items measure socially desirable impression management and they include items like “I have always been completely fair to others”. It is very unlikely that one would respond ‘true’ to that item and would indicate that the individual taking the PPI is trying to impress the examiner by seeming unreasonably virtuous.

• **Response Consistency** is composed of item pairs in the PPI and comparing the response on those items will show whether there is response inconsistency among items which share the same content. Responding to two items which are based from
the same construct differently or inconsistently indicates the validity of their result on the PPI is most likely jeopardized.

The design of the PPI was a long process which included many analyses by its authors to ensure it had proper content to address the construct of psychopathy. Lilienfeld and Andrews thoroughly examined its psychometric properties and found it had high internal consistency (Cronbach $\alpha = 0.92$), high test-retest reliability ($r = 0.95$) and high correlations with other psychopathy scales, such as the Self-Report Psychopathy Scale Revised (SRP-R, $r = 0.90$; MMPI-2 Antisocial Scale $= 0.56$) (Lilienfeld & Andrews, 1996). It is important to keep in mind that the results derived from the authors’ analysis came from a homogenous sample of undergraduate students in their early twenties whose ethnicity was not at all identified. In order to generalize these results, a few studies have been done to assess its psychometric properties in different populations. The PPI is currently undergoing re-standardization which will hopefully use a more diverse sample in order to increase its generalizability.

**Factor structure of the PPI.** The factor structure of the PPI was described in the Lilienfeld and Andrews study as an eight factor model—one factor for each subscale of the test. A few studies have examined the factor structure of the PPI and two investigated it among populations which were different than the original study. These two studies examined the factor structure of the PPI in an older (Benning, Patrick, Hicks, Bloniger, Krueger, 2003) and a non-English speaking population (Maesschalck, Vertommen, Hooghe, 2002).

The first looked at 353 male twins in Minnesota in their early forties (Benning, Patrick, Hicks, Bloniger, Krueger, 2003). They found that the PPI had 2 higher order
factors after having dropped one of the subscales, namely coldheartedness. They found that coldheartedness was the only subscale loading on a third factor, which lowered the overall percentage of variance assumed (Benning et al., 2003).

The second looked at the factor structure of the PPI in 314 Dutch speaking Belgians (Maesschalck, Vertommen, Hooghe, 2002). The factor structure which emerged from their study showed a 7 factor model which varied in reliability from 0.67 to 0.90 (Maesschalck et al., 2002). The article did not discuss any higher order factors.

The different methods used for both extraction and rotation explain the variability in results of these two studies. In the original study by Lilienfeld and Andrews, they factor analyzed all 160 items from the scale (they did not include validity items), showing 8 factors based on a principal component extraction method and no rotation. Their criteria for salient factor loadings were liberal, allowing items which loaded below 0.3 to be included as salient items. In the Dutch study of the PPI factor structure, Maesschalck et al. replicated the factor analysis done by Lilienfeld and Andrews. They also included all items in their analysis, using a principal component extraction method and an orthogonal Procrustes congruence rotation which mapped the hypothetical 8 factor model from Lilienfeld and Andrews. The factor analysis showed a 7 factor model, unlike the previous structure described by the authors of the scale. A second factor analysis was done using a principal component extraction method with a Varimax rotation but 7 factors were still present. Their factors were similar to the 8 subscales identified by Lilienfeld and Andrews, but it did not include Blame Externalization. Their criteria for salient item loadings were stricter than those used by the authors of the scale—a minimum loading of 0.4 was required for an item to be
considered salient. This was probably the cause for the discrepancy between their results and those found by Lilienfeld and Andrews. The study by Benning et al. (2003) used a total score format which summed all items for each subscale, leaving them with only 8 variables to use in the factor analysis—those 8 variables were the 8 factors found by Lilienfeld and Andrews. Their research showed two major factors, although the initial Eigenvalue analysis showed three—they decided to drop the Coldheartedness subscale which was the only one that loaded on factor three, leaving them with only two factors. In their study, a principal axis extraction method was used with a Varimax rotation. Their criteria for salient loadings were a compromise between the two previous studies, using items loading of 0.35 or greater to be salient. Since they used the preexisting subscales which were found in the first study by Lilienfeld and Andrews, they called their factors higher order factors. Table 1 below illustrates the differences between the three studies on the PPI factor structure. Therefore, even though the results varied between 8, 7 and 2 factors, the higher order factors remain the same, hence the suggested use of confirmatory factor analysis.
Table 1

*Factor Structure of the PPI*

<table>
<thead>
<tr>
<th>Study</th>
<th>Items vs Subscales</th>
<th>FA extraction / rotation</th>
<th>Strict vs Liberal Cutoff Scores</th>
<th>Factors Found</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lilienfeld &amp; Andrews</td>
<td>Items (160)</td>
<td>Principal component / no rotation</td>
<td>Liberal (0.3 or greater)</td>
<td>8</td>
</tr>
<tr>
<td>Benings et al.</td>
<td>Subscales (8)</td>
<td>Principal axis / Varimax</td>
<td>Moderate (0.35 or greater)</td>
<td>2</td>
</tr>
<tr>
<td>Maesschalk et al.</td>
<td>Items (160)</td>
<td>Principal component / Varimax</td>
<td>Strict (0.4 or greater)</td>
<td>7</td>
</tr>
</tbody>
</table>

FA = Factor Analysis

**Validity of the PPI.** The validity of the PPI was also examined at length by its authors, Lilienfeld and Andrews (1996). They investigated the convergent and divergent validity of their scale using measures which assessed psychopathy, mood disorders and other psychopathologies. They found, as hypothesized, positive correlation between the PPI and another Self-Report Psychopathy Scale (SRP-II, \( r = 0.91 \)), positive and no correlations with the mood disorder scale (General Behavior Inventory: positive correlation with hypomania \( r = 0.58 \), no correlation for biphasic or depressive) and no correlation with the schizoidia scale (presence of schizoid type behaviors), Perceptual Aberrant Scale (unusual sensory perception due to psychosis) or with the diagnosis of histrionic or borderline personality disorder (Lilienfeld & Andrews). Other studies have also examined the concurrent, convergent and divergent validity of the PPI.
In a first study, concurrent validity was established by Poythress, Edens and Lilienfeld (1998) when they compared the results of the PPI of fifty young offenders to their score on the PCL-R. They found high correlations between the total PPI score and factor 1 ($r = 0.54$) and 2 ($r = 0.40$) of the PCL-R and with the PCL-R total score ($r = 0.54$). In a second study, again with inmates, convergent and divergent validity between the PPI and other scales were examined (Sandoval, Hancock, Poythress, Edens, Lilienfeld, 2000). As hypothesized, they found a positive correlation between the PPI and the Aggression Questionnaire ($r = 0.60$) and a negative correlation between the PPI and the Questionnaire Measure of Emotional Empathy ($r = -0.45$) (Sandoval et al., 2000). To support the PPI’s divergent validity, they also found no correlations between participants’ score on the PPI and their score on the Activity Frequency Inventory (a measure of heroism). A third study which investigated the validity of the PPI looked at participants’ scores on two separate impulsivity scales (Dickman Impulsiveness Inventory-Short Version and the Eysenck Impulsiveness Questionnaire) to see whether they would positively correlate with their PPI scores (Maesschalck et al., 2002). As they predicted, PPI scores were positively correlated with both measures of impulsiveness (DII-SV: functional impulsiveness $r = 0.40$, dysfunctional impulsiveness $r = 0.28$; EIQ: narrow impulsiveness $r = 0.41$, venturesomeness $r = 0.67$). In a fourth study, convergent validity of the PPI was done by examining the scores of 36 female inmates on the PPI and on the Personality Assessment Inventory, Antisocial Scale (PAI-ANT) (Chapman, Gremore, Farmer, 2003). The PAI-ANT has three subscales: antisocial behaviors, egocentricity and stimulus seeking. All three subscales were positively correlated but the highest correlation was found in the stimulus seeking subscale ($r = 0.80$). This last
finding is quite interesting because it supports the underarousal theory which states that most psychopaths have a higher threshold in heart rate and EEG compared to the normal population, hence their need for more thrill and sensation seeking (Raine, 1997; Sutker & Allain, 2001; Williams, 1969).

Many studies were successful in showing that the PPI is a valid scale by examining its relationship with other psychopathy scales, aggression scales, empathy and emotional stability scales, personality disorder and mood disorder scales and impulsiveness scales. Most of these studies were done on incarcerated populations, but in order for the PPI to become a valid assessment of psychopathy within normal populations, more studies need to be done within that population.

**Aim**

The goals of this study were to examine the concurrent and convergent validity of the PPI to determine whether a normal population with high ethnic and age diversity changes the previous results found by Lilienfeld and Andrews. Because most of the studies done on the psychometric properties of the PPI have recruited Caucasian populations, it was important to see whether its factorial structure was supported when tested with participants who are Hispanic, African American and Asian American. A new area for research which was also examined in this study was whether other impulsive behaviors such as driving recklessly or angrily and sensation-seeking behaviors were correlated with psychopathy. Many studies on road rage have shown that those who engage in risky and illegal driving have emotional dispositions or traits which are different than those who drive more securely (Deffenbacher, Deffenbacher, Lynch &
Richards, 2003). Some of those traits are impulsiveness, risk taking, aggressiveness, social irresponsibility and sensation seeking (Arnett, Offer, Fine, 1997; Mayer, Treat, 1987; Underwood, Chapman, Wright, Crundall, 1999). It is because of their close association with personality traits of psychopathy that it will be used as a correlate of psychopathy. Also, due to the numerous research studies which have shown that psychopaths have high threshold for excitement, therefore needing more intense activities to get a thrill, the Arnett Inventory of Sensation Seeking will be used to see if there is a correlation between it and the PPI.

It was therefore hypothesized that:

**Hypothesis 1.**
- A significant positive correlation would be found between the total scores of the PPI and the SRP-II, which is a similarly structured self-report psychopathy scale.

**Hypothesis 2.**
- A significant positive correlation would be found between the total scores of Driving Anger Scale (DAS), which is a scale that examines impulsive and angry driving, and the total score on the PPI along with the subscale score of the Impulsive Noncomformity subscale.

**Hypothesis 3.**
- A significant positive correlation would be found between the total scores of the Arnett Inventory of Sensation Seeking (AISS), which is a scale that measures one’s desire for novel and high-sensation activities, and the total score on the PPI along with the subscales scores of the Stress Immunity and Fearlessness subscales.
Hypothesis 4.

- A significant negative correlation would be found between the total score of the Interpersonal Reactivity Index (IRI), which is a scale that measures one's level of empathy, and the total score on the PPI along with the subscale score of the Coldheartedness subscale.
Methods

Participants

Participants were recruited from California State University San Bernardino, via their professors who sent them an email asking for their participation in a research study. Students interested in participating accessed the questionnaire online at surveymonkey.com, a research collection site. An information page was presented to all potential participants asking for their consent in participating in the study. A total of 389 students accessed the questionnaire and of those, 36 declined the consent form, thereby opting out of the study. Another 41 participants consented, but only completed the demographic portion of the questionnaire, and were therefore eliminated from the sample. Of the 312 participants left, an additional 59 were taken out of the sample due to excessive missing data—those individuals completed less than 75% of the total scales. Participants whose responses fell outside of the normal distribution on some of the subscales were also taken out of the sample so as to limit outliers. The final sample size was n = 253, with 222 females (87.7%) and 31 males (12.3%). The mean age was 25.48 years old and the sample was ethnically diverse: 44.3% Hispanic (n = 112), 37.2% Caucasian (n = 94), 4.3% Asian (n = 11) and 5.9% African American (n = 15). Additional information about the sample can be found in Table 2.

Surveys

The Psychopathic Personality Inventory (PPI) is a self-report measure composed of 187 items which assesses the core personality traits and characteristics of psychopathy (Lilienfeld & Andrews). The items are scored on a 4 point Likert scale (1-false, 2-mostly
Table 2

Demographic Variables

<table>
<thead>
<tr>
<th></th>
<th>N</th>
<th>M</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td>25.48</td>
<td>7.65</td>
<td></td>
</tr>
<tr>
<td>Years in College</td>
<td>3.97</td>
<td>1.42</td>
<td></td>
</tr>
<tr>
<td>Gender</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>31</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Female</td>
<td>222</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ethnicity</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hispanic</td>
<td>112</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Caucasian</td>
<td>94</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Asian</td>
<td>11</td>
<td></td>
<td></td>
</tr>
<tr>
<td>African Amer.</td>
<td>15</td>
<td></td>
<td></td>
</tr>
<tr>
<td>American Indian</td>
<td>4</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other</td>
<td>14</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Religious Preference</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>None</td>
<td>46</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Christian</td>
<td>147</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Judaism</td>
<td>4</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Muslim</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Buddhist</td>
<td>2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other</td>
<td>41</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Marital Status</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Single</td>
<td>95</td>
<td></td>
<td></td>
</tr>
<tr>
<td>In a relationship</td>
<td>85</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Married</td>
<td>57</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Divorced/Widowed</td>
<td>15</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

false, 3-mostly true, 4-true). There are 160 items which evaluate the degree of psychopathic personality features in individuals based on 8 subscales: Machiavellian Egocentricity (30 items), Social Potency (24 items), Coldheartedness (21 items), Carefree Nonplanfulness (20 items), Fearlessness (19 items), Blame Externalization (18 items), Impulsive Nonconformity (17 items) and Stress Immunity (11 items). There are 24 items which assess the validity of the responses given: deviant responding (10 items), unlikely virtues (14 items) and variable response inconsistency which has 40 item pairs.)
There are also 3 items which neither fit in the 8 subscales or the validity subscales. Those three variables show high correlations with the rest of the items in the PPI ($r > 0.30$). The PPI has high internal consistency with a Cronbach $\alpha = 0.92$ and high test-retest reliability, $r = 0.95$ (Lilienfeld & Andrews). The PPI has had high concurrent validity with the PCL-R ($r = 0.54$) and the SRP-II ($r = 0.90$) (Lilienfeld & Andrews; Poythress et al.). The PPI has also had high convergent validity with the Questionnaire Measure of Emotional Empathy ($r = -0.45$), the Aggression Questionnaire ($r = 0.60$), the Dickman Impulsiveness Inventory ($r = 0.40$ and $r = 0.28$) and with the Personality Assessment Inventory-Antisocial Scale ($r = 0.81$).

The psychometric properties of the Self-Report Psychopathy Scale (SRP-II) closely resemble those of the PCL-R since its theoretical framework, and the conceptualization of psychopathy used in its creation, along with its creator, were the same (Williams & Paulhus, 2004). Similar to the PCL-R, the SRP-II has a two factor structure made up of personality traits and behavioral characteristics (Williams & Paulhus). The scale is composed of 60 items which has shown high internal consistency, with Cronbach $\alpha = 0.80$ (Williams et al.). The SRP-II has also shown high concurrent validity with the PCL-R ($r = 0.54$) and high convergent validity with the Narcissitic Personality Inventory ($r = 0.60$) and the Machiavellianism scale ($r = 0.34$) (Williams & Paulhus).

The Driving Anger Scale (DAS) was developed to assess the propensity of getting angry while driving (Deffenbacher et al., 2003). The DAS short form has 14 items which are scored on a 5 point Likert scale where respondents are rating the degree to which a situation would anger them (1 = not at all, 5 = very much). The short form of
the DAS has shown great internal consistency, with Cronbach $\alpha = 0.80$ and is highly correlated with the longer form ($r = 0.95$) (Deffenbacher et al.; Dahlen, Martin, Ragan, Kuhlman, 2005). The DAS has shown high validity in its relationship with trait anger and in aggressive and risky driving (Deffenbacher, Huff, Oetting, Salvatore, 2000; Deffenbacher, Lynch, Oetting, Yingling, 2001).

The Arnett Inventory of Sensation Seeking (AISS) is a 20 item scale which measures sensation seeking (Arnett, 1994). The items are scored on a 4 point Likert scale as to how well the item describes them (1 = does not describe me at all, 4 = describes me very well). The AISS shows high internal consistency with a Cronbach $\alpha = 0.70$ and shows convergent validity with other measures of sensation seeking and risky behaviors, including aggression and aggressive driving (Arnett, 1994, 1996; Arnett et al. 1997).

The Interpersonal Reactivity Index (IRI) is a 28 item self-report scale which assesses the four components of empathy: perspective taking, fantasy seeking, empathic concern and personal distress (Davis, 1980). There are seven items for each of the four components of the scale and the responses are scored on a 5 point Likert scale (1 = never describes me, 5 = always describes me). The internal consistency for the scale is high, Cronbach $\alpha = 0.77$, ranging from 0.74 to 0.79 between the four scales and it shows high convergent validity with the Questionnaire Measure of Emotional Empathy.
Results

As a reminder, the following hypotheses were postulated for this study.

It was therefore hypothesized that:

Hypothesis 1

- A significant positive correlation would be found between the total scores of the PPI and the SRP-II, which is a similarly structured self-report psychopathy scale.

Hypothesis 2

- A significant positive correlation would be found between the total scores of Driving Anger Scale (DAS), which is a scale that examines impulsive and angry driving, and the total score on the PPI along with the subscale score of the Impulsive Noncomformity subscale.

Hypothesis 3

- A significant positive correlation would be found between the total scores of the Arnett Inventory of Sensation Seeking (AISS), which is a scale that measures one’s desire for novel and high-sensation activities, and the total score on the PPI along with the subscales scores of the Stress Immunity and Fearlessness subscales.

Hypothesis 4

- A significant negative correlation would be found between the total score of the Interpersonal Reactivity Index (IRI), which is a scale that measures one’s level of empathy, and the total score on the PPI along with the subscale score of the Coldheartedness subscale.
Correlational analyses were done to evaluate the relationships between the PPI and the other instruments used to explore both reliability and validity of the PPI. The results of the analyses revealed significant relationships between most instruments and the PPI. The details of the analyses can be found in Table 3.

Table 3

*Correlation Matrix of PPI, SRP-II, DAS, AISS and IRI*

<table>
<thead>
<tr>
<th></th>
<th>PPI</th>
<th>SRP-II</th>
<th>DAS</th>
<th>AISS</th>
<th>IRI</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. PPI</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. SRP-II</td>
<td>0.48***</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. DAS</td>
<td>0.13*</td>
<td>0.18**</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. AISS</td>
<td>0.24***</td>
<td>0.16*</td>
<td>0.16**</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. IRI</td>
<td>0.19**</td>
<td>0.19**</td>
<td>0.28***</td>
<td>0.47***</td>
<td></td>
</tr>
</tbody>
</table>

Note: All correlations of \( p < 0.05 = *; p < 0.01 = **; p < 0.001 = *** \)

In addressing the concurrent validity of the PPI, a correlational analysis was done with the SRP-II, another self-report scale which measures psychopathic personality traits. As hypothesized, the two scales total scores were highly correlated with one another \( (r = 0.475, p < 0.001) \). The result of this analysis is very similar to previous studies which showed concurrent validity at close to \( r = 0.50 \).

The other scales used in this study all show a positive correlation with the PPI, and all analyses yielded a significant relationship, as can be seen in Table 3. As per the original hypotheses, some of the subscales of the PPI were examined more closely with
the other scales to determine whether specific personality traits were related to sensation seeking, the ability to empathize and driving anger.

As per the stated hypotheses, the Impulsive Nonconformity scale was evaluated with the Driving Anger Scale. Though we hypothesized a significant relationship would be found, the result of the correlational analysis showed no significant relationship ($r < 0.11, p > 0.05$). Next, the Fearlessness and Stress Immunity subscales were analyzed with the Arnett Inventory of Sensation Seeking. Both scales were hypothesized to show a significant positive correlation, and both the Fearlessness subscale ($r = 0.13, p < 0.05$), and the Stress Immunity subscale showed a significant positive correlation with the AISS ($r = 0.14, p < 0.05$). Finally, the Coldheartedness subscale was evaluated with the Interpersonal Reactivity Index. As was hypothesized, a significant negative correlation was found ($r = -0.21, p < 0.001$).
Discussion

The purpose of this study was to validate the PPI, a self-report measure of psychopathic personality traits which can be used in a non-clinical and non-institutionalized population. This study introduced 2 new theoretical constructs which were posited to have a significant relationship with psychopathic personality traits, namely sensation seeking and driving anger. The importance of the study are threefold: a) to bolster the PPI’s psychometric properties, b) to evaluate whether the subscales hold true with a diverse population, and c) to test its relationship to the new theoretic constructs of driving anger and sensation seeking.

Concurrent Validity

The Psychopathic Personality Inventory, though developed in the late 90s, has yet to undergo thorough investigation as to whether it truly is a valid instrument in measuring psychopathic personality traits. A few past studies have shown good concurrent validity with the Self-Report Psychopathy Scale (SRP-II), a scale which has received more research attention. This study showed a similar relationship between the PPI and the SRP-II, namely a significant positive relationship \( r = 0.48, \ p < 0.001 \). It is important to note that our sample was more ethnically diverse than past studies, thereby showing that the PPI is a valid instrument with not only White populations, but with diverse populations.
Construct Validity

The other scales used in this study evaluated several constructs associated with psychopathy. More specifically, the Driving Anger Scale evaluated impulsivity and tendency towards aggression in stressful situations. Next, the Interpersonal Reactivity Index measured one’s ability to empathize with others. Lastly, the Arnett Inventory of Sensation Seeking examined one’s tendency to seek out thrill and take risks. None of these scales have been compared to the PPI in the past, although these constructs have been measured with other scales (i.e. MMPI-2 scale 4, Psychopathic Deviance). The results found were interesting, and for the most part, as predicted by our hypotheses.

First, all four scales showed a significant positive correlation between their total scores and the total score on the PPI. Therefore, as individuals endorsed greater psychopathic traits, they also endorsed greater driving anger ($DAS \ r = 0.13, p < 0.05$), a greater need for sensation seeking activities ($AISS \ r = 0.24, p < 0.001$) and finally, a greater ability to empathize for others ($IRI \ r = 0.19, p < 0.01$). These statistical trends follow our hypotheses for the DAS and the AISS, but it does not for the IRI. In fact, it goes against one of the greatest hallmark of psychopathy, which is that psychopaths lack the ability to empathize for others.

Upon further examination, the results of the IRI with this sample appear to be significantly higher than what is usually found with college students. The IRI’s authors (Davis, 1980) found in their study that the total score mean for men is usually lower than women (Men, $M = 61$; Women, $M = 72.8$). In our sample, male participants scored higher than female participants, though not at a significant rate (Men, $M = 86.39$; Women, $M = 84.96$), $t(251) = 0.62, p > 0.05$. Since the male-female ratio in our sample
is quite uneven (222 females and 31 males), post-hoc analyses were ran to see if there was something particular about our sample which yielded these results. One hypothesis for the high scores on the IRI may be that our sample is more ethnically diverse. Literature on empathic responses among ethnic minorities shows that there are often significant differences between them and White participants, namely that ethnic minorities tend to be more empathic than White participants (Wang, Davidson, Yakushko, Savoy, Tan, Bleier, 2003). In their study, they found that Latino participants showed some of the highest responses, which may explain the higher scores in our sample, since Latino participants were the most represented among all ethnic groups. There was, however, no significant difference in IRI total scores for whites and non-whites (Non-White, $M = 85.15$; White, $M = 85.10$), $t(248) = 0.03$, $p > 0.05$. Latino participants did have a higher total score than other ethnic groups, but it was not significant (Latino IRI $M = 85.58$). Another possible explanation for this sample’s high score may simply be that the average scores developed by the IRI’s author need to be re-standardized. The IRI’s authors developed their scale in the late seventies and published it in 1980. It is possible that college students have changed in the last 30 years and perhaps those means should be re-evaluated.

The next analysis was done with the Fearlessness and Stress Immunity subscales of the PPI with the AISS. The Fearlessness subscale showed a significant positive correlation with the AISS total score ($r = 0.13$, $p < 0.05$). Similarly, the Stress Immunity subscale also showed a significant positive correlation with the AISS total score ($r = 0.14$, $p < 0.05$). The result of those analyses supported our original hypotheses that a significant positive correlation would be found. Another personality trait found in
psychopaths is their need for thrill due to their biologically shown higher threshold for excitement. Individuals who possess many psychopathic personality traits are more likely to take risks and put themselves in situations where they will experience a rush of adrenaline, because their baseline of excitement, or of emotional experience, is below that of those with fewer psychopathic traits. Based on this interpretation of the psychopathic personality traits, another post-hoc analysis was done to evaluate whether the Fearlessness and Stress Immunity subscales also showed a significant positive correlation with the Driving Anger Scale. The results, however, were not significant with either the Fearlessness subscale \(r = 0.08, p > 0.05\) or the Stress Immunity subscale \(r = 0.06, p > 0.05\). Although the DAS measures driving impulsivity, its focus is also on the driver’s experience of anger, which is not captured by the Fearlessness and Stress Immunity subscales of the PPI.

The third analysis was done with the Impulsive Nonconformity subscale of the PPI and the Driving Anger Scale. The results of the analysis, however, were not significant \(r = 0.11, p > 0.05\). Although it was originally hypothesized that they would be a significant positive correlation between the two scales, upon further examination, the constructs measured by each scale were actually quite different. While the DAS measures one’s level of patience during stressful driving situations and one’s tendency to respond to those situations in anger, the Impulsive Nonconformity subscale of the PPI looks at impulsive actions which are not necessarily emotionally-based.

The fourth and final analysis was done with the Coldheartedness subscale of the PPI and the Interpersonal Reactivity Index. As posited in our original hypothesis, a significant negative correlation was found between the two \(r = -0.21, p < 0.001\).
However as was discussed previously, the IRI and the PPI total score showed a significant positive correlation, which did not support our original hypotheses. However, the Coldheartedness subscale, a much smaller sample of the PPI which solely addresses difficulty empathizing with others, did show a significant negative correlation.

**Gender Differences**

All measures administered in this study were evaluated for any significant gender differences, but none were found. It should be noted, however, that the PPI total scores between men and women were the most different and were close to being significant (Men $M = 518.5$; Women $M = 511.4$), $t (251) = 1.83$, $p = 0.06$. This trend is supported in other studies and with other measures of psychopathy, namely that men tend to have higher scores than women. As will be discussed later, one of the limitations of this study is its lack of balance between male and female participants. Perhaps had a greater number of men completed the surveys, a significant difference would have been found.

**Ethnic Differences**

In examining more closely whether differences were found between the six ethnic groups in our study (White, Latino, Asian, African American, American Indian and Other), a significant difference was found in their responses on the SRP-II, $F (5, 244) = 3.51$, $p < 0.01$. The mean scores for Whites ($M = 184.30$), Latinos ($M = 185.69$) and African Americans ($M = 179.60$) were closely related, but scores for Asians ($M = 190.64$) and for American Indians ($M = 215.00$) were much higher, while those who
endorsed their ethnicity as ‘Other’ scored much lower ($M = 167.25$). Although one may want to jump to conclusion regarding levels of psychopathy being higher in Asians and American Indians, this would be both too hasty and incorrect. Our sample did not have equal representation across all ethnic groups, and in fact, the Asian and American Indian subgroups had the lowest numbers (Asian = 11 and American Indians = 4). Therefore this significant difference is most likely representative of individual differences for those participants, rather than a generalizable trait among that ethnic group.

Another post-hoc analysis focused on whether any significant differences could be found between White and Non-White participants. Our sample was more diverse than previous studies done with the PPI, which makes the analysis between ethnic groups very important since it has not been done in the past. However, the lack of equal representation in our sample, as stated previously, may have fogged some of the potential differences between those groups. To examine the hypothesis of ethnic differences, the sample was split into two groups: Whites and Non-Whites, which encompassed all other ethnic groups. A significant difference was found between those two groups on the PPI, $t(248) = 2.26, p < 0.05$, but not on any of the other measures. The mean total score for Non-White participants ($M = 514.7$) was significantly higher than the mean total score for White participants ($M = 508.9$). Based on this finding, it appears that Non-White participants show higher rates of psychopathic personality traits when compared to White participants.
Religious Differences

Participants' religious affiliation was then evaluated to see if any significant differences were found between religious groups. No significant differences were identified for any of the instruments completed by participants in this study. To further evaluate this result, the sample was divided into two groups: Christians and Non-Christsians. A significant difference was found between those groups on the SRP-II, $t(239) = -2.24, p < 0.05$. Christians in our sample had a significantly lower SRP-II total score ($M = 177.96$) than Non-Christsians ($M = 186.39$). Once again, this finding implies there is a significant difference between these groups, but our sample did not have an equal representation across all religious groups. It is difficult to know, in our study, whether this finding is unique to our sample, or whether it can be generalized to those populations in future studies.

Limitations

A limitation of this study is its moderately sized sample size. Other studies which evaluated the PPI's validity and reliability had samples greater than 300 participants, which may have played a role in their results on both concurrent and construct validity. In addition, the composition of our sample was not ideal, due to its uneven distribution amongst different groups. These include the gender, ethnic and religious breakdown. Clearer implications could be gathered from a sample which had similar numbers for both males and females, along with the various ethnic and religious groups being studied.
Another limitation of this study involves the recruitment pool for participants. Most participants were recruited by their psychology professors, which yielded a large number of participants from social sciences majors (40.6%). One may argue that our sample was perhaps too homogenous, composed of individuals who are interested in psychology and who might have greater knowledge about personality research.

The format of the questionnaire also presented as a limitation. Participants were asked to complete several personality scales which made the study quite long and time intensive (most participants completed the questionnaire in 60 minutes). This lead to many participants quitting after the first 100 or so questions, making it necessary to exclude them from the final sample since there was too much missing data.

**Future Studies**

The results of this study point to many holes in the PPI research. First, research needs to focus on the construct validity of the PPI. There are many traits of psychopathy which the PPI’s authors claim are evaluated by their scale, but these need to be examined individually, by subscale, not simply by using its total score. This appears to be particularly important based on this study’s findings that there were differences between the relationship of the PPI with other scales and subscales of the PPI with those same other scales (i.e. PPI and the IRI, vs. Coldheartedness and the IRI). Therefore, to ensure that the PPI is measuring the 8 hallmark personality traits it purports it does, future studies need to focus on those constructs.

Second, research needs to focus on gender differences for psychopathy. In this study, no significant differences were identified between males and females, but as
stated previously, the gender breakdown of our sample was not equal. As such, future research with more balanced distributions between males and females should be done to evaluate if there are differences between the two.

Third, research needs to evaluate whether different ethnic groups show differences on their responses on the PPI. This would both address whether ethnic minorities display similar patterns of psychopathy as Whites and also whether the PPI should be normed the same way for those individuals.

Fourth, the concept of religion and spirituality has not been evaluated with the PPI. Interesting findings were identified in this study between Christians and Non-Christians, but once again, a better distributed sample which would include greater representation of participants from different faiths would be needed.

**Conclusion**

Psychopathy is a disorder which has captured the attention of many due to its great differences from what is often called “normal”. The word ‘psychopath’ or ‘sociopath’ is thrown around by the media in ways which often reflect very little of what psychologists would label as psychopathy. Lilienfeld and Andrews attempt to debunk the view of psychopaths as serial killers to replace it with a more universal definition by focusing on personality traits, rather than behavioral mischief. In doing so, the PPI became one of the only tools which can be used with non-incarcerated and non-institutionalized populations. But what constructs were chosen as making up psychopathy in a non-criminal population? The PPI’s authors focused on Cleckley’s
definition of psychopathy, more specifically the ‘successful’ psychopath, or the individual who has not been caught by authorities for behavioral wrongdoings.

Based on this study of the PPI’s constructs, there are some modifications I would make to their definition of psychopathy. Although the PPI’s authors claim this instrument can be used with any population, their research has only focused on predominantly White participants, thereby begging the question as to whether their tool was also applicable to ethnic minorities. In our study, more than half the participants were Non-White and the results of our validity analyses showed some significant differences between these groups. As stated previously, this study did not have equal representation across ethnic groups, but nonetheless, a significant difference was found. Many of the constructs of the PPI are affected by cultural differences which are inherent in ethnic differences. For instance, one of the construct measured by the PPI is one’s ability to empathize with others. In certain collectivistic cultures, thinking of one’s needs above the needs of others would be considered wrong, or at least not part of the norm. Such cultural differences, however, are not taken into account by the PPI. Does a high score for an individual from the United States mean the same thing as for an individual from a collectivistic culture? As it stands, there is no accounting for those differences. Similarly, many Christian faiths have an emphasis on benevolence and thinking of others before themselves. This facet of the Christian culture was found in our study, with Christians having significantly lower scores than Non-Christians on the SRP-II, a measure which is very closely related to the PPI. That difference, however, was not seen on the PPI, which begs the question as to whether the subscale which measures
benevolence and empathy (Coldheartedness), is accurately accounting for cultural differences.

Another important construct of psychopathy is their need for sensation seeking since they tend to operate at a lower emotional baseline. Therefore, for a psychopathic individual to ‘feel’, the thrill, or the stakes, must be very high. As seen in this study, there is a significant relationship between the PPI and a scale of sensation seeking (AISS). An important distinction, however, that was found in this study, is that the sensation seeking or impulsivity associated with trying to get a “rush” or a “high” cannot be tied to emotions. The most important trait identified in psychopathy is a deficit in emotional processing and emotional experience. Therefore, the impulsivity attached in doing an action to get a thrill is not tied to emotions. One example of this nuance was found in the evaluation of two of the subscales of the PPI which deal with impulsivity and sensation seeking, with the Driving Anger Scale, a scale which measures impulsivity in display anger while driving. Since individuals with high psychopathic personality trait also have emotional dysfunction, it made sense for those subscales to not show a strong correlation with the DAS.

Other constructs which should be evaluated further are the psychopaths’ grandiose view of themselves along with their tendency to externalize blame onto others. The subscales which measure these constructs on the PPI are the Machiavellian Egocentricity and the Blame Externalization subscales. Based on this study, and the past study on factor structure, those two appear to be the most consistent subscales and the ones that make up most of the PPI in terms of items. One of the difficulties in assessing psychopathy is often differentiating it from narcissism, especially if behavioral
components are not taken into account, as is the case with the PPI. As such, these two subscales should get further attention to ensure that it is accurately measuring psychopathy. Those scales should then focus on a desire to portray being better than others, but at a more intense rate than the narcissist. Namely, a need to push their needs above anybody else’s at whatever cost (i.e. interpersonal loss or even behavioral misconduct). This is the main difference between the narcissist and the psychopath: the narcissist wants interpersonal success even though the means to get there are counterproductive. The psychopath, though often very skilled socially, is not after long lasting relationships unless there is something to be gained from them.

The same can be said for the Blame Externalization subscale. For the psychopath, externalizing blame is done not because they are trying to avoid the painful feeling of failure, but instead because there is an aspect of the disorder which has persecutory tones. Their ability to interpret others’ actions is flawed and they often fail to see that some actions may have been accidental, and instead, believe that all actions are intentional and often mean-spirited.

Psychopathy is a complex disorder and much like other mental illnesses, there is a great deal of variability among those diagnosed with it. The PPI is a good instrument in measuring psychopathy among those who display its personality traits, rather than its behaviors. As seen in this study and the previous one on its factor structure, it is still a new instrument which requires further research in both its validity and its factor structure. What has been shown, however, is that it appears to be measuring the constructs of psychopathy as posited by its authors and its factor structure appears to follow their conceptualization of psychopathy. Based on this study, my
conceptualization of psychopathy very much mirrors Lilienfeld and Andrews, although I would add a cultural component to it. Researchers have shown using different measures of psychopathy that there exists significant differences in the presentation of psychopathy between men and women, different ethnic groups and different religious affiliations. As such, culture plays an important role both the conceptualization of psychopathy and in how it is measured. It would be important for future studies to focus on the role of culture.

It is an exciting time for the research of psychopathy, especially in regards to the PPI. Since its conceptualization is still being worked out, with each new study, the field of psychology comes one step closer to understanding this fascinating population.
References


Instructions: On the following pages you will find a number of statements that have been used by people to describe their beliefs and behaviors, and the beliefs and behaviors of others. Read each statement carefully and decide whether you agree or disagree with it. Indicate how much you agree or disagree with each statement according to the following scale:

1 2 3 4 5 6 7
Disagree Disagree Disagree Neutral Agree Agree Agree
Strongly Moderately Slightly Slightly Moderately Strongly

For example, if you disagree moderately with a statement, write the number “2” next to it. If you neither agree nor disagree with the statement, write the number “4”, indicating neutral.

There are no right or wrong answers to any of these questions and none of the questions have any trick to them. Some of the questions are similar to one another, but judge each one separately. It does not matter if you have answered a similar question differently—simply indicate how you would respond to the current statement.

Be sure not to miss any questions.

1 2 3 4 5 6 7
Disagree Disagree Disagree Neutral Agree Agree Agree
Strongly Moderately Slightly Slightly Moderately Strongly

___ (01) I enjoy driving at high speed.

___ (02) I enjoy giving “bossy” people a hard time.

___ (03) I think I could “beat” a lie detector.

___ (04) Sometimes you have to be craft or sly.

___ (05) It’s best to be dominant and assertive because no-one else is going to look out for you.

___ (06) I worry about a lot about possible misfortunes.

___ (07) I like to change jobs fairly often.

___ (08) I can be fairly cunning if I have to be.

___ (09) Everybody likes to hear my stories.
I am usually very careful about what I say to people.

I have often done something dangerous just for the thrill of it.

I wish I were more assertive.

I expect a great deal from other people.

I'm not at all calculating.

I think of myself as self-assured and confident.

I didn't get into much trouble at school.

I get a kick out of "conning" someone.

I get into trouble for the same things time after time.

I am very good at most things I try to do.

I was never in trouble with the police when I was a kid.

It's more effective to be straightforward and honest if you want people to do things for you.

Being unemployed would depress me.

I enjoy taking chances.

I wouldn't do anything dangerous just for the thrill of it.

I often worry unnecessarily.

I insist on getting the respect that is due me.

The best way to get things done is to be forceful and persistent.

I got in a lot of trouble at school.

Rules are made to be broken.

I usually feel quite confident when meeting new people.

Not hurting others' feelings is important to me.
(32) I would be good at a dangerous job because I like making fast decisions.
(33) I have used few, if any, hallucinogenic drugs.
(34) On average my friend would probably say I am a kind person.
(35) I see myself as a good leader.
(36) I can read people like a book.
(37) I can usually talk my way out of anything.
(38) I have used most of the hallucinogenic drugs.
(39) I have sometimes broken an appointment because something more interesting came along.
(40) I enjoy gambling for large stakes.
(41) I have a strong will to power.
(42) I would describe myself as a craft individual.
(43) I prefer having many sexual partners rather than just one.
(44) I will never be satisfied until I get all that I deserve.
(45) One must live only for the present and not worry about the future.
(46) If I ruled the world it would be a much better place.
(47) Sometimes at night I get so worried about something that my heart pounds and I can’t fall asleep.
(48) I don’t think of myself as tricky or sly.
(49) I almost never feel guilty over something I’ve done.
(50) It’s sometimes fun to see how far you can push someone before they catch on.
(51) People can usually tell if I am lying.
(52) I wouldn’t describe myself as shy or timid.
(53) Conning people gives me the “shakes”.
(54) When I do something wrong, I feel guilty even though nobody else knows.
(55) I always know what I am doing.
(56) I find it easy to manipulate people.
(57) I’m a soft-hearted person.
(58) I enjoy drinking and doing wild things.
(59) Ideally people should be undemanding.
(60) I am the most important person in this world and nobody else matters.
Appendix B

DAS

Deffenbacher Driving Anger Scale (Deffenbacher, Oetting & Lynch, 1994) – Short form
Instructions: Imagine that each situation described below was actually happening to you
and rate the amount of anger that would be provoked.

<table>
<thead>
<tr>
<th>none at all</th>
<th>a little</th>
<th>some</th>
<th>much</th>
<th>very much</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
</tbody>
</table>

1. Someone is weaving in and out of traffic.
2. A slow vehicle on a mountain road will not pull over and let people by.
3. Someone back right out in front of you without looking.
4. Someone runs a red light or stop sign.
5. You pass a radar speed trap.
6. Someone speeds up when you try to pass him/her.
7. Someone is slow in parking and is holding up traffic.
8. You are stuck in a traffic jam.
9. Someone makes an obscene gesture toward you about your driving.
10. Someone honks at you about your driving.
11. A bicyclist is riding in the middle of the lane and is slowing traffic.
12. A police officer pulls you over.
13. A truck kicks up sand or gravel on the car you are driving.
14. You are driving behind a large truck and you cannot see around it.
Appendix C

AISS

Items are scored on a 4 point Likert scale.

1. I can see how it would be interesting to marry someone from a foreign country.
2. When the water is very cold, I prefer not to swim even if it is a hot day.
3. If I have to wait a long time, I'm usually patient about it.
4. When I listen to music, I like it to be loud.
5. When taking a trip, I think it is best to make as few plans as possible and just take it as it comes.
6. I stay away from movies that are said to be frightening or highly suspenseful.
7. I think it's fun and exciting to perform or speak before a group.
8. If I were to go to an amusement park, I would prefer to ride the rollercoaster or other fast rides.
9. I would like to travel to places that are strange and far away.
10. I would never like to gamble with money, even if I could afford it.
11. I would have enjoyed being one of the first explorers of an unknown land.
12. I like a movie where there are a lot of explosions and car chases.
13. I don't like extremely hot and spicy food.
14. In general, I work better when I'm under pressure.
15. I often like to have the T.V. on while I'm doing something else, such as reading or cleaning up.
16. It would be interesting to see a car accident happen.
17. I think it's best to order something familiar when eating in a restaurant.
18. I like the feeling of standing next to the edge on a high place and looking down.

19. If it were possible to visit another planet or the moon for free, I would be among the first to sign up.

20. I can see how it must be exciting to be in a battle during a war.
Appendix D

IRI

The following statements inquire about your thoughts and feelings in a variety of situations. For each item, indicate how well it describes you by choosing the appropriate letter on the scale at the top of the page: A, B, C, D, or E. When you have decided on your answer, fill in the letter next to the item number. READ EACH ITEM CAREFULLY BEFORE RESPONDING. Answer as honestly as you can. Thank you.

ANSWER SCALE:

<table>
<thead>
<tr>
<th></th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>E</th>
</tr>
</thead>
<tbody>
<tr>
<td>DOES NOT DESCRIBE ME WELL</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>DESCRIBES ME VERY WELL</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

1. I daydream and fantasize, with some regularity, about things that might happen to me.

2. I often have tender, concerned feelings for people less fortunate than me.

3. I sometimes find it difficult to see things from the "other guy's" point of view.

4. Sometimes I don't feel very sorry for other people when they are having problems.

5. I really get involved with the feelings of the characters in a novel.

6. In emergency situations, I feel apprehensive and ill-at-ease.

7. I am usually objective when I watch a movie or play, and I don't often get completely caught up in it.

8. I try to look at everybody's side of a disagreement before I make a decision.

9. When I see someone being taken advantage of, I feel kind of protective towards them.

10. I sometimes feel helpless when I am in the middle of a very emotional situation.

11. I sometimes try to understand my friends better by imagining how things look from their perspective.

12. Becoming extremely involved in a good book or movie is somewhat rare for me.
13. When I see someone get hurt, I tend to remain calm.

14. Other people's misfortunes do not usually disturb me a great deal.

15. If I'm sure I'm right about something, I don't waste much time listening to other people's arguments.

16. After seeing a play or movie, I have felt as though I were one of the characters.

17. Being in a tense emotional situation scares me.

18. When I see someone being treated unfairly, I sometimes don't feel very much pity for them.

19. I am usually pretty effective in dealing with emergencies.

20. I am often quite touched by things that I see happen.

21. I believe that there are two sides to every question and try to look at them both.

22. I would describe myself as a pretty soft-hearted person.

23. When I watch a good movie, I can very easily put myself in the place of a leading character.

24. I tend to lose control during emergencies.

25. When I'm upset at someone, I usually try to "put myself in his shoes" for a while.

26. When I am reading an interesting story or novel, I imagine how I would feel if the events in the story were happening to me.

27. When I see someone who badly needs help in an emergency, I go to pieces.

28. Before criticizing somebody, I try to imagine how I would feel if I were in their place.
Appendix D

Personality Styles Inventory

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.

\[ \text{I enjoy going to movies.} \]

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.
<p>| | | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1) False</td>
<td>2) Mostly False</td>
<td>3) Mostly True</td>
<td>4) True</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9) If I'm at a dull party or social gathering, I like to stir things up.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10) I weigh the pros and cons of major decisions carefully before making them.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>11) Being rich is much less important to me than enjoying the work I do.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>12) I've always considered myself to be something of a rebel.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>13) I sometimes worry about whether I might have accidentally hurt someone's feelings.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>14) I find it difficult to make small talk with people I do not know well.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>15) I think a fair amount about my long-term career goals.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>16) I would not mind wearing my hair in a &quot;mohawk.&quot;</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>17) I occasionally forget my name.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>18) I rarely find myself being the center of attention in social situations.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>19) It might be fun to belong to a group of &quot;bikers&quot; (motorcyclists) who travel around the country and raise some hell.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>20) I tell many &quot;white lies.&quot;</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>21) I often hold on to old objects or letters just for their sentimental value.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>22) I am a good conversationalist.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>23) A lot of people in my life have tried to stab me in the back.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>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.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>25) I often find myself resenting people who give me orders.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>26) I would find the job of movie stunt person exciting.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>27) I have always been extremely courageous in facing difficult situations.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>False</td>
<td>Mostly False</td>
<td>Mostly True</td>
</tr>
<tr>
<td>---</td>
<td>-------</td>
<td>--------------</td>
<td>-------------</td>
</tr>
<tr>
<td>28</td>
<td>I hate having to tell people bad news.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>29</td>
<td>I think that it should be against the law to seriously injure another person intentionally.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>30</td>
<td>I would be more successful in life had I not received so many bad breaks.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>31</td>
<td>It bothers me (or it would bother me) quite a bit to speak in front of a large group of strangers.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>32</td>
<td>When I am faced with a decision involving moral matters, I often ask myself, &quot;Am I doing the right thing?&quot;</td>
<td></td>
<td></td>
</tr>
<tr>
<td>33</td>
<td>From time to time I really &quot;blow up&quot; at other people.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>34</td>
<td>Many people think of me as a daredevil.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>35</td>
<td>It takes me a long time to get over embarrassing or humiliating experiences.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>36</td>
<td>I usually feel that people give me the credit I deserve.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>37</td>
<td>I've never really cared much about society's so-called &quot;values of right and wrong.&quot;</td>
<td></td>
<td></td>
</tr>
<tr>
<td>38</td>
<td>If someone mistreats me, I'd rather try to forgive him or her than get even.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>39</td>
<td>It would bother me to cheat on an examination or assignment even if no-one got hurt in the process.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>40</td>
<td>I become deeply upset when I see photographs of starving people in Africa.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>41</td>
<td>I rarely monopolize conversations.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>42</td>
<td>Making a parachute jump would really frighten me.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>43</td>
<td>At times I have been envious of someone.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>44</td>
<td>I become very angry if I do not receive special favors or privileges I feel I deserve.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>45</td>
<td>I often find myself worrying when a friend is having serious personal problems.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>46</td>
<td>I pride myself on being offbeat and unconventional.</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>1) False</td>
<td>2) Mostly False</td>
<td>3) Mostly True</td>
</tr>
<tr>
<td>---</td>
<td>-----------</td>
<td>-----------------</td>
<td>----------------</td>
</tr>
<tr>
<td></td>
<td>47) Keeping in touch with old friends is very important to me.</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>48) I usually strive to be the best at whatever I do.</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>49) I almost always feel very sure of myself when I'm around other people.</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>50) I look down at the ground whenever I hear an airplane flying above my head.</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>51) I could make an effective &quot;con artist&quot; if the situation required it.</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>52) I wouldn't mind spending my life in a commune and writing poetry.</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>53) I have had &quot;crushes&quot; on people that were so intense that they were painful.</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>54) I like to stand out in a crowd.</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>55) I'm not intimidated by anyone.</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>56) Before I say something, I first like to think about it for a while.</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>57) I would enjoy hitch-hiking my way across the United States with no prearranged plans.</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>58) I am a guilt-prone person.</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>59) I bet that it would be fun to pilot a small airplane alone.</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>60) When I want to, I can usually put fears and worries out of my mind.</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>61) Never in my whole life have I wished for anything that I was not entitled to.</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>62) I generally prefer to act first and think later.</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>63) I am easily flustered in pressured situations.</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>64) I often make the same errors in judgment over and over again.</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>65) I always look out for my own interests before worrying about those of the other guy.</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>66) I smile at a funny joke at least once in a while.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1) False</td>
<td>2) Mostly False</td>
<td>3) Mostly True</td>
<td>4) True</td>
</tr>
<tr>
<td>----------</td>
<td>----------------</td>
<td>----------------</td>
<td>--------</td>
</tr>
<tr>
<td>67) People have often criticized me unjustly (unfairly).</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>68) I almost always promptly return items that I have borrowed from others.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>69) I sometimes have difficulty standing up for my rights in social situations.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>70) If I want to, I can influence other people without their realizing they are being manipulated.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>71) My opinions are always completely reasonable.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>72) I become embarrassed more easily than most people.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>73) When I'm in a frightening situation, I can &quot;turn off&quot; my fear almost at will.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>74) It bothers me greatly when I see someone crying.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>75) Frankly, I believe that I am more important than most people.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>76) I frequently have disturbing thoughts that become so intense and overpowering that I think I can hear claps of thunder or crashes of cymbals inside my head.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>77) If I do something that causes me trouble, I'm sure to avoid doing it again.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>78) I often place my friends' needs above my own.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>79) I like having my vacations carefully planned out.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>80) People whom I have trusted have often ended up &quot;double-crossing&quot; me.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>81) I often become deeply attached to people I like.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>82) I've been the victim of a lot of bad luck in my life.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>83) I have at times eaten too much.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>84) I sometimes question authority figures &quot;just for the hell of it.&quot;</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>85) When my life becomes boring, I like to take some chances to make things interesting.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>86) I tend to be &quot;thin-skinned&quot; and overly sensitive to criticism.</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
1) False   2) Mostly False   3) Mostly True   4) True

87) I've quickly learned from my major mistakes in life.
88) When someone 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.
<table>
<thead>
<tr>
<th></th>
<th></th>
<th>1) False</th>
<th>2) Mostly False</th>
<th>3) Mostly True</th>
<th>4) True</th>
</tr>
</thead>
<tbody>
<tr>
<td>105</td>
<td>Some people seem to have gone out of their way to make life difficult for me.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>106</td>
<td>I have always been completely fair to others.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>107</td>
<td>I get a kick out of startling or scaring other people.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>108</td>
<td>I generally try to pay attention when someone important speaks to me directly.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>109</td>
<td>I feel very bad about myself after telling a lie.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>110</td>
<td>I enjoy watching violent scenes in movies.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>111</td>
<td>I would not enjoy being a race-car driver.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>112</td>
<td>I am very careful about my manners when other people are around.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>113</td>
<td>I feel that very few people have ever understood me.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>114</td>
<td>I'm hardly ever the &quot;life of the party.&quot;</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>115</td>
<td>I have occasionally felt discouraged about something.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>116</td>
<td>I agree with the motto, &quot;If you are bored with life, risk it.&quot;</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>117</td>
<td>I am a squeamish person.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>118</td>
<td>I enjoy (or I would enjoy) participating in sports involving a lot of physical contact (e.g., football, wrestling).</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>119</td>
<td>I do not enjoy loud, wild parties and get-togethers.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>120</td>
<td>I often push myself to my limits in my work.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>121</td>
<td>I am easily &quot;rattled&quot; at critical moments.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>122</td>
<td>In school or at work, I sometimes try to &quot;stretch&quot; the rules a little bit just to see how much I can get away with.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>123</td>
<td>On occasion, I've had to restrain myself from punching someone.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>124</td>
<td>I wouldn't mind belonging to a group of people who &quot;drift&quot; from city to city, with no permanent home.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>125</td>
<td>I have at times been angry with someone.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>---</td>
<td>---</td>
<td>---</td>
<td>---</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1) False</td>
<td>2) Mostly False</td>
<td>3) Mostly True</td>
<td>4) True</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>126) If I were growing up during the 1960's, I probably would have been a &quot;hippie&quot; (Or, I was a &quot;hippie&quot; during the 1960's).</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>127) When a friend says hello to me, I generally either wave or say something back.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>128) While watching a sporting event on TV, I sometimes wince when I see an athlete get badly injured.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>129) I'm good at flattering important people when it's useful to do so.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>130) I sometimes become deeply angry when I hear about some of the injustices going on in the world.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>131) I'm not very good at talking people into doing favors for me.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>132) Seeing a poor or homeless person walking the streets at night would really break my heart.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>133) When someone tells me what to do, I often feel like doing exactly the opposite just to spite them.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>134) I always tell the entire truth.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>135) I prefer rude, but exciting people to nice, but boring people.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>136) I can remain calm in situations that would make many other people panic.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>137) I usually enjoy seeing someone I don't like get into trouble.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>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.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>139) People are almost always impressed with me after they first meet me.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>140) I like to (or would like to) wear expensive, &quot;showy&quot; clothing.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>141) In the past, people who were supposed to be my &quot;friends&quot; ended up getting me in trouble.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>142) I might enjoy flying across the Atlantic in a hot-air balloon.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
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.
1) False 2) Mostly False 3) Mostly True 4) True

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

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 same job for most of my life would be dull.
Appendix F

Consent Form

Research Purpose

We are sampling the California State University San Bernardino undergraduate community to learn more about differences in personality traits and behavioral characteristics—that is how people differ in their personality styles and behaviors.

Statement of the Research

You are invited to participate in a research study.

The purpose of this consent form is to provide you with the information that you need to decide whether to participate in this research study and to inform you, as completely as possible, of the nature, purpose and risks involved in the study.

The following sections of the consent form cover:
(1) the nature of the questions you will be asked;
(2) the risks and benefits of participation, if any;
(3) the time commitment of participation, if any;
(4) voluntary participation and early withdrawal;
(5) confidentiality of the information you give us;
(6) whom to contact if you want more information.

When you sign this questionnaire at the bottom of the form, you thereby affirm that you are satisfied with the information and you consent to continue with the study. Do not proceed in this way until you are fully satisfied. Contact the Principal Investigator (see below) if you have questions about the study that you want answered before participating.

Information on Research

This study is intended to examine the differences among various personality types. It includes two personality questionnaires asking you to endorse certain behaviors or beliefs you may hold, an assessment of your personal relationships, a measure designed to see what kind of activities you enjoy participating in and finally, some items concerning your attitudes towards driving.