



# Construct validation of a self-report psychopathy scale: does Levenson's self-report psychopathy scale measure the same constructs as Hare's psychopathy checklist-revised?

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## Abstract

In an effort to validate Levenson, Kiehl and Fitzpatrick's [Levenson, M. R., Kiehl, K. A., & Fitzpatrick, C. M. (1995). Assessing psychopathic attributes in a noninstitutionalized population. *Journal of Personality and Social Psychology*, 68, 151–158]. Self-report Psychopathy Scale (SRPS) we compared it to Hare's [Hare, R. D. (1991). *The Hare Psychopathy Checklist-Revised*. Toronto: Multi-Health Systems] (PCL-R) and examined its relation to criminal activity and a passive avoidance task. Participants were 270 Caucasian and 279 African-American participants in a minimum security state prison. Confirmatory factor analysis provided modest support for the original SRPS factor structure. Although diagnostic concordance of the two instruments ranged from poor to fair, the SRPS and the PCL-R were significantly correlated and both showed similar patterns of correlations to measures of substance abuse and criminal versatility. Both measures were also predictive of performance on a passive avoidance task. While this constellation of findings provides some evidence for the construct validity of the SRPS, it also suggests that the SRPS may not measure the same construct as the PCL-R and further refinement of the instrument appears to be warranted. © 2001 Elsevier Science Ltd. All rights reserved.

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Psychopathy refers to a disorder that begins early in life and is characterized by a variety of antisocial behaviors and exploitative interpersonal relationships. Prototypical psychopathic traits include callous and manipulative use of others, shallow and short-lived affect, irresponsible/impulsive behavior, egocentricity, and pathological lying (Cleckley, 1976). Although this description includes both personality and behavioral characteristics, recent attempts to operationalize

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the psychopathy construct — such as the DSM-IV (APA, 1994) Antisocial Personality Disorder (APD) diagnosis — have focused on criminal behaviors as criteria for diagnostic purposes (Hare, 1985a, 1996; Lilienfeld, 1994; Millon, 1981). Researchers dissatisfied with the APD criteria believe that personality features integral to the psychopathy construct are currently underrepresented by DSM diagnostic criteria (Hare, 1985b). Hare (1996), for example, cites work demonstrating that the APD diagnosis identifies a more heterogeneous group than do assessments based on inferred prototypical psychopathic traits.

Trait-based assessments of psychopathy have been derived almost entirely from the work of Cleckley (1976). Using his wealth of clinical experience as a guide, Cleckley was able to extract commonalities from numerous exemplar case studies to define general features which he felt represented the core of the psychopathy construct. Often referred to as the Cleckley criteria, these 16 features included such behaviors as failure to learn from experience and persistent lying as well as personality components such as callousness and egocentricity. Such traits, Cleckley argued, were prototypically psychopathic and might serve as markers for identifying those with the disorder. Although Cleckley's efforts were entirely descriptive and he never presented a formal diagnostic system, he laid the groundwork for future efforts to define psychopathy as a construct capable of reliable identification.

Hare (1980, 1991) took up where Cleckley left off. Concerned that progress in the field was being hampered by the lack of a sound psychometric instrument for the reliable and valid assessment of psychopathy, Hare sought to transform the Cleckley criteria into a reliable diagnostic instrument. The result was the initial Psychopathy Checklist (PCL) and its revision, the Psychopathy Checklist-Revised (PCL-R). Both versions of the checklist were multi-item scales rated on the basis of personal interviews and corroborating information. Items were constructed based on the initial Cleckley criteria, although some were modified so as to be more clearly assessed. Since its publication, the PCL-R (Hare, 1991) has been a widely used measure and has been shown to have excellent psychometric properties in a variety of incarcerated populations (Hare, 1996). Moreover, the development of the PCL-R as a standardized diagnostic tool has provided the foundation for a deluge of much-needed experimental work investigating the nature of the psychopathy construct.

Many intriguing findings about PCL-R defined psychopaths have emerged in the last decade. Among these are studies demonstrating that psychopaths display poor passive avoidance learning (Newman & Kosson, 1986; Newman, Patterson, Howland & Nichols, 1990; Thornquist & Zuckerman, 1995), less differentiated emotional responses to affective stimuli (Patrick, 1994), smaller skin conductance responses to fearful or distressing stimuli (Blair, Jones, Clark & Smith, 1997; Hare, 1978; Ogloff & Wong, 1990), and difficulties processing or producing emotional language (Day & Wong, 1996; Hare, Williamson & Harpur, 1988). Such findings have increased understanding of psychopathic behavior and helped to generate hypotheses about the etiology of psychopathy (for a review, see Hare, 1996).

Although this work has been important to advancing the field of psychopathy, it does have a major limitation. Almost without exception, all of these findings have been obtained using participants from penal institutions. Many people feel that psychopathy necessarily implies criminal activity, but Cleckley (1976) clearly believed it did not. The different case studies Cleckley presented were representative of a surprisingly large cross-section of the population. These individuals were from every social class, both genders, and different ethnic backgrounds. The doctors, lawyers, and dilettantes described by Cleckley were a far cry from the criminals more commonly discussed

in the literature of today. Essentially, Cleckley made the case that psychopathy could, and did, exist in the population as a whole and did not necessarily involve criminal activity.

If this is the case, why is it that most work with psychopaths has been done in a prison setting? There appear to be at least two reasons. First, when one is attempting to diagnose individuals well known for their deceitfulness, it is unwise to base diagnoses only on self-report interview information. Prisons maintain institutional files which can serve to corroborate or refute an inmate's interview information. Second, psychopathy is relatively infrequent in the population as a whole (Hare, 1991). An efficient way to obtain a large number of participants for study is to sample from institutions where poorly socialized behavior is the norm — prisons.

Despite these valid reasons for conducting research in a correctional setting, such a sampling strategy restricts the focus of psychopathy research to a relatively narrow group of criminal psychopaths. Any findings based on prison samples must be regarded as tentative because they may be true of only the subset of institutionalized psychopaths (Widom, 1977). In order to fully understand the construct of psychopathy as conceptualized by Cleckley (1976), we must also look at non-institutionalized individuals. To do this successfully will require an instrument which measures the Cleckley/Hare psychopathy construct and which can be efficiently administered to a large community sample to identify enough psychopaths to conduct meaningful experimental studies.

To date, efforts to produce such instruments have been unable to address both of these concerns. Hart, Cox and Hare (1995) derived a measure from the PCL-R for use with community samples, the Psychopathy Checklist- Screening Version (PCL-SV). The PCL-SV is, however, still interview based and, thus, expensive to administer to large groups of participants. To overcome this problem, researchers have used pen and paper assessments such as the psychopathic deviate (Pd) scale of the Minnesota Multiphasic Personality Inventory (MMPI) and the socialization scale (So) of the California Psychological Inventory (CPI; Gough, 1969). Unfortunately, these scales appear to be better measures of antisocial behavior than psychopathic personality and, thus, capture only part of the psychopathy construct (Hare, 1991, 1996). A more sophisticated self-report instrument, the Psychopathy Personality Inventory (PPI; Lilienfeld & Andrews, 1996), has been developed but there is still limited data examining how this measure relates to the psychopathy construct as defined by the PCL-R (Poythress, Edens & Lilienfeld, 1998).<sup>1</sup> Thus researchers are still in need of a valid measure of psychopathy which is also easy, quick, and inexpensive to administer.

Levenson et al. (1995) attempted to develop such a scale. The self-report psychopathy scale (SRPS) is a pen and paper measure of psychopathy based on the PCL-R criteria and designed for use in college samples. The SRPS consists of 26 items divided into two separate scales — primary and secondary psychopathy. These scales correspond roughly to the two factors of the PCL-R. The primary psychopathy scale was designed to “assess a selfish, uncaring, and manipulative posture towards others” (p.152) while the secondary psychopathy scale was created to “assess impulsivity and a self defeating life style” (p. 152; Levenson et al.). Instead of emphasizing criminal activity, the SRPS was designed to elicit information about behaviors more typical of community life. For example, the individual's integrity is assessed by items such as “even if I were trying hard to sell a product I would not lie about it” (p. 153; Levenson et al.).

<sup>1</sup> The authors would have liked to include the PPI in the current study so that we could (1) cross validate the measure and (2) compare it directly to both the PCL-R and the SRPS. Unfortunately, Lilienfeld and Andrews (1996) article had not yet been published when the data for the current study were being collected.

Levenson et al. (1995) sought to validate the measure in two ways. First, they examined the instrument's correlations with various self-report scales measuring constructs such as harm avoidance, boredom susceptibility, and thrill/adventure seeking to determine if they were of the direction and magnitude that would be expected for a measure of the psychopathy construct. Second, they tried to determine if high scores on the SRPS were predictive of various antisocial behaviors within a college environment such as cheating on exams, plagiarism, and drunk and disorderly behavior (i.e. academic disciplinary problems). Levenson et al. (1995) found that SRPS scores were correlated as expected with other measures of personality. SRPS scores were also found to be a significant predictor of academic disciplinary problems. Lynam, Whiteside and Jones (1999) recently conducted a cross validation study in which they replicated the SRPS' factor structure and relation to antisocial acts. They also demonstrated that SRPS scores were capable of predicting poor passive avoidance in a college sample (Lynam et al., 1999).

Although these data provide preliminary evidence concerning the validity of the SRPS as a measure of psychopathy, there is still an important piece of evidence which needs to be collected before we can conclude that this is the case. First, neither Levenson et al. (1995) nor Lynam et al. (1999) made use of the PCL-R in their validation studies. It, therefore, remains to be seen if the SRPS measures a comparable construct to that tapped by the present "gold standard" of psychopathy assessment. Thus, the next step in the validation of the SRPS as a measure for psychopathy would seem to require comparing the SRPS with the PCL-R.

Despite the fact that the SRPS was intended for noninstitutionalized populations, we believe this can be best accomplished in a prison sample. There are two reasons for this. First, almost all work validating the PCL-R has been done in a prison setting. Second, if the SRPS assesses the kind of impulsive, selfish, and callous presentation which we would expect from anyone meeting the Cleckley criteria (institutionalized or not), it should be a valid indicator of psychopathy even in a prison population.

In an attempt to cross-validate the SRPS in a prison population and determine if the SRPS measures the same construct as the PCL-R, we gathered data from a minimum security prison in Wisconsin in four different validation domains. In particular, we investigated (1) the SRPS's factor structure and internal consistency, (2) the association of the SRPS with the PCL-R, (3) the similarity of the SRPS's and PCL-R's relationships to criminal activity and substance abuse, and (4) the relation between SRPS scores and performance on a laboratory measure of passive avoidance. If the SRPS can be shown to have the expected relations to important elements of psychopathy's nomological net (i.e. PCL-R scores, substance abuse, passive avoidance deficits, etc.), then we will have taken some important steps towards validating an easily administered, pen and paper measure of psychopathy.

## 1. Methods

### 1.1. Participants

The sample consisted of 279 African-American and 270 Caucasian male inmates from Wisconsin state prisons. Participants were obtained from a comprehensive roster after screening out those men who were above the age of 40, receiving psychotropic medication, diagnosed as having

schizophrenia or bipolar disorder, or noted as having reading and/or math skills below the fourth grade level (as measured by the prison's standardized measures). All participants were told that their decision to take part in the current project or to refuse would have no influence on their status within the correctional system. Informed consent was obtained from all participants.

Participants who consented to take part in the study were then evaluated using the Psychopathy Checklist Revised (PCL-R) and were asked to complete an extensive battery of self-report instruments over three separate days. Not all participants elected to complete all three days of the study. Data on personality measures administered on days two and three of the study were not available for all participants and, as a result, the sample sizes for the different questionnaires vary.

The measures administered included the Welsh Anxiety Scale (WAS; Welsh, 1956), Short Form of the Michigan Alcohol Screening Test (SMAST; Selzer, Vinokur & von Rooijen, 1975), the Shipley Institute of Living Scale (SILS; Zachary, 1986), and the Self-report Psychopathy Scale (SRPS; Levenson et al., 1995).<sup>2</sup> In addition, we obtained a measure of criminal versatility from the official records in their institutional files. Participants scoring below 70 on the estimated WAIS-R IQ from the SILS were eliminated from all analyses in this study because the authors believed these participants might have difficulties understanding task and questionnaire instructions and content well enough to complete the necessary test battery.

### *1.2. Assessment measures*

The Self-report Psychopathy Scale (SRPS; Levenson et al., 1995) is a 26-item self-report measure designed to evaluate both the behavioral and personality traits commonly associated with psychopathy in the literature. Each item consists of a statement which the participant reads and then endorses on a four point scale (“disagree strongly”, “disagree somewhat”, “agree somewhat”, and “agree strongly”). Some items are reversed in order to control for response sets.

A factor analysis based on initial data collected by Levenson et al. (1995) using university undergraduates revealed two distinct factors. The first factor, primary psychopathy, appears to measure a callous/manipulative interpersonal style whereas the second factor, secondary psychopathy, contains items related to behavioral problems (such as poor behavioral controls, failure to learn from mistakes, etc.). These factors correspond roughly to the two factors of the PCL-R (Harpur, Hare & Hakistan, 1989).

Following the example of the PCL-R, participants were divided into three groups based on their total SRPS score. Those participants scoring in the top third of the distribution were considered psychopathic (scores of 58 or more), those scoring in the lowest third of the distribution were considered nonpsychopathic (scores of 48 and below), and those scoring in the middle were considered a mixed group (scores of 49–57) according to the SRPS. Receiver Operating Curve (ROC) analyses confirmed that these cut off scores were optimal for balancing the SRPS's sensitivity and specificity for identifying PCL-R defined psychopathic characteristics in participants. Descriptive statistics for the SRPS can be found in Table 1.

<sup>2</sup> Some readers may wonder why we did not make use of the self report measure derived from the PCL-R — Hare's self report psychopathy scale revised (SRP-II; Hare, 1980). Our reasoning was that the SRP-II was created as an analog of the PCL-R and has high correlations with that instrument. Since we were using the PCL-R itself, there seemed little reason to include the SRP-II.

Table 1  
Summary statistics for the PCL-R and the SRPS<sup>a</sup>

	<i>n</i>	PCL-R Total <i>M</i> (S.D.)	PCL-R Factor 1 <i>M</i> (S.D.)	PCL-R Factor 2 <i>M</i> (S.D.)	SRPS Total <i>M</i> (S.D.)	SRPS Primary <i>M</i> (S.D.)	SRPS Secondary <i>M</i> (S.D.)
Total sample	549	23.33 (7.34)	8.99 (3.43)	10.83 (3.55)	54.66 (11.58)	32.99 (8.19)	21.68 (5.05)
Caucasian sample	270	23.29 (7.47)	8.89 (3.57)	11.00 (3.57)	54.07 (11.99)	31.86 (8.22)	22.20 (5.18)
African-American sample	279	23.37 (7.22)	9.10 (3.29)	10.66 (3.52)	55.24 (11.16)	34.08 (8.02)	21.17 (4.87)

<sup>a</sup> PCL-R, Psychopathy Checklist-Revised; SRPS, Self Report Psychopathy Scale; *n*, sample size; *M*, mean; S.D., standard deviation

The Psychopathy Checklist Revised (PCL-R; Hare, 1991) is a checklist consisting of 20 items, each indicative of a core psychopathic attribute discussed by Cleckley (1976). Each item is rated from 0 to 2, with 0 meaning the item isn't at all present and 2 indicating that it is certainly present, on the basis of an extensive interview and institutional file review. Scores on the PCL-R range from 0 to 40 with scores of 30 or more generally regarded as being indicative of psychopathy and scores of 20 or less generally being indicative of a distinct absence of psychopathy. The PCL-R has been shown to have a replicable two factor structure with factor 1 measuring a callous/manipulative interpersonal style and factor 2 measuring antisocial action (Harpur, Hare & Hakstian, 1989). To date, a large body of evidence has accumulated indicating the instrument's reliability and validity for use with Caucasian, male, offenders (Hare, 1996). Preliminary evidence for the reliability and validity of the PCL and PCL-R in African American male offenders has been reported by Kosson, Smith and Newman (1990) and Lorenz, Smith, Bolt, Schmitt and Newman (2000). Descriptive statistics for the PCL-R can be found in Table 1.

Given that the PCL-R and the SRPS are both reported to be measures of the psychopathy construct, we hypothesized that the two would be highly correlated. Further, we expected factor 1 of the PCL-R to be more strongly correlated with primary psychopathy (factor 1) of the SRPS and factor 2 of the PCL-R to be more strongly correlated with secondary psychopathy (factor 2) of the SRPS.

The Short Form of the Michigan Alcohol Screening Test (SMAST; Selzer et al., 1975) is a questionnaire consisting of 34 yes–no items concerning the symptoms and consequences of alcohol abuse and dependence. Scores on the SMAST have been shown to differentiate alcoholics from controls (Hedlund & Viewig, 1984). SMAST scores have also been reported to correlate highly with both the full version of the Michigan Alcohol Screening Test (Selzer et al.) and other self-report measures of alcohol abuse/dependence (Hedlund & Viewig).

Hart and Hare (1989) have reported that psychopaths have significant substance abuse problems. Smith and Newman (1990) have demonstrated that lifetime DSM-III diagnoses of alcoholism are significantly correlated with the total and factor 2 scores, but not factor 1 scores, of the PCL-R. Based on this evidence, the authors predicted that scores on the SMAST would be significantly correlated with total and factor 2 scores, but not factor 1 scores, for both the PCL-R and the SRPS.

The Welsh Anxiety Scale (WAS; Welsh, 1956) is a 39-item questionnaire, derived from the MMPI, designed to measure anxiety. The WAS is not, however, a "pure" measure of anxiety and

relates not only to measures of anxiety, but also depression and negative affect. Gray (1991) has, in fact, suggested that the “anxiety” construct measured by the WAS is actually a hybrid of two parts neuroticism and one part introversion that corresponds to his behavioral inhibition construct.

The Shipley Institute of Living Scale (SILS; Zachary, 1986) is a brief measure of general intellectual functioning. It consists of a 40-item vocabulary test and a 20-item abstraction test. This test has demonstrated good psychometric properties and the revised scoring procedures make it possible to obtain reliable estimates of Wechsler Adult Intelligence Scale — Revised (WAIS-R) scores (Zachary, 1986). The SILS was used as a screening measure in this study.

Criminal versatility was determined by reviewing inmate files and counting the total number of different types of crimes committed. The categories used to differentiate crimes were those described in the PCL-R manual (Hare, 1991). Crimes were coded as violent if they involved murder, battery, assault, sexual crimes or weapons charges. All other crimes were considered nonviolent. Because this measure of criminal versatility is identical to that used to code item 20 of the PCL-R, correlations between the PCL-R and criminal versatility were done using a prorated version of the participants’ PCL-R scores which omitted item 20. As criminal versatility is theoretically related to the psychopathy construct (Hare, 1991), the authors hypothesized that it would be significantly related to both PCL-R and SRPS scores.

### *1.3. Passive avoidance task*

The experimental task used in this study was a version of the passive avoidance task developed by Newman and Kosson (1986). This task was selected because poor passive avoidance performance is one of the most replicable findings in the psychopathy literature (Lykken, 1995; Newman & Kosson, 1986; Newman & Schmitt, 1998; Newman et al., 1990) and Lynam et al. (1999) have found that SRPS scores predict performance on this task in a college sample. The task was conducted using an IBM compatible computer, a standard 13 inch monitor, and a black plastic response box with one push button located on the top. At the beginning of the task, participants received instructions indicating that they would be seeing a series of 10 numbers many different times and in random orders. They were informed that some of these numbers would be “good” numbers (S+’s) and some of them would be “bad” numbers (S–’s). To maximize their earnings, participants were told to push the button whenever they saw an S+ and not push the button whenever they saw an S–. The stimuli for the task consisted of 10 different numbers between 01 and 99. These numbers were divided into two separate lists counterbalanced for the attributes of being below or above 50 and being either even or odd. Furthermore, the list which served as the S+’s for one half of the participants served as the S–’s for the other half. Each number was presented in white on a black background for 2.5 seconds and measured 5.1 × 2.5 cm. Prior to receiving the 90 test trials which consisted of nine blocks of 10 trials each, participants received a five trial pretreatment which included each of the five S+’s. The purpose of the pretreatment was to encourage a dominant response set for reward. Other than the first five trials, the numbers appeared randomly on the screen with the stipulation that no more than three S+’s or three S–’s would occur in a row. Each time the participants pressed the button when an S+ was present, they were reinforced by the presentation of a high-pitched tone, a message that they had won 10 cents, and a poker chip representing their reward. Each time the participants pressed the button

when an S– was present, they received feedback consisting of the presentation of a low-pitched tone, a message that they had lost 10 cents, and the removal of a poker chip. No rewards or punishments were administered in the absence of a response.

Performance on the passive avoidance task is evaluated by looking at two different types of errors. Commission errors are defined as failures to inhibit responses to S– stimuli and omission errors are defined as failures to respond to S+ stimuli. Errors of commission represent failures of passive avoidance and have differentiated PCL-R defined psychopaths and controls in past research. As the task requires that participants observe all stimuli before performance can reflect learning, data from the first block of trials are not analyzed. Following Newman and Schmitt (1998) and Lynam et al. (1999), it was hypothesized that low-anxious psychopaths (defined using either the PCL-R or the SRPS) would make more commission errors than low-anxious controls.

Although some of the passive avoidance data has been previously presented in Newman and Schmitt (1998), we felt the comparisons between the performances of SRPS and PCL-R defined psychopaths and controls on this task was sufficiently interesting and important to warrant reporting the data here as well. It should be noted that the data sets for the two papers are slightly different because participants included in Newman and Schmitt's study who did not have SRPS scores were excluded from the present analyses.

## 2. Results

### 2.1. *Confirmatory factor analyses*

Confirmatory factor analyses (CFAs) were conducted to determine the adequacy of fit of a two-factor model for the SRPS as identified by Levenson et al. (1995). For the two-factor model, each item was constrained to load on only one of the two factors (16 items loading on the SRPS primary scale and 10 items loading on the SRPS secondary scale) and latent factors were allowed to correlate. Fit indices used to determine goodness-of-fit included the comparative fit index (CFI; Bentler, 1990), the root mean square error of approximation (RMSEA; Browne & Cudeck, 1993), and the Bentler and Bonett (1980) non-normed fit index (NNFI). Values for CFI and NNFI above 0.9 are indicative of good fit; an RMSEA value of 0.05 or smaller is indicative of good fit whereas RMSEA values between 0.05 and 0.08 indicate a reasonable model fit (Browne & Cudeck, 1993). Model improvements were tested by means of change in model chi-square ( $\Delta\chi^2$ ).

In order to test the comparability of the SRPS item-factor relations across the Caucasian and African-American samples, two-factor CFA invariance models were fit to the data. Prior to invariance modeling, the fit of the Levenson et al. (1995) two-factor model was examined for each race separately to establish good-fitting baseline models (Byrne, 1994). When Lynam et al. (1999) conducted two-factor CFAs of the SRPS using data from college undergraduates, model fit was found to be poor unless several errors of measurement were allowed to correlate and one item was allowed to load on both factors ("Love is overrated").

In the current study, initial two-factor CFAs were computed without specifying the Lynam et al. (1999) model modifications (correlated errors and one item loading on both factors) and these analyses revealed poor model fit for both Caucasians (CFI=0.85, NNFI=0.83, RMSEA=0.06) and African-Americans (CFI=0.79, NNFI=0.77, RMSEA=0.08). Adding the model modifications

identified by Lynam et al. (1999) significantly improved model fit for both Caucasians (CFI=0.90, NNFI=0.88, RMSEA=0.05;  $\Delta\chi^2$  (df=18)=90.95,  $P<0.001$ ) and for African-Americans (CFI=0.85, NNFI=0.83, RMSEA=0.05;  $\Delta\chi^2$  (df=18)=83.68,  $P<0.001$ ). Apart from establishing good-fitting baseline models for the invariance CFAs, these analyses suggest that the two-factor structure of the SRPS provides an adequate fit to the data for both races, although the fit appears to be better in Caucasians.

An initial two-factor invariance CFA was computed in which factor loadings were not constrained to be equal across the two races. The same two-factor model with the Lynam et al. (1999) model modifications (with the same set of correlated errors for both Caucasians and African-Americans) was used for each race in the invariance CFAs. This analysis yielded a model  $\chi^2$  (df=560)=860.29, CFI=0.88, NNFI=0.86, and RMSEA=0.035. A second two-factor invariance CFA was computed in which factor loadings were constrained to be equal across the two samples. This second analysis yielded a model  $\chi^2$  (df=601)=924.600, CFI=0.87, NNFI=0.86, and RMSEA=0.035. Model improvement was evaluated by the change in chi-square,  $\Delta\chi^2$  (df=41)=64.31,  $P<0.02$ , which indicated that adding the equal factor loading constraints resulted in significantly poorer model fit. More specifically, factor loadings for two items loading on the Primary factor and two pairs of correlated errors were significantly different for Caucasians and African-Americans. The two items were: "I feel bad if my words or actions can cause someone else to feel emotional pain" and "I would be upset if my success came at someone else's expense." Thus, the measurement properties of the SRPS appear to be somewhat different for Caucasians and African-Americans. Given these results, pooling of data from both races may be inappropriate. Therefore, SRPS analyses are computed separately for Caucasians and African-Americans as well as for the combined sample.

## 2.2. *Internal consistency*

Coefficient alpha was used to evaluate the internal consistency of the SRPS and its two subscales (primary and secondary psychopathy)<sup>3</sup>. Cronbach's coefficient alpha was calculated separately for the total sample, Caucasian participants, and African-American participants. Cronbach's alphas for the total sample were 0.85 for the total SRPS, 0.83 for SRPS factor 1, and 0.69 for SRPS factor 2. Cronbach's alphas for the Caucasian subsample were, respectively, 0.88, 0.85, and 0.74. Finally, for the African-American subsample, Cronbach's alphas were 0.83, 0.80, and 0.64.

## 2.3. *Relationship to the PCL-R*

To determine if the SRPS and the PCL-R measure similar constructs, we examined correlations between the SRPS and the PCL-R total scores. As predicted, SRPS total scores correlated significantly with PCL-R total scores in the total sample as well as in the Caucasian and African-American subsamples. We also looked at how the SRPS factor scores correlated with the PCL-R factor scores. The SRPS primary scale was significantly correlated with both factors of the PCL-

<sup>3</sup> We made use of coefficient alpha because it is a relatively simple measure of internal consistency that is widely recognized and understood. Readers should, however, be aware that Hattie (1985) has questioned the validity of coefficient alpha as a measure of unitary dimensionality.

R and the PCL-R total score in Caucasians, African-Americans and the total sample. Scores on the SRPS secondary scale were significantly correlated with PCL-R factor 2 and total scores in all three samples, and were significantly correlated with PCL-R factor 1 in the total and Caucasian, but not African-American, samples. A concise listing of means and standard deviations for the SRPS and PCL-R can be found in Table 1. Correlations between the SRPS and the PCL-R are reported in Table 2.

#### 2.4. Relationship to criminal versatility and substance abuse

To determine whether or not the behavioral correlates of the SRPS are the same as those of the PCL-R, we examined the similarity of the correlations between the two assessment devices and measures of criminal versatility and substance abuse (SMAST). Prorated PCL-R total scores (excluding item 20) were significantly correlated with both violent and nonviolent criminal activity. SRPS total scores, however, were significantly correlated with violent criminal activity, but not nonviolent criminal activity. This pattern was similar for both the Caucasian and African-American subsamples.

The correlations between the PCL-R, SRPS, and the SMAST are particularly noteworthy. In the total sample, the PCL-R total and PCL-R factor 2 scores, but not PCL-R factor 1 scores, are significantly correlated with SMAST scores. Similarly, SRPS total and secondary scores are significantly correlated with SMAST scores, but SRPS primary scores are not. This pattern is the same in the Caucasian subsample. In the African-American subsample, the pattern is similar but the SRPS total score is not significantly correlated with the SMAST scores. Correlations between the SRPS, PCL-R and clinical/behavioral outcome measures are reported in Table 3.

Table 2  
Correlations between the PCL-R and the SRPS<sup>a</sup>

	SRPS Total score	SRPS Primary scale	SRPS Secondary scale
<i>Total sample (n = 549)</i>			
PCL-R total	0.35***	0.34***	0.27***
PCL-R factor 1	0.27***	0.30***	0.13**
PCL-R factor 2	0.38***	0.31***	0.36***
<i>Caucasian subsample (n = 270)</i>			
PCL-R total	0.40***	0.36***	0.34***
PCL-R factor 1	0.29***	0.30***	0.19**
PCL-R factor 2	0.44***	0.37***	0.45***
<i>African-American subsample (n = 279)</i>			
PCL-R total	0.31***	0.31***	0.19***
PCL-R factor 1	0.25***	0.30***	0.08
PCL-R factor 2	0.31***	0.28***	0.26***

<sup>a</sup> PCL-R = Psychopathy Checklist-Revised; SRPS = Self Report Psychopathy Scale. \* $P < 0.05$ , \*\* $P < 0.01$ , \*\*\* $P < 0.001$ .

Table 3  
PCL-R and SRPS correlations with criminal activity and substance abuse<sup>a</sup>

	<i>n</i>	PCL-R Total	PCL-R Factor 1	PCL-R Factor 2	SRPS Total	SRPS Primary	SRPS Secondary
<i>Total sample</i>							
SMAST	543	0.19***	0.04	0.27***	0.18**	0.08	0.28***
Criminal activity (non-violent)	378	0.26***	0.17***	0.27***	0.01	−0.02	0.07
Criminal activity (violent)	378	0.30***	0.24***	0.28***	0.24***	0.25***	0.14**
<i>Caucasian subsample</i>							
SMAST	267	0.21***	0.04	0.29***	0.19**	0.12	0.25***
Criminal activity (non-violent)	197	0.30***	0.17*	0.33***	0.06	0.05	0.07
Criminal activity (violent)	197	0.24***	0.21**	0.20**	0.18**	0.17*	0.14*
<i>African-American subsample</i>							
SMAST	276	0.18**	0.06	0.25***	0.20***	0.11	0.28**
Criminal activity (non-violent)	181	0.21**	0.20**	0.17	−0.04	−0.04	−0.02
Criminal activity (violent)	181	0.39***	0.28***	0.40***	0.30***	0.30***	0.21*

<sup>a</sup> PCL-R, Psychopathy Checklist-Revised; SRPS, Self Report Psychopathy Scale; SMAST, Short Form Michigan Alcohol Screening Test. Criminal activity was determined by counting the total number of crimes an individual had been charged with which were either violent or non-violent. Murder, attempted murder, assault, battery, weapons charges, and any crime involving a weapon were coded as violent crimes. All other kinds of charges were coded as non-violent crimes. Correlations between criminal versatility and PCL-R total scores use a prorated PCL-R score which excludes item 20 — criminal versatility.

\* $P < 0.05$ .

\*\* $P < 0.01$ .

\*\*\* $P < 0.001$ .

## 2.5. Diagnostic concordance

In order to examine the diagnostic agreement between the PCL-R and the SRPS, Kappa coefficients were calculated for the total sample as well as the Caucasian and African-American subsamples. Three sets of kappa were calculated, each to reflect a different manner in which the PCL-R has been used to categorize research participants. When the PCL-R and the SRPS are used to divide participants into three different groups (highs, lows, and middles), kappa is 0.11 for the total sample, 0.16 for Caucasian participants, and 0.07 for African-American participants. When the PCL-R and SRPS are used to identify two groups (highs vs all other participants), kappa is 0.16 for the total sample, 0.22 for the Caucasians, and 0.11 for the African-Americans. Finally, when the PCL-R and the SRPS are used to identify only extreme scorers (highs and lows only), kappa is 0.47 for the total sample, 0.57 for the Caucasians and 0.38 for the African-Americans. Table 4 provides a more specific breakdown of the overlap between PCL-R and SRPS diagnoses.

## 2.6. Passive avoidance data

Data analysis employed two mixed-model analyses of variance (ANOVAs). In the first analysis, level of PCL-R total scores (psychopathic, non psychopathic), level of WAS scores (high

Table 4  
Diagnostic concordance of the SRPS and the PCL-R using high, middle, and low scorers<sup>a</sup>

	High PCL-R (score $\leq 30$ ; <i>n</i> )	Middle PCL-R (score 21–29; <i>n</i> )	Low PCL-R (score $\geq 20$ ; <i>n</i> )
<i>Caucasian subsample</i>			
High SRPS (score $\leq 58$ )	32	36	21
Middle SRPS (score 48–57)	20	35	27
Low SRPS (score $\geq 47$ )	7	28	39
<i>African-American subsample</i>			
High SRPS (score $\leq 58$ )	29	45	22
Middle SRPS (score 48–57)	18	22	25
Low SRPS (score $\geq 47$ )	8	28	34
<i>Total sample</i>			
High SRPS (score $\leq 58$ )	61	81	43
Middle SRPS (score 48–57)	38	57	52
Low SRPS (score $\geq 47$ )	15	56	73

<sup>a</sup> PCL-R, Psychopathy Checklist-Revised; SRPS, Self-Report Psychopathy Scale; *n*, number of participants.

anxiety, low anxiety), and ethnic group (Caucasian, African-American) were the between-participants variables and type of error (passive avoidance, omission) was the within-participants variable. The second analysis used level of SRPS total scores (high SRPS, low SRPS), level of WAS scores (high anxiety, low anxiety), and ethnic group (Caucasian, African-American) as the between-participants variables and type of error (passive avoidance, omission) was the within-participants variable. Two sets of planned comparisons, one for PCL-R data and one for SRPS data, were conducted using two-tailed *t*-tests to test the a priori hypothesis that low-anxious psychopaths commit more passive avoidance errors than do low-anxious controls.

Examination of the PCL-R ANOVA revealed a significant Psychopathy $\times$ Anxiety interaction ( $F(1, 79) = 6.97, P < 0.01$ ) with low-anxious psychopaths making more total errors than low-anxious controls. There was a trend indicating a Psychopathy $\times$ Anxiety $\times$ Ethnic Group interaction ( $F(1, 79) = 2.98, P < 0.10$ ). Low-anxious Caucasian psychopaths tended to make more total errors (both passive avoidance and omission errors) than did the low-anxious Caucasian controls whereas low-anxious African-American psychopaths made roughly the same number of total errors as did the low anxious African-American controls. There was a significant effect for Type of Error,  $F(1, 79) = 12.18, P < 0.001$ , with participants committing more passive avoidance errors than omission errors, and a significant Psychopathy $\times$ Type of Error interaction,  $F(1, 79) = 4.08, P < 0.05$ , indicating that psychopaths committed more passive avoidance errors and fewer omission errors than controls. No other effects approached significance.

Three planned comparisons, one each for the total, Caucasian and African-American samples, were used to test the a priori hypothesis that low-anxious psychopaths would commit significantly more passive avoidance errors than low-anxious controls. For the total sample, low-anxious psychopaths committed significantly more passive avoidance errors than low-anxious controls,  $t(42) = 2.32, P < 0.05$ . This comparison was also significant for Caucasians,  $t(21) = 1.99, P < 0.05$ , but not African-Americans,  $t(19) = 1.28, ns$ .

Examination of the SRPS ANOVA revealed a significant effect for type of error ( $F(1, 85) = 18.59, P < 0.001$ ), with participants committing more passive avoidance errors than omission errors. There was also a significant SRPS Psychopathy  $\times$  Type of Error interaction,  $F(1, 85) = 5.36, P < 0.05$ , indicating that participants with high SRPS scores committed more passive avoidance errors and fewer omission errors than controls. No other effects approached significance<sup>4</sup>.

Once again, three planned comparisons, one each for the total, Caucasian and African American samples, were used to test the a priori hypothesis with the SRPS-based data. In the total sample, low-anxious high-SRPS participants committed significantly more passive avoidance errors than did their low-anxious counterparts,  $t(43) = 2.39, P < 0.05$ . The planned comparison was not significant for the Caucasian subsample,  $t(23) = 1.57, ns$ , but was a trend for the African-American subsample,  $t(18) = 1.80, P < 0.10$ .

### 3. Discussion

An important question addressed in this study concerned the replicability of the two-factor structure of the SRPS in incarcerated males. A related question concerned the invariance of the SRPS factor structure across racial groups. Initial confirmatory factor analyses suggested that the two-factor model presented by Levenson et al. (1995) was not replicated in Caucasian or African-American inmates. We then conducted additional CFAs with modifications based on findings reported by Lynam et al. (1999) and model fit for both races significantly improved although the fit was somewhat better for Caucasian participants. These initial CFAs provided adequate-fitting baseline models that were then used in CFAs testing invariance of the two-factor model for Caucasians vs. African-Americans.

The invariance CFAs showed that some of the SRPS factor loadings appear to be different for Caucasian and African-American participants. This finding suggests that the SRPS may be measuring related, but slightly different, constructs in Caucasians and African-Americans or that construct bias may exist in the SRPS. As a result, researchers using the SRPS should be wary of combining data from participants of different racial or ethnic groups. It should be noted that Lorenz et al. (2000) have reported similar findings concerning the factor structure of the PCL-R.

The internal consistency data are promising. The coefficient alphas for the SRPS total and primary scales suggest that they measure a unitary construct (see, however, Hattie, 1985). Low coefficient alphas were, however, obtained for the SRPS secondary scale. These data suggest that factor 2 of the SRPS, in particular, needs to be revised to reflect a more homogeneous construct. Future research should identify replacements for items which contribute poorly to their respective factors.

The primary goal of this report was to evaluate the validity of the SRPS by comparing it with the PCL-R and other psychopathy related-variables. Significant zero-order correlations between the

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<sup>4</sup> The authors recognize that the small cell sizes for the high anxious controls in the SRPS passive avoidance analysis might affect interpretations on the Anxiety  $\times$  Psychopathy interaction. These cells, however, do not affect the planned comparisons. Although we could have changed the WAS cutting scores for the SRPS analysis to achieve a better distribution of participants, we felt that it was important to maintain the same criterion for high-low WAS groups we used in the PCL-R passive avoidance analysis.

SRPS and the PCL-R provided preliminary evidence that the SRPS is, to some extent, measuring a similar or related construct as that underlying the PCL-R. It should be noted that the magnitude of these correlations was small to moderate and similar to those typically found between the PCL-R and other self-report measures of psychopathy (such as the Pd and So scales) and the PCL-R (Hare, 1991). These other measures, however, have typically been found only to correlate with PCL-R factor 2, whereas the SRPS was found to correlate with both factors of the PCL-R. In contrast to other self-report measures, the SRPS appears to tap the psychopathic personality as well as antisocial behavior.

The PCL-R's relation to substance abuse and criminal versatility is well documented (Hart & Hare, 1989). Smith and Newman (1990) have noted that substance abuse is significantly and positively associated with PCL-R factor 2, but not factor 1. In the present study, scores on the SMAST were significantly associated with PCL-R factor 2, but not factor 1 scores. Similarly, the secondary factor of the SRPS was significantly correlated with SMAST scores, but the primary factor of the SRPS was not. The correspondence between the PCL-R's and SRPS' relation to a measure of alcohol abuse is further evidence that the constructs underlying these measures relate to key external criteria in similar ways.

Williamson, Hare and Wong (1987) have also demonstrated that PCL-R ratings are positively related to violent criminal activity. In the present study, high PCL-R scores were significantly associated with both violent and nonviolent criminal versatility. High SRPS scores were significantly associated with violent, but not nonviolent, criminal versatility. Although it is promising that these two measures correspond in their relation to violent crimes, the different relations between the PCL-R and the SRPS to nonviolent crimes could be seen as problematic. Future work is needed to clarify this discrepancy between the two measures.

Diagnostic concordance results indicated poor agreement between the PCL-R and SRPS except when the SRPS is used to identify extreme groups. The magnitude of Kappa, however, when extreme groups are identified (0.38 to 0.57) is still only fair to good using interpretive guidelines suggested by Landis and Koch (1977). Thus, the use of the SRPS to identify psychopaths and nonpsychopaths in incarcerated samples may introduce considerable measurement error.

Previous work has demonstrated that PCL-R psychopaths are prone to making commission errors on passive avoidance tasks (Newman & Kosson, 1986; Thornquist & Zuckerman, 1995). In the present study, "psychopaths" selected using the SRPS responded almost identically on the passive avoidance task to "psychopaths" selected using the PCL-R. The only difference was that PCL-R psychopaths' performance was significantly influenced by their WAS scores whereas SRPS psychopaths' performance was not. Although it is not entirely clear why WAS anxiety would influence performance for groups defined using the PCL-R and not the SRPS, there are a number of possibilities. Possible explanations might include shared method variance between the WAS and the SRPS or true differences between the constructs measured by the SRPS and PCL-R.

In summary, Levenson's SRPS has the predicted correlations with both factors of the PCL-R, and it demonstrates similar relationships to self-reported measures of substance abuse and violent criminal versatility as does Hare's PCL-R. Further, high scores on the SRPS appear to predict errors on a passive avoidance task as does the PCL-R. Given that the PCL-R is currently the most widely accepted measure of the psychopathy construct, this preliminary evidence suggests that the

SRPS is a promising, albeit weaker, measure of a similar or related construct. This finding is particularly impressive when one considers that the present study, having used an institutional sample, favored the performance of the PCL-R and put the SRPS at a disadvantage.

Despite this, the present evidence does not suggest that SRPS and the PCL-R are measuring precisely the same construct. Although significant, the magnitude of the correlations between the PCL-R and the SRPS are small. Also, the diagnostic concordance between the PCL-R and the SRPS is fair at best, suggesting that the two would not identify precisely the same research participants for study. The present results also suggest that the two-factor structure reported by Levenson et al. may be different for Caucasians and African-Americans and, as such, the SRPS may not perform the same way in different ethnic and racial populations. Finally, SRPS scores are only based on self-report data and do not make use of any kind of collateral information. As a result, the instrument is susceptible to “faking good or bad” response bias (Hare, 1991, 1996).

Taking these limitations into consideration, however, the SRPS still has many potential benefits for researchers. It is quick, easy, and inexpensive to administer and it has fair diagnostic concordance with PCL-R when extreme scores are used. Given how costly and time consuming it is to do full interviews with all members of a sample, the SRPS may also be a useful screening instrument for selecting key participants in studies making use of the PCL-R or PCL-SV. Also, the SRPS is one of the few self-report measures of psychopathy that seems to tap into personality as well as non-criminal antisocial behavior. In fact, the instrument itself has no questions pertaining directly to criminal activity. Therefore, researchers interested in studying psychopathy who are limited by resources and must make use of simplified self-report measures may find the SRPS a preferable measure to the Pd or So scales which tap only the antisocial component of psychopathy.

We have three recommendations for future research with the SRPS. First, our findings suggest that several of the items on SRPS do not perform well. Additional research is needed to identify individual SRPS items that do not contribute much to the overall measure as well as those items that show measurement non-invariance across important ethnic and racial groups. Psychometrically inadequate items should be replaced with better performing questions.

Second, we need to conduct large-scale cross-validation studies in a variety of non-institutionalized samples such as Lynam et al.’s (1999). Although the current validation study with the prison population was useful in order to compare the underlying constructs of the SRPS and the PCL-R, it does not directly address questions about how the SRPS performs with the intended population. Future validation studies should include individuals from the community at large such as university students, laborers, white collar workers, and the like. Such studies should also make use of confirmatory factor analysis as well as a variety of self-report and behavioral measures. In this way the SRPS can be validated in a number of different population samples and sampling domains.

Finally, there is a need for more research comparing existing self-report measures of psychopathy. Given the time and energy necessary to validate such measures, it is in researchers’ best interest to devote resources to perfecting our most promising scales. We need to determine appropriate uses for such scales and how well individual scales perform relative to one another. For this reason, future validation studies should include not only the SRPS, but also measures such as Hare’s self-report scale (SRP-II; Hare, 1990), and Lilienfeld and Andrews PPI (1996).

Table 5  
Passive avoidance and omission errors for PCL-R psychopaths and controls subdivided using Welsh anxiety<sup>a</sup>

Group	<i>n</i>	Passive avoidance <i>M</i> (S.D.)	Omission <i>M</i> (S.D.)
<i>Caucasian Subsample</i>			
Low-WAS controls	13	14.23 (6.42)	10.23 (6.69)
High-WAS controls	11	19.09 (9.09)	12.45 (7.48)
Low-WAS psychopaths	10	21.10 (7.09)	10.30 (8.31)
High-WAS psychopaths	11	16.09 (8.41)	6.82 (4.67)
<i>African-American subsample</i>			
Low-WAS controls	15	16.27 (9.59)	15.27 (9.76)
High-WAS controls	8	13.25 (6.23)	15.50 (10.22)
Low-WAS psychopaths	6	21.33 (6.62)	10.17 (5.04)
High-WAS psychopaths	13	14.69 (8.41)	10.76 (4.66)
<i>Total sample</i>			
Low-WAS controls	28	15.32 (8.19)	12.93 (8.70)
High-WAS controls	19	16.63 (8.35)	13.74 (8.61)
Low-WAS psychopaths	16	21.19 (6.70)	10.25 (7.07)
High-WAS psychopaths	24	15.33 (9.25)	8.96 (7.56)

<sup>a</sup> PCL-R, Psychopathy Checklist-Revised; WAS, Welsh Anxiety Scale; *n*, sample size; *M*, mean; S.D., standard deviation

Table 6  
Passive avoidance and omission errors for SRPS psychopaths and controls subdivided using Welsh anxiety<sup>a</sup>

Group	<i>n</i>	Passive avoidance (S.D.)	Omission (S.D.)
<i>Caucasian subsample</i>			
Low-WAS controls	18	15.67 (8.69)	10.83 (5.80)
High-WAS controls	2	16.50 (2.12)	8.00 (2.82)
Low-WAS psychopaths	7	20.71 (3.05)	7.43 (2.52)
High-WAS psychopaths	21	17.38 (6.89)	7.48 (3.51)
<i>African-American subsample</i>			
Low-WAS controls	14	16.00 (7.21)	15.00 (9.87)
High-WAS controls	3	10.67 (3.06)	11.33 (2.52)
Low-WAS psychopaths	6	22.33 (4.99)	8.50 (5.62)
High-WAS psychopaths	22	20.05 (8.64)	11.73 (6.51)
<i>Total Sample</i>			
Low-WAS controls	32	15.81 (7.95)	12.66 (7.98)
High-WAS controls	5	13.00 (4.00)	10.00 (2.92)
Low-WAS psychopaths	13	21.46 (5.74)	7.92 (4.61)
High-WAS psychopaths	43	18.74 (7.89)	9.65 (6.97)

<sup>a</sup> SRPS, Self Report Psychopathy Scale; WAS= Welsh Anxiety Scale; *n*, sample size; *M*, mean; S.D., standard deviation

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