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SHORT REPORTS

Response Perseveration in Psychopathic Women

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Recent attempts to validate the Psychopathy Checklist—Revised (PCL–R; R. D. Hare, 1991) as a measure of psychopathy in female offenders have been limited by a failure to examine laboratory correlates of the syndrome. We assessed 112 incarcerated women by using the PCL–R and examined their performance on a card perseveration task that has been used to demonstrate response perseveration in psychopathic men. Contrary to prediction, psychopathic women did not perseverate responding when the PCL–R was used either dimensionally or categorically. The authors discuss the implications of the results for the PCL–R and for female psychopathy more generally.

Psychopathy is a syndrome characterized by affective, interpersonal, and behavioral deficits (Cleckley, 1976; Hare, 1991). Psychopathic individuals are defined according to their inability to form emotional bonds with others, their callous, self-serving attitudes, and their impulsive, often antisocial behaviors. The introduction of Hare's (1991) Psychopathy Checklist—Revised (PCL–R), currently considered the state-of-the-art measure of the syndrome (Fulero, 1995) in Caucasian men, has facilitated systematic investigation of the etiology, course, and symptomotology of the syndrome (see Hare, 1996). Recently, researchers have begun to examine these correlates of PCL–R psychopathy in diverse samples, including adolescents (e.g., Brandt, Kennedy, Patrick, & Curtin, 1997), ethnic minorities (e.g., Kosson, Smith, & Newman, 1990; Lorenz, Smith, Bolt, Schmitt, & Newman, 1999), and women (e.g., Forth, Brown, Hart, & Hare, 1996; Rutherford, Cacciola, Alterman, & McKay, 1996).

Studies of PCL–R psychopathy in female samples have been promising. As for psychopathic men, women classified as psychopathic using the PCL–R showed deficits in perspective taking, lacked empathy, and engaged in high levels of criminal behavior and alcohol and drug use (e.g., Rutherford et al., 1996; Strachan, 1993; Vitale, Smith, Brinkley, & Newman, in press). However, it is not entirely clear that the PCL–R assesses the same construct across genders (Salekin, Rogers, & Sewell, 1997; Salekin, Rogers, Ustad, & Sewell, 1998).

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In contrast to studies examining the criminal behavior and personality correlates of psychopathy in women, relatively few studies have examined the laboratory performance of these individuals. Whereas psychopathic men have been shown to differ from control participants on laboratory measures assessing affective processing (e.g., Levenston, Patrick, Bradley, & Lang, 2000) and behavioral inhibition (e.g., Lykken, 1957; Newman & Kosson, 1986; Newman, Patterson, & Kosson, 1987), such data are lacking for women.

One such measure of behavioral inhibition is response perseveration. Response perseveration involves a failure to inhibit or modify a response that has become maladaptive. Thus, tasks designed to assess response perseveration provide a useful measure of an individual's difficulty regulating maladaptive behaviors (Gorenstein & Newman, 1980).

In the first study to demonstrate response perseveration in PCL–R-assessed psychopathic individuals, Newman et al. (1987; see also Siegel, 1978) used a Card Perseveration Task (CP Task). The CP Task uses a computerized deck of 100 cards, composed of 10 blocks of 10 cards. The deck is "stacked" such that the probability of playing a losing (i.e., number) card increases by 10% with each block (from 10% to 100%). Simultaneously, the probability of playing a winning (i.e., face) card decreases at the same rate. An initial high rate of reward (90%) is used to establish a dominant response set for playing cards. This set then needs to be modified as the game continues in response to the changing probabilities of winning and losing.

In their initial study, Newman et al. (1987) found that psychopathic individuals exhibited response perseveration. That is, they played significantly more cards and earned significantly less money than control participants on the CP Task. Although the authors explained this result in terms of their theory of psychopathy (i.e., the response modulation hypothesis), it is unlikely that response perseveration is specific to a single dysfunction. Indeed, more recent studies using the CP Task (and other, similar tasks) have demonstrated response perseveration in a variety of groups, including children with conduct disorder (e.g., Daugherty & Quay, 1991; Milich, Hartung, Martin, & Haigler, 1994), children with attention-deficit/hyperactivity disorder (ADHD; e.g., Matthys, van

Goozen, de Vries, Cohen-Kettenis, & van Engeland, 1998), and children with severe behavior problems, including aggression (e.g., Fonseca & Yule, 1995; Kindlon, Mezzacappa, & Earls, 1995). Although such findings highlight the CP Task's utility as an index of impulsive, disinhibited behavior, they also suggest that response perseveration is not specific to adult psychopathy and may represent a self-regulation deficit associated with behavioral disinhibition in a number of pathological groups.

The matter of specificity aside, response perseveration remains an important characteristic of the psychopathy syndrome and has been replicated in various groups characterized by psychopathic traits (e.g., Belmore & Quinsey, 1994; Fisher & Blair, 1998; O'Brien & Frick, 1996). In this sense, response perseveration is similar to other behavioral characteristics of psychopathy (e.g., poor passive avoidance, or high rates of criminal behavior) that have come to define the syndrome, despite the fact that they are exhibited by other pathological groups.

The purpose of the current study is to extend investigations of the generalizability of PCL–R psychopathy across genders by examining response perseveration in women. To this end, we administered the CP Task to a group of incarcerated women who were assessed for psychopathy using the PCL–R.

Following Newman et al. (1987), we tested two primary hypotheses: (a) that psychopathic women would play significantly more cards, relative to nonpsychopathic women; and (b) that psychopathic women would earn significantly less money than nonpsychopathic women.

Method

Participants

Participants were 112 adult, Caucasian women incarcerated at the Taycheedah Correctional Institution in Wisconsin. The women were drawn from the minimum, medium, and maximum security levels. Participants were excluded on the basis of age (no participants >45 years), any current use of antipsychotic medication, and academic level (all participants were required to have 4th grade reading and mathematical abilities).

PCL–R ratings are based on a semistructured interview lasting approximately 75 min and on a review of the inmates' prison files (including conduct reports and presentence investigations). During the assessment, data were also collected on the number of crimes with which each participant had been charged as an adult.

The PCL–R (Hare, 1991) consists of 20 items rated as 0 (*absent*), 1 (*may be present*), or 2 (*definitely present*). Although the PCL–R is often used to classify groups of psychopathic individuals (PCL–R >30) and control participants (PCL–R <20), there is increasing interest in utilizing the PCL–R as a dimensional instrument, particularly in female samples (e.g., Rutherford et al., 1996). Thus, in addition to conducting group analyses using the PCL–R cutting scores of 20 and 30, we also used the instrument dimensionally.

Following the PCL–R interview, we collected data on several self-report measures, including the Shipley Institute of Living Scale (SILS; Zachary, 1986), a brief measure of intelligence; and the Self-Report Psychopathy Scale (SRPS; Levenson, Kiehl, & Fitzpatrick, 1995), a self-report measure of the personality and behavioral characteristics of psychopathy.

Procedure

Participants meeting the inclusion criteria were provided with written and verbal descriptions of the study. If participants consented to participate, they were immediately interviewed as part of the PCL–R assessment. Participants earned $5.00 for the PCL–R assessment interview and $5.00 for completing various questionnaires (e.g., SILS). The CP Task was administered among a number of computerized tasks 2 to 4 weeks after the initial interview. Participants were paid the money they earned on this task.

The CP Task was similar to that used by Newman et al. (1987).[1] The task was presented via a computer. All participants began the game with 10 poker chips representing 5¢ each. At the beginning of each trial, a graphic of the back side of a playing card appeared on the screen. The phrases DO YOU WANT TO PLAY?, PRESS 1 TO PLAY, and PRESS 2 TO QUIT were printed over the card. Thus, on every trial, participants were reminded that they had two choices: to play the next card or to quit the game. To play, participants pressed one of two buttons mounted on top of a plastic box. After each play, the card face was revealed as either a number card or a face card. Face cards were accompanied by the appearance of the words YOU WIN! over the card; number cards were accompanied by the words YOU LOSE! above the card. To quit, participants pressed the second button on the button box.

The experimenter read instructions informing the participants how to play a card and how to quit the game. They were also informed that the task did not involve a standard deck of playing cards, so they could not predict how many of each card would appear. Participants were also informed that they could only play a card or quit the game; they could not skip a card.

The experimenter gave and took away chips as the participants won and lost. Participants won a 5¢ chip whenever a button press was followed by a face card (i.e., Jack, Queen, King, or Ace), and they lost a 5¢ chip whenever a number card appeared. The probability of losing (i.e., getting a number card) increased by 10% with every block of 10 cards from 10% to 100%. The dependent measure was the number of cards played before quitting. In addition, the computer recorded the amount of money that each participant won or lost during the game.

Results

In this sample, internal consistency of the PCL–R was .83, item-total correlations were all significant and over .29, and interrater reliability of PCL–R scores for a subsample of 39 women was .95.

Information on the age, IQ, SRPS scores, number of criminal charges, and task performance for participants in each psychopathy group can be found in Table 1. Psychopathy groups did not differ on age or estimated IQ[2] but did differ significantly on SRPS scores and criminal behavior, supporting the validity of the PCL–R assessments in this sample.

A one-way analysis of variance (ANOVA) with psychopathy group as the between-subjects variable was used to test the hypothesis that individuals classified as psychopathic would play significantly more cards than control participants. The main effect for group was nonsignificant, $F(1, 83) = 0.17$, *ns*. The mean number of cards played by psychopathic individuals and control participants were 58.5 (SD = 30.5) and 62.6 (SD = 30.3), respectively.

Pearson's correlation was used to determine if PCL–R scores used dimensionally were significantly related to the number of

[1] The task used in this study was more recently programmed than that used by Newman et al. (1987). It is identical to the original task in instruction and procedure but differs in that it has more sophisticated graphics than the original program and is administered on a PC-compatible computer rather than an Apple computer.

[2] CP Task performance was independent of IQ scores, $r(112) = -.06$, *ns*. Thus, IQ was omitted from subsequent analyses.

Table 1
Means (and Standard Deviations) for PCL–R Groups and Relations to Age, IQ, and Task Performance

Measure	Group	
	Psychopathic (n = 11)	Nonpsychopathic (n = 73)
Age (in years)	25.4 (4.3)	28.9 (6.7)
SILS estimated IQ	93.7 (7.5)	97.3 (13.4)
SRPS		
Primary psychopathy	36.6 (4.5)*	25.2 (5.3)
Secondary psychopathy	26.1 (5.3)*	20.8 (5.6)
No. of criminal charges	12.2 (5.2)*	6.1 (4.9)
No. of cards played	58.5 (30.5)	62.6 (30.3)
Money earned (in cents)	96.4 (63.7)	87.6 (56.6)

Note. PCL–R = Psychopathy Checklist—Revised; SILS = Shipley Institute of Living Scale; SRPS = Self-Report Psychopathy Scale.
* Significantly different at α = .05.

cards played. This analysis showed no significant association between PCL–R scores and the number of cards played, $r(112) = -.09$, *ns*.

An ANOVA with psychopathy group as the between-subjects variable was conducted to test the hypothesis that psychopathic individuals would lose significantly more money than control participants. This analysis showed no significant effect for group on the amount of money earned, $F(1, 83) = 0.22$, *ns*.

The Pearson's correlation, examining the association between PCL–R scores used dimensionally and the amount of money earned, was nonsignificant, $r(112) = .05$, *ns*.

Discussion

Contrary to our predictions, women classified as psychopathic using the PCL–R did not play more cards or earn significantly less money than nonpsychopathic women on the CP Task. This failure to replicate response perseveration in psychopathic women may be due to a number of factors.

One possibility is that the PCL–R is not adequately classifying participants as psychopathic. Consistent with this possibility is the relatively small number of women who met the standard cutoff for psychopathy (PCL–R > 30) in this sample (n = 11).[3] Although there is evidence in this sample that the PCL–R was used in a reliable manner and that PCL–R scores relate to convergent measures of psychopathy (i.e., SRPS, and criminal behavior), it is possible that the PCL–R does not identify the essential features of psychopathy in women and, lacking sensitivity, may fail to classify certain psychopathic women correctly (see Vitale & Newman, 2001).

Alternatively, the absence of a relation between PCL–R-assessed psychopathy and response perseveration may be unrelated to the measure of psychopathy. Rather, it may be that response perseveration is not a core symptom of psychopathy in women. Although a correlate of the syndrome in adult men and associated with other syndromes of disinhibition in children, response perseveration may be less useful for discriminating psychopathic women from other female offenders. For instance, lower self-reported rates of sensation seeking and disinhibition in women (e.g., Hartman & Rawson, 1992; Wang et al., 2000) may affect the likelihood of observing significant group differences in disinhibited behavior. It might also be the case that the parameters of the task itself (e.g., an emphasis on gambling, the use of 5¢ rewards) were insufficient for eliciting behavioral disinhibition in women.

If women did not approach this situation with the same potential for disinhibited responding as men, then the deficits in self-regulation typically associated with psychopathy may not have had the same impact on their performance as they do on the performance of psychopathic men. This possibility is supported by the finding that, across both groups, women played fewer cards on the CP Task than did the men in the Newman et al. (1987) study (62.51 vs. 76.2, respectively). In other words, although psychopathy appears to disinhibit reward-seeking behavior in male offenders, this effect may not have been applicable to the female offenders in the context of this laboratory assessment.

Our failure to demonstrate response perseveration in female psychopathic individuals should not be viewed as evidence against using the PCL–R with women. This is particularly true in light of existing evidence demonstrating the validity of the instrument in terms of its relation to self-reported personality characteristics and antisocial behavior. As noted above, inadequate classification of psychopathic women is only one possible explanation for these results. The current study is among the first to attempt to test the validity of the PCL–R using laboratory behavioral measures. Thus, the results of this study should be considered alongside the results of future laboratory studies to determine whether our failure to find evidence for response perseveration in psychopathic women can be attributed to the classification measure employed, the task used, or gender differences in the expression of psychopathy.

[3] Although the small number of psychopathic participants is a concern because of the concomitant decrease in statistical power in any analyses involving this group, the fact that the pattern of results was similar in the dimensional analysis, and that the psychopathic women actually played nonsignificantly fewer cards than the nonpsychopathic women, suggests that the findings should not be attributed to a lack of power.

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