COMMENT AND REPLY

The Role of Antisociality in the Psychopathy Construct: Comment on Skeem and Cooke (2010)

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J. Skeem and D. J. Cooke (2010) asserted that Hare and Neumann consider criminality to be an essential component of the psychopathy construct. The assertion, presented in the guise of a debate on the nature of psychopathy, is neither accurate nor consistent with the clinical and empirical literature on psychopathy to which Hare and Neumann have contributed. Broadly defined antisociality, not criminality per se, is considered to be part of the psychopathy construct. Skeem and Cooke also expressed concerns that the popularity of the Psychopathy Checklist—Revised (R. D. Hare, 2003) inhibits the development and use of other instruments, that it has become the construct it measures, that it deviates from its clinical roots, and that it conflates criminality with personality. These and related issues are addressed, and it is suggested that the arguments proffered by Skeem and Cooke are not convincing, nor do they provide clear directions for theory and research.

Keywords: psychopathy, Psychopathy Checklist—Revised (PCL–R), structure and correlates, antisociality, confirmatory factor analysis (CFA)

Scientific debate operates according to well-established principles, one of the most basic of which is that the views of an opposing side should be presented and evaluated in a fair and unbiased manner. We contend that the critique by Skeem and Cooke (2010) of the Psychopathy Checklist—Revised (PCL–R; Hare, 2003) is inconsistent with these principles. Skeem and Cooke suggested that they have provided "conceptual directions for resolving the debate" about whether "criminal behavior is a central component of psychopathy." The very title of their article is a straw man based on the unfounded claim that Hare and his colleagues consider criminality to be central or fundamental to the psychopathy construct. Their claim is bolstered by arguments misconstruing our published work and that of others and by quotes of our work that have been taken out of context or reconstructed in such a way that it appears that we have said something that we did not say. Skeem and Cooke also made highly selective use of the literature, often omitting published studies that directly contradict or do not support the points they attempted to make, particularly with respect to the role of antisocial tendencies in clinical and empirical conceptions of psychopathy. These tactics are inconsistent with their tutorial on the philosophy of science, compromise their arguments, and divert attention from any legitimate issues raised in their article. We contend that Skeem and Cooke did the field a disservice by presenting an inaccurate account of the role of the PCL–R in theory and research on psychopathy, both applied and basic.

Because of space limitations, we focus our response on the more salient assertions and misattributions made by Skeem and Cooke (2010). We also briefly address several other topics in which we believe Skeem and Cooke misinterpreted the clinical and empirical literature, including the importance of antisociality to psychopathy, Cleckley's role in the scheme of things, the concern that the PCL–R has become the construct, the predictive validity of the PCL–R, and the developmental stability of psychopathy. Although Skeem and Cooke largely confined their comments to the PCL–R, research with its derivatives is highly relevant to most of their arguments and, where appropriate, is considered here. Virtually all of the issues raised by Skeem and Cooke have been discussed in detail by Hare and Neumann (2008).

Is Criminal Behavior Central to Psychopathy?

This question and the answers provided by Skeem and Cooke (2010) provide the foundation for their article. Skeem and Cooke said of us, "They described criminal behavior as 'important' (Hare & Neumann, 2005, pp. 59 and 62), 'critical' (Hare & Neumann, 2005, p. 59; Vitacco et al., 2005, p. 473), and even 'central' (Hare & Neumann, 2005, p. 58) to psychopathy" (p. 433). These single-word quotes were taken out of context or fitted into a context that does not represent what we actually said. The quotes attributed to us refer to antisocial behavior, not criminal behavior. Later, Skeem and Cooke

stated, "Hare and Neumann (2005) recently argued that criminal behavior is central to psychopathy" (p. 437). What we actually said is that "an integral part of psychopathy is the emergence of an early and persistent pattern of *problematic behaviors* [italics added]" (Hare & Neumann, 2005, p. 58). The replacement of *problematic* with *criminal* goes well beyond simple misinterpretation. These are not the only instances of Skeem and Cooke misattributing statements and ideas, ours as well as those of other researchers; other examples are provided in this article and a detailed account is available on request. Below, we discuss empirical support for the role of antisociality, broadly defined, in understanding the nature of psychopathic personality.

Skeem and Cooke (2010) noted that the PCL–R was developed in a correctional environment and stated, "This issue bears directly on the notion that criminal behavior is central to psychopathy" (p. 435). But this certainly is not our notion. The PCL–R had its origins in a criminal milieu because of the high prevalence of psychopathy in criminals and the ready availability of the collateral information required for reliable and valid assessments. The PCL–R was designed to discriminate psychopathic individuals from other criminals—a job it does very well—but this does not mean that criminality is essential to the construct of psychopathy, any more than studentship must be essential to the construct tapped by self-report measures developed with college students (e.g., Levenson, Kiehl, & Fitzpatrick, 1995; Lilienfeld & Andrews, 1996).

The PCL–R item indicators for the latent constructs they measure may reflect the context in which the instrument was developed, but different indicators might be (and are) used in other contexts (see below). Further, most of the arguments by Skeem and Cooke (2010) are directed at the role of the PCL–R in the criminal justice system, with no mention of the role it plays in other areas, both basic (e.g., see Patrick, 2006b) and applied (e.g., see Hervé & Yuille, 2007). Skeem and Cooke also ignored the development and extensive research on the Psychopathy Checklist: Screening Version (PCL:SV; Hart, Cox, & Hare, 1995), an instrument that was developed in another context; does not rely on criminal behavior to score the items; and yet is so strongly related to the PCL–R, both conceptually and empirically, that it "can be considered a short or parallel form of the PCL–R" (Cooke, Michie, Hart, & Hare, 1999, p. 11; see also Guy & Douglas, 2006). The PCL:SV has generated a great deal of research, much of it with civil psychiatric patients (e.g., Skeem & Mulvey, 2001; Vitacco et al., 2005) and samples from the general population (e.g., De Oliveira-Souza, Ignácio, Moll, & Hare, 2008; Neumann & Hare, 2008). There now is extensive evidence that the PCL:SV and the PCL–R not only share the same psychometric properties but also have similar behavioral, cognitive and affective, neurobiological, and predictive correlates. If, as Skeem and Cooke claimed, we believe that criminality is an essential component of psychopathy, they are faced with the task of explaining how two instruments— one without reference to criminality—can be considered parallel measures of the same construct (Cooke et al., 1999).

Criminal or Antisocial?

The context for most of the Skeem and Cooke (2010) arguments is the original two-factor model of the PCL–R, with only passing reference to the more recent four-factor model. In the two-factor model (Hare, 1991), Factor 1 (F1) consists of eight items that reflect interpersonal and affective features, whereas Factor 2 (F2)

consists of nine items that reflect more overt antisocial tendencies. The four-factor model (Neumann, Hare, & Newman, 2007) splits F1 into Interpersonal and Affective factors (four items each) and F2 into Lifestyle and Antisocial factors (five items each). One item, Criminal Versatility, was not part of F2 but is included in the Antisocial factor, which is conceptually and statistically linked with the other PCL-based psychopathy factors (Neumann, Vitacco, Hare, & Wupperman, 2005).

Skeem and Cooke (2010) defined *criminal* as "behavior that is sanctioned by the legal system" (p. 434) and *antisocial* as "behavior that defeats the interests of the social order" (p. 435). How one can have the former without the latter is unclear. Nonetheless, they used *criminal* in the title of their current article but used *antisocial* in the title of an earlier version ("Is Antisocial Behaviour Essential to Psychopathy? Conceptual Directions for Resolving the Debate," referenced in their companion piece, Cooke, Michie, & Skeem, 2007, p. s39). We do not know why the key word in the title shifted from *antisocial* to *criminal* even though the content of the article apparently remained unchanged. What is clear is that Skeem and Cooke offered a simplistic explanation of the differences in the meanings of *antisocial* and *criminal* but then used these terms interchangeably to argue that the PCL–R conflates criminality with psychopathy. Skeem and Cooke did not mention that large-scale studies (Krueger & Markon, 2006; Marcus, Lilienfeld, Edens, & Poythress, 2006; Markon & Krueger, 2005) indicated that antisocial behavior, whether or not it is unlawful, is continuously distributed and therefore cannot be parsed in a simplistic manner. We suggest that wherever Skeem and Cooke stated that we consider criminality to be central, essential, or fundamental to psychopathy, the reader should replace the word *criminality* with *antisociality*.

Skeem and Cooke (2010) said that some items of the PCL–R (e.g., early behavior problems, poor behavioral controls) reference criminality, even though an individual can receive the maximum score on each of these items without any evidence of criminal behavior. They also argued that other PCL–R items—not only those in the Antisocial factor—can reflect criminality. Although we contend that antisocial behavior is an important component of psychopathy (e.g., conning, deceptive, irresponsible, callous, remorseless), Skeem and Cooke are contradictory on this issue. On the one hand, they stated, "In our view there is no compelling empirical evidence to support the conclusion that antisocial behaviour is a *central* [italics added] feature of psychopathy" (Cooke et al., 2007, p. s48). On the other hand, Skeem and Cooke (2010) stated, "Some antisocial behavior seems *inherent* [italics added] to the interpersonal and affective core of psychopathy (e.g., non-criminal manipulative behavior)" (p. 435) and "some traits of psychopathy seem *inherently* [italics added] linked with antisocial behavior that defeats the social order" (p. 435). It is noteworthy that they did not mention the third (lifestyle) factor in the three-factor model, a factor considered by Cooke and Michie (2001) to be part of the core of psychopathy: "All three factors are necessary for characterization of the disorder—each factor contributing to the superordinate factor to the same extent" (p. 185).

If antisocial behavior is inherent to the interpersonal and affective factors, it must be even more so for the lifestyle factor, labeled by Cooke and Michie (2001) as *Impulsive and Irresponsible Behavioral Style*. The conclusion we draw from this is that Skeem and Cooke (2010) consider antisociality to be part of the three-factor model but cannot discuss it because of their overemphasis

on F1. They now view F1 (which they refer to as *Emotional Detachment*) as reflecting psychopathy and F2 as reflecting antisocial personality disorder and suggested that the former might be viewed as "merely a violent variant" (Skeem & Cooke, 2010, p. 438) of the latter. The suggestion that F1 is psychopathy and F2 is antisocial personality disorder is not new, but it is nonetheless simplistic and untenable. Their suggestion that F1 is a violent variant of antisocial personality disorder is sharply at odds with their claim (see below) that there is no empirical evidence that F1 is predictive of violence. Moreover, F1 and F2 are correlated factors that underpin a superordinate construct and should not be considered in isolation (Hare & Neumann, 2008). There is very strong evidence, some of it from Cooke and colleagues (e.g., Cooke & Michie, 1997), that the PCL–R measures a unitary construct (e.g., Bolt, Hare, Vitale, & Newman, 2004; Neumann, Hare, & Newman, 2007) that includes antisocial dispositions. Indeed, Cooke and Michie (1997) stated that item response theory "analysis confirms that the PCL–R is a good measure of psychopathic personality disorder because all the items contribute to the estimate of the trait and there are different items that function efficiently, at different points, along the whole length of the trait" (p. 10). The suggestion, therefore, that psychopathy consists only of interpersonal and affective dimensions certainly is inconsistent with the three-factor model that Cooke and colleagues have vigorously promoted in recent years as "conceptually coherent and consistent with clinical tradition" (Cooke et al., 2007, p. s39). This, of course, presents Skeem and Cooke with a dilemma, given that the lifestyle features, considered by Cooke and Michie (2001) to be part of the core of psychopathy, do not reside in F1.

We note that Skeem and Cooke (2010) relied on the work of Patrick, Bradley, and Lang (1993) to typify their concept of emotional detachment (F1) as psychopathy. However, they did not acknowledge that this study was based on the use of the PCL–R or that only participants with high scores on both F1 and F2 showed reduced affective modulation of startle. This finding is consistent with our view that psychopathy is a superordinate construct represented by the joint action of F1 and F2 and with other empirical research. For example, Vanman, Mejia, Dawson, Schell, and Raine (2003) replicated the Patrick et al. (1993) findings with a community sample. Those with high scores on both F1 and F2 of the PCL–R showed the least affective modulation of startle. Using the PCL:SV, Zeier and Newman (2007) found that performance on an interference task was predicted by the interaction of F1 and F2 (described as Part 1 and Part 2, respectively, in the PCL:SV manual). They concluded that the results were related to the construct of psychopathy rather than to the unique variance associated with the factors.

Threshold Score

Skeem and Cooke (2010) said, "Without a history of violent or criminal behavior, even an individual with pronounced interpersonal and affective traits of psychopathy is unlikely to surpass the PCL–R's threshold score for diagnosing psychopathy" (p. 434). Again, they left out reference to the impulsive lifestyle factor in the Cooke and Michie (2001) three-factor model. Several of the 20 items (juvenile delinquency, criminal versatility) are directly related to criminality. One item (revocation of conditional release) is scored only if the individual has been charged with or convicted of a crime and has had a chance to violate the conditions of a release

into the community. Otherwise, it is omitted and the scores based on the other items are prorated to a 20-item scale. This could hardly be considered heavy reliance on criminal behavior, unless we redefine, as Skeem and Cooke attempted to do, other PCL–R items as instances of criminality. If the PCL–R is used as intended, it is possible for an individual to obtain a threshold score (30) with evidence of antisocial behavior but without any direct evidence of criminality. Further, the PCL:SV does not depend on evidence of criminality, and it is not at all difficult for an individual without any evidence of criminality to obtain a score of 18, approximately equivalent to a PCL–R score of 30 (e.g., De Oliveira-Souza et al., 2008). In any case, the use of a threshold or cut score for diagnosing psychopathy is problematic, given recent taxometric evidence that the PCL–R (Guay, Ruscio, Knight, & Hare, 2007) and its derivatives (Edens, Marcus, Lilienfeld, & Poythress, 2006; Walters et al., 2007) measure a dimensional construct. Cut scores are useful for communication among researchers but, of necessity, are somewhat arbitrary when used for diagnostic purposes. The real issue is not how difficult it may be to reach a given threshold but how variations in the psychopathy dimensions relate to variables of interest, including normal-range personality processes (Hare & Neumann, 2008; Lynam & Widiger, 2007).

Violence

Skeem and Cooke (2010) made statements that are unsupported by or inconsistent with the published literature. For example, they stated that the "link between the PCL and violence has supported a myth that emotionally detached psychopaths callously use violence" (Skeem & Cooke, 2010, p. 438) and further proposed that "core features of psychopathy explain relatively little variance in future violent and other criminal behavior" (p. 439). The statements by Skeem and Cooke are wrong, even if by *emotionally detached* they mean F1 of the PCL–R. Presumably, the words "callously use violence" imply violence that is more instrumental than reactive. Here, there is good evidence that F1 plays an important role (Porter, Woodworth, Earle, Drugge, & Bower 2003; Reidy, Zeichner, Miller, & Martinez, 2007; Swogger, Walsh, & Kosson, 2007; Vitacco, Neumann, Caldwell, Leistico, & van Rybroeck, 2006; Woodworth & Porter, 2002). In a large-scale meta-analysis of the PCL Scales, Leistico, Salekin, DeCoster, and Rogers (2008) reported that F1 was a moderately strong predictor of crime, aggression, and violence, although not as strong as F2. They cautioned that the predictive utility of F1 may be underestimated because it reflects "interpersonal charm, exploitative manipulation, and self-advancing deceitfulness, which are likely associated with duping the system and escaping documentation of antisocial conduct" (Leistico et al., 2008, p. 40). They also noted that their analyses were based on the original two-factor model and that "recent research indicates that newer factor models may be more appropriate" (Leistico et al., 2008, p. 40).

Skeem and Cooke (2010) confined their analyses to the two-factor model and did not adequately discuss the correlates of the dimensions that underlie these newer models of the PCL–R and its derivatives. Recent research indicates that when the three-factor or the four-factor model is used, the interpersonal and affective dimensions may be as important as the lifestyle and antisocial dimensions (e.g., Hill, Neumann, & Rogers, 2004; Vitacco, 2007). For example, Vitacco et al. (2005) used structural equation mod-

eling with a three-factor model of the PCL:SV to predict violence in civil psychiatric patients. They found that only the affective dimension was significantly related (.34) to future violence. When the antisocial dimension was added to the analyses, it significantly predicted (.40) future violence, and the structural coefficient between the affective dimension and violence increased to .41. Penney and Moretti (2007) reported that use of the three-factor model with adolescent boys and girls revealed that both the affective and the behavioral dimensions of the Psychopathy Checklist: Youth Version (PCL: YV; Forth, Kosson, & Hare, 2003) were related to overt aggression, whereas only the affective dimension was related to relational aggression. In general, it was the affective dimension that was most consistently related to aggression. Parks and Bard (2006) found that the interpersonal and antisocial factors of the PCL:YV predicted sexual recidivism. Kennealy, Hicks, and Patrick (2007) reported that violence in female offenders was significantly associated with scores on the affective, lifestyle, and antisocial dimensions and with residualized scores on the affective and antisocial dimensions, consistent with the findings by Vitacco et al. (2005).

Research on the differential correlates of the PCL dimensions may help to illuminate the theoretical and applied implications of psychopathy. Some dimensions may be more useful than others in certain contexts (e.g., criminal justice, developmental psychopathology, cognitive and affective neuroscience), but this does not invalidate the fact that these dimensions underpin what is truly important, namely, the superordinate construct of psychopathy (Neumann, Hare, & Newman, 2007). The inclusion of antisocial tendencies is less a tautology than an appropriate conceptual and statistical approach to understanding the construct.[1]

The PCL–R Is Too Popular

Skeem and Cooke (2010) suggested that the popularity of the PCL–R is a problem for the field. They used the term *reification* five times in their article and commented on the frequent references in the literature to the PCL–R as the "gold standard" for the assessment of psychopathy. They provided two such references, but a casual inspection of the published literature reveals that since 2001, more than 50 articles (not by the current authors), including reviews in the 12th and 16th editions of the Buros Mental Measurements Yearbook (Acheson, 2005; Fulero, 1995), use the term. Even Skeem and her colleagues have discussed openly the importance of the PCL–R in similar terms: "Certainly, the personality disorder field is fortunate to have a 'gold standard,' predominant measure of psychopathy" (Skeem, Mulvey, & Grisso, 2003, p. 41). Skeem and Cooke (2010) may be right to be concerned that the PCL instruments bring a "mono-operation bias" (p. 441) to the field, but even they cannot deny that the PCL–R and its derivatives also have brought a semblance of order to the field and have played a pivotal role in explicating the construct of psychopathy, with respect not only to the criminal justice and mental health systems but also to the emerging contributions of neuroscience, behavior genetics, developmental psychopathology, and general personality theory. Whether one calls an instrument a gold or a lead standard seems less important than having something to use as an acceptable frame of reference for research on psychopathy. Further, the prominence of the PCL–R clearly has not impeded attempts by researchers to devise and validate other measurement tools, some not based on the PCL–R. We view this as a healthy

development for the field, as do others (see Hare & Neumann, 2008, p. 221). For example, Benning, Patrick, Salekin, and Leistico (2005) suggested that the PCL–R can be considered an "anchor for the burgeoning nomological network of psychopathy" (p. 271). We suggest only that potential additions to this network should be subjected to the same degree of scrutiny as applied to the PCL–R (e.g., see Neumann, Malterer, & Neumann, 2008).

Measure as Construct

We agree with the basic point made by Skeem and Cooke (2010) that instruments should not be confused with the constructs they purport to measure. At the end of their article, they provided a quote from Hare (1996) and then followed it with "This statement crystallizes the failure to distinguish between constructs and measures" (Skeem & Cooke, 2010, p. 442). It does nothing of the sort. Hare was careful to talk about psychopathy as a clinical construct and referred to indices of psychopathy, not the PCL–R, as having potential importance in future assessment batteries. In discussing these instruments, we have stated explicitly that latent variable models of the PCL measures "should not be equated with the latent structure of the broader construct of psychopathy" (Neumann, Kosson, Forth, & Hare, 2006, p. 146). We do not confuse the PCL scales or our structural model of psychopathic dimensions with the psychopathy construct, but Skeem and Cooke are correct to point out that others may do so.

Much of the current debate began with an article by Cooke and Michie (2001) entitled "Refining the Construct of Psychopathy: Towards a Hierarchical Model," in which they appeared to commit the very crime of which they accuse us. In discussing their confirmatory factor analysis of the 1991 PCL–R data sets (provided by Hare), Cooke and Michie (2001) asked the question, "What are the core features of psychopathy?" and gave the answer, "Three first-order factors [sic] appear to be necessary to specify the superordinate construct of psychopathy" (p. 183). Further, in summing up their data analytic findings, these authors wrote that they had "extracted a coherent construct of psychopathy" (Cooke & Michie, 2001, p. 185) primarily on the basis of a set of 13 PCL–R items. These statements and the title of the article suggest that they equated the measure with the construct.

Skeem and Cooke (2010) stated that because there have been no substantive changes to the PCL–R items, "the implicit assumption is that the measure arrived in near-perfect condition" (p. 437). In

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[1] Walters, Knight, Grann, and Dahle (2008) recently examined how well the facets (i.e., derived composite scores, not latent variables) from the four-factor model (Hare & Neumann, 2006) predicted future violence and aggression. Walters and colleagues found that, in addition to Facets 1, 2, and 3 having significant predictive effects, Facet 4 also had a significant effect above and beyond the common variance it shares with the other three core features of psychopathy. In interpreting their findings, Walters et al. suggested that Facet 4 cannot be ignored. The Walters et al. findings, however, should be interpreted with some caution given that they did not assess the combined effects of all of the PCL–R facets together, nor did they use analytic methods that model measurement error separately from common variance. Perhaps most critical to this study is that recent research has questioned the utility of simple composite scores of ordinal items for estimating psychopathological traits and that such composites may underestimate the lower and higher levels of a given trait (Dumenci & Achenbach, 2008).

truth, more than 5 years of testing and modifications took place before the draft items were circulated in 1985. Although the PCL–R is not perfect, it works well enough to have generated many hundreds of empirical studies on psychopathy (e.g., Patrick, 2006b; also see http://www.hare.org) and to have withstood unusually intense conceptual and statistical scrutiny. Its widespread use in basic and applied research is testament to its scientific utility, a point also made by Cooke (1998), who concluded that the PCL–R "performs well" against the "criteria for evaluating the validity of a clinical construct" (p. 261). Revisions of the PCL–R will occur, but on sound clinical and empirical grounds.

The PCL–R's Roots in Cleckley

A key basis for Skeem and Cooke's (2010) critical comments about the PCL–R is that its two-factor model "seems inconsistent with its roots in the Cleckleyan conceptualization of psychopathy" (p. 438). They stated that "for decades, the field largely ignored the disconnect between the PCL–R and early conceptualizations of psychopathy" (Skeem & Cooke, 2010, p. 433). An extensive evaluation of this and other issues related to Cleckley and other early clinicians is available elsewhere (Hare & Neumann, 2008, pp. 221–231). Briefly, Cleckley has had a strong influence on many North American researchers (including Robert D. Hare). However, his work was based on clinical case studies of an unrepresentative sample of patients, and his views of psychopathy were influenced by the state of psychiatry and behavioral science in the early part of the 20th century. His clinical accounts, although brilliant and informative, should not be accepted uncritically as the first or last word on psychopathy. Derivation of the PCL and the PCL–R was not based on simple acceptance and mechanical application of the characteristics listed in the clinical profile described by Cleckley but rather on an appreciation of the rich clinical tradition reflected in his writings and those of other clinicians, 20 years of experience and empirical research by Robert D. Hare and his colleagues, and the many scores of theoretical and empirical articles on psychopathy published in the years before the circulation of the draft version of the PCL–R.

The differences between the conceptualizations of psychopathy offered by Cleckley and measured by the PCL–R have been exaggerated by Skeem and Cooke (2010), particularly with respect to the role of antisocial behavior (see below). Skeem and Cooke noted that Cleckley did not consider serious criminality to be fundamental to the disorder (nor do we). However, they are incorrect when they say antisocial behavior was not an integral part of Cleckley's account of psychopathy. Cleckley (1976) noted that he was "in complete accord" with the description of the psychopath as "simply a basically asocial or antisocial individual" (p. 370).

> Not only is the psychopath undependable, but also in more active ways he cheats, deserts, annoys, brawls, fails, and lies without any apparent compunction. He will commit theft, forgery, adultery, fraud, and other deeds for astonishingly small stakes, and under much greater risks of being discovered than will the ordinary scoundrel. (Cleckley, 1976, p. 343)

Along the same lines, Patrick (2006a) wrote, "There is no question that Cleckley considered persistent antisocial deviance to be characteristic of psychopaths" (p. 608).

Skeem and Cooke (2010) implied that the PCL–R leaves out an important aspect of psychopathy, anxiety, and referred to research in which performance on some laboratory tasks depends on interactions between the PCL–R and self-report measures of anxiety. We note that Cooke et al. (2007) have promoted their three-factor model of the PCL–R, which does not have an explicit anxiety item. We have discussed this issue elsewhere (Hare & Neumann, 2008) and suggest that the role of anxiety in the psychopathy construct is unclear and perhaps is reasonably subsumed by other features reflecting general emotionality (Hale, Goldstein, Abramowitz, Calamari, & Kosson, 2004; Hare, 2003). We also have argued (Hare & Neumann, 2008) that what Patrick (2006a) referred to as Cleckley's "positive adjustment" (p. 612, Table 31.1) items are of doubtful relevance to the psychopathy construct.

In sum, there are some differences between Cleckley's views on psychopathy and the PCL–R, but it is the construct measured by the PCL–R and its derivatives—not the one some claim was described by Cleckley—that has received extensive empirical support. Conceptualizations of psychopathy are better informed by sound empirical research—which helps to integrate the structural, genetic, developmental, personality, and neurobiological research findings based on use of the PCL–R and other instruments—than by rigid adherence to early clinical formulations. Although Skeem and Cooke (2010) are concerned that individuals might confuse the PCL–R with the construct it measures, we are concerned that they themselves may have exacerbated the problem by confusing the clinician with the construct.

Conceptual, Empirical, and Methodological Considerations

Antisociality

As noted above, Skeem and Cooke (2010) were unclear about the role of antisociality in psychopathy: inherent but not central. However, the essential role of antisocial tendencies in the construct is clearly evident in recent developmental psychopathology research. Behavior genetic studies of children (Baker, Jacobson, Raine, Lozano, & Bezdjian, 2007; Viding, Blair, Moffitt, & Plomin, 2005; Viding, Frick, & Plomin, 2007), adolescents (Larsson et al., 2007; Taylor, Loney, Bobadilla, Iacono, & McGue, 2003), and adults (Blonigen, Hicks, Krueger, Patrick, & Iacono, 2005) all report that the overlap of antisocial tendencies (broadly defined) with other psychopathic traits (e.g., interpersonal, affective) can be explained by common genetic factors. Longitudinal studies indicate that prior antisocial tendencies predict the stability of (Frick, Kimonis, Dandreaux, & Farell, 2003) and covary with (Larsson et al., 2007) the subsequent expression of other psychopathic traits. Using a Cleckley-based measure with a large community sample, Loney, Taylor, Butler, and Iacono (2007) found stability coefficients of approximately .40 for subjects ranging from ages 17–23 years old. These results are an underestimate of stability because measurement error was not accounted for using latent variable methods. When these same data are reanalyzed using structural equation modeling, the stability of the psychopathy traits is even greater, and the traits are structurally invariant across time (Neumann, Taylor, Blonigen, Loney, & Iacono, 2008). Finally, using different measures of psychopathy at baseline and follow-up (but not a latent variable approach), Lynam, Caspi, Moffitt, Loeber, and Stouthamer-Loeber (2007) reported that "adolescent psychopathy, as assessed by the [Child Psychopathy Scale], is a developmental

precursor to adult psychopathy, as assessed by the PCL:SV" (p. 162). Space limitations prohibit us from further discussion of this topic (see Forsman, Lichtenstein, Andershed, & Larsson, 2008; Obradović, Pardini, Long, & Loeber, 2007; also see Salekin & Lochman, 2008).

Four-Factor Model

Skeem and Cooke (2010) referred to their companion piece (Cooke et al., 2007), which unfortunately provides little clarity for understanding models of psychopathy (Neumann, 2007). We have shown in a number of studies (Neumann, 2007; Neumann et al., 2005, 2006; Neumann, Hare, & Newman, 2007; Vitacco et al., 2005; also see Skeem et al., 2003) that Cooke's hierarchical model is overfactored (10 factors explain 13 PCL–R items; 7 factors explain 9 PCL:SV items) and results in untenable (negative variance) parameters. Published critiques of their overfactored model remain unanswered by Cooke and colleagues. Cooke et al. (2007) said, "In the interests of transparency, we append as data supplements to the online version of this paper the code for all models tested" (p. s40). However, the polychoric correlation matrix they provided does not allow investigators unambiguously to verify their findings (Neumann, 2007; Neumann & Hare, 2007). Because Hare (2003) had prior access to the English data set used by Cooke et al. (2007), we were able to test their hierarchical model and found that it resulted in a misspecified model. On the basis of a series of analyses across thousands of cases, we (see Neumann, 2007) have shown that there is little difference in model fit even when a viable "degraded" (Cooke et al., 2007, p. s47) version of Cooke's model is compared with our four-factor model. Using the same program (Mplus) and procedures (robust weighted least squares), we found that fit for the English data set was as good for the four-factor model (TLI = .90, RMSEA = .09) as for the three-factor model (TLI = .89, RMSEA = .10).

Remarkably, Skeem and Cooke (2010) claimed that extant published studies have not compared these models in large samples. Neumann et al. (2005), using PCL–R data of 4,865 male offenders, reported that model fit was essentially the same for the four-factor (TLI = .94, RMSEA = .07) and three-factor (TLI = .95, RMSEA = .07) models. Neumann, Hare, and Newman (2007) pooled PCL–R data across male and female offenders and male psychiatric patients ($N = 6{,}929$) and found that model fit was virtually the same for the four-factor (TLI = .93, RMSEA = .08) and three-factor models (TLI = .94, RMSEA = .08). Vitacco et al. (2005), using the PCL:SV and a sample of 840 civil psychiatric patients, found little difference in fit between the four-factor (TLI = .97, RMSEA = .08) and three-factor models (TLI = .97, RMSEA = .10). Jackson, Neumann, and Vitacco (2007) compared the three- and four-factor PCL:SV models, which were invariant across White and African American psychiatric patients, and found similar good fit. Neumann and Hare (2008) obtained excellent fit for the four-factor model (TLI = .98; RMESA = .04) using a large community sample ($N = 514$). The four-factor model also works well for the PCL:YV. Neumann et al. (2006) found identical fit for the three- and four-factor models (TLI = .95, RMSEA = .07, standardized root-mean-square residual = .06) in a sample of 505 adolescent offenders. Finally, the four first-order factors are comprehensively explained by a single superordinate factor (Neumann et al., 2006; Neumann, Hare, & Newman, 2007), and the four-factor model explains far more data points and thus survives

a much more risky test than does the more saturated three-factor model (Neumann et al., 2005; Vitacco et al., 2005).

In addition to a consistent failure to cite relevant studies, Cooke and his colleagues continued to make other modeling errors (Bolt, Hare, & Neumann, 2007; Neumann, 2007; Neumann & Hare, 2007). For example, their companion piece (Cooke et al., 2007) contains such errors as forming unacceptable parcels (an overfactored parcel model that violates the requirement that parcels reflect unidimensional factors; see discussion by Neumann, Kosson, & Salekin, 2007) and placing disturbances on a correlated factors model (see Figure 5 in Cooke et al., 2007). By asserting that our fourth PCL–R Antisocial factor merely reflects criminality, Skeem and Cooke (2010) appear to have confused manifest variables (i.e., observed PCL item ratings) with unmeasured, latent variables (i.e., overt antisociality). Manifest variables should not be confused with their underlying latent variables (Bollen, 2002). For instance, although the manifest variables for the externalizing latent variable (Krueger & Markon, 2006) include antisocial personality disorder, conduct disorder, and substance use disorders, it would be a mistake to confuse these observed indicators (in particular, symptoms that include unlawful behavior) with the unmeasured externalizing latent variable thought to reflect a disinhibitory (undercontrolled) process. It also would be a mistake to suggest that this latent variable simply reflects criminality or that certain manifest variables (e.g., versatile criminality, alcohol abuse) are simply consequences of other more central features (e.g., pathological lying, low constraint) of respective latent variables (e.g., psychopathy, externalizing), given that latent variables reflect the common variance across all manifest variables.[2]

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[2] Although it is clear that aspects of psychopathic personality and externalizing psychopathology (e.g., substance abuse) frequently covary, it does not appear that the latter form of psychopathology is synonymous with the former (e.g., Blonigen et al., 2005). One study directly compared the PCL–R with a latent externalizing factor and claimed a strong link between the two (Patrick, Hicks, Krueger, & Lang, 2005). However, this study should be interpreted in the context of several cautionary points. First, the authors did not follow the procedures outlined by Neumann, Kosson, and Salekin (2007) for forming parcels (subsets of items). The work by Neumann and colleagues described parcels that are supported by empirical item response theory research and delineates items that can be legitimately combined given that they stem from underlying unidimensional factors. In contrast, Patrick et al. (2005) aggregated across a number of PCL–R items in forming one of their parcels (Parcel 7), and thus this parcel reflects several underlying factors. Use of parcels that reflect underlying multidimensional factors results in misspecified latent variable models (Bandalos, 2002). It also appears that Patrick et al. did not fix the loadings of each parcel to be equal on their respective factors, which is necessary for local model identification purposes (see Neumann et al., 2006). Second and more important, the specific form of the structural equation model used in the Patrick et al. study only delineated how the unique variance associated with each latent PCL–R factor was linked with their externalizing factor and therefore did not assess how the common variance across the PCL–R factors was associated with externalizing psychopathology. This was a critical omission, given that a number of independent studies suggest that the psychopathy construct can be represented by a superordinate factor, which explains several lower order correlated domains, as opposed to the unique variance associated with specific first-order factors (Hare & Neumann, 2008). Finally, given the cross-sectional nature of the study and the same methodology for assessing psychopathic traits and externalizing psychopathology, it is likely that unaccounted for shared method variance resulted in biased parameter estimates. One solution to this latter problem would have been to also model the latent method factors underlying their data.

Finally, we agree with Skeem and Cooke (2010) that interpretation of factor solutions must be based on theory, but we disagree with their claim that the PCL–R functions in a theoretical vacuum. Factor analysis is one of the most common forms of construct validation (Hershberger, 1999), and confirmatory factor analysis necessarily is a theory-driven modeling approach (Neumann, Kosson, & Salekin, 2007). The PCL–R and its derivatives are heavily involved in the interplay between theory and research in a wide variety of areas, including criminal justice, neuroscience, developmental psychopathology, behavioral genetics, and general personality theory (e.g., Patrick, 2006b). Our four-factor modeling results across diverse samples are in line with this literature, which highlights the role of broad antisocial tendencies in the psychopathy construct (Hare & Neumann, 2008).

Conclusions

Academic debates depend on each side presenting evidence and arguments in a fair and unbiased manner, reviewing the literature, noting contrary viewpoints and findings, and attempting to persuade others through reasoned and studied appraisal of competing positions and supporting evidence. Given space limitations, we necessarily focused on only some of the many unfounded statements and assertions made about our work and the PCL–R, with only brief comments on more salient issues. We trust that readers will compare the Skeem and Cooke (2010) statements about our work and that of others with the published record.

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