Correspondence

EDITED BY KIRIAKOS XENITIDIS and COLIN CAMPBELL

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Psychopathy

Cooke et al (2007) claim that there is no compelling empirical evidence to support the conclusion that antisocial behaviour is a central feature of psychopathy. However, in the same issue of the *Journal* Viding et al (2007) report a common genetic component to callous–unemotional traits and antisocial tendencies. Other studies cited by Viding et al report similar results. Moreover, Larsson et al (2007) reported that the same general four factors present in our four-factor model of psychopathy (Vitacco et al, 2005) all loaded onto a single genetic factor. Longitudinal research (not cited by Cooke et al) indicates that antisocial tendencies are significantly linked to the longitudinal stability of psychopathic traits (Frick et al, 2003). Cooke et al refer to the work of Cleckley (1988) to support their position, but in Cleckley's accounts of psychopathy antisocial behaviours play an important role. As Patrick (2006: p. 608) noted, 'There is no question that Cleckley considered persistent antisocial deviance to be characteristic of psychopaths. Without exception, all the individuals represented in his case histories engage in repeated violations of the law – including truancy, vandalism, theft, fraud, forgery, fire-setting, drunkenness and disorderly conduct, assault, reckless driving, drug offences, prostitution, and escape.' As Blackburn (2007: p. 145) recently put it, 'Contra Cooke, . . . antisocial behavior, conceived broadly, is a characteristic feature of psychopathy.'

In our paper based on a very large sample (Vitacco et al, 2005), we demonstrated the conceptual errors and flaws in modelling that went into the development of Cooke's model and provided evidence for the four-factor model. Interestingly, Cooke et al did not cite this large study but rather chose to cite our small preliminary studies, although they are in line with our larger study. We do not view criminality as central to psychopathy. Indeed, the Psychopathy Checklist – Screening Version (PCL–SV) contains two items that refer to antisocial behaviour and that can be scored without evidence of criminality. The PCL–R and PCL–SV are virtually identical psychometrically, as noted previously by Cooke et al (1999).

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Vitacco, M., Neumann, C. S. & Jackson, R. L. (2005) Testing of a four-factor model of psychopathy: associations with gender, ethnicity, intelligence and violence. *Journal of Consulting and Clinical Psychology*, **73**, 466–476.

M. J. Vitacco Mendota Mental Health Institute, Madison, Wisconsin, USA. Email: vitacmj@dhfs.state.wi.us
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The article by Cooke et al (2007) contains a number of fundamental modelling errors.

First, the authors continue to present an over-factored model (i.e. hierarchical three-factor model with testlets), which results in negative variances. This 13-item model actually contains 10 factors: 6 first-order factors/testlets, 3 second-order factors and 1 third-order factor (simply count the number of circles/factors in Fig. 1). Any model can achieve good fit when it is as complex as the data it attempts to summarise. We have shown that this testlet model results in untenable parameters in four separate studies (Neumann et al, 2006). One author of the Cooke et al paper has also suggested that the testlet model is over-factored (Skeem et al, 2003). Cooke does not acknowledge this problem of an over-factored model, even though it is evident in his published work (see Cooke & Michie, 2001, Figs 2 and 3, which contain zero variance terms that the EQS program sets to zero when estimating negative variances). Cooke et al (2007) mention that we have criticised their use of testlets but they do not dispute that it creates a misspecified model with untenable parameters. Our analysis of the testlet model is available upon request.

Cooke et al provided a polychoric correlation matrix, ostensibly to give investigators the opportunity to replicate their findings. However, as noted in the EQS program manual, robust procedures can only be conducted with the raw items. Thus, the results reported by Cooke et al appear to be transparent but in reality no one will be able to unambiguously verify their analyses. When one analyses their published correlation matrix using a non-robust procedure, very different findings result. Also, Cooke et al relied upon a maximum likelihood procedure for estimating model parameters, despite the fact that it is well known that this procedure underestimates model parameters and model fit when used with ordinal data (Everitt & Dunn, 2001) such as the items of the Psychopathy Checklist – Revised. There was no serious discussion on why robust maximum likelihood with polychoric correlations was employed, except that it is recommended in the manual for EQS version 6. None the less, the verisimilitude of this new approach is currently unknown. A program such as Mplus, which employs a robust weighted least-squares procedure for ordinal data is an accepted approach (Neumann et al, 2006). Cooke et al's use of Mplus was limited. Our Mplus analyses of the UK data along with our previously