J. Biosoc. Sci., (2018) **50**, 870–871, © Cambridge University Press, 2018. This is an Open Access article, distributed under the terms of the Creative Commons Attribution licence (http://creativecommons.org/licenses/by/4.0/), which permits unrestricted re-use, distribution, and reproduction in any medium, provided the original work is properly cited.
doi:10.1017/S0021932018000160 First published online 17 Jul 2018

Debate

ANALYSING GROUP DIFFERENCES IN INTELLIGENCE USING THE PSYCHOMETRIC META-ANALYTIC METHOD OF CORRELATED VECTORS HYBRID MODEL: A REPLY TO WICHERTS (2018) ATTACKING A STRAWMAN

JAN TE NIJENHUIS[1] AND MICHAEL VAN DEN HOEK

Work and Organizational Psychology, University of Amsterdam, the Netherlands

Summary. Wicherts (2018) criticizes the use of the method of correlated vectors when testing Spearman's hypothesis. It is argued that Wicherts ignores the psychometric meta-analytic method of correlated vectors hybrid model and so is attacking a strawman.

Wicherts (2018) argues that when testing Spearman's hypothesis item-level data should be analysed using item response theory and not with the method of correlated vectors (MCV). Astonishingly, in a paper on the heritability and culture-loadedness of subtests of IQ batteries (Kan *et al*., 2013) he used the very same technique.

Wicherts ignores the psychometric meta-analytic–MCV hybrid model (te Nijenhuis *et al*., 2007, 2016) with its corrections for sampling error, reliability of the *g* vector, reliability of the second vector, restriction of range in *g* loadings and imperfectly measuring the construct of *g*. Wicherts focuses only on the individual correlations between two vectors of item scores, so Wicherts is attacking a strawman. Wicherts' criticism at the item level is eerily similar to Schönemann's (1997) criticism at the subtest level that MCV will automatically lead to positive correlations. Schönemann's position has been thoroughly undermined by the large amount of negative correlations from subtest-level studies. A strong negative correlation ($r = -0.39$) was found in a study on learning potential at the item level (te Nijenhuis *et al*., 2007), which after corrections for artifacts might easily become $r = -0.60$.

Wicherts argues that relations studied with MCV are quite complex. However, from the perspective of the psychometric meta-analytic–MCV hybrid model this is to be expected, as the influences of no less than five statistical artifacts on the observed correlation have to be taken into account at the same time.

[1] Corresponding author. Email: JanteNijenhuis@planet.nl

Wicherts (2018) brings up the point that, recently, reviewer Wicherts suggested to the present authors to cite an unpublished paper from himself; however, this constitutes misuse of the reviewer position. Obviously, a paper should first be accepted by the reviewers, by a selection from the forum of peers (de Groot, 1969).

References

de Groot, A. D. (1969) *Methodology: Foundations of Inference and Research in the Social Sciences*. Mouton, The Hague, the Netherlands.

Kan, K.-J., Wicherts, J. M., Dolan, C. V. & Van der Maas, H. L. J. (2013) On the nature and nurture of intelligence and specific cognitive abilities: the more heritable, the more culture dependent. *Psychological Science* **24**, 2420–2428.

Schönemann, P. H. (1997) Famous artifacts: Spearman's hypothesis. *Cahiers de Psychologie Cognitive* **16**, 665–694.

te Nijenhuis, J., Bakhiet, S. F., van den Hoek, M., Repko, J., Allik, J., Žebec, M. S. & Abduljabbar, A. S. (2016) Spearman's hypothesis tested comparing Sudanese children and adolescents with various other groups of children and adolescents on the items of the Standard Progressive Matrices. *Intelligence* **56**, 46–57.

te Nijenhuis, J., van Vianen, A. & van der Flier, H. (2007) Score gains on *g*-loaded tests: no *g*. *Intelligence* **35**, 283–300.

Wicherts, J. M. (2018) Ignoring psychometric problems in the study of group differences in cognitive test performance. *Journal of Biosocial Science*, doi:10.1017/S0021932018000172.