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## Big Five or Big Two? Superordinate factors in the NEO Five Factor Inventory and the Antisocial Personality Questionnaire

Ronald Blackburn <sup>a,\*</sup>, Stanley J.D. Renwick <sup>b</sup>, John P. Donnelly <sup>c</sup>,  
Caroline Logan <sup>a</sup>

<sup>a</sup> *Department of Clinical Psychology, University of Liverpool, The Whelan Building, Quadrangle, Brownlow Hill, Liverpool L69 3GB, UK*

<sup>b</sup> *The Duchess of Kent's Psychiatric Hospital, Catterick Garrison DL9 4DF, UK*

<sup>c</sup> *The State Hospital, Carstairs M11 8RP, Scotland, UK*

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### Abstract

Although it is claimed that the Big Five dimensions of Neuroticism, Extraversion, Openness, Agreeableness, and Conscientiousness represent the highest level in the hierarchical structure of personality, there is consistent evidence that they are not independent and that two higher order factors underlie them. Two higher order factors also underlie the scales of the Antisocial Personality Questionnaire (APQ). Structural equation modelling was used in a sample of male forensic psychiatric patients ( $N = 164$ ) to test the hypotheses that the scales of the NEO Five Factor Inventory (NEO-FFI) support two higher order factors as found in other Big Five measures, and that these are equivalent to the dimensions of the APQ. Good support was found for the model and a confirmatory factor analysis indicated that the Impulsivity and Withdrawal factor scales of the APQ provide reasonable markers of the NEO-FFI latent factors. The two factors can be interpreted in terms of the metaconcepts of agency and communion, and it is suggested that the Impulsivity and Withdrawal dimensions reflect basic motivational concerns about power, status, and intimacy.

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\* Corresponding author. Tel.: +44-151-794-5529; fax: +44-151-794-5537.

E-mail address: [ronb@liverpool.ac.uk](mailto:ronb@liverpool.ac.uk) (R. Blackburn).

## 1. Introduction

In the factor analytic tradition, personality variables are construed as hierarchically structured. Eysenck (1947) noted that traits represent the intercorrelations of specific, repeated behaviours and that intercorrelations between traits define ‘a type concept’, such as extraversion, generally assessed as a continuous dimension. More recent proponents, such as Costa and McCrae (1992), describe these different levels as ‘facets’ (specific traits) and ‘domains’ (trait dimensions). As Watson, Clark, and Harkness (1994) observe: ‘...trait dimensional hierarchies are variance–covariance hierarchies. The covariance of the lower order elements becomes the variance of the higher order elements’ (p. 19).

The number of traits or dimensions identified will vary according to where the hierarchy is ‘sliced’ (e.g. Harkness, 1992), but it is currently widely accepted that the most comprehensive representation of the higher order elements is provided by the ‘Big Five’ dimensions of Neuroticism (N), Extraversion (E), Openness (O), Agreeableness (A), and Conscientiousness (C). This view reflects convergent findings of lexical analyses and questionnaire research (Costa & McCrae, 1992; Goldberg, 1993), and Watson et al. (1994) found that it accommodates the competing views of those, such as Eysenck, who argue for a Big Three representation. Goldberg (1993) proposed that the Big Five are located ‘at the highest level that is still descriptive of behavior, with only general evaluation located at a higher and more abstract level’ (p. 27). McCrae and Costa (1996) similarly assert that their five-factor model (FFM) constitutes ‘the highest level of the hierarchy’ (p. 74).

Despite this apparent consensus that the Big Five represent the more ‘basic’ trait dimensions, there is consistent evidence that they are not independent. Block (1995) detected appreciable intercorrelations between ratings of the Big Five and between self-report versions of these factors as measured by both the Revised NEO Personality Inventory (NEO PI-R; Costa & McCrae, 1992) and the shorter NEO Five Factor Inventory (NEO-FFI), and considered the factor structure to be ‘impressively nonorthogonal’. Other studies of the NEO-FFI confirm this. Egan, Deary, and Austin (2000), for example, found highly significant negative correlations of N with E and C, and a positive correlation between the latter. They attribute this to weaknesses in the NEO-FFI, but Clark and Harrison (2001) also report a high negative correlation between N and E in a structured interview measure of the FFM.

Investigators attempting to validate the FFM through confirmatory factor analysis (CFA) have also demonstrated that oblique solutions provide a somewhat better fit to the data than orthogonal factors (e.g. Church & Burke, 1994; Tokar, Fischer, Snell, & Harik-Williams, 1999). McCrae, Zonderman, Costa, Bond, and Paunonen (1996) questioned the utility of CFA in investigating personality structure and argued that intercorrelations between domain measures arise from the selection of facets to represent each domain. They demonstrated that when secondary loadings of facets across domains are specified, orthogonal factors fit the data as well as oblique factors. This does not, however, fully account for intercorrelations of the NEO-FFI scales, whose items were selected as relatively pure measures of the five domains (Costa & McCrae, 1992).

Critics argue that correlations between domain measures cast doubt on the integrity of the Big Five as distinct dimensions. From the hierarchical perspective, however, these correlations are understandable if the Big Five do not, as claimed, represent the highest point of the hierarchy.

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