Integrity, Conscientiousness, Neuroticism, and Ability: Relationships and Measurement.

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Abstract

The purpose of this dissertation was to increase knowledge relevant to psychometrically oriented workplace selection and classification. Multivariate relationships among integrity, conscientiousness, neuroticism, and fluid and crystallised ability scales were investigated. Adverse impact and the capacity to use response time information as criteria of ability scoring were also investigated. These three foci all had the potential to contribute knowledge capable of increasing the accuracy of the measurement and interpretation of commonly used psychometric assessments.

Two cross-sectional studies were undertaken. The first study used archival data for extant assessments of ability, general personality, and integrity. It involved 211 participants having undertaken assessments as a function of job applications. The second study designed and piloted new scales of integrity, conscientiousness, neuroticism, and fluid and crystallised ability. It involved 317 participants who completed these scales online as voluntary participants.

The first study found integrity to be related to both conscientiousness and neuroticism, but not substantially related to ability. Conscientiousness was also negatively related to crystallised ability. These findings were replicated in the second study. The first study's neuroticism scale which included a suspicion/cynicism facet (i.e., subscale) had a negative relationship with ability indices. This finding was not replicated in the second study. This may have been due to the absence of a neuroticism facet measuring suspicion/cynicism in the second study.

Those identifying as Māori within the first study were found to score substantially less well than non-Māori on crystallised ability indices, but not other scales measured. Calculations suggested any resulting adverse impact could be reduced by combining ability assessments with scales of integrity, conscientiousness, and neuroticism. These calculations were based in part upon the assumption that relationships among assessments are likely to account for shared variance in job performance predictions. No significant differences were found in the second study; although the very small sample size used (N = 22) encourages caution regarding the robustness of this result.

Findings from the second study also suggested that relative to low-ability respondents, high-ability respondents took less time to complete crystallised items and more time to complete fluid ability items. A small significant relationship was also observed between conscientiousness and the length of time taken to complete the fluid ability scale.

The studies undertaken had a number of limitations. One limitation shared across these studies was the very small number of participants identifying as Māori (N46 in Study 1 and N22 in Study 2). Another common limitation was the inability to generalise findings based upon cross-sectional data drawn from participant groups of convenience rather than individuals selected via probability sampling.

Despite such limitations the preceding findings have a number of practical implications. One such implication is that relationships among scales may vary according to whether the level of analysis undertaken is at the Big Five or facet level and whose version of a scale is examined. On this basis practitioners should examine items in order to understand scale output, and researchers should examine relationships at the level of facet or ability subcomponent. Practitioners should also use personality assessments alongside those of ability if they wish to maximise predictive validity and reduce adverse impact for those identifying as Māori. Furthermore, the use of response time information in testing is probably better suited to controlling and checking respondents' approach to answering assessments than incorporation in scoring algorithms.

This dissertation makes two novel contributions concerning relationships between response time and participant characteristics. Firstly, negative relationships between ability indices and conscientiousness or neuroticism scales appear real. They do not appear to be a consequence of more conscientious or neurotic respondents taking longer to complete ability scales. Secondly, poor time-management strategies do not explain response time results that are inconsistent with the belief that higher-ability respondents will complete assessments more quickly than their lower-ability peers. Differences in the cognitive requirements associated with fluid and crystallised tasks instead appear to explain why higher-ability respondents take relatively less time to complete crystallised scales, but relatively more time to complete fluid ability scales.

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Dante Alighieri's the Divine Comedy begins "*Mid way this way of life we're bound upon, I woke to find myself in a dark wood where the right road was wholly lost and gone."* I once shared this fate…In much the same way as Virgil guided Dante, so too have countless others helped me find my "right road." My father Brian Wood has always being chief amongst such supporters. This dissertation provides him with another positive milestone along the journey of his most prodigal son. My brothers Jon, Andrew, and Chris have also played important parts. Jon and Chris always strongly encouraged me and the sibling rivalry associated with submitting before Andrew completed his Ph.D. at the London School of Economics provided additional motivation. My sister-in-law Cristiane also deserves a special mention for always enquiring after my progress and keeping me focused on my goals.

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Mary Jean Wood
1941 - 1995

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