



DUNEDIN STUDY CONCEPT PAPER FORM

Provisional Paper Title: Quantifying Triarchic Model Traits in the Dunedin Multidisciplinary Health and Development Study Using the Multidimensional Personality Questionnaire

Proposing Author: Emma Veltman, Martin Sellbom

Author's Email: emma.veltman@postgrad.otago.ac.nz, martin.sellbom@otago.ac.nz

P.I. Sponsor: Richie Poulton
(if the proposing author is a student or colleague of an original PI)

Today's Date: 05/07/2021

Please describe your proposal in 2-3 pages with sufficient detail for helpful review.

Objective of the study:

The psychopathy construct has been defined and operationalised in a number of different ways throughout the literature. In an attempt to integrate the various perspectives and present a unified model of psychopathy, Patrick et al. (2009) developed the triarchic model of psychopathy. The triarchic model proposes that there are three distinct phenotypic components of psychopathy which recur consistently throughout the literature: boldness, meanness, and disinhibition. These domains are considered to be distinct from one another, meaning that each can be conceptualised, measured and understood individually. However, Patrick et al. (2009) argue that together, these three domains represent the construct of psychopathy in its entirety, regardless of the various manifestations known to occur (e.g. successful vs. non-successful psychopathy).

Various methods have been developed to operationalise this model. One recent and very promising attempt has used items from the well-established Multidimensional Personality Questionnaire (MPQ) (Brislin et al., 2015) to develop scales for boldness, meanness, and disinhibition. These MPQ-based triarchic scales have been validated in

three previous studies by Brislin et al. (2015), Brislin et al. (2017), and Garofalo et al. (2021) however, further validation of these scales are needed. For instance, previous research has been confined to convenience samples in the U.S. with self-selected participants, or at-risk samples which are not immediately generalizable to the general population. Garofalo et al. (2021), who did use a longitudinal community sample from the Netherlands, relied almost exclusively on self-report based measures as external validity criteria. Furthermore, the MPQ represents the best measurement framework to operationalise psychopathic personality traits in the Dunedin study, but unfortunately, the study has relied upon an abbreviated NZ form, and therefore, these MPQ-triarchic scales cannot be scored in full. However, because Brislin and colleagues (2015) relied on the 155-item short form of the MPQ rather than the full-length form (MPQ-300) adapted for the Dunedin study, there are several items Brislin et al. did not consider that are available in the Dunedin study and would be good candidates for replacement of missing items, as well as augmenting the scales to further improve their content validity.

This paper aims to modify the existing MPQ-triarchic scales for use in the Dunedin study, and other samples which have administered the full MPQ-300 and were not previously accessible to psychopathy research, as well as to build on existing validation research using a large population representative sample. We will also use prison and undergraduate samples (derived from Brislin et al., 2015 and Brislin et al. 2017) that include MPQ-300 to evaluate the degree of agreement between the two sets of scales with respect to construct validity. Finally, we will examine the temporal stability and predictive validity of the MPQ-triarchic scales across an 8-year time period. Ultimately, these efforts will allow for future research to use the Dunedin study to address a number of important questions regarding psychopathy.

Data analysis methods:

Classical test theory methods will be used to examine whether new items selected for MPQ-triarchic scales are suitable replacements for unavailable items, and following this, whether additional items augment existing scales through internal consistency reliability analyses as well as corrected item-to-total correlations. The pattern of association between the revised MPQ-triarchic scales and relevant criterion measures will then be compared to that of the original scales to ensure they assess the same psychological constructs.

To then examine the psychometric properties of the revised MPQ-triarchic scales, temporal stability will be assessed to determine whether the scales reliably capture the triarchic constructs over time. In terms of construct validity, we will examine the extent to which the MPQ-triarchic scales explain the variance of other well-established models and measures in a theoretically expected pattern. Finally, the predictive validity of the MPQ-Tri scales will be assessed to determine whether the scales predict

this same theoretically expected pattern of criterion measures over time. These analyses will be conducted at ages 18 and 26 from the Dunedin study cohort, as well as using two archival samples derived from Brislin et al. (2015) and Brislin et al. (2017).

1. Calculate intraclass correlation coefficients (ICCs; two-way random models, absolute agreement) to quantify the level of agreement between the original MPQ-triarchic scales and the revised scales in their relative associations with various criterion measures. These analyses will be conducted in an archival prison sample derived from Brislin et al. (2015) and a university sample derived from Brislin et al. (2017), in which both original and revised scale scores can be calculated.
2. Calculate correlations between the MPQ-triarchic scale scores at age 18 and the respective corresponding scale score at age 26. If the scales have good temporal stability, we would expect to see large correlations between scale scores across time.
3. Calculate correlations between the MPQ scale measure and other measures of personality (i.e. Big-5). For example, we would expect to see a relatively strong correlation between boldness and extraversion (+) and low neuroticism (-) (Patrick, & Drislane, 2015), whereas disinhibition should be strongly correlated with low conscientiousness (-), and to a lesser degree, low agreeableness (-) and neuroticism (+). Meanness should primarily be associated with low agreeableness (-) and to a lesser degree low conscientiousness (-) (Patrick, & Drislane, 2015).
4. Calculate correlations between the MPQ scale measure and common correlates of psychopathy
 - a. Psychopathology symptoms
 - b. Substance abuse and dependence
 - c. Antisocial behaviours

For example, we would expect to see relatively large correlations between boldness and both depression (-) and anxiety (-), whereas disinhibition should be strongly correlated with depression (+), anxiety (+) and substance dependence (+) (Brislin et al., 2017; Patrick, & Drislane, 2015). Meanness should also evidence large positive correlations with substance dependence (Brislin et al., 2017).

Similarly, disinhibition and meanness should both show large positive correlations with Antisocial Personality Disorder (Brislin et al., 2017; Patrick, & Drislane, 2015).

5. Conduct multiple linear regression analyses in which MPQ-triarchic scale scores at age 18 are entered into a regression equation predicting criterion variable scores at age 26 to establish the unique contribution of the revised MPQ-triarchic scales to the prediction of criterion measures.

We would expect psychopathy scale scores at age 18 would predict scores on theoretically associated criterion variables at age 26, for example high Disinhibition at age 18 would predict psychopathology such as Alcohol, Marijuana, and other forms of drug dependence at age 26.

Variables needed at which ages:

Variable	Age(s)
MPQ items (don't need scale scores)	18 & 26
Big 5 informant ratings	26
Psychopathology symptom counts based on clinical interview data (<i>Diagnostic Interview Schedule for the Diagnostic and Statistical Manual of Mental Disorders – Third Edition, Revised and Diagnostic Interview Schedule for the Diagnostic and Statistical Manual of Mental Disorders – Fourth Edition</i>)	
- Depression symptoms	18 & 26
- Anxiety symptoms	18 & 26
- Conduct Disorder symptoms	18
- Antisocial PD symptoms	26
- DSM-III-R Substance Dependence symptoms	18
- DSM-IV Alcohol Dependence symptoms	26
- DSM-IV Marijuana Dependence symptoms	26
- DSM-IV Other Drug Dependence symptoms	26
Criminal convictions	18 & 26
Self-reported delinquency	18 & 26
Self-reported variety of crimes	18 & 26
Resting heart rate	18 & 26

Significance of the Study (for theory, research methods or clinical practice):

MPQ triarchic scales represent a useful operationalisation of the psychopathy construct, especially since the MPQ is widely used. However, the reliability and validity of MPQ-Tri scale scores have not yet been sufficiently established across contexts and populations. The proposed analysis will provide further validation of the MPQ as a measure of psychopathy with a large population representative sample, as well as elucidate the temporal stability and predictive validity of the scales. These findings could provide further evidence which supports this operationalisation of the triarchic model constructs, which will be beneficial for use in future research in this area. Furthermore, the MPQ represents the best measurement framework to operationalise psychopathic personality traits in the Dunedin Study. The availability to measure psychopathy in this longitudinal sample offers a valuable opportunity to learn more about the aetiology of psychopathic personality traits, as well as their role in a range



of mental health, physical health, and other important life outcomes far beyond what is proposed in the current projects.

References:

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