

## Duel or Diversion? Conscientiousness and Executive Function in the Prediction of Health and Longevity

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In their letter to the editor, Hall and Fong [1] present post hoc analyses to support their contention that executive function is a more potent predictor of two health-related behaviors than the personality trait domain of conscientiousness. These analyses, along with an outdated critique of personality traits, lead them to conclude that conscientiousness requires a “careful re-construction...from a social neuroscience perspective”. We see no reason to do so, for three reasons: (1) executive functioning currently lacks appropriate levels of construct validity, (2) findings from our own research fail to support the authors’ contention, and (3) the social cognitive models of traits implied by the authors are common and have been examined for more than a decade.

The authors seem to suggest that executive functioning is worthy of greater research attention than conscientiousness. While we cannot deny that such concepts have received ample research attention, meta-analyses of measures related to executive functioning produce low convergent correlations [2]. Before conscientiousness can be supplanted by alternative constructs like executive functioning, it is necessary for researchers to provide more compelling evidence of their coherence and validity.

Second, although we accept the veracity of Hall and Fong’s findings, we conducted a highly similar study that included a wider variety of executive functioning measures and multiple methods for assessing conscientiousness [3]. The results showed there to be few associations between executive function outcomes and conscientiousness-related

traits, indicating little overlap between these putative markers of impulse control. Moreover, regression analyses showed there to be independent predictions from self-control facets of conscientiousness (including observer reports) and go–no go task performance to measures of wellness maintenance, accident control, and substance risk.

Third, the authors argue for a social neuroscience reconceptualization of conscientiousness. We take this to mean that conscientiousness should be a hierarchical, social cognitive construct. At the lower level of such a structure would be cognitive capacities akin to executive functioning. Given its current operationalizations, we are skeptical executive functioning would suffice. Moreover, integrative models of this sort were proposed as early as 2001 [4] and continue to be a focus of theoretical and conceptual attention, especially in personality psychology [5, 6].

The analyses of Hall and Fong highlight two of the points of emphasis from our review: (1) the identification of mediating and moderating factors of conscientiousness–health relations is a key task and (2) facets matter when examining relations between conscientiousness and health outcomes. Among the limitations of the authors’ winner-takes-all “competitive test” is the inability to examine direct *and* indirect effects. Might executive function mediate the relationship between conscientiousness and the diet/physical activity outcomes or, alternatively, would stronger effects be found if a measure of industriousness were used—a conscientiousness-related facet which has shown more robust relations to diet/physical activity than global measures of conscientiousness [7]?

In closing, we would be remiss if we did not address the authors’ characterization of conscientiousness–health relations as errant byproducts of cross-sectional monomethod (i.e., self-report) designs. Related issues have been covered *ad nauseum* elsewhere [8, 9], but we feel credit is due to those researchers whose multisource and/or longitudinal designs resulted in many of the important findings discussed in our review. There are few more parsimonious accounts of

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the power of personality than showing how parent and teacher ratings of childhood conscientiousness predict longevity [10, 11]. In comparison, there is a paucity of research showing the long-term health effects of constructs related to executive functioning.

Executive function likely plays a role in health and longevity, but the evidence does not support the reformulation of conscientiousness as a logical corollary to such an assertion.

**Conflict of Interest** The authors have no conflict of interest to disclose.

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