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| **RUHR UNIVERSITY** BOCHUM | 44780 Bochum | Germany | |  | FACULTY OF PSYCHOLOGY  Psychology of  Human Technology Interaction  **Dr. Ian Hussey**  Phone +32 (0)470 396842  Email Ian.hussey@rub.de  **February 7, 2023** |
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| Manuscript Submission: “An aberrant abundance of Cronbach’s alpha values at .70” | | | |

Dear Prof Sbarra,

Please find attached our manuscript “An aberrant abundance of Cronbach’s alpha values at .70” for consideration for publication in AMPPS.

Early on in the Replication Crisis, meta-scientific evidence for the implausible distribution of *p* values in the published literature was important to establish awareness of the scale of the problem. In particular, Masicampo and Lalande’s (2012) “*A peculiar prevalence of p values just below .05*” described an excess of barely-significant *p* values. Our manuscript provides analogous evidence for a problematic overabundance of Cronbach’s alpha values at common rule-of-thumb cut-offs (e.g., alpha = .70); i.e., “*An aberrant abundance of Cronbach’s alpha values at .70*”. We believe this is the first direct evidence of wide scale α-hacking in the psychology literature - and therefore one of the first assessments of Schmeasurement practices (as Flake & Fried would call them) of this scale.

We extracted Cronbach’s alpha values from two very large datasets of published articles. The first covers the general psychology literature, and was the same dataset used by the original StatCheck publication (Nuijten et al., 2015): 74,470 articles across all APA journals published between 1985-2013. The second dataset, the metaBUS dataset, covered I/O psychology and management (Bosco et al., 2015): 14,038 articles published in 27 journals between 1980 and 2017. We extracted around 120,000 Cronbach’s alpha values from these literatures. We developed our analytic strategy in the first dataset, created a highly specific preregistration (both written and R code implementing all analyses), and then applied it to the second dataset. In both datasets, we observed an excess of alpha values at common rule-of-thumb thresholds (.70, .80, .90). We also report a number of robustness tests, which include using the caliper test method originally employed to examine excesses of barely-significant *p* values. We provide all R code and all processed data to enhance reproducibility. We discuss the scope, causes and consequences of α-hacking and suggest some potential solutions.

We believe there to be an appetite within AMPPS’s readership for articles that focus on the issue of problematic measurement practices. Indeed, some of AMPPS’s most cited articles are on this issue (e.g., Flake & Fried, 2020, Measurement Schmeasurement; Hussey & Hughes, 2021, Hidden Invalidity). We therefore hope that our manuscript will also be of great interest to your readership.

Kind regards,

Ian Hussey (corresponding author)

Taym Alsalti

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