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One measure to measure them all?

Commentary on "Ten steps toward a better personality science"

Kai T. Horstmann & Matthias Ziegler

Humboldt-Universität zu Berlin (Germany)

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Author Note

Correspondence:

Kai Horstmann, Humboldt-Universität zu Berlin, Institute of Psychology, Unter den Linden 6,
10117 Berlin; kaitobiashorstmann@gmail.com

Abstract

Leising and colleagues (2021) proposed ten steps to improve personality research. We agree with most of these steps and even more with the desired goals but disagree with the proposition to use exactly one measure for one construct. Keeping the same goals in mind, we suggest an alternative solution, based on open data and open materials. An online repository that contains items and data, additional information about the scale (e.g., mode of collection), and information about the sample (e.g., age, culture), would (1) allow detecting jingle-jangle-fallacies, (2) the development of new and useful measures, (3) provide the opportunity to develop equivalent measures based on different items, and (4) could, eventually, still culminate in one measure for one construct. Ideally, each scale used would, in the long run, be identified by an unambiguous identifier that, when submitted to our suggested repository, could recreate the scale, and provide additional, relevant psychometric information.

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One measure to measure them all?

Leising and colleagues (2021) suggested ten steps toward a better personality science. Without a doubt, following or implementing the spirit underlying these ten steps would further improve the quality of personality science, it would make life easier for a lot of (young) researchers, and would culminate in a more integrative and manageable research field. We agree with this spirit and most of these propositions, cannot comment on some, but disagree with one. Specifically, Leising et al. (2021) suggested that the field should pursue common measurement practices, especially with respect to the measurement of the Big Five personality traits. The authors write "there needs to be a single, standard way of assessing the Big Five personality factors, as well as standard ways of assessing everything else that is considered worth assessing." (p. 12). The authors suggest that this should be achieved to avoid jingle-jangle fallacies, to facilitate meta-analyses, and to allow for cumulative knowledge building. Although we strongly agree with the goals that should be achieved, we disagree with the proposed solution, specifically with the idea of one standard measure to assess personality. Instead, we suggest an alternative that could be implemented for any type of test that uses individual items (e.g., statements about oneself as in personality tests, stimuli in reaction time tasks, intelligence tests items).

Psychological tests that assess one variable are usually developed for a specific purpose (e.g., comparing groups vs. assessing individual levels), and for a specific population (e.g., younger people, older adults, from different cultures) (Ziegler, 2014). To achieve this, items are, for example, tailored towards the language level of the targeted participants or to reflect specific living circumstances. As a result, different measures fulfil the needs of different researchers. Using just one tool would leave a gap in our tool kit. To provide a metaphor: There is no one tool to measure distance. At home, where precision does not matter too much, one can use a simple

yardstick, for longer distances, a laser distance meter can be used. Of course, this example neglects the problem of different scales of measurement in psychology which potentially prohibit comparing results derived with different measures. A risk we see when using one authoritative measure alone is an artificial reduction of the potential construct breadth. The field of personality research underwent a similar development before, when the original Big Five were developed, based on items and adjectives selected by specific researchers. The result was that the field, after years of otherwise very productive work, realized that many, often darker aspects of personality, were not reflected (Thalmayer, Saucier, & Eigenhuis, 2011).

Instead of forcing the same measure upon everyone, we would suggest providing, in the long run, an online repository of measures *and* data. Such a data base should ideally contain individual items and their scores, plus background information on the sample characteristics and the survey method (e.g., rating scale used, language, introduction, online vs. offline). Similar to automatically updating websites such as curatescience.org, such a website could generate item and scale statistics for different samples, estimates of reliability, validity, and even measurement invariance across different populations. To this end, the website would need to match uploaded items to existing scales or other items, compute (latent) scale composites, and provide (latent) correlations to other scales, if available.

Such a website or repository would ideally provide three services: First, researchers could search for items and scales that have been used and validated in samples similar to the ones they intend to collect. Second, items (without data) could be uploaded, and be compared to existing items based on linguistic features, thereby avoiding the jingle-jangle fallacies that Leising et al. point out as a potential threat to the test score's validity (similar to https://rosenbusch.shinyapps.io/semantic_net/, Rosenbusch, Wanders, & Pit, 2020). Finally,

researchers could upload their data *and* their items to share both at the same time in a well-documented format.

From our standpoint, such a dynamic approach has several advantages over one authoritative measure to rule them all: (1) It is continuously possible to detect jingle-jangle-fallacies. If someone develops new items, they can directly see where in the existing item-universe their new measure would fall. (2) If someone is convinced, they need to develop a new measure for an existing construct, they can still do this. This repository would immediately allow them to provide evidence that their new measure would outperform existing measures (e.g., be measurement invariant across groups for which previously no invariant measure existed). (3) In the long run, an online repository with well-documented data would allow developing measures for one construct that consisted of different (i.e., in terms of wording), yet equivalent (in terms of psychometric properties) items. Last but not least, (4) the ultimate goal proposed by Leising and colleagues to have one measure for one construct is still possible, and even more likely, as it will be data driven instead of a measure that is chosen for other reasons (e.g., authority of the authors, prestige of the journal, because it has always been used).

Finally, we envision an even more ambitious goal: For each scale, it could be possible to generate a unique identifier or code (similar to a DNA sequence or a DOI) that unambiguously represents the items that have been used in a scale, the rating type scale used, and even the instructions. Published in an article, this code could then be submitted to the website, generating the exact questionnaire that was used (e.g., for reuse in online survey platforms such as formr.org, or as a word-template), additional statistics, and also further publications in which the scale has been used.

We agree, this proposal is not modest, and it will require financial investment as well as the investment and commitment of our community to share their data. Luckily, however, this project could be launched right away with the existing open data from personality research (Horstmann, Arslan, & Greiff, 2020). If successful, it could serve as a beacon for the integration of different measures in personality psychology and beyond.

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