



## An attempt to validate national mean scores of Conscientiousness: No necessarily paradoxical findings

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### ABSTRACT

Two large cross-cultural databases on personality were used to study the relationship between culture-level mean scores of Conscientiousness and 18 country-level criterion variables including health indicators, religiosity, democracy, corruption, economic wealth and freedom, and the presence of a favorable business environment. Compared to previous research, more rigorous requirements for the study of the predictor–criterion relationships were formulated and followed. Mean Conscientiousness scores were significantly related to most of the criteria but, importantly, the relationships differed largely across facets of the broad Conscientiousness domain. In several facets, the patterns of relationships to the external criteria were consistent with clearly formulated multi-variate predictions but the pattern of relationships was moderated by the type of ratings (self- vs. observer-ratings).

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### 1. Introduction

National mean scores of personality traits often demonstrate a consistent pattern in their geographic distribution and a meaningful configuration of correlations with several relevant culture-level indicators (Allik & McCrae, 2004; Schmitt, Allik, McCrae, & Benet-Martinez, 2007). Recently, however, the validity of national mean scores of self- and other-reported personality traits has been seriously questioned, at least in the Conscientiousness domain. Heine, Buchtel, and Norenzayan (2008) reanalyzed published data and showed that aggregate national scores of self-reported Conscientiousness were, contrary to the authors' expectations, negatively correlated with various country-level behavioral and demographic indicators of Conscientiousness, such as postal workers' speed, accuracy of clocks in public banks, accumulated economic wealth, and life expectancy at birth. Oishi and Roth (2009) expanded the list of contradictory findings by demonstrating that nations with high self-reported Conscientiousness were not less but more corrupt.

These and other similar warnings against taking national means of self- and peer-reported personality at face value must be heeded (Ashton, 2007; McCrae, Terracciano, Realo, & Allik, 2007; Perugini & Richetin, 2007). However, for time being there is still too little in the way of both understanding and comprehensive research

on the ability of culture-level personality scores to predict relevant external and, preferably, objective criteria. Before we can come to a final verdict on the predictive validity of culture-level personality scores, we need a comprehensive system of prescriptions how to react on situations where trait measures are related to external criteria not in an expected manner. We believe that the existing studies on the predictive validity on nation-level personality scores have not exhausted all possibilities to look at the problem. In this article we identify and attempt to overcome a series of theoretical and methodological issues, allowing thereby for more informed conclusion on the validity problem. In particular, we focus on Conscientiousness, the most controversial personality trait in cross-cultural comparisons.

Firstly, it is possible that the personality traits used in predictive validity studies are sometimes too broad and only some of their aspects are related the expected criterion variable. So far, external validity studies have primarily used broad personality traits such as the Big Five domains (Heine et al., 2008; Oishi & Roth, 2009), but these broad traits break down into more specific lower-level facets. A more differentiated description of personality traits is justified by the possibility that external criterion variables may not be so much correlated with the central core of the trait (i.e., the common variance of different lower-level facets of the trait) but, rather, with some more peripheral aspects of it. To give an example, dictionaries usually define an extravert as a “person primarily interested in the people and things around him rather than in his inner thoughts” (Williams, 1979). Taking this definition literally, it would be hard to believe that Norwegians, Danes, and Swedes have the highest—and Italians, Portuguese, and Russians relatively

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much lower—scores on the Revised NEO Personality Inventory (NEO PI-R) self-rated Extraversion scales (McCrae, 2002). However, these results become less perplexing once we realize that “turning attention outside” is probably only a by-product of the core of Extraversion (e.g., reward sensitivity), rather than the core feature itself (Lucas, Diener, Grob, Suh, & Shao, 2000). If positive emotions and life satisfaction are the true essence of Extraversion, the ranking of countries presented above becomes more consistent with our intuition.

Similarly, a counter-intuitive correlation between a seemingly obvious criterion variable and culture-level Conscientiousness may be driven by only one or a few facets of Conscientiousness. Consistent with this possibility, different facets of Conscientiousness have been found to relate differently to external criteria at the level of individuals (Roberts, Chernyshenko, Stark, & Goldberg, 2005), with correlations sometimes having even different signs (Moon, 2001). Distinguishing between the different facets of Conscientiousness may render the previously found unexpected relationships more easily understandable.

Secondly, going for a refined description of personality should be coupled with a rigorous and comprehensive choice of external validity criteria. Ideally, choice of criteria should be based on a clear, theoretically sound account of the causal chain of events that connect the ways of responding on personality scales to variation in the expected external criterion variable. The links are, however, not always as transparent as they have been assumed to be. There are at least two groups of reasons why an expected link between the external criterion and the mean personality scores could be misspecified.

The first group of reasons is that quite often the expected external validity criterion is unrepresentative of general populations. For instance, it has been tempting to hypothesize that high culture-level means of Conscientiousness should yield high accuracy of bank-clocks but, in fact, it needs a causal explanation *how* a greater proportion of conscientious people in a given population helps to get bank-clocks more accurate (Heine et al., 2008). Bank clocks are certainly monitored by very small and probably very unrepresentative fractions of populations. It is possible that in highly conscientious nations, bank clerks are under constant public pressure to keep the clocks accurate. It is also possible that in terms of Conscientiousness bank clerks may not be very different from population average or, at least, they differ from population average in the same way everywhere on the Earth. But this is not necessarily so. We can also hypothesize that in generally less conscientious societies—as a compensatory mechanism—only very highly conscientious people can manage as bank clerks, whereas in more conscientious societies banking systems are efficient enough to allow for more relaxed workers.

Similarly, nobody doubts that people commit suicide mainly because they feel desperately unhappy. Indeed, the level of an individual's life dissatisfaction (i.e., depression and negative emotions) is a strong predictor of suicide intention (Koivumaa-Honkanen et al., 2001). However, at the aggregate national level, there is a strong positive association between happiness and the suicide rate: in countries where more people are generally happy and satisfied with their lives, the suicide rate is higher than in those countries where people tend to feel more miserable (Bray & Gunnell, 2006; Diener & Diener, 1995). An explanation for this paradox is that the very small number of people who commit suicide may be mainly those who are not able to cope with the social demand for being happy brought about by the relatively high average level of happiness (Inglehart, 1990). As another relevant example, anti-social behavior has typically been related to low Conscientiousness in individuals (Miller & Lynam, 2001). At the level of nations, however, this may be the other way around. Societies with generally less conscientious people may, as a compensatory mechanism, de-

velop stricter rules to cope with crime (e.g. via religion), resulting in the few individuals inclined to crime being better constrained (e.g. reflected in low homicide rate). Thus, statistics that reflect the behavior of only a fraction of people may not always be the most straightforward criteria for validating mean country-level personality scores.

The second group of reasons for counter-intuitive findings between external criterion variables and the mean personality scores is related to gullible theoretical expectations. The assumed links between external criteria and personality mean scores are often based on broad theoretical generalizations. However, there may sometimes be alternative ways of conceptualizing the relationships. As an example, let us consider a hypothetical relationship between Conscientiousness and democracy. Democracy provides political and civil rights, allowing people to have freedom of choice in their public and private actions (Inglehart & Welzel, 2005). It could be argued that the maintenance of democracy presupposes not only efficient regulation and a transparent legal system but also competent and responsible people. Therefore, one could expect that in more democratic countries citizens are more responsible and disciplined, resulting in a positive correlation between the level of democracy and mean national scores of Conscientiousness. However, the relationship may almost equally well go the other way around—it is dictatorship that better enforces hard work, discipline, and order in society. According to Inglehart and colleagues (Inglehart & Welzel, 2005), effective democracy is much more likely to be found in cultures with a strong emphasis on self-expression values, whereas dutifulness, order, and hard work are the correlates of survival, the opposite of self-expression. Thus, it can be argued that in countries with higher scores of Conscientiousness—that is, where people are rule-abiding, inhibited by social constraints, and keen on keeping order—people are not able to realize their potential for freedom and autonomy which, in turn, are the cornerstones of democracy. So, in principle, the relationship between democracy and Conscientiousness at the national level could be either positive or negative. Yet alternatively, the relationship depends on the facet of Conscientiousness that we are looking at: self-perceived competence may be positively related to the possibility of having political say, whereas more autocratic/totalitarian societies boost higher levels of orderliness, hard work, and cautiousness.

### *1.1. How should external validity criteria for Conscientiousness be chosen?*

Given that we hardly have any solid theories on which to base our selection of the “objective” external criteria for aggregate culture-level personality scores, the most straightforward and transparent strategy would then be to extrapolate from individual-level findings. For instance, we know that more conscientious individuals are more likely than less conscientious people to start their own businesses (Zhao & Seibert, 2006) and we may expect that a similar tendency is also true for culture-level analyses: in countries with a higher concentration of conscientious people, entrepreneurship is encouraged. At the same time, as described above, there are several potential (intertwined) issues related to choosing appropriate criteria for culture-level personality scores: the criteria may not be related to all aspects of the trait in the same manner, the criteria may not describe the society in general, and there may sometimes be equally tenable alternative ways for personality scores to relate to criteria.

In such a situation, a viable approach is to use multiple criteria. Normally we do not rely on one single participant to demonstrate a relationship—there are too many chances to be wrong. We sample numerous individuals, which should allow for the hypothesized relationship to emerge through the “noise” and reduce the chances

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