

Is there a Meaningful General Factor of Personality?

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Abstract. Numerous studies and meta-analyses have now confirmed that personality traits tend to correlate such that a general factor of personality (GFP) emerges. Nevertheless, there is an ongoing debate about what these correlations, and therefore the GFP, represents. One interpretation is that the GFP reflects a substantive factor that indicates general social effectiveness or emotional intelligence. Another interpretation is that the GFP merely is an artifact based on measurement or response bias. In the present paper, we elaborate on a selection of topics that are central to the debate about this construct. Specifically, we discuss (a) the GFP in relation to more specific personality dimensions (e.g., Big Five, facets), (b) the validity of the GFP and under what circumstances it seems to ‘disappear’, and (c) the theoretical and practical relevance of the general factor. Overall, the review should provide insight into the nature of the GFP and whether or not it represents a meaningful factor that can contribute to a better understanding of personality.

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The study of personality has long been hampered by the lack of clear definitions and theory. However, scholars started to develop personality models that allowed more systematic investigations of individual differences. Some of these, now well-known models, include Cattell’s 16-factor model, Eysenck Giant Three (Psychoticism, Extraversion, and Neuroticism), and the Five-Factor Model, or Big Five, that includes Openness/Intellect (O), Conscientiousness (C), Extraversion (E), Agreeableness/Altruism (A), and Neuroticism (N). There also is the more recent HEXACO model that assumes a sixth basic personality dimension, Honesty-Humility, and includes some changes in the other five dimensions (e.g., Ashton et al., 2020).

While scholars debate on whether personality can be comprehensively described by three, five, six, or sixteen factors, some pointed out that regardless of the preferred model, the presumed basic dimensions all remain to show intercorrelations that suggest the existence of higher-order factors (e.g., DeYoung et al., 2006; Musek, 2007). The highest-order factor is the general factor of

personality, or GFP (Figueroedo et al., 2004; Musek, 2007; Rushton et al. 2009; van der Linden et al., 2010). The GFP captures the socially desirable ends of personality scales, and for example, in terms of the Big Five dimensions, high-GFP individuals are, on average, more open-minded, hard-working, sociable, friendly, and emotionally stable.

The idea that socially desirable traits tend to cluster together is not new and was already proposed by Darwin (1871) and Galton (1887). However, since its renewed inception in the literature, the notion of a general factor has stirred much debate. Empirically, it seems well-established that specific personality dimensions tend to correlate and share a relevant proportion of their variance (e.g., van der Linden et al., 2010) and, therefore, the debate has mainly focused on the interpretation and nature of those correlations.

One line of thinking about this is that the correlations between traits mainly reflect artifacts due to the way personality is measured. For example, Ashton et al. (2009, 2020) proposed that there are no higher-order factors above the Big Five or HEXACO models, and any correlations between those dimensions are

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caused by intercorrelations at the facet level. Another proposition is that the GFP is mainly caused by common-method bias or socially desirable responses (Bäckström et al., 2009).

In contrast to the artifact interpretations, it has been suggested that the GFP may be a substantive factor reflecting genuine and relevant individual differences in personality (Figueiredo et al., 2004; Musek, 2007; Rushton et al., 2009). The early empirical work derived from this line of thinking focused mainly on distinguishing between the artifact and substantive account of the GFP. One rationale behind this research is that if the GFP would merely reflect artifact (bias, lying, etc.), then it would be unlikely to have real-life impact. There are currently many studies that have tested this and they largely confirm that the GFP indeed is related to real-life outcomes. For example, the GFP has been linked to better objective or supervisor-rated job performance, objectively measured delinquent behavior, leadership emergence, and social status (e.g., Pelt et al., 2017; van der Linden et al., 2016; Wu et al., 2020). Such findings are not in line with the artifact account of the GFP, but rather support its substantive nature.

Beyond showing the criterion-related validity of the GFP, theories have been developed on what possible psychological mechanism would underlie the emergence of a general factor in personality. Currently, the leading theories assume that the GFP reflects general social effectiveness or emotional intelligence (Dunkel & van der Linden, 2014; Loehlin, 2011; van der Linden et al., 2016, 2017).

As a theoretical exercise to further understanding, first assume that there is such a thing as emotional intelligence (EI) that can be defined as knowledge of emotional and social processes, and the ability and motivation to use that knowledge in order to display socially and emotionally effective behavior (Mayer & Salovey, 1997). The second part of the theoretical exercise is to think about what general consequences EI would have on emotion and behavior. For example, people scoring high on EI are likely to be emotionally stable and socially astute. Thus, being high on EI would raise one's scores (in a socially desirable direction) on emotional stability, agreeableness, and extraversion/sociability. Similarly, high-EI people would more likely to be considered reliable, which is a facet of conscientiousness, and not overly rigid, thus more open. Consequently, the scores on the Big Five would correlate in a way that is consistent with the GFP.

The details of the empirical work on the GFP and its various interpretations can be found in a range of previous reviews, and we will not fully repeat those points here (Musek, 2017; van der Linden et al., 2016, 2017). In the present review, however, we focus on a limited

range of topics and misconceptions about the GFP that may require further discussion.

The GFP in Relation to More Specific Traits

The first topic relates to the relationship between the GFP and its lower-order factors, such as, for instance, described in the Big Five or HEXACO. Because in some previous articles, the GFP was compared to the general factor (*g*) in the domain of cognitive abilities (Loehlin, 2011; Rushton & Irving, 2011), several scholars interpreted this as a claim that all of the individual differences in personality could be reduced to one general factor or score. Subsequently, there was critique on the GFP by emphasizing that personality is complex and cannot be captured in a single factor (e.g., Ferguson et al., 2011). However, this line of critique is based on a misconception. That is, the notion that a substantive GFP exists does not imply that other, more specific personality dimensions are obsolete. In contrast, lower-order dimensions or facets of personality have their unique variance. It is obvious that people differ on numerous specific traits, and that unique patterns of traits exist. For example, some people are friendly, but slightly lazy, while others are sociable, but emotionally unstable, etc. Yet, beyond the specific dimensions and patterns, there seems to be a general psychological mechanism that pushes the scores on different personality scales in the same direction (van der Linden et al., 2016, 2017). Subsequently, based on the type of personality measure and specific sample, the GFP typically explains somewhere between 20 to 60% of the variance in the underlying traits.

One way of looking at this is that the GFP, as emotional intelligence, may be some sort of general mechanism regulating biological or temperamental tendencies. For example, some people may have a biological tendency to be more anxious or emotionally unstable than others (Corr, 2004). However, being high on emotional intelligence may allow one to partly deal with such tendencies and either suppress them or otherwise manifest them in socially effective/desirable ways (Kunnanatt, 2004). In contrast, a person with similar biological tendencies, but who is also low on emotional intelligence would be less able to adequately regulate behavior. Consequently, in theory, two people with the same biological tendency towards anxiety or emotional instability could differ on their neuroticism score because, in one of them, its manifestations and negative effects are mitigated by a higher emotional intelligence. The same principle would apply to most other social undesirable tendencies such as anger, inactivity, impulsiveness, rigidity, etc. The main point of the above line of reasoning is that a higher ability to regulate one's behavior towards socially effective or desirable

manifestations, will lead to correlations between traits, hence the GFP.

The Validity of the GFP

Although empirical work now supports the notion of a substantive general factor, there is also a category of articles that seem to suggest that one can make the GFP disappear, which would indicate the artefactual nature of the construct. Many of those articles have already been extensively discussed in previous papers (e.g., van der Linden et al., 2016, 2017), but we will nevertheless also mention them briefly here as they are important for understanding the GFP and its empirical work.

One subcategory of those articles involves the ones claiming that the GFP is only found in self-reports and cannot be validated by other-ratings (e.g., Chang et al., 2012; Riemann & Kandler, 2010). When reading those articles closely, however, one can see that the models that are tested often seem to control for self-and other ratings at lower levels of personality dimensions. For example, they test the overlap between self and other rated GFPs, while controlling for self and other ratings on the level of the Big Five. Such an approach seems invalid, however. By definition, the GFP is assumed to be partially present in the manifestations of the underlying traits. Thus, controlling for the rater's overlap at the specific trait level means throwing out the baby with the bathwater. It is obvious that in such a case, the overlap on the GFP between raters is no longer visible, even though that overlap actually exists. The latter becomes apparent when using the more straightforward approach of directly comparing the GFP of self and other ratings. Studies that have done so report that there is indeed substantial overlap between raters on the GFP (Dunkel et al., 2016; Oltmanns et al., 2018; Rushton et al., 2009). These findings show that the GFP is not only found in self-reports but can be observed by others, which implies that it cannot only be caused by how people score personality items.

Another proposed way to make the GFP disappear is by reducing the socially desirable content of items (Bäckström et al., 2009). This is assumed to deal with the possibility that the GFP reflects socially desirable response bias (instead of true socially desirable behavior). This approach indeed seems to reduce the size (i.e., level of explained variance) of the GFP (Bäckström et al., 2009). Several things can be said about this. One is that, even though the GFP becomes smaller with this method, it never is eliminated, and a relevant amount of shared variance among the lower traits remains.

Another counterargument to this 'social desirability bias account of the GFP' is that when controlling for response bias, the relationship between the GFP and criteria such as job performance, is not reduced but, in

fact, becomes stronger. Thus, taking the socially desirable component out of items probably also reduces their criterion-related validity. For example, using meta-analytic data, Pelt et al. (2017) showed that Extraversion correlated $r = .15$ with overall job performance. However, after taking out the GFP, the Extraversion-Performance relationship became $r = -.01$. This seems to suggest that the lion-share of the relationship between Extraversion and job performance is due to the general factor. This fits with the idea that social desirability in personality questionnaires is mostly substantive rather than artifact.

A final approach in the category 'how to make the GFP disappear' is to control for correlations among the lower-order traits or measures, such as in the correlated facets model (Ashton et al., 2009, 2020). This model assumes that higher-order factors above the Big Five or HEACO model are merely artifacts caused by correlations among personality facets (which underlie the Big Five or HEXACO). It is clear that by taking out, or controlling for, correlations among facets, there would no longer be correlations among the Big Five or HEXACO dimensions and thus no higher-order factors anymore. However, in that case, one simply took out the correlations without explaining why they occurred or what their relevance is. It would be similar to trying to find the Big Five dimensions after first controlling for the correlations among the items in the personality questionnaire. With such an approach, even the Big Five would probably disappear!

The Theoretical and Practical Relevance of the GFP

A final topic we will touch upon here is the theoretical and practical relevance of the GFP. This is a question that many reviewers of GFP manuscripts, rightfully, raise. For example, some say that if the GFP is extracted from lower-order traits measures, then why would one need a GFP in the first place? It is indeed true that in order to find a valid GFP, one needs to measure a sufficiently wide range of specific traits. Nevertheless, knowing whether or not a general factor exists would provide a useful contribution to understanding personality and would also have imperative theoretical implications. For example, the general literature on personality shows that specific patterns of findings seem to occur rather consistently. That is, traits such as the Big Five often show a pattern of correlations in the direction of O+, C+, E+, A+, and N-. This pattern is found when looking at the relationship between the Big Five and, for instance, job performance (Barrick et al., 2001), a range of psychopathologies (Kotov et al., 2010), and many other psychological variables (e.g., self-esteem, resilience, burnout). Now, if one would assume that the Big Five are the highest

meaningful and independent, personality dimensions, then one has to come up with specific and separate explanations for why each of the Big Five relates to a criterion. For example, one has to develop separate theories on why extraversion, openness, and conscientiousness may positively relate to job performance, whereas neuroticism negatively relates to it. Yet, in GFP, theory it is assumed that the general factor is mainly responsible for this pattern (van der Linden et al., 2016; Pelt et al., 2017), and thus that theory would be more parsimonious.

Another important theoretical implication of the GFP is that it would be able to unify several different theories on individual differences. For example, in the literature on emotional intelligence, there is an ongoing debate about how EI relates to personality. Some say that the construct EI is not meaningful, but is merely a configuration of various well-known personality dimensions (Landy, 2005). Subsequently, they show that after controlling for the Big Five, EI loses a significant amount of its criterion validity. Positing a GFP is able to resolve this issue because it suggests that the EI is virtually the same as trait GFP. Thus, personality and EI are not incompatible, but they are intertwined.

The potential unifying role of the GFP also becomes apparent in evolutionary theories on individual differences. It may relate to observations of Darwin (1871) stating that humans have been under selective pressure to be more prosocial and to behave in ways that are approved upon by others. In this view, the social desirability that is often linked to the GFP is not considered to be a bias but a genuine tendency to behave in socially desirable ways (Figueroedo et al., 2004). Such behavior would enhance the probability of gaining social status or resources and, thus, would increase general fitness. A study in line with this idea showed that GFP among indigenous people of Bolivia (i.e., the Tsimane), males with higher GFP scores indeed have more offspring (van der Linden et al., 2018).

The practical relevance of the GFP relates to its predictive validity. For example, compared to traits such as the Big Five, the GFP shows the strongest correlation with job performance (Pelt et al., 2017). In addition, the GFP seems to be related to the general factor of psychopathology (Oltmanns et al., 2018), thus supporting its clinical relevance. All in all, the present state of empirical and theoretical work on the GFP would imply that it is a construct to take into account and can contribute to a better understanding of individual differences in personality.

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