# PREDICTING THE GENERAL FACTOR OF PERSONALITY: FROM ADOLESCENCE THROUGH ADULTHOOD

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### ABSTRACT

It was predicted that interviewers' rating of the attractiveness of interviewees' personality would be predictive of interviewees' self-assessed personality and that this association would primarily be a function of the General Factor of Personality (GFP). Using data from the National Longitudinal Study of Adolescent to Adult Health, ratings based on four interviews occurring across adolescence and into adulthood exhibited small, but reliable, associations with self-assessed personality in early to middle adulthood. Consistent with predictions, the association was primarily a function of the GFP, was independent of interviewee sex and ethnicity, and remained when controlling for the rated candidness of the interviewee. The results are discussed in terms of the GFP socialeffectiveness hypotheses.

Key words: General Factor of Personality, Big Five, Interpersonal perception

## INTRODUCTION

Although, in research on individual differences, several models exists that assume largely independent personality dimensions, several studies have now confirmed that personality traits covary in a systematic fashion such that traits that are more socially valued create a general factor of personality or GFP (Figueredo, Vásquez, Brumbach, & Schneider, 2004; Rushton, Bons, & Hur, 2008). Assessments as to the nature of the GFP have coalesced around two differing views. One is that the GFP is mainly measurement error resulting from socially desirable responding and should rightfully be controlled for when assessing the relationship between personality traits and criterion variables (Major, Johnson, & Deary, 2014). Another view is that the GFP is meaningful and represents an existent psychological characteristic; therefore, it should be associated other variables not confounded with a respondent's response biases (Dunkel, Cabeza de Baca, Woodley, & Fernandes, 2014).

In assessing the relationship between the GFP and criterion variables it is important to use theory to select variables that should be associated with the GFP, and this means positing a definition of GFP beyond it simply not being response bias. Because Loehlin (2012) found that personality scales that indicated social ability had the strongest loadings on the GFP, he proposed that the GFP may best be thought of as reflecting social effectiveness and this definition has now received ample empirical support. For example, the GFP has been found to correlate with a large variety of social effectiveness indicators (Dunkel & Van der Linden, 2014), including humor styles (Aitken Schermer, Martin, Martin, Lynskey, & Vernon, 2013), emotional intelligence (Van der Linden, Tsaousis, & Petrides, 2012), popularity and likeability (Van der Linden, Scholte, Cillessen, Te Nijenhuis, & Segers, 2010; Van der Linden, 2011), job performance (Sitser, Van der Linden, Born, 2013; Van der Linden, Te Nijenhuis, Bakker, 2010), and the exhibition of culturally prescribed behaviors (Bell, Woodley, Schermer, & Vernon, 2012; Dunkel, 2013). Recently, more sophisticated research methods have been employed to test the social effectiveness hypothesis. For example, Van der Linden, Oostrom, Born, Van der Molen and Serlie (2014) had participant's enact behavioral responses to scripted social situations and found that the GFP was associated with higher levels of social knowledge and skills. Likewise, using a quasiexperimental method, Dunkel et al. (2014) found that high-GFP individuals were more likely to utilize the effective tit-for-tat decision strategy in the Prisoner's Dilemma.

Just as general intelligence should be perceived in individuals when they are engaged in intellectual activities, if the GFP represents social effectiveness it should be apparent in social interactions. Consequently, the GFP should be apparent in both formalized and non-formalized interactions. However, formalized interviews should be a particularly good source of data because the interview process is standardized in order to objectively gather important personal information about the interviewee. Additionally, formalized interviews often provide both self-assessed and interviewer judged information, which allows for the two types of assessments to be cross-referenced (Chang, Connelly, & Geeza, 2012; Danay, & Ziegler, 2011; Rushton et al., 2009).

In line with this, using a standardized interview format conducted by an impartial interviewer, Van der Linden, Te Nijenhuis, Cremers, Van de Ven, and Van der Heijden-Lek (2014) found that interviewer's impressions were positively correlated to a GFP extracted from the interviewee's self-reported personality. The interviewer rated the interviewee on various criteria which in turn formed a general factor, and this interviewer-rating factor correlated with the GFP from the interviewee's self-assessment at  $r \approx .29$ . Moreover, this general interviewer's impression factor also correlated with a single item gauging the overall impression made by the interviewee r = .65. This single item correlated with the interviewee's GFP at about the same strength as the impression factor, namely  $r \approx .24$ . These results suggest that despite psychometric limitations inherent in single item measures, a single item reflecting the interviewer's general impression is predictive of the interviewee's GFP. Additionally, pointing to the relative importance of the GFP, subsequent analyses by Van der Linden et al. (2014) showed that more variance in the general impression was explained by the GFP (the shared variance between personality scales) than by the unique variance of the individual personality dimensions (i.e., Big Five).

As in Van der Linden et al. (2014), in the current study interviewers provided their general impression of the interviewee's personality using a single item. Unique to the present study, data from a large nationally representative sample was used to examine the ability of interviewers' impressions of participants' personality from adolescence through adulthood to predict adult self-assessed personality. There is a dearth of longitudinal and developmentally focused research on the GFP despite explicit calls for such research (e.g., Loehlin and Martin, 2011). We hope to begin to address this void testing whether an interviewer's general impression of a participant's personality from adolescence and into adulthood will be predictive of a GFP in adulthood derived from the participant's self-assessment. Such a test is based on the notion that if the GFP would genuinely reflect social effectiveness, then high-GFP individuals would more likely be rated by others as having a more attractive personality. In accordance, it is predicted that this relationship between the general impression and self-assessed personality will primarily be a function of the GFP, rather than more specific and molecular personality traits.

### METHOD

The National Longitudinal Study of Adolescent to Adult Health (Add Health; Harris et al., 2009) public-use data were used. The Add Health is a longitudinal study initiated when participants were in grades 7-12 with three additional waves of data collection; the second wave of data collection occurred one year after the initial wave, the third wave of data collection took place about five years later when the participants were between 18 and 26 years, and the fourth wave of data collection was when the participants were between ages

24 and 32. The wave 1 in-home survey included 20,745 participants, while the waves 2, 3, and 4 surveys included 14,738, 15,197, and 15,701 respondents, respectively (Harris et al., 2009).

## Measures

Interview Ratings. The majority of the interviews were conducted in the participant's home. At each wave of data collection, after the interview, interviewers used a five-point Likert-type scale to respond to a number of questions concerning their subjective impression of aspects of the participant's home and demeanor. One question was, "How attractive is the respondent's personality?" The interviewer response to this question was used as the interviewer's rating of the participant's personality. Stability in the rating across waves was low with correlations between ratings ranging from r = .08 to r = .26. It should be noted that interviews were conducted by different interviewers in each of the four interviews. An intrarater reliability (Schmidt & Hunter, 1996) estimate for a composite measure reflecting the stability in the ratings, by treating each rating as an item and computing Cronbach's alpha, was  $\alpha = .40$ ; single-rater reliability = .14. Additionally, interviewers assessed the candidness of the interviewee. In the fourth wave of data collection interviewers documented their impression as to whether the interviewee was candid (= 1) or not (= 0).

Big Five Personality Traits and the GFP. The Big Five personality traits of agreeableness ( $\alpha = .70$ ), conscientiousness ( $\alpha = .65$ ), extraversion ( $\alpha = .71$ ), neuroticism ( $\alpha = .63$ ), and openness ( $\alpha = .65$ ) were measured by having participants use a five-point Likert-type scale to rate items from the 20-item Mini-International Personality Item Pool (Baldasaro, Shanahan, & Bauer, 2013). The scale was only administered in the fourth wave of data collection.

The factor score from the first unrotated factor using Principal Axis Factoring (PAF) was used to extract the GFP. This factor had an Eigenvalue of .87 and explained 17.38% of the variance among the trait scales. The level of Big Five variance explained by the general factor may have been attenuated by the relatively low reliabilities (M = .67) of the trait scales. An alternative GFP was also computed using factor weights from the meta-analysis of Big Five-based GFPs by Van der Linden et al. (2010). This meta-analytic based GFP allows for a GFP that is independent of the sample specific idiosyncrasies. Nonetheless, the two GFPs correlated at r (5026) = .95.

## RESULTS

The correlations between the rated attractiveness of the participant's personality at each wave of data collection and the combined (i.e., aggregate) ratings with each of the self-assessed Big Five personality traits and the meta-analytic based GFP and PAF-based GFP are presented in Table 1. The correlations were small in magnitude, but each correlation was in the expected direction. The unreliability of the measures can be expected to weaken the

strength of the correlations, therefore we corrected for the attenuation of the bivariate correlations following the formula introduced by Schmidt and Hunter (1996). Reliability of the GFP was .66 (calculated with Mosier composite reliability formula). The resulting disattenuated correlations can be seen at the bottom of Table 1. Correcting for attenuation led to a substantial increase in the strength of the association between the interviewer ratings and the self-reported personality traits including the GFP.

Wave	0	С	Ε	Α	Ν	<b>GFP</b> <sub>PAF</sub>	<b>GFP</b> <sub>MW</sub>		
1	.06*(03)	.04*(01)	.09*(.02)	.13*(.04)	02(.03)	.13*	.11*		
2	.05*(06*)	.07*(00)	.11*(.03)	.14*(.04)	03(.02)	.15*	.14*		
3	.06*(03)	.02(03)	.09*(.02)	.11*(.04)	05(00)	.12*	.12*		
4	.06*(07*)	.06*(01)	.13*(.03)	.15*(.04)	09*(05)	.17*	.17*		
Aggregate	10*(08*)	.08*(02)	.17*(.04)	.22*(.07*)	08*(.00)	.23*	.24*		
Corrected	.20*	.16*	.32*	.42*	.16*	.45*	.47*		

**Table 1.** Bivariate and Partial Correlations (Controlling for the  $GFP_{PAF}$ ) between the RatedAttractiveness of the Participant's Personality Across Waves 1 through 4 and Aspects of Participant'sSelf-Rated Personality at Wave 4

**Note.** \*p < .01. O = Openness. C = Conscientiousness. E = Extraversion. A = Agreeableness. N = Neuroticism. GFP<sub>PAF</sub> = Principal Axis Factoring GFP. GFP<sub>MW</sub> = meta-analytic GFP. Partial correlations controlling for the GFP<sub>PAF</sub> are in parentheses. N = 3,276 - 5,091.

The strongest correlations between the rated attractiveness of the participant's personality and self-assessed personality tended to be with the GFP, the only exception being agreeableness at wave 1 of data collection. The exception is notable because the strength of the correlations between rated personality and agreeableness are almost as strong in magnitude as those between the rated attractiveness of the participant's personality and the GFP. This suggests that the attractive personality-GFP correlation is primarily a function of the agreeableness of the participant. Next, partial correlations between the rated attractiveness of the participant's personality at each wave and the combined ratings and the Big Five traits, controlling for the PAF-based GFP, were calculated. The results are also presented in Table 1 and show that when controlling for the GFP each of the correlations was diminished in magnitude or even changed direction. The reduction in attractivenesspersonality correlations of the Big Five suggest that it was mainly the shared variance (i.e., the GFP) that was responsible for those correlations instead of the unique variance of any specific traits such as agreeableness.

To control for potential biases, such as rater bias, additional analyses were conducted; based on participant's demographics, the samples were split by race (Black and White) and sex and the correlations between the rated attractiveness of the participant's personality and

the GFP were rerun. Splitting the sample by sex and ethnicity allows an assessment of the potential influence of these factors on the observed associations (Nedelec and Beaver, 2011). In addition, partial correlations between the ratings and the GFP were conducted wherein participant's candidness was controlled. The results can be seen in Table 2. The results suggest that the relationship between the rated personality attractiveness and the GFP was not a function of these potential sources of bias.

0	/		/		
	Bl	ack	White		
Wave	Female	Male	Female	Male	
1	.11* (.13*)	.14* (.13)	.11* (.10*)	.09* (.11*)	
2	.11* (.13*)	.14* (.13)	.11* (.10*)	.09* (.11*)	
3	.17* (.21*)	.16* (.15*)	.11* (.11*)	.06 (.07)	
4	.15* (.15*)	.11 (.12)	.16* (.17*)	.20* (.20*)	
Aggregate	.28* (.28*)	.24* (.25*)	.22* (.21*)	.20* (.20*)	

**Table 2.** Bivariate Correlations and Partial Correlations, Controlling for Rated Participant Candidness, between the Rated Attractiveness of the Participant's Personality Across Waves 1 through 4 and GFP at Wave 4 by Ethnicity (Black and White) and Sex.

*Note*. \**p* < .01. Partial correlations are in parentheses. N = 292-1924.

### DISCUSSION

The results supported the hypotheses that interviewers' ratings of the attractiveness of the interviewees' personality is associated with self-assessed personality, that this association is primarily a function of the GFP, and that it is independent of the candidness, ethnicity, and sex of the interviewee. The longitudinal nature of the data also suggests that by adolescence there are discernable, somewhat stable, behaviors that are predictive of adult GFP.

It is important to note the interviewer ratings were based on a single item and that consistency in the ratings across the waves of data collection was slight. This inconsistency could represent the vicissitudes of development and/or the unreliability of the measure as aggregating the ratings across the waves and correcting for the attenuation due to low reliability produced stronger correlations with the GFP. Using multiple raters (Connelly & Ones, 2010) should increase the reliability of the rating, and allow for the proper attenuation correction. However, we also attempted a statistical correction for the unreliability of the measures. Alternatively, one may expect that to the degree the GFP exerts social force it should be apparent and, therefore, lead to greater reliability. Future research could gauge the parameters under which the GFP can be ascertained by raters.

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