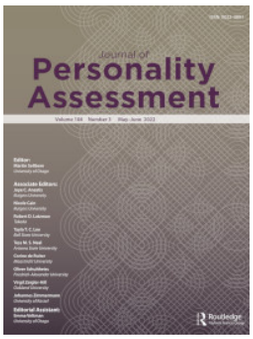

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A Cross-Cultural Investigation of the Five-Factor Narcissism Inventory Short Form: Narcissism as a Multidimensional Trait in the United Kingdom and Russia

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ABSTRACT

Research on narcissism supports a multifactorial structure with each factor to be multidimensional. However, studies typically assess 1 factor of narcissism using scales such as the Short Dark Triad (SD3). The Five-Factor Narcissism Inventory and its short form (FFNI–SF) were developed recently to account for this issue. The extent to which the FFNI–SF assesses equivalent constructs across countries has, nonetheless, received little attention. This study evaluated the factor structure of the FFNI–SF in a Russian sample ($N = 1{,}996$) and compared the results with those derived from a UK sample ($N = 1{,}292$). Overall, the FFNI–SF evidenced satisfactory internal consistency (mean $\alpha =$ .82 and .79 for the Russian and UK sample for the factors of Antagonism, Extraversion and Neuroticism, respectively). Additionally, analyses yielded a 3-component model in both samples similar to that reported in the original validation study, which also demonstrated meaningful correlations with the SD3. Finally, Antagonism demonstrated significant differences between the 2 samples, perhaps reflecting societal differences between Russia and the United Kingdom. The study highlights the importance of using psychometrically sound measures to assess narcissism in its complexity and the need for additional research on how this trait operates within the personality sphere and across cultures.

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Theoretical interest in the conceptualization and assessment of narcissism has increased as researchers have realized the relevance of the construct for various important outcomes (Muris et al., 2017). These include dysfunction and distress in interpersonal domains (Miller et al., 2007), symptoms of psychopathology (Papageorgiou, Gianniou et al., 2019, school grades (Papageorgiou et al., 2018) and mental toughness (Papageorgiou et al., 2017).

Research has consistently indicated that narcissism is not unifactorial and comprises at least two expressions, vulnerable and grandiose narcissism (Wink, 1991). The primary connection between the two opposing sides of narcissism is the tendency to react in an antagonistic manner (Miller et al., 2011). Grandiose narcissism is characterized by exhibitionism, entitlement, and interpersonal dominance; vulnerable narcissism is characterized by a fragile self-esteem, need for admiration, and shame (Miller et al., 2011). In research, accounting for this distinction is vital because grandiose and vulnerable narcissism are differentially related to psychological characteristics. For example, recent research revealed that grandiose narcissism associates indirectly with lower depression, whereas vulnerable narcissism associates indirectly with higher depression (Papageorgiou, Denovan, et al., 2019).

Despite evidence to suggest a multifactorial structure for narcissism (e.g., grandiose and vulnerable narcissism; Crowe et al., 2019) with each factor incorporating several dimensions (e.g., grandiose narcissism is characterized, in part, by antagonism and extraversion), narcissism and the associated Dark Traits of Machiavellianism and psychopathy have been inconsistently assessed with unifactorial measures (Miller et al., 2019). Indeed, many existing measures assess narcissism as a unifactorial trait (e.g., the Short Dark Triad [SD3]; Paulhus & Jones, 2014) focusing on capturing either its grandiose aspects (e.g., Narcissistic Personality Inventory; Raskin & Terry, 1988), or its vulnerable qualities (e.g., Hypersensitive Narcissism Scale; Hendin & Cheek, 1997). Few measures, such as the Pathological Narcissism Inventory (Pincus et al., 2009), capture both grandiose and vulnerable narcissism and have been adapted for use across several countries (e.g., Diguer et al., 2014; Jakšić et al., 2014). Another example of a measure that was developed to account for some of the complexities around assessing narcissism is the Five-Factor Narcissism Inventory (FFNI; Glover et al., 2012).

The FFNI is one of the few measures that assesses both grandiose and vulnerable narcissism and contains 148 items derived from the 30 traits of the Five-Factor Model (FFM;

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McCrae & Costa, 2008). The measure comprises 15 facets associated with either or both grandiose (i.e., acclaim seeking, arrogance, authoritativeness, entitlement, exhibitionism, exploitativeness, grandiose fantasies, indifference, lack of empathy, manipulativeness, and thrill-seeking) and vulnerable narcissism (i.e., cynicism/distrust, need for admiration, reactive anger, and shame). Miller et al. (2016) found evidence for a three-factor structure comprising Antagonism, Neuroticism and Agentic Extraversion. Ultimately, the FFNI factors help explicate the differences between various expressions of narcissism such that all are related to Antagonism but differ with regard to Neuroticism (relevant to vulnerable narcissism and narcissistic personality disorder [NPD]) and Agentic Extraversion (relevant to grandiose narcissism and NPD).

The abridged version of the FFNI, the Five-Factor Narcissism Inventory–Short Form (FFNI–SF; Sherman et al., 2015) has 60 items. Both the original and short versions are theoretically significant because they were produced specifically to synthesize different conceptualizations of narcissism (i.e., grandiose and vulnerable narcissism, and delineations of NPD based on the *Diagnostic and Statistical Manual of Mental Disorders* [5th ed.; *DSM–5*]; American Psychiatric Association, 2013). Relative to the FFNI, FFNI–SF subscales are reliable, possess an identical factor structure (i.e., three factors of Antagonism, Extraversion, Neuroticism), and demonstrate similar correlations with criterion measures (Sherman et al., 2015).

Considering the necessity for reliable measures that capture narcissism's variants and their dimensions, additional research is required to replicate and extend Sherman et al.'s (2015) observations of the FFNI–SF, specifically in different cultural contexts to the United States and other English-speaking nations. Only a limited number of investigations evaluating the FFNI–SF cross-culturally exist. For example, Eksi (2016) examined the psychometric properties of the Turkish version of the short form of the FFNI–SF in a sample of university students (54% were female; ages ranged from 18–32). The results indicated that the scores had high consistency and that the Turkish version of the FFNI–SF is a useful tool in assessing narcissistic personality traits in nonclinical samples (Eksi, 2016).

More recently, Fossati et al. (2018) tested the measure in an Italian undergraduate sample, supporting its reliability and three-factor structure (using an Italian translation). The authors confirmed limitations of sample representativeness; however, congruence coefficient values reported in that study suggested that FFNI–SF Antagonism, Agentic Extraversion, and Neuroticism factors were in close agreement with those reported by Sherman et al. (2015) and Miller et al. (2016).

The principal aim of this study involved assessing the factor structure of the FFNI–SF in a large Russian sample. Given that issues exist when using traditional means to test factorial structure (i.e., confirmatory factor analysis [CFA]) of personality scales due to theoretically significant and considerable secondary loadings (Marsh et al., 2014), analysis applied Sherman et al.'s (2015) exploratory approach. Instead, the researchers used exploratory structural equation modeling (ESEM).

A second aim involved comparing the Russian sample with a UK sample. The extent to which the FFNI–SF assesses equivalent construct(s) across countries has received little attention. However, tests of invariance facilitate measure application, interpretation, and usefulness (Denovan et al., 2019). Finally, convergent validity testing occurred via comparing the FFNI–SF with a general Dark Triad scale (SD3; Paulhus & Jones, 2014). Based on previous findings (see, for a review, Weiss et al., 2019) we hypothesized that: (a) the FFNI–SF factors of Agentic Extraversion and Antagonism will correlate positively with psychopathy and Machiavellianism assessed using the SD3; and (b) narcissism assessed using the SD3 will correlate positively with the FFNI–SF factors of Agentic Extraversion and Antagonism, with the strongest correlation existing for Extraversion (as the most prosocial factor of the three). A limitation of using the SD3 is that this measure does not encapsulate any narcissistic vulnerability items; as such no hypotheses could be tested regarding the possible association between the FFNI–SF factor of Neuroticism and the SD3 scales.

Despite this limitation, the SD3 was used in this study for both practical and theoretical reasons: The measure is short; as such, it was well-suited to be used concurrently with a longer questionnaire (the FFNI–SF) without exposing participants to a lengthy survey; the SD3 has already been validated for use in a Russian population and was recently used successfully in various studies (e.g., Likhanov et al., 2021; Papageorgiou et al., 2020) in Russian populations; it is a very popular measure in this area of research and using it in parallel with the FFNI–SF in a cross-cultural context offers opportunities for directly linking the results of this study with the wider literature.

Finally, given the samples were derived from two countries that differ in wealth inequality, we tested whether narcissism is sensitive to these differences. Jonason et al. (2019) reported higher Dark Triad scores in Turkey than Australia due to societal differences in competitiveness as indexed by wealth inequality (with Turkey characterized by greater wealth inequality). Accordingly, we hypothesized that (c) the Russian sample will have higher scores on narcissism than the UK sample reflecting differences in wealth inequality (as reported in the *World Fact Book* using the GINI index) between the two countries. According to the World Fact Book, Russia (currently placed 57th based on GINI index) shows greater wealth inequality than the United Kingdom (currently placed at 116th based on GINI index).

Method

Sample

This study used two independent samples provided by private companies specializing in participant recruitment for research purposes. The Russian sample included 1,996 participants (65.20% females; M age = 36.8, SD = 12.5; range = 18–70). The UK sample included 1,292 participants (55.9% females; M age = 37.40, SD = 13.61, range = 18–70). Of the Russian sample, 1%, 26%, 69%, and 4% possessed secondary/high school, college, undergraduate, or postgraduate qualifications, respectively; and 24%, 23%, 29%, and 24% of the UK sample fell into the same categories. For residency, 90%, 5%, 4%, and 1% of the Russian sample lived in a city, small city, small

town, or village, respectively; whereas 30%, 15%, 42%, and 13% of the UK sample fell into these categories.

Measures

The FFNI–SF (Sherman et al., 2015) comprises 60 items presented as statements. Participants endorse items via a Likert scale, ranging from 1 (*disagree strongly*) to 5 (*agree strongly*). Sherman et al. (2015) reported a mean Cronbach's alpha of .81. In this study, α = .74, .91, .90, .81, and .76 for Vulnerability, Grandiosity, Antagonism, Extraversion, and Neuroticism, respectively, in the Russian sample. For the UK sample, α = .70, .86, .83, .77, and .78 for Vulnerability, Grandiosity, Antagonism, Extraversion, and Neuroticism, respectively. Additional information is provided in Section I of the supplementary material including descriptive statistics and reliability for the FFNI–SF facet scales.

The SD3 (Paulhus & Jones, 2014) assesses Machiavellianism, narcissism, and psychopathy as unidimensional traits. The measure consists of 27 items (9 items per trait) presented as statements (e.g., "It's not wise to tell your secrets"). Participants respond using a 5-point Likert scale ranging from 1 (*completely disagree*) to 5 (*completely agree*). The questionnaire has been translated and validated to Russian with high reliability estimates ($\alpha > .70$ for all scales; Egorova et al., 2015). In this study, α = .76, .60, and .74 for Machiavellianism, narcissism, and psychopathy, respectively, in relation to the Russian sample. For the UK sample, α = .78, .75, and .81 for Machiavellianism, narcissism, and psychopathy, respectively.

Procedure

Participants completed the FFNI–SF and the SD3 and provided basic demographic information (gender, age, etc.). Questions were rotated to avoid order effects. For Russian participants, the FFNI–SF was translated from and then back to English. Specifically, forward translation was performed by an external collaborator (who is not a coauthor) whose mother tongue is Russian. A coauthor whose mother tongue is Russian and who is proficient in English has identified any inadequate expressions and concepts of the translation and performed the back-translation. All coauthors checked the two English versions of the questionnaire; no major discrepancies between the original version and the version resulting from the back-translation were identified. Back-translation is a quality, established procedure that researchers have used in cross-cultural survey research over the past 50 years (Dept et al., 2017; Son, 2018). All participants read an information sheet and provided informed consent prior to taking part. The Ethics Committee of a UK-based university approved the study.

Data analysis

Analyses, using M*plus* Version 8.0 (Muthén & Muthén, 2017), evaluated measurement models and determined which provided the best data fit. Tested models were a two-factor correlated model comprising Grandiose and Vulnerability (a null test of the measure's original dimensional purpose), and a three-factor correlated model encompassing Antagonism, Extraversion, and Neuroticism (Miller et al., 2016). Analysis occurred at the facet level because this provides a greater probability of cross-cultural replication (Morton et al., 2019). Model evaluation included traditional CFA followed by ESEM. Explicitly, CFA is useful when assessing personality-based measures (e.g., the FFNI–SF) because it comprises unique features including the ability to model hierarchical structures and examine latent structures (consistent with the view of personality encompassing a hierarchical order, and its traits resembling latent dispositions; Booth & Hughes, 2014). Marsh et al. (2010) argued that ESEM is effective for testing personality measures because it permits many of the robust analyses of structure possible with CFA, but without the oft-cited limitations of constraining nontarget loadings to zero and limiting the possibility of cross-loadings. Essentially, it represents a more flexible framework for the scrutiny of personality measures (Booth & Hughes, 2014). ESEM permits FFNI–SF facet cross-loading to verify the impact of facets on narcissism factors. The authors employed oblique target rotation because it most effectively combines confirmatory and exploratory techniques. Analyses used Analyses used maximum likelihood parameter estimation (MLR) estimation.

Indexes of chi-square, comparative fit index (CFI), standardized root mean square residual (SRMR), and root mean square error of approximation (RMSEA) evaluated model fit. Good fit thresholds are CFI $\geq$ .90, SRMR $\leq$ .08, and RMSEA $\leq$ .08 (Browne & Cudeck, 1993). Analysis also considered Akaike's information criterion (AIC) and Bayesian information criterion (BIC). For interpretation, factor loadings $\geq$ .40 are satisfactory and representative of the factors (Gliner et al., 2011). Interfactor correlations $>$ .10, $>$ .30, and $>$ .50 indicated small, medium, and large effect sizes (Cohen, 1992).

Subsequently, tests of configural, metric, and scalar invariance occurred among gender (men vs. women) and country (Russia vs. UK) within the framework of multigroup ESEM. CFI changes should be $\leq$ .01 alongside an RMSEA difference of $\leq$ .015 (Chen, 2007). In large samples, due to its sensitivity, use of chi-square as an index for invariance is not advisable as a single index (Brown, 2006). Therefore, consideration of this (using the Satorra–Bentler index) occurred alongside key criteria of CFI and RMSEA differences. A comparison of latent factor means occurred among the groups used for invariance testing. Finally, convergent validity assessment compared the FFNI–SF factor means with the SD3. Additional information on data analyses exists in Section I of the supplementary material.

Results

Data screening

For both samples (UK vs. Russia), on all variables, assessment of univariate skewness and kurtosis indicated no concerns; skewness values fell between −2.0 and +2.0, and kurtosis between −4.0 and +4.0 (Field & Miles, 2010). However, estimates of multivariate kurtosis (Russia sample

Mardia's $b2p = 53.70$, $p < .001$; UK sample Mardia's $b2p = 40.30$, $p < .001$) and skewness (Russia sample Srivastava's $b1p = 141.97$, $p < .001$; UK sample Srivastava's $b1p = 201.09$, $p < .001$) suggested a departure from multivariate normal distribution. Therefore, use of MLR estimation is necessary, given that this produces parameter estimates and standard errors that are robust to instances of nonnormality (Marsh et al., 2013).

Factor analyses

For the two-factor correlated model, CFA indicated poor data–model fit for the Russian and UK samples (Table 1). The three-factor correlated model also demonstrated poor fit for the Russian and UK samples via CFA. These findings indicate that the instrument requires modification to achieve a good fit, or at least correlation of error terms and correction for model misspecification. The CFA results are therefore unsatisfactory and highlight the necessity of ESEM as an alternative approach.

The ESEM results yielded a better fit for the two-factor correlated model, with fit indexes increasing for the Russian and UK samples. However, outcomes remained below satisfactory thresholds on CFI and RMSEA. ESEM analyses indicated good fit for the Russian and UK samples in relation to the three-factor correlated model. CFI increased due to permitting cross-loadings, thus providing a better fit between the conceptual and observed data. Decreases in RMSEA further suggested that better data fit existed with ESEM versus the more restrictive CFA model. AIC and BIC values corroborated these findings, confirming that the ESEM model (particularly the three-factor model) was superior.

Scrutiny of parameter estimates involved observing the three general factors of the FFNI–SF, as explained by the variance of each facet within the model (Table 2). Reporting includes cross-loadings because ESEM analysis permits latent variables to correlate with one another. Results for the Russian sample provided reasonable loadings on all targeted factors ($\lambda = .38$–$.87$), with all facets but thrill-seeking loading above .40. Most of the facets displayed significant cross-loadings, and all $< .40$ apart from indifference on Antagonism ($\lambda = -.50$), and reactive anger on Neuroticism ($\lambda = .52$). Examining these separately suggested the facets most representative of each factor. For Antagonism, lack of empathy loaded the highest ($\lambda = .87$). Acclaim seeking loaded highly on Extraversion ($\lambda = .67$), followed closely by authoritativeness ($\lambda = .63$) and exhibitionism ($\lambda = .62$). Shame reflected the highest loading on Neuroticism ($\lambda = .76$).

Table 1. Fit indexes for Five-Factor Narcissism Inventory–Short Form factor models.

Model	χ^2	*df*	CFI	SRMR	RMSEA [90% CI]	AIC	BIC
Russian sample							
Two-factor CFA	2852.43**	89	.72	.10	.12 [.12, .13]	145044.55	145302.10
Two-factor ESEM	1749.55**	76	.83	.06	.10 [.10, .11]	143786.55	144116.88
Three-factor CFA	2727.14**	87	.73	.12	.12 [.11, .13]	144557.09	144831.44
Three-factor ESEM	822.11**	63	.92	.03	.07 [.07, .08]	142657.46	143060.58
UK sample							
Two-factor CFA	2114.75**	89	.77	.10	.13 [.12, .13]	96382.73	96620.28
Two-factor ESEM	1362.43**	76	.85	.06	.11 [.10, .12]	95497.98	95802.65
Three-factor CFA	1957.63**	87	.79	.13	.12 [.12, .13]	95906.60	96154.46
Three-factor ESEM	559.68**	63	.94	.03	.07 [.07, .08]	94512.01	94883.80

Note. CFI = comparative fit index; SRMR = standardized root mean square residual; RMSEA = root mean square error of approximation; AIC = Akaike's information criterion; BIC = Bayesian information criterion; CFA = confirmatory factor analysis; ESEM = exploratory structural equation modeling.
**χ^2 significant at $p < .001$.

Table 2. Parameter estimates of the Five-Factor Narcissism Inventory–Short Form based on exploratory structural equation modeling.

	UK sample λ			Russia sample λ		
Variable	Antagonism	Extraversion	Neuroticism	Antagonism	Extraversion	Neuroticism
Antagonism						
Manipulativeness	**.45****	.36**	−.26**	**.51****	.39**	−.13**
Exploitativeness	**.66****	.11**	−.07**	**.87****	.01	−.05*
Entitlement	**.55****	.30**	.13**	**.87****	−.01	−.03
Lack of empathy	**.87****	−.37**	−.19**	**.92****	−.23**	−.12**
Arrogance	**.65****	.19**	−.02	**.84****	.07*	−.08**
Reactive anger	**.47****	.13**	.52**	**.54****	.06*	.40**
Distrust	**.56****	−.19**	.14**	**.32****	.04	.33**
Thrill seeking	**.38****	.32**	−.08**	**.47****	.33**	−.03
Extraversion						
Acclaim seeking	.22**	**.67****	−.04*	−.10**	**.79****	.08**
Authoritativeness	.15**	**.63****	−.23**	.01	**.79****	−.15**
Grandiose fantasies	.15**	**.47****	.15**	.53**	**.30****	.13**
Exhibitionism	.09**	**.62****	.11**	.08*	**.66****	.08*
Neuroticism						
Shame	.21**	.02	**.76****	.04	−.03	**.87****
Need for admiration	.18**	−.14**	**.67****	.18**	.16**	**.66****
Indifference	−.50**	.10**	**.49****	−.42**	−.12*	**.41****

Note. λ = factor loading; targeted loadings are shown in bold.
*$p < .05$. **$p < .001$.

Table 3. Fit indexes for Five-Factor Narcissism Inventory–Short Form invariance models.

Model	χ^2	S–B χ^2	*df*	CFI	CFI difference	SRMR	RMSEA [90% CI]	AIC
Gender								
Configural	1678.99**		126	.91		.03	.08 [.08, .09]	239019.92
Metric	1726.91**	86.41**	162	.91	.001	.04	.07 [.07, .08]	239062.20
Scalar	1863.77**	139.47**	174	.91	.007	.12	.07 [.07, .08]	239174.58
Country								
Configural	1382.85**		126	.93		.03	.07 [.07, .08]	237169.46
Metric	1906.01**	525.46**	162	.91	.02	.05	.08 [.07, .08]	237717.85
Metric (partial)	1540.38**	159.38**	160	.93	.007	.05	.07 [.07, .08]	237298.24
Scalar	2391.88**	525.46**	172	.88	.04	.06	.09 [.08, .09]	238229.20
Scalar (partial)	1670.72**	145.47**	165	.92	.007	.05	.07 [.07, .08]	237424.87

Note. χ^2 = chi-square goodness-of-fit statistic; S–B χ^2 = Satorra–Bentler chi-square difference; CFI = comparative fit index; SRMR = standardized root mean square residual; RMSEA = root mean square error of approximation; AIC = Akaike's information criterion.
**χ^2 significant at $p < .001$.

For the UK sample, all facets loaded reasonably well on their targeted factors (λ = .30–.92), and all but distrust (λ = .32) and grandiose fantasies (λ = .30) loaded above .40. Relatively speaking, facets loaded generally higher across their target factors than the Russian sample. The majority of facets demonstrated significant cross-loadings, and all < .40 but grandiose fantasies and indifference on Antagonism (λ = .53 and λ = −.42, respectively). In terms of the facets representing each factor, lack of empathy loaded the highest on Antagonism (λ = .92), followed quite closely by exploitativeness (λ = .87), entitlement (λ = .87), and arrogance (λ = .84). Acclaim seeking and authoritativeness revealed the highest loadings on Extraversion (both λ = .79). Shame indicated the greatest loading on Neuroticism (λ = .87).

Next, analysis compared interfactor correlations. The Russian data evidenced a significant correlation between Antagonism and Extraversion only (r = .50; large effect size). The UK data, however, displayed significant correlations between all factors. Specifically, r = .61 (large effect size) for Antagonism and Extraversion, r = .13 (small effect size) for Neuroticism, and r = .10 (small effect size) for Extraversion and Neuroticism.

Multigroup analyses

Invariance tests (Table 3) involved fitting the superior model (the three-factor ESEM solution) to the data for gender (men vs. women) and country (UK vs. Russia). For gender, the configural model indicated good fit. This can be taken as support for configural invariance (i.e., equality in the number of latent factors across men and women for the FFNI–SF). The progression from the test of form (configural) to factor structure (metric) indicated a significant Satorra–Bentler chi-square difference (S–B χ^2) of 86.41 (df = 36, $p < .001$). However, a CFI difference of .001 and an RMSEA difference of .01 existed, supporting metric invariance. In addition, a significant S–B χ^2 of 139.47 existed (df = 12, $p < .001$) when testing metric versus scalar models. However, an acceptable CFI difference (.007) and no RMSEA change existed. This suggested the FFNI–SF was satisfactorily invariant across gender for the three-factor ESEM solution.

Good fit existed for the configural model comparing country. An unacceptable CFI difference of .02 occurred between configural and metric models (although RMSEA was satisfactory at –.003). In addition, a significant S–B χ^2 of 525.46 existed (df = 36, $p < .001$). Freeing constraints between manipulativeness and exploitativeness, and grandiose fantasies and acclaim seeking (given these belong to the same subfactors) resulted in a significant S–B χ^2 of 159.38 (df = 34, $p < .001$), yet a satisfactory CFI difference (.007) and RMSEA difference (.003) existed. Relaxing the additional constraint between grandiose fantasies and exhibitionism was necessary to result in a nonsignificant S–B χ^2 of 29.14 (df = 33, p = .65). Comparing metric and scalar models revealed an unsatisfactory RMSEA difference (.017), a CFI difference of .04, and a significant S–B χ^2 of 525.46 (df = 36, $p < .001$).

Relaxing intercept constraints for thrill seeking, distrust, entitlement, grandiose fantasies, and reactive anger (based on modification indexes) supported partial scalar invariance, as acceptable differences occurred for CFI (.007) and RMSEA (.004). A significant S–B χ^2 of 145.47 (df = 7, $p <$ .001) occurred, however. It was necessary to additionally free the intercept for acclaim seeking to obtain a nonsignificant S–B χ^2 of 9.05 (df = 6, p = 1.0).

Latent mean comparisons

Because scalar invariance between males and females existed, in addition to partial scalar invariance between the United Kingdom and Russia, a comparison of latent means occurred. The male group represented the reference group for gender, and the UK group acted as the reference group for country. The latent means of the male and UK groups were fixed to zero, indicating that the latent means of the female and Russian groups represented the mean differences between the groups (Hong et al., 2003).

Freely estimated latent means for females were significantly higher for Neuroticism (M = .13, $p < .001$), with a small effect size (Cohen's d = .14). In comparison, latent means did not display significant differences for females on Antagonism (M = .05, p = .12) and Extraversion (M = .03, p = .32). Freely estimated latent means for Russia were significantly higher for Antagonism (M = .10, $p < .001$), with a small effect size (d = .12). However, Russia latent means were significantly lower for Extraversion (M = −.13, $p <$ .001) and Neuroticism (M = −.13, $p < .001$). A small effect size (d = .15) existed in both instances.

Table 4. Correlations of Five-Factor Narcissism Inventory–Short Form (FFNI–SF) factors with Short Dark Triad (SD3) subscales, and SD3 intercorrelations.

	SD3 subscale		
	Machiavellianism	Narcissism	Psychopathy
FFNI–SF factor			
Russia sample			
Antagonism	.31**	.35**	.27**
Extraversion	.34*	.47**	.23**
Neuroticism	.02	−.08*	.03
Grandiose	.34**	.44**	.26**
Vulnerable	.18**	.11**	.17**
UK sample			
Antagonism	.56**	.61**	.76**
Extraversion	30**	.73**	.45**
Neuroticism	.04	−.17**	−.04
Grandiose	.48**	.72**	.69**
Vulnerable	.41**	.17**	.37**
SD3 subscale			
Russia sample			
Machiavellianism	—	.32**	.32**
Narcissism		—	.24**
Psychopathy			—
UK sample			
Machiavellianism	—	.32**	.45**
Narcissism		—	.51**
Psychopathy			—

*$p < .05$. **$p < .001$.

Convergent validity

The correlations of the FFNI–SF factors with the SD3 scales appear in Table 4. The results indicated that the SD3 correlated mostly in expected ways with all FFNI–SF factors. However, the strength of the correlations differed. Specifically, the UK sample exhibited significantly larger correlations between Antagonism with Machiavellianism ($z = 8.73$, $p < .001$), narcissism ($z = 9.60$, $p < .001$), and psychopathy ($z = 20.12$, $p < .001$). The UK sample also evidenced significantly greater associations between Extraversion with narcissism ($z = 11.71$, $p < .001$) and psychopathy ($z = 7.0$, $p < .001$), but not Machiavellianism ($z = 1.24$, $p = .21$). Finally, the UK sample exhibited a significantly greater correlation between Neuroticism and narcissism ($z = 2.55$, $p = .01$), yet not psychopathy ($z = .28$, $p = .77$) or Machiavellianism ($z = .56$, $p = .57$).

Discussion

Previous research (e.g., Fossati et al., 2018) highlighted the need to replicate and extend Sherman et al.'s (2015) findings on the FFNI–SF, particularly in cross-cultural contexts. This study responded via investigating whether the FFNI–SF performs well using a non-English (Russian) version of the instrument.

Overall, the findings extend current reliability and construct validity evidence of the FFNI–SF. Indeed, adequate (> .70) Cronbach's α values existed for the factor scales of the Russian translation of the FFNI–SF that were directly comparable with the α values observed in the UK sample and in previous research (e.g., Fossati et al., 2018; Sherman et al., 2015). In addition, facet scales reported satisfactory reliability overall for the Russian (median α = .76) and UK (median α = .83) samples. Specific facets (particularly distrust) revealed weaker reliability, consistent with Fossati et al. (2018).

Furthermore, this study replicated the three-component model (Antagonism, Extraversion, and Neuroticism), with all facets loading reasonably well on their targeted factors in both samples. This level of consistency in the structure of the FFNI–SF in two independent samples, derived from very distinct cultures, indicates that the instrument assesses, with a satisfactory degree of reliability, multiple sources of phenotypic variation in narcissism. This finding constitutes further empirical evidence on the multidimensionality of the trait and the appropriateness of using the FFNI–SF to capture it. The results have important implications for future work, offering researchers the opportunity to derive models assessing the aspects of narcissism that are responsible for important outcomes that span a number of domains, with a higher degree of sensitivity and specificity. Such models will aid the field's current attempts to replicate and validate cross-cultural findings on the relevance of narcissism for various life outcomes and its position within the Dark Triad and the wider spectrum of personality (Papageorgiou, Benini et al., 2019).

Further analyses supported invariance in relation to gender at the factor and intercept level. Existence of scalar invariance makes it possible to compare latent means (Sass, 2011). Inspection of latent means revealed women scored higher on Neuroticism only. This is consistent with previous research demonstrating that women tend to exhibit greater levels of self-consciousness and vulnerability (e.g., Kajonius & Johnson, 2018).

In relation to culture, support for partial metric and scalar invariance occurred. The reasons for cross-cultural noninvariance of some facets are complex to establish, but can be attributed to translation nonequivalence, contextual differences, or both (International Test Commission, 2017). Particularly, some items and their corresponding facets might not have translated effectively. As an example, Item 15 from thrill seeking (a noninvariant intercept), "I will try almost anything to get my 'thrills,'" translates as "I will go to great lengths to get the 'thrill,'" which is slightly different in meaning. In addition, it is possible that idioms like *thrills* do not possess the same meaning in Russian. Instances like this can affect factor loadings and thresholds.

Comparing latent means revealed significantly higher scores on FFNI–SF Antagonism and lower Neuroticism and Extraversion for the Russian sample compared to the UK sample. Differences between the countries are interpretable using Hofstede's (2001) dimension of individualism versus collectivism (a relevant cultural dimension to narcissism; Wetzel et al., 2020). Specifically, the UK sample scored considerably higher than the Russian sample (89 vs. 39), indicating that focusing on oneself as opposed to a group is most important, which could cultivate narcissistic qualities and explain why the UK sample scored higher on the majority of factors. In addition, extraverted characteristics (being outgoing, authoritative) are often considered socially desirable within individualistic cultures (e.g., Western society; Hills & Argyle, 2001). The higher scores of the Russian

sample on Antagonism are consistent with the findings of Jonason et al. (2020), who observed higher scores in comparison with the United Kingdom on the Dirty Dozen (a measure underpinned by antagonism; Lynam and Miller, 2019). This interesting finding requires further investigation to identify the cultural forces that contribute to these differences. Specifically, this further highlights that the FFNI–SF is an appropriate tool to shed light on the degree to which different aspects of narcissism are sensitive to cultural influences and how those influences create different personality profiles.

Tests of convergent validity identified small to moderate positive correlations between the SD3 scales and the FFNI–SF factors for the Russian data, and small to large correlations for the UK data. It is not clear why a significantly weaker pattern of correlations occurred in the Russian sample, but this could be partly due to issues with translation nonequivalence, contextual differences, or both. Specifically, both the FFNI–SF and SD3 were designed and validated using English-speaking participants, and perhaps further work needs to occur in terms of creating equivalent Russian versions of the measures in future (e.g., seeking comparable idioms, testing pilot samples; Wetzel et al., 2020).

As hypothesized, narcissism assessed using the SD3 correlated more strongly with the most prosocial factor of the FFNI–SF (Extraversion). This finding occurred in both samples but was particularly prominent in the UK sample, where the two scales (SD3 Narcissism and FFNI–SF Extraversion) shared more than half of their variance. This result is consistent with previous findings (e.g., Papageorgiou, Donovan, & Dagnall, 2019) providing further cross-cultural evidence that the narcissism scale of the SD3 is biased toward capturing the more prosocial, less maladaptive aspects of narcissism.

Correspondingly, any interpretations of the links between narcissism (assessed via SD3) and related outcomes should involve a discussion on the limited ability of the scale to capture a majority of narcissism's phenotypic variation. Neuroticism exhibited nonsignificant correlations with Machiavellianism and psychopathy, and small (albeit significant) negative associations with narcissism in both samples. This finding requires further investigation relating to the aforementioned bias of the SD3 toward assessing the most prosocial aspects of the Dark Traits. Consistent with the view that the SD3 primarily captures grandiose as opposed to vulnerable narcissism (Maples et al., 2014), stronger correlations existed between SD3 narcissism and FFNI–SF grandiose narcissism in both samples (weaker correlations existed with FFNI–SF vulnerable narcissism).

This study shares well-reported limitations with other research in this domain, namely, the self-report nature of the data that might be influenced by common-method variance (Podsakoff et al., 2003), and social desirability, particularly in the context of the assessment of Dark Traits. Furthermore, the samples included more women than men and the alpha for the Russian SD3 scale of narcissism was lower than previously reported.

Despite these limitations, the study benefited from access to two large samples that were fairly representative of the populations, and provided additional information regarding the reliability and validity of the FFNI–SF. Furthermore, this study tested specific hypotheses on cross-cultural differences in narcissism showing that some of its aspects might be particularly prominent in Russia as opposed to the United Kingdom; and that gender interacts with culture to contribute to differences at least in some aspects of narcissism, which hints toward the idea that Dark Traits may be geared toward maximizing Darwinian fitness in difficult socioecologies. It is anticipated that the availability of a cross-language version of the FFNI–SF will increase research on the cross-cultural validity of the FFNI three-factor model of narcissism and the cultural factors that contribute to both individual and gender differences in narcissism.

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References

American Psychiatric Association. (2013). *Diagnostic and statistical manual of mental disorders* (5th ed.). Washington, DC: Author.

Booth, T., & Hughes, D. J. (2014). Exploratory structural equation modeling of personality data. *Assessment*, *21*, 260–271. https://doi.org/10.1177/1073191114528029

Brown, T. A. (2006). *Confirmatory Factor Analysis for Applied Research*. Guilford Press.

Browne, M. W., & Cudeck, R. (1993). Alternative ways of assessing model fit. In K. A. Bollen & J. S. Long (Eds.), *Testing structural equation models* (pp. 136–162). Sage.

Chen, F. F. (2007). Sensitivity of goodness of fit indexes to lack of measurement invariance. *Structural Equation Modeling: A Multidisciplinary Journal*, *14*, 464–504. https://doi.org/10.1080/10705510701301834

Cohen, J. (1992). A power primer. *Psychological Bulletin*, *112*(1), 155–159. https://doi.org/10.1037/0033-2909.112.1.155

Crowe, M. L., Lynam, D. R., Campbell, W. K., & Miller, J. D. (2019). Exploring the structure of narcissism: Toward an integrated solution. *Journal of Personality*, *87*(6), 1151–1169. https://doi.org/10.1111/jopy.12464

Denovan, A., Dagnall, N., Dhingra, K., & Grogan, S. (2019). Evaluating the perceived stress scale among UK university students: Implications for stress measurement and management. *Studies in Higher Education*, *44*(1), 120–133. https://doi.org/10.1080/03075079.2017.1340445

Dept, S., Ferrari, A., & Halleux, B. (2017). Translation and cultural appropriateness of survey material in large-scale assessments. In P. Lietz, J.C. Cresswell, K.F. Rust, & R.J. Adams (Ed.), *Implementation of Large-Scale Education Assessments* (pp. 168–192). John Wiley & Sons.

Diguer, L., Turmel, V., Luis, R. D. S., Mathieu, V., Marcoux, L. A., & Lapointe, T. (2014). EPA-0614–Development and initial structure analysis of a french version of the pathological narcissism inventory. *European Psychiatry*, *29*, 1. https://doi.org/10.1016/S0924-9338(14)77997-0

Egorova, M. S., Sitnikova, M. A., & Parshikova, O. V. (2015). Adaptation of the short triad questionnaire. *Psychological Research: Electronic Scientific Journal*, *8*, 1–1.

Eksi, F. (2016). The short form of the Five-Factor Narcissism Inventory: Psychometric equivalence of the Turkish version. *Educational Sciences: Theory & Practice*, *16*(4), 1081–1096. https://doi.org/10.12738/estp.2016.4.0001

Field, A., & Miles, J. (2010). *Discovering statistics using SAS*. Sage.
Fossati, A., Somma, A., Borroni, S., & Miller, J. D. (2018). Assessing dimensions of pathological narcissism: Psychometric properties of the Short Form of the Five-Factor Narcissism Inventory in a sample of Italian university students. *Journal of Personality Assessment*, *100*(3), 250–258. https://doi.org/10.1080/00223891.2017.1324457
Gliner, J. A., Morgan, G. A., & Leech, N. L. (2011). *Research methods in applied settings: An integrated approach to design and analysis*. Routledge.
Glover, N., Miller, J. D., Lynam, D. R., Crego, C., & Widiger, T. A. (2012). The five-factor narcissism inventory: A five-factor measure of narcissistic personality traits. *Journal of Personality Assessment*, *94*(5), 500–512. https://doi.org/10.1080/00223891.2012.670680
Hendin, H. M., & Cheek, J. M. (1997). Assessing hypersensitive narcissism: A reexamination of Murray's Narcism Scale. *Journal of Research in Personality*, *31*(4), 588–599. https://doi.org/10.1006/jrpe.1997.2204
Hills, P., & Argyle, M. (2001). Emotional stability as a major dimension of happiness. *Personality and Individual Differences*, *31*, 1357-1364. https://doi.org/10.1016/S0191-8869(00)00229-4
Hong, S., Malik, M. L., & Lee, M. K. (2003). Testing configural, metric, scalar, and latent mean invariance across genders in sociotropy and autonomy using a non-Western sample. *Educational and Psychological Measurement*, *63*, 636–654. https://doi.org/10.1177/0013164403251332
International Test Commission. (2017). *The ITC guidelines for translating and adapting tests*. http://www.intestcom.org/
Jakšić, N., Milas, G., Ivezić, E., Wertag, A., Jokić-Begić, N., & Pincus, A. L. (2014). The Pathological Narcissism Inventory (PNI) in transitional post-war Croatia: Psychometric and cultural considerations. *Journal of Psychopathology and Behavioral Assessment*, *36*(4), 640–652. https://doi.org/10.1007/s10862-014-9425-2
Jonason, P. K., Okan, C., & Özsoy, E. (2019). The dark triad traits in Australia and Turkey. *Personality and Individual Differences*, *149*, 123–127. https://doi.org/10.1016/j.paid.2019.05.058
Jonason, P. K., Żemojtel-Piotrowska, M., Piotrowski, J., Sedikides, C., Campbell, W. K., Gebauer, J. E., … Yahiiaev, I. (2020). Country-level correlates of the Dark Triad traits in 49 countries. *Journal of Personality*, *88*, 1252–1267. https://doi.org/10.1111/jopy.12569
Kajonius, P. J., & Johnson, J. (2018). Sex differences in 30 facets of the five factor model of personality in the large public (N = 320,128). *Personality and Individual Differences*, *129*, 126–130. https://doi.org/10.1016/j.paid.2018.03.026
Likhanov, M. V., Tsigeman, E. S., Papageorgiou, K. A., Akmalov, A. F., Sabitov, I. A., & Kovas, Y. V. (2021). Ordinary extraordinary: Elusive group differences in personality and psychological difficulties between STEM-gifted adolescents and their peers. *British Journal of Educational Psychology*, *91*(1), 78–100. 10.1111/bjep.12349
Maples, J. L., Lamkin, J., & Miller, J. D. (2014). A test of two brief measures of the dark triad: The dirty dozen and short dark triad. *Psychological Assessment*, *26*, 326–331. https://doi.org/10.1037/a0035084
Marsh, H. W., Lüdtke, O., Muthén, B., Asparouhov, T., Morin, A. J., Trautwein, U., & Nagengast, B. (2010). A new look at the big five factor structure through exploratory structural equation modeling. *Psychological Assessment*, *22*, 471–491. https://doi.org/10.1037/a0019227
Marsh, H. W., Morin, A. J., Parker, P. D., & Kaur, G. (2014). Exploratory structural equation modeling: An integration of the best features of exploratory and confirmatory factor analysis. *Annual Review of Clinical Psychology*, *10*, 85–110. https://doi.org/10.1146/annurev-clinpsy-032813-153700
Marsh, H. W., Vallerand, R. J., Lafrenière, M. A. K., Parker, P., Morin, A. J., Carbonneau, N., … Paquet, Y. (2013). Passion: does one scale fit all? Construct validity of two-factor passion scale and psychometric invariance over different activities and languages. *Psychological Assessment*, *25*, 796–809. https://doi.org/10.1037/a0032573
McCrae, R. R., & Costa, P. T. Jr. (2008). Empirical and theoretical status of the five-factor model of personality traits. In G. J. Boyle, G. Matthews, & D. H. Saklofske (Eds.), *The SAGE handbook of personality theory and assessment, Vol. 1. Personality theories and models* (pp. 273–294). Sage.
Miller, J. D., Campbell, W. K., & Pilkonis, P. A. (2007). Narcissistic personality disorder: Relations with distress and functional impairment. *Comprehensive Psychiatry*, *48*(2), 170–177. https://doi.org/10.1016/j.comppsych.2006.10.003
Miller, J. D., Hoffman, B. J., Gaughan, E. T., Gentile, B., Maples, J., & Keith Campbell, W. (2011). Grandiose and vulnerable narcissism: A nomological network analysis. *Journal of Personality*, *79*(5), 1013–1042. https://doi.org/10.1111/j.1467-6494.2010.00711.x
Miller, J. D., Lynam, D. R., McCain, J. L., Few, L. R., Crego, C., Widiger, T. A., & Campbell, W. K. (2016). Thinking structurally about narcissism: An examination of the Five-Factor Narcissism Inventory and its components. *Journal of Personality Disorders*, *30*(1), 1–18. https://doi.org/10.1521/pedi_2015_29_177
Miller, J. D., Vize, C., Crowe, M. L., & Lynam, D. R. (2019). A critical appraisal of the dark-triad literature and suggestions for moving forward. *Current Directions in Psychological Science*, *28*(4), 353–360. https://doi.org/10.1177/0963721419838233
Morton, N., Hill, C., Meiring, D., & De Beer, L. T. (2019). Investigating the factor structure of the South African Personality Inventory-English version. *SA Journal of Industrial Psychology*, *45*, 1–13. https://doi.org/10.1177/0081246319877537
Muris, P., Merckelbach, H., Otgaar, H., & Meijer, E. (2017). The malevolent side of human nature: A meta-analysis and critical review of the literature on the dark triad (narcissism, Machiavellianism, and psychopathy). *Perspectives on Psychological Science: A Journal of the Association for Psychological Science*, *12*(2), 183–204. https://doi.org/10.1177/1745691616666070
Muthén, B., & Muthén, L. (2017). *Mplus user's guide* (8th ed.). Muthén & Muthén.
Papageorgiou, K. A., Benini, E., Bilello, D., Gianniou, F. M., Clough, P. J., & Costantini, G. (2019). Bridging the gap: A network approach to dark triad, mental toughness, the Big Five, and perceived stress. *Journal of Personality*, *87*(6), 1250–1263. https://doi.org/10.1111/jopy.12472
Papageorgiou, K. A., Denovan, A., & Dagnall, N. (2019). The positive effect of narcissism on depressive symptoms through mental toughness: Narcissism may be a dark trait but it does help with seeing the world less grey. *European Psychiatry: The Journal of the Association of European Psychiatrists*, *55*, 74–79. https://doi.org/10.1016/j.eurpsy.2018.10.002
Papageorgiou, K. A., Gianniou, F. M., Wilson, P., Moneta, G. B., Bilello, D., & Clough, P. J. (2019). The bright side of dark: Exploring the positive effect of narcissism on perceived stress through mental toughness. *Personality and Individual Differences*, *139*, 116–124. https://doi.org/10.1016/j.paid.2018.11.004
Papageorgiou, K. A., Likhanov, M., Costantini, G., Tsigeman, E., Zaleshin, M., Budakova, A., & Kovas, Y. (2020). Personality, Behavioral strengths and difficulties and performance of adolescents with high achievements in science, literature, art and sports. *Personality and Individual Differences*, *160*, 109917. https://doi.org/10.1016/j.paid.2020.109917
Papageorgiou, K. A., Malanchini, M., Denovan, A., Clough, P. J., Shakeshaft, N., Schofield, K., & Kovas, Y. (2018). Longitudinal associations between narcissism, mental toughness and school achievement. *Personality and Individual Differences*, *131*, 105–110. https://doi.org/10.1016/j.paid.2018.04.024
Papageorgiou, K. A., Wong, B., & Clough, P. J. (2017). Beyond good and evil: Exploring the mediating role of mental toughness on the dark triad of personality traits. *Personality and Individual Differences*, *119*, 19–23. https://doi.org/10.1016/j.paid.2017.06.031
Paulhus, D., & Jones, D. (2014). Introducing the Short Dark Triad (SD3): A brief measure of dark personality traits. *Assessment*, *21*(1), 28–41. https://doi.org/10.1177/1073191113514105
Pincus, A. L., Ansell, E. B., Pimentel, C. A., Cain, N. M., Wright, A. G. C., & Levy, K. N. (2009). Initial construction and validation of the Pathological Narcissism Inventory. *Psychological Assessment*, *21*(3), 365–379. https://doi.org/10.1037/a0016530

Podsakoff, P. M., MacKenzie, S. B., Lee, J. Y., & Podsakoff, N. P. (2003). Common method biases in behavioral research: A critical review of the literature and recommended remedies. *The Journal of Applied Psychology*, *88*(5), 879–903. https://doi.org/10.1037/0021-9010.88.5.879

Raskin, R., & Terry, H. (1988). A principal-components analysis of the Narcissistic Personality Inventory and further evidence of its construct validity. *Journal of Personality and Social Psychology*, *54*(5), 890–902. https://doi.org/10.1037//0022-3514.54.5.890

Sass, D. A. (2011). Testing measurement invariance and comparing latent factor means within a confirmatory factor analysis framework. *Journal of Psychoeducational Assessment*, *29*(4), 347–363. https://doi.org/10.1177/0734282911406661

Sherman, E. D., Miller, J. D., Few, L. R., Campbell, W. K., Widiger, T. A., Crego, C., & Lynam, D. R. (2015). Development of a short form of the Five-Factor Narcissism Inventory: The FFNI-SF. *Psychological Assessment*, *27*(3), 1110–1116. https://doi.org/10.1037/pas0000100

Son, J. (2018). Back translation as a documentation tool. *The International Journal of Translation and Interpreting Research*, *10*(2), 89–100. https://doi.org/10.12807/ti.110202.2018.a07

Weiss, B., Campbell, W. K., Lynam, D. R., & Miller, J. D. (2019). A trifurcated model of narcissism: On the pivotal role of trait Antagonism. In J. D. Miller & D. R. Lynam (Eds.), *The handbook of antagonism* (pp. 221–235). Academic Press.

Wetzel, E., Lang, F. J., Back, M. D., Vecchione, M., Rogoza, R., & Roberts, B. W. (2020). Measurement invariance of three Narcissism Questionnaires across the United States, the United Kingdom, and Germany. *Assessment*, *28*(1), 29–43.

Wink, P. (1991). Two faces of narcissism. *Journal of Personality and Social Psychology*, *61*(4), 590–597. https://doi.org/10.1037/0022-3514.61.4.590