Personality Traits of Russians from the Observer's Perspective

JÜRI ALLIK[1]*, ANU REALO[1], RENÉ MÕTTUS[1], HELLE PULLMANN[1],
ANASTASIA TRIFONOVA[1], ROBERT R. McCRAE[2] and
56 MEMBERS OF THE RUSSIAN CHARACTER AND PERSONALITY SURVEY[†]

[1]*Department of Psychology, University of Tartu and The Estonian Centre of Behavioural and Health Sciences, Estonia*
[2]*Gerontology Research Center, National Institute on Aging, National Institutes of Health, USA*

Abstract

Data were collected by the members of the Russian character and personality survey from 39 samples in 33 administrative areas of the Russian Federation. Respondents (N = 7065) identified an ethnically Russian adult or college-aged man or woman whom they knew well and rated the target using the Russian observer rating version of the Revised NEO Personality Inventory, which measures neuroticism, extraversion, openness to experience, agreeableness and conscientiousness. Factor analyses within samples showed that the factor structure of an international sample combining data from 50 different cultures was

*Correspondence to: Jüri Allik, Department of Psychology, University of Tartu, Tartu 50410, Estonia.
E-mail: juri.allik@ut.ee

well replicated in all 39 Russian samples. Sex differences replicated the known pattern in all samples, demonstrating that women scored higher than men on most of the neuroticism, openness, agreeableness and conscientiousness facet scales. Cross-sectional analyses demonstrated consistent age differences for four factors: Older individuals compared to younger ones were less extraverted and open but more agreeable and conscientious. The mean levels of traits were similar in all 39 samples. Although in general personality traits in Russians closely followed the universal pattern, some reliable culture-specific effects were also found that future studies can help interpret. Copyright © 2009 John Wiley & Sons, Ltd.

PERSONALITY TRAITS OF RUSSIANS FROM THE OBSERVER'S PERSPECTIVE

About 10 years ago, a strong claim was made concerning the universality of the pattern of covariation among basic personality traits. McCrae and Costa (1997) argued that the structure of five-factor model personality traits can be found in all languages and cultures, suggesting that this is a universal feature of the human species (Allik & McCrae, 2002; McCrae & Costa, 1999). The hypotheses of universality of personality trait structure found powerful support in a recent Personality Profiles of Cultures Project (PPOC) involving college students in 50 different cultures who identified an adult or college-age man or woman they knew well and then rated the 11 985 targets using the observer rating version of the Revised NEO Personality Inventory (NEO-PI-R; McCrae, Terracciano, & 78 Members of the Personality Profiles of Cultures Project, 2005a). However, it became also clear that the five-factor model is not necessarily the universal structure since Eysenck's three-factor (van Hemert, van de Vijver, Poortinga & Georgas, 2002) and psycholexical six-factor (Lee & Ashton, 2008) structures were clearly replicated in most cultures. Several other universal features of the personality traits—gender differences (Costa, Terracciano, & McCrae, 2001; Schmitt, Realo, Voracek, & Allik, 2008), cross-sectional age differences (McCrae, Costa, Lima, Simões, Ostendorf, Angleitner et al., 1999) and a regular pattern of the geographical distribution of personality traits (Allik & McCrae, 2004)—were also replicated in observer ratings (McCrae et al., 2005a; McCrae, Terracciano, & 79 Members of the Personality Profiles of Cultures Project, 2005b). The present research re-examines these claims of universality in a large sample from a relatively understudied group: ethnic Russians. It also seeks ways in which Russians may prove to be distinctive.

Sampling and sample size in cross-cultural comparisons

How large a sample is needed to allow reliable statistical judgments? Mean differences in personality traits across cultures seem to be rather small in magnitude. For example, NEO-PI-R factor means of 36 cultures had standard deviations equal to about one-third of the magnitude of individual differences within culture (McCrae, 2002). Approximately the same ratio of between- to within-culture variation was observed in two cross-cultural studies involving more than 50 cultures (McCrae et al., 2005a; Schmitt, Allik, McCrae, & Benet-Martínez, 2007). Thus, it may be a general rule that the typical variance between cultures is approximately one ninth of the interindividual variance within cultures (Allik,

2005). This means that considerable power is needed to detect cross-cultural differences in mean trait scores. Many other personality effects are also relatively small. For example, personality scores rarely differ more than one tenth of one standard deviation per decade after age 40 (McCrae et al., 2005a).

To date, large-scale cross-cultural studies have dealt with the problem of power by combining relatively modest samples from a large number of cultures. This is a useful strategy for detecting small but universal effects, but it is not optimal for identifying cultural differences. For example, in PPOC, adults scored higher than college-age targets on agreeableness ($d = 0.11$, $N = 11\,223$, $p < .001$), replicating the effect normally seen in self-report studies. In two cultures, however—Japan and Portugal—adults scored lower on agreeableness (ds $= -0.29$, Ns $= 191$, 198, ps $< .05$). Do these findings point to real cultural differences in personality development, or are they statistical flukes, expectable when a small effect is examined in 50 samples? One would need substantially larger samples to have confidence that Japan and Portugal really differ from the universal pattern.

Typically, cross-cultural studies are designed using the principle of convenience, driven by considerations of cost and availability of collaborators rather than by a deliberate choice of participating cultures. As a result, more developed countries (e.g. the United States, Canada, Japan) are severely overrepresented compared to countries in which psychologists rarely publish articles in journals and books indexed by the *PsycINFO* database.

One of these is Russia. Only a relative handful of studies of personality traits have been reported, although these clearly show the feasibility of researching the five-factor model (FFM) in Russian samples (Digman & Shmelyov, 1996; Slobodskaya, 2007). But Russia is a country of enormous size and cultural diversity, with more than 160 different ethnic groups, speaking more than 100 different languages. According to the 2002 Russian Census, 79.8% of the total 145 166 731 inhabitants identified themselves as ethnically Russians, followed by Tatars (3.8%), Ukrainians (2.0%), Bashkirs (1.1%), Chuvashs (1.1%) and Chechens (0.9%). A serious attempt to characterize personality in the Russian Federation would need to deal with these ethnic minorities; a more modest goal would be to characterize the personality of ethnic Russians. Even that, however, would need to take into account the possibility of regional variation. A sample of convenience from Moscow or St. Petersburg would not necessarily represent Russians as a whole.

Although good cross-language generalizability has been demonstrated for several personality instruments (McCrae et al., 2005a; Schmitt et al., 2007), it is still possible that the observed differences in the mean-level of personality traits across cultures are attributable not to true differences in trait levels but to small semantic shifts produced by translation. One obvious solution is to study different cultural groups speaking the same language. From this perspective Russia provides a good opportunity because most of its inhabitants are fluent in Russian even if it is not their mother tongue.

The first aim of this study was to collect personality data from as many geographical locations in Russia as possible to document replicability and variation in personality traits. In all locations college students were asked to identify an ethnic Russian they knew well from one of four target groups—college-aged men, college-aged women, adult men and adult women—and provide ratings of that target on the Russian version of the NEO-PI-R. This study format replicates the design that was previously used to collect observer rating personality data from 50 cultures (McCrae et al., 2005a).

These data will allow us to examine the replicability of the FFM structure in Russia as a whole and in specific areas. They can also be used to estimate the effects of age, sex, education and place of residence on traits and trait ratings—effects that can be compared to those found

in international samples. Trait levels can also be related to characteristics that distinguish the samples within Russia such as economic development and geographical location.

Mean-level change in personality across the lifespan

A second, more specialized aim of this study is to reopen the issue of personality change in adulthood by examining cross-sectional age differences in this large, cross-cultural sample. In the *Principles of Psychology*, James (1890/1981) made the bold observation that for most people by the age of thirty 'the character has set like plaster, and will never soften again' (p. 121). However, it took almost a century to obtain solid empirical evidence demonstrating that mean levels of personality traits change with moderate rates during college age and slower rates after age 30 (Costa & McCrae, 2002; Roberts, Walton, & Viechtbauer, 2006; Terracciano, Costa, & McCrae, 2006). The fact that these mean-level trends are surprisingly similar for men and women (McCrae & Costa, 2003), and that they follow analogous trajectories in countries with completely different levels of development and political or economic histories (Martin, Costa, Oryol, Rukavishnikov, & Senin, 2002), led to a suggestion that these developments across the lifespan reflect intrinsic processes of maturation that are insulated from the direct effects of the social environment (McCrae & Costa, 1999).

This unorthodox view has been challenged by researchers who believe that personality traits continue to change in adulthood and even in old age, and that these changes are caused by culture, social environment or life experience (Helson, Kwan, John, & Jones, 2002; Roberts & Mroczek, 2008). First, a series of meta-analyses of previously published data suggested that both extraversion and neuroticism have increased during recent decades (Twenge, 2000, 2001). Because each new generation enters into a slightly different socio-economical environment, birth cohort differences may reflect these broad social trends in the society. However, no such trends were observed in many cross-sectional (McCrae & Costa, 2003) and longitudinal (Terracciano, McCrae, Brant, & Costa, 2005) studies, suggesting that the birth cohort effects may reflect a response bias rather than a substantive change in personality traits themselves. Another challenge came from an impressively large sample (more than 100 000 individuals) who completed a personality measure on the Internet (Srivastava, John, Gosling, & Potter, 2003). The results showed a variety of changes in the mean levels of personality traits far beyond age 30. The main problem of self-recruited Internet samples comes from a potential sampling bias. Those who use the Internet usually have better education, and those who decide to answer personality questionnaires may not be representative of the whole birth cohort. Many of these age effects seem to disappear when educational differences from the whole sample are taken into account (Pullmann, Allik, & Realo, 2009) or when more representative sampling procedures are used (Trzesniewski, Donnellan, & Robins, 2008).

METHOD

Samples

The study was initiated by the first five authors from the University of Tartu, Estonia. Data were collected by members of the Russian Character and Personality Survey (RCPS), which involved 40 universities or colleges all over the Russian Federation. Collaborators were recruited from psychology departments of Russian universities through both

electronic and conventional letters of invitation and publicity in one of the leading Russian psychological journals. Due to the small number of participants, data from one sample were merged with another sample from the same region. The remaining 39 samples were collected in 33 federal subjects (administrative areas: oblast, krai, okrug or republic) of which 6 (Novosibirsk, Primorsk, Sverdlovsk, Tatarstan, Udmurtia and Volgograd) were represented by two independent samples. The list of samples and their corresponding federal subjects are given in Table 1 and in Figure 1, where their geographic locations with their administrative names are shown.

The human development index (HDI), characterizing each federal region, was obtained from the Independent Institute for Social Policy (IISP) homepage (http://atlas.socpol.ru/indexes/index.shtml). The HDI (Table 1, column 4) is a combined measure of life quality which is computed on the basis of three indicators with equal weight: life expectancy at birth; overall literacy combined with secondary and tertiary education enrolment ratio; and gross domestic product *per capita* (GDP) at purchasing power parity in US dollars. In Table 1 the given values are rank orders among 79 federal subjects. No HDI was provided for Khanty-Mansi okrug due to its disproportionally high income from oil and gas production.

Beside HDI and its three components—life expectancy, GDP and level of education— we also recorded several other characteristics that might be associated with aggregate personality trait levels, including longitude, latitude, distance from the capital (Moscow), average temperature and precipitation, population density, number of students and indices of life-quality, innovation and democratization provided by IISP for each region.

Measure

The NEO-PI-R (Costa & McCrae, 1992) is an operationalization of the FFM. Each factor is represented by six facet scales that assess related traits. The 240 items are answered on a 5-point Likert scale, from *strongly disagree* to *strongly agree*. Form R, the observer rating version of the NEO-PI-R, uses items phrased in the third person. Data on the reliability and validity of the instrument are given in the manual (Costa & McCrae, 1992). The development and validation of the Russian version is reported in Martin, Costa, Oryol, Rukavishnikov, and Senin (2002). Scores were converted to *T*-scores using the mean and standard deviation of the full sample.

Participants and procedure

As in PPOC (McCrae et al., 2005a), raters were randomly assigned to one of four target conditions and were asked for ratings of college-aged women, college-aged men, adult (over 50) men or adult women. For the college-aged targets, for example, raters were instructed as follows:

> Please think of a young man [woman] aged 17–23 whom you know well. She [he] should be someone who is a native RUSSIAN and who has lived most of her [his] life in the region which is your permanent place of residence. She [he] can be a relative or a friend or neighbor—someone you like, or someone you do not like.

The age categories were slightly different from PPOC (18–21 and 40+). In particular, we chose to focus on adults over age 50 who had lived most of their lives under the Communist regime of the Soviet Union. There were 150 raters (2.1%) who did not follow instructions and rated someone outside the requested age range. Age as indicated by raters

Table 1.   Characteristics of the samples

Sample name	University or college	Region	HDI (rank)	N	Target mean age (years)	Mean age (years)	Raters % Males	Raters % Russians
Abakan	Katanov State University of Khakassia	Khakassia	56	176	37.6	20.7	29.0	92.6
Adyghe	Adyghe State University	Adyghe	71	192	39.3	20.6	8.9	68.8
Arkhangelsk	Pomor State University	Arkhangelsk	20	196	39.9	20.5	26.5	95.9
Arzamas	Arzamas State Pedagogical University	Nizhny Novgorod	34	195	41.3	20.3	26.7	99.5
Astrakhan	Astrakhan State University	Astrakhan	32	161	40.3	20.6	39.8	71.4
Chelyabinsk	Chelyabinsk State University	Chelyabinsk	17	163	38.0	21.5	50.0	90.2
Dubna	International University of Nature, Society and Man 'Dubna'	Moscow	39	187	39.5	20.8	11.0	94.1
Elabuga	Elabuga State Pedagogical University	Tatarstan	4	200	40.5	19.6	25.5	57.5
Izhevsk1	Udmurt State University	Udmurtia	24	190	38.4	20.4	9.1	39.2
Izhevsk2	Izhevsk State Technical University	Udmurtia	24	366	41.5	20.1	35.0	79.0
Kazan	Tatar State Humanitarian-Pedagogical University	Tatarstan	4	199	39.9	20.8	40.2	44.7
Krasnodar	Kuban State University of Physical Education	Krasnodar	27	169	39.9	23.3	12.3	43.8
Kurgan	Kurgan State University	Kurgan	68	195	39.2	22.3	41.8	90.8
Magadan	Northern International University	Magadan	26	188	39.2	21.4	20.2	83.5
Nizhnevartovsk	Nizhnevartovsk State Humanitarian University	Khanty-Mansi	—	199	39.1	24.0	22.6	77.9
Novosibirsk1	Novosibirsk Russian Academy of Medical Sciences	Novosibirsk	16	96	38.4	24.1	29.2	94.8
Novosibirsk2	Novosibirsk State Pedagogical University	Novosibirsk	16	188	37.9	19.8	21.3	94.7
Omsk	Omsk State Pedagogical University	Omsk	7	177	38.5	22.2	13.1	84.7
Orel	Orel State University	Orel	21	103	37.5	18.1	16.7	87.4
Perm	Perm State University	Perm	30	200	39.9	20.0	23.2	94.0
Petrozavodsk	Karelian State Pedagogical University	Karelia	54	202	39.9	20.8	21.4	87.1
Ryazan	Ryazan State University named after S. A. Esenin	Ryazan	33	156	40.6	19.9	7.1	94.9
Sakhalinsk	Sakhalin State University	Sakhalin	36	185	37.1	24.8	7.8	86.5
Samara	Samara State Pedagogical University	Samara	10	194	39.9	20.7	10.9	91.2
Taganrog	Taganrog Institute of Management and Economy	Rostov	38	117	41.5	21.4	34.2	92.3
Tambov	Tambov State University named after G. R. Derzhavin	Tambov	40	197	39.3	21.0	6.1	98.0
Ufa	Bashkir State Pedagogical University	Bashkortostan	11	181	38.1	21.5	8.9	39.2
Ulan-Ude	Buryat State University	Buryatia	69	193	38.8	24.0	19.9	57.5

Ussuriysk	Ussuriysk Sate Pedagogical University	61	89	39.0	19.9	19.1	80.9
Vladimir	Vladimir State University	65	181	39.9	19.5	40.8	91.7
Vladivostok	Far Eastern National University	61	197	39.1	22.2	18.3	94.9
Volgograd1	Volgograd State Technical University	25	226	39.4	19.9	26.1	88.5
Volgograd2	Volgograd Academy of Public Sciences	25	160	39.5	20.2	16.9	95.6
Vologda	Vologda State Pedagogical University	12	199	40.7	20.8	25.1	98.5
Voronezh	Voronezh State University	37	195	40.6	20.0	19.5	99.0
Yaroslavl	Yaroslavl Demidov State University	18	124	42.2	19.5	8.9	98.4
Yekaterinburg1	Russia State Professional-Pedagogical University	22	187	39.9	20.7	8.6	93.6
Yekaterinburg2	Ural State Pedagogical University	22	175	40.6	19.5	8.0	91.4
Yoshkar-Ola	Mari State University	66	167	39.9	19.6	12.0	64.7

Note: Region = administrative region of the Russian federation shown in Figure 1; HDI = human development index 2004 (rank order among 79 federal subjects; http://atlas.socpol.ru/indexes/index.shtml).
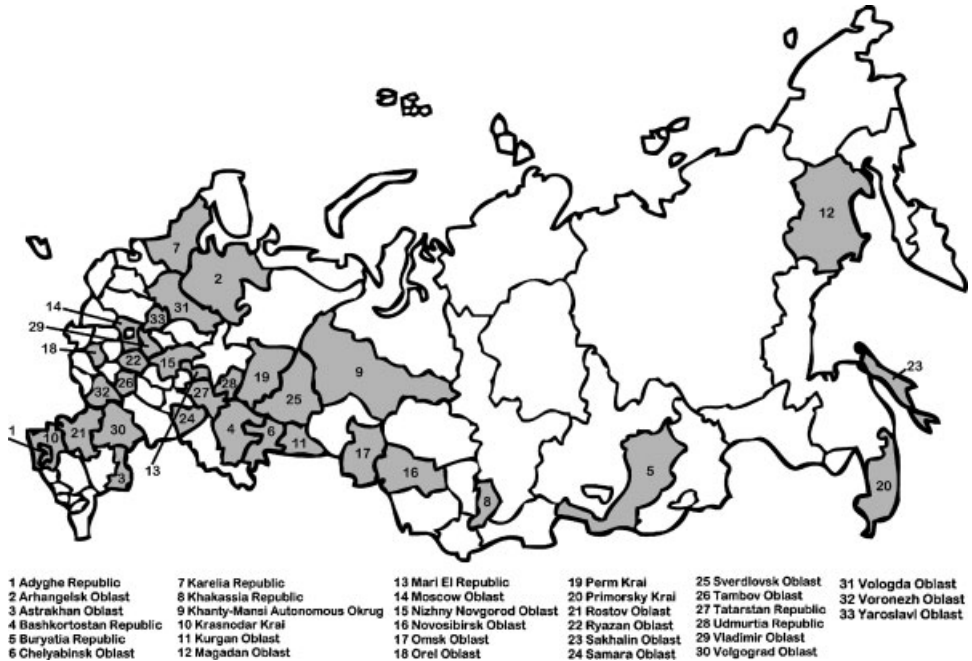
Figure 1. Geographical distribution of the subjects of the Russian federation from which 39 samples were collected.

was therefore used in all further analyses. Raters were also asked to estimate education and place of residence—rural village, small town or city—of the targets. Raters also provided demographic information about themselves after completing the NEO-PI-R.

Data were obtained from 7157 respondents. Ninety-two respondents who had more than 30 missing items where eliminated from further analysis. For the remaining 7065 respondents, missing data were treated by substituting the most frequent response category in the respective sample. In total, 4191 missing items were replaced, which was 0.3% of about 1.7 million single answers made by the participants.

The mean age of respondents was 20.9 years ($SD = 3.6$), of whom 1494 were males and 5441 females (130 respondents did not report their sex). Of the 7065 raters, 82.2% identified themselves as ethnic Russians, followed by Tatars (5.4%), Udmurts (1.8%), Maris (1.0%) and Buryats (0.9%). Overall, more than 60 different nationalities were mentioned, including some from very small ethnic groups such as Udis ($N = 2$) and Tofalars ($N = 1$). The percentage of respondents who identified themselves as Russians is shown in the last column in Table 1.

RESULTS

Reliability and factor structure

We start with an imperative question: How replicable is the FFM in Russian observer ratings? The 30 NEO-PI-R facet scales were factored in the total sample ($N = 7065$) using principal component analysis. The first 10 eigenvalues were 7.10, 5.45, 3.21, 2.21, 1.38,

0.86, 0.85, 0.69, 0.64 and 0.57 suggesting that five factors are the optimal choice. These five factors explained about 64.4% of the common variance, which is slightly more than the explained variance (61.6%) in the PPOC sample (McCrae et al., 2005a). Like the American self-report normative data (Costa & McCrae, 1992, Appendix F), Neuroticism summary score had a strong negative correlation with Conscientiousness (−.47 vs. American −.53) and Extraversion was positively related with Openness (.57 vs. American .40). The extracted orthogonal varimax structure was then rotated towards the factor structure of the international sample of 50 cultures to find the maximal alignments (McCrae, Zonderman, Costa, Bond, & Paunonen, 1996). Table 2 reports factor loadings and congruence coefficients and demonstrates a clear replication of the international pattern of loadings. (Virtually identical results were obtained when the American self-report normative factor structure was used as the target.) All factor congruence coefficients after Procrustes rotation were .95 or .96. Only one loading, O3: Feelings, had a clearly stronger loading on E than on the expected O factor. It seems that from the observer's perspective, experiencing

Table 2. Factor loadings for observer-rated NEO-PI-R facet scales Procrustes rotated towards the combined 50 cultures factor structure (McCrae et al., 2005a, Table 3)

NEO-PI-R facet	*N*	*E*	*O*	*A*	*C*	*VCC*
N1: Anxiety	**0.80**	−0.07	−0.08	0.15	0.05	0.95
N2: Angry hostility	**0.62**	−0.09	−0.15	−0.54	−0.11	0.98
N3: Depression	**0.68**	−0.32	0.03	0.12	−0.14	0.93
N4: Self-consciousness	**0.62**	−0.24	0.02	0.31	0.01	0.89
N5: Impulsiveness	**0.39**	0.36	0.12	−0.39	−0.39	0.95
N6: Vulnerability	**0.68**	−0.05	−0.11	−0.05	−0.42	0.98
E1: Warmth	−0.18	**0.70**	0.17	0.41	0.23	0.99
E2: Gregariousness	−0.20	**0.75**	0.16	−0.07	−0.14	0.96
E3: Assertiveness	−0.28	**0.48**	0.16	−0.41	0.40	0.99
E4: Activity	−0.12	**0.65**	0.17	−0.23	0.22	0.93
E5: Excitement seeking	−0.08	**0.52**	0.45	−0.33	−0.22	0.87
E6: Positive emotions	−0.11	**0.71**	0.33	0.10	0.10	0.98
O1: Fantasy	0.17	0.28	**0.59**	−0.04	−0.28	0.98
O2: Aesthetics	0.12	0.11	**0.78**	0.13	0.20	0.99
O3: Feelings	0.28	**0.61**	0.43	−0.04	0.13	0.96
O4: Actions	−0.14	0.35	**0.56**	−0.09	−0.21	0.93
O5: Ideas	−0.10	−0.09	**0.75**	0.01	0.37	0.95
O6: Values	−0.29	0.22	**0.39**	0.05	−0.13	0.88
A1: Trust	−0.14	0.34	0.04	**0.69**	0.03	0.93
A2: Straightforwardness	−0.04	−0.07	−0.17	**0.76**	0.11	0.97
A3: Altruism	−0.08	0.34	0.06	**0.74**	0.32	0.95
A4: Compliance	−0.17	−0.18	0.06	**0.79**	−0.03	0.99
A5: Modesty	−0.04	−0.12	−0.11	**0.76**	0.12	0.89
A6: Tender-mindedness	0.16	0.21	0.08	**0.61**	0.25	0.92
C1: Competence	−0.26	0.07	0.10	0.10	**0.81**	0.96
C2: Order	−0.13	−0.05	−0.05	0.08	**0.77**	0.96
C3: Dutifulness	−0.09	0.02	−0.01	0.39	**0.77**	0.98
C4: Achievement striving	−0.21	0.25	0.20	−0.09	**0.76**	0.99
C5: Self-discipline	−0.23	0.00	−0.04	0.23	**0.83**	0.95
C6: Deliberation	−0.24	−0.27	0.02	0.29	**0.71**	0.99
Congruence	*0.96*	*0.96*	*0.95*	*0.96*	*0.96*	0.95

Note: $N = 7065$. Factor loadings of the principal component solution rotated to the international normative data (McCrae et al., 2005a). Maximal loadings for each NEO-PI-R subscale are given in boldface. VCC = variable congruence coefficient.

deeper and more differentiated emotional states and feeling both happiness and unhappiness more intensely than others were treated as signs of energy and optimism, which are typical indicators of extraversion. The fact that N5: Impulsiveness has almost equally strong loadings on other factors had already been noted in Russian self-reported data (Martin et al., 2002).

Are there regional differences in the structure of the Russian NEO-PI-R? To assess that we examined the internal consistency and factor structure of the instrument within each sample. The first six columns of Table 3 report Cronbach α for the 48-item domain scales and their average. In general, these were rather high, with median values .84, .91, .85, .91

Table 3.   Reliability and factor replicability of the samples

Sample	Cronbach α						Factor congruence						% Explained Variance
	N	E	O	A	C	Average	N	E	O	A	C	Average	
Abakan	.86	.89	.81	.91	.94	.88	.98	.96	.91	.99	.96	.96	64.1
Adyghe	.80	.90	.79	.90	.92	.86	.95	.95	.83	.97	.98	.94	61.7
Arkhangelsk	.86	.92	.85	.93	.95	.90	.98	.97	.98	.97	.97	.97	67.1
Arzamas	.84	.90	.85	.92	.92	.89	.97	.97	.96	.98	.97	.97	63.9
Astrakhan	.85	.92	.88	.91	.94	.90	.97	.95	.92	.98	.97	.96	67.1
Chelyabinsk	.73	.86	.75	.87	.92	.83	.93	.92	.93	.97	.94	.94	61.0
Dubna	.83	.92	.89	.92	.95	.90	.97	.98	.97	.98	.98	.97	66.2
Elabuga	.83	.89	.86	.91	.91	.88	.98	.97	.92	.97	.97	.96	64.7
Izhevsk1	.86	.90	.81	.92	.94	.88	.96	.96	.94	.98	.97	.96	66.1
Izhevsk2	.86	.93	.86	.92	.94	.90	.97	.98	.93	.98	.98	.97	66.1
Kazan	.86	.91	.86	.91	.95	.90	.96	.95	.94	.98	.97	.96	64.7
Krasnodar	.84	.91	.86	.91	.92	.89	.94	.95	.93	.98	.97	.96	65.4
Kurgan	.83	.87	.69	.84	.91	.83	.95	.95	.92	.93	.93	.93	60.1
Magadan	.86	.92	.86	.92	.94	.90	.96	.98	.97	.98	.98	.97	64.4
Nizhnevartovsk	.79	.87	.77	.90	.93	.85	.95	.88	.82	.96	.95	.92	61.9
Novosibirsk1	.82	.89	.85	.90	.93	.88	.84	.89	.80	.95	.95	.90	66.8
Novosibirsk2	.89	.92	.84	.92	.94	.91	.96	.97	.96	.98	.98	.97	66.8
Omsk	.87	.90	.85	.88	.93	.89	.98	.96	.94	.98	.98	.97	64.1
Orel	.83	.90	.82	.89	.89	.86	.95	.96	.92	.95	.96	.95	62.9
Perm	.85	.92	.86	.90	.94	.89	.97	.97	.96	.98	.98	.97	64.9
Petrozavodsk	.89	.93	.86	.93	.94	.91	.97	.97	.95	.98	.98	.97	68.9
Ryazan	.85	.92	.85	.91	.94	.89	.95	.96	.93	.97	.97	.96	68.4
Sakhalinsk	.84	.89	.75	.86	.93	.86	.96	.96	.93	.96	.94	.95	62.2
Samara	.85	.92	.86	.91	.94	.89	.96	.98	.95	.97	.98	.97	67.2
Taganrog	.85	.91	.82	.89	.93	.88	.95	.93	.93	.97	.97	.95	63.8
Tambov	.87	.93	.85	.93	.94	.90	.96	.97	.97	.98	.98	.97	67.6
Ufa	.85	.92	.83	.92	.94	.89	.95	.95	.94	.96	.98	.96	67.3
Ulan-Ude	.84	.91	.82	.90	.93	.88	.95	.98	.96	.97	.98	.97	64.0
Ussuriysk	.88	.91	.85	.92	.96	.90	.95	.95	.94	.97	.94	.95	67.1
Vladimir	.84	.91	.86	.92	.95	.89	.97	.97	.93	.98	.97	.97	66.1
Vladivostok	.86	.92	.84	.92	.95	.90	.96	.97	.97	.97	.98	.97	67.1
Volgograd1	.83	.90	.84	.91	.95	.89	.97	.95	.98	.98	.97	.98	65.0
Volgograd2	.84	.91	.85	.90	.94	.89	.93	.91	.84	.95	.97	.93	65.0
Vologda	.88	.93	.88	.92	.94	.91	.97	.96	.95	.98	.99	.97	68.1
Voronezh	.87	.92	.89	.91	.93	.90	.96	.97	.98	.99	.97	.97	67.8
Yaroslavl	.87	.92	.89	.92	.94	.91	.97	.97	.97	.97	.98	.97	66.3
Yekaterinburg1	.87	.93	.90	.92	.93	.91	.97	.97	.97	.98	.98	.97	65.7
Yekaterinburg2	.85	.92	.83	.91	.93	.89	.96	.95	.92	.97	.97	.96	65.7
Yoshkar-Ola	.84	.91	.85	.93	.94	.89	.95	.97	.97	.97	.96	.96	67.3

and .94 for neuroticism, extraversion, openness, agreeableness and conscientiousness, respectively. In only five (2.6%) out of 195 cases were α lower than .80 (all in neuroticism or openness domains). The average α across domains and 39 samples was .89, which is very close to Russian mean values from PPOC (McCrae et al., 2005a).

The next six columns of Table 3 report factor congruence coefficients for each of 39 samples. The average congruence coefficient across the five domains varied from .90 to .98. For individual factors the congruence coefficients never fell below .80 and had an average value of .96, which indicates a very good replication of the factor structure McCrae et al. (1996). In this study none of samples failed to replicate the international factor structure.

The last column of Table 3 shows the percentage of variance explained by the first principal component. The mean congruence and the explained variance were highly correlated across samples [$r(38) = .87, p < .001$], indicating that data quality may be a factor affecting agreement with the international data set. Samples in which a five-factor model accounts for a smaller proportion of variation were less similar to the aggregated data from 50 cultures.

Differences between samples

Although samples differed considerably in their ethnic composition and geographical location, the mean profiles in all 39 samples were very similar. One-way ANOVAs revealed a significant effect of the sample for 27 scales out of 30 at 1% level of significance, but the effect sizes—partial η^2s—were rather small. The effect of sample on the mean scores of the NEO-PI-R scales was in the range from 0.5% to 2.5% of the total variance with the mean effect size 1.4%. Even though small in magnitude, these differences, multiplied by the behaviours of thousands of individuals, can have some effect at the population level, and aggregate personality scores might be systematically related to sample-level characteristics.

Of particular interest was the association of extraversion with longitude. In international samples, European cultures consistently score higher in extraversion than East Asian cultures (McCrae, 2004). The present sample stretched 6500 km from Eastern Europe to the Pacific Ocean, yet sample-level extraversion was unrelated to longitude, $r = -.29$, ns, $d = -0.61$. Similarly, most of the other socio-economic and climatic variables characterizing the regions from which data were collected were unrelated to sample-level personality scores at the domain level. The strongest correlation ($r = -.44, p = .009, d = -0.98$) was found between the mean scores of Openness and the region's ranking on the HDI (see Figure 2). Multiple regressions demonstrated that only economic wealth of the region, not education or life expectancy, predicted the mean scores of Openness. The largest contribution came from the Openness to Aesthetics. This means that in regions where people have greater economic wealth they are more likely to be rated as unconventional, open to new ideas, and more interested in the arts. For example, Tatarstan (Kazan and Elabuga) is, along with Moscow and St. Petersburg, the most developed region in Russia, and targets living in this region were rated high on openness. In contrast, Buryatia (Ulan-Ude) and Kurgan oblast are the least developed regions and their inhabitants were considered to be more conventional and conservative.

At the facet level there was another correlation of note: The mean score of A1: Trust tended to decreased with distance from Moscow ($r = -.51, p = .001, d = -1.19$). Although that distance is confounded with longitude, distance from the capital contributed more strongly to the observed correlation than longitude. Thus, targets who lived closer to Moscow were thought to be more trusting (or gullible) compared to those who lived far
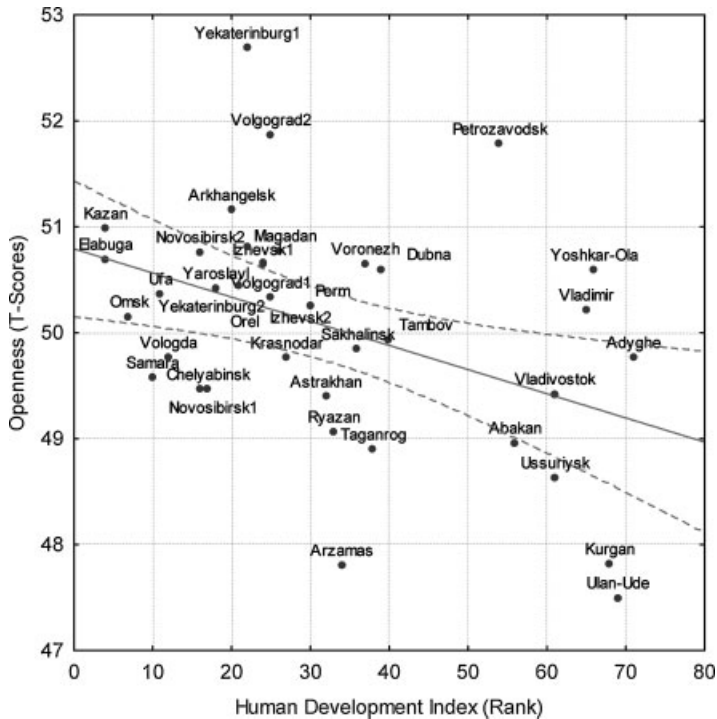
Figure 2.   The mean value of openness (*T*-Scores) as a function of rank in the human development index of 38 study samples.

from the capital. Because both rater and target were from the same federal subject, it is not possible to determine if these small regional differences are attributable to characteristics of the rater or the target.

Effects of characteristics of the observers

In general, as in PPOC (McCrae et al., 2005a), the observer's sex and age played a minor role in personality ratings. Of 30 NEO-PI-R facet scales, 14 demonstrated a significant observer's sex effect ($p < .01$), but all were small, accounting for less than 1% of the variance. The largest differences were found for O3: Feelings and E6: Positive Emotions, which were rated higher by female observers.

All observers were divided into two groups, 20-year-olds or younger ($N = 3916$) and 21-year-olds or older ($N = 3012$). The mean scores were almost identical in these two age groups. The effect size never exceeded 0.05%, suggesting that the observer's age (in this very narrow range) played a negligible role in ratings.

Effects of characteristics of the targets

Sex

While the observer's sex, age and geographical area influenced personality ratings very little, the effects of the targets' demographic characteristics were more robust. First, we examined variation in sex differences. Women scored significantly ($p < .01$) higher than

men on 22 out of 30 NEO-PI-R facet scales. The largest difference was in N1: Anxiety, where women's *z*-score was 0.62 points higher than the men's score. There were only three facet scales on which men scored significantly higher than women: E3: Assertiveness, E5: Excitement Seeking and O5: Ideas. Five scales (N5: Impulsiveness, O6: Values, C1: Competence, C4: Achievement Striving and C6: Deliberation) showed no sex differences.

These gender differences are generalizable throughout Russia. Costa et al. (2001) proposed a composite index of gender differentiation created by summing the facets that showed replicable sex differences. When this index was examined, females scored significantly higher than males in all 39 samples, and on average, 9.7% of its total variance was attributable to differences in targets' sex (corresponding to $d = .65$).

Figure 3 presents the mean sex differences (*d*-values) for 30 NEO-PI-R facets in the full sample. For comparison the mean sex differences in the international PPOC sample (McCrae et al., 2005a) are also reproduced. Because the shapes of the two curves are practically identical ($r = .90, N = 30, p < .001$), it can be concluded that the specific pattern of sex differences is another cross-cultural universal. However, given the size of both these samples, it is also possible to detect subtle differences between Russians and world citizens in general. We compared the differences by converting the *d*s to *r*s, and comparing *r*s using the Fisher *r*-to-*z* transformation. Gender differences are exaggerated in Russians with respect to N1: Anxiety, N6: Vulnerability and O2: Aesthetics, and they are muted with respect to O5: Ideas, and A5: Modesty, all $p < .001$.

Previous research has shown that sex differences in personality traits are larger in prosperous, healthy, and egalitarian cultures in which women have more nearly equal opportunities (Costa et al., 2001; Schmitt et al., 2008); at the culture level, the index of gender differentiation correlated .75 with GDP (McCrae et al., 2005a). We might therefore expect that sex differences would be larger for economically more prosperous regions.
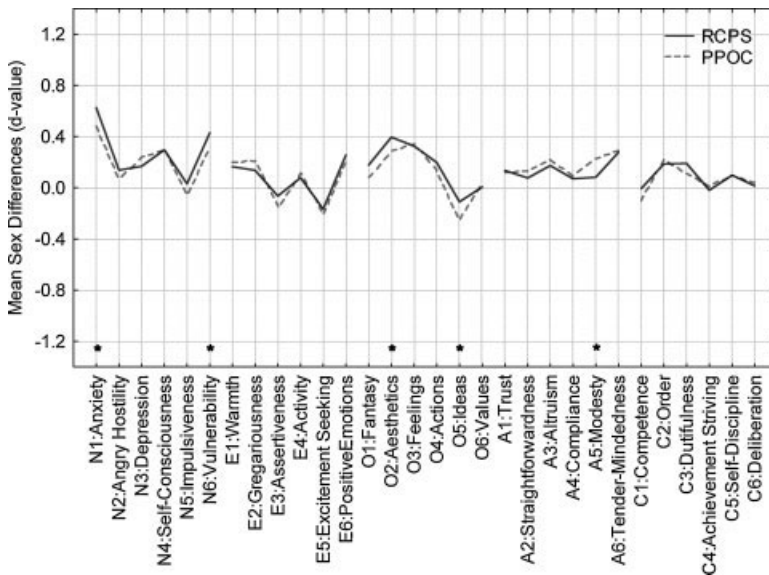

Figure 3. Mean sex differences (*d*-values) between women and men for 30 NEO-PI-R facets for Russian Character and Personality Survey (RCPS) and personality profiles of cultures project (PPOC; McCrae et al., 2005a). PPOC data are the unweighted means of college age and adult samples. Positive values mean higher scores of women. Asterisks (*$p < .001$) indicate statistically significant differences between the PPOC and RCPS samples.

However, the correlation between the index of gender differentiation and GDP of the region was only $r = .12$, ns. Another prediction is that gender differences for targets from cities ($N = 2085$) would be larger than differences for targets from villages ($N = 1435$), where living standards are lower. The pattern of sex differences in cities and villages across NEO-PI-R facets was very similar ($r = .88$, $N = 30$, $p < .001$) and the size of these differences was in fact slightly larger in the sample of villages. For example, village women were rated as significantly higher than men on all facets of conscientiousness, whereas no differences were found among city-dwellers. Again, sex differences in N1: Anxiety were greater among villagers ($d = 0.70$) than city residents ($d = 0.54$). However, gender differences in N2: Angry Hostility were larger in city residents ($d = 0.20$) than in villagers ($d = 0.04$).

Education and place of residence

As expected, the targets' education level affected their personality ratings particularly with regard to extraversion and openness. Individuals with higher education ($N = 3271$) were rated higher than those with secondary ($N = 3110$) and they, in turn, higher than those with elementary ($N = 664$) education on all extraversion and openness facets. However, a very similar pattern was observed when place of residence was analysed. Overall, targets who lived in rural settlements ($N = 1435$) were rated as more introverted and less open to new experiences than those who were living in small towns ($N = 3505$), who, in turn, were rated as more introverted and less open than those who lived in cities ($N = 2085$). Nevertheless, it would be impossible to reach clear conclusions because both education level and place of residence may be confounded with the age of targets.

Age. In the full sample, younger (< 35 years) and older targets were perceived to be approximately equal in their level of neuroticism, but younger targets were thought to be considerably more extraverted and open than older targets, and older targets were perceived to be more agreeable and conscientious than younger targets.

We analysed age differences at the facet level. The profiles of age differences for men and women were very similar ($r = .96$, $p < .001$, $d = 6.86$), providing strong evidence that not only the direction but also the magnitude of developmental trends (or cohort differences) are essentially identical for men and women in Russia. Figure 4 shows d-values as the differences between adult and college-age targets for the 30 facets in Russia and in the PPOC sample. The correlation between these profiles is .89, $p < .001$, suggesting strong similarity in developmental patterns. However, there are also some intriguing differences. In particular, N3: Depression and N4: Self-Consciousness decline cross-sectionally in the international sample, but increase slightly in the Russian sample. In the world sample, E2: Gregariousness declines, E3: Assertiveness increases and E4: Activity is unchanged across the two age groups; in Russia all indicators of extraversion decline, most dramatically for E5: Excitement Seeking. Some of these differences may be due to the fact that the PPOC sample includes a large number of targets between ages 40 and 50 who are not represented in the RCPS; they are likely to be more assertive and certainly more active than older adults. When PPOC data were reanalysed omitting these 40-year-olds, the profile of age differences more closely resembled those in Russian data ($r = .92$), especially with regard to Excitement Seeking, where a larger age difference was found ($d = -1.03$). However, this sample difference cannot explain the relatively high Depression and Self-Consciousness scores in Russian adults, which might instead reflect the difficulty older Russians have adjusting to the post-Soviet era.
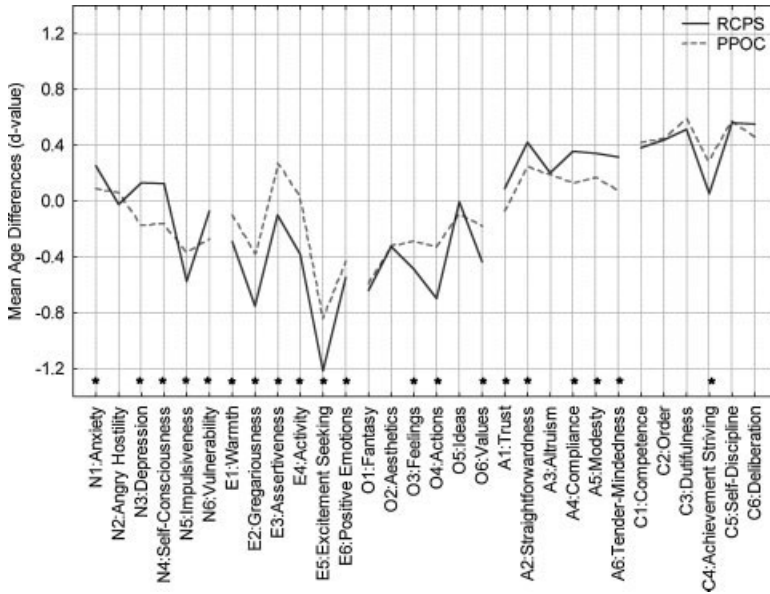
Figure 4. Mean age differences (*d*-values) between adults and college-age targets for 30 NEO-PI-R facets for Russian Character and Personality Survey (RCPS) and Personality Cultures Project (PPOC; McCrae et al., 2005a). Asterisks ($^*p < .001$) indicate statistically significant differences between the PPOC and RCPS samples.

A comparison of effect sizes

Due to the size of the total sample, it is possible to treat target's sex, age, education and place of residence as random effects and use variance component estimation to determine the relative importance of these influences on personality. We analysed this dataset using a four-way factorial ANOVA treating all four factors and their interactions as random effects. Table 4 reports, beside the NEO-PI-R scale mean values and standard deviations, the proportion of explained variance that can be attributed to the target age, sex, education and place of residence. In general, age differences between targets had the largest influence on scores. A particularly strong effect was on E4: Excitement Seeking: Younger targets were substantially more eager to look for excitement than older targets. There were four facets (N1: Anxiety, N4: Self-Consciousness, N6: Vulnerability and O2: Aesthetics) for which the effect of the sex differences was strongest. Quite logically, the strongest effects of the targets' education level were on E3: Assertiveness, C4: Achievement Striving and especially O5: Ideas. Place of residence had little effect on the NEO-PI-R mean scores. The only effect which slightly exceeded the 1% level was A5: Modesty: People living in rural areas were rated as more modest than those living in towns. Interactions explained little variance; all 11 interactions combined accounted for only 2.1% of the variance on average, and none of the single interactions was strikingly large.

Developmental curves across adulthood

Contributing to the debate about how much personality changes after age 30 (McCrae & Costa, 2003; Srivastava et al., 2003), we examined the rate of change of age differences in personality traits as a function of age. Srivastava et al. (2003) had omitted data from

Table 4.   The mean values, standard deviations, and the proportion of explained variance in the mean scores by the effect of target's age, sex, education, and place of residence

Facet	Mean	SD	Explained variance				
			Age	Sex	Education	Residence	Total
N1: Anxiety	15.1	4.95	1.8	**15.6**	0.3	0.0	20.98
N2: Angry hostility	13.2	5.29	0.0	0.5	**0.8**	0.0	3.23
N3: Depression	13.4	4.56	0.6	**1.4**	**1.4**	0.1	5.26
N4: Self-consciousness	14.2	4.20	0.5	**4.0**	0.4	0.3	6.95
N5: Impulsiveness	15.5	4.83	**13.6**	0.0	0.4	0.3	16.23
N6: Vulnerability	13.3	4.41	0.0	**8.3**	2.0	0.1	11.41
E1: Warmth	22.5	5.18	**3.7**	1.3	1.1	0.2	9.26
E2: Gregariousness	18.9	6.10	**21.5**	0.7	0.0	0.0	23.53
E3: Assertiveness	18.6	5.44	0.0	0.1	**4.5**	0.2	6.97
E4: Activity	18.4	5.82	**5.6**	0.0	0.8	0.1	9.99
E5: Excitement seeking	16.5	5.96	**41.1**	1.1	0.3	0.1	44.97
E6: Positive emotions	20.5	5.22	**12.5**	2.6	1.0	0.0	17.51
O1: Fantasy	16.6	4.91	**16.3**	1.1	0.1	0.5	19.22
O2: Aesthetics	16.5	5.87	3.6	**6.4**	5.8	0.5	19.62
O3: Feelings	18.9	4.37	**10.1**	4.6	0.7	0.3	16.93
O4: Actions	14.1	4.56	**18.5**	1.5	0.8	0.1	22.34
O5: Ideas	17.1	5.86	0.0	0.1	**11.2**	0.2	15.24
O6: Values	17.6	3.38	**7.8**	0.0	1.6	0.3	12.16
A1: Trust	17.9	5.21	**0.3**	1.0	0.1	0.0	2.97
A2: Straightforwardness	17.6	5.82	**7.6**	0.3	0.0	0.1	9.65
A3: Altruism	20.6	5.46	**1.2**	**1.2**	0.1	0.0	5.33
A4: Compliance	14.4	5.30	**5.5**	0.0	0.0	0.1	8.07
A5: Modesty	16.4	5.93	**4.9**	0.1	0.6	1.1	8.93
A6: Tender-mindedness	17.7	4.06	**4.3**	3.8	0.0	0.1	9.45
C1: Competence	20.3	4.72	**6.2**	0.0	4.7	0.0	12.69
C2: Order	19.6	5.34	**8.2**	1.9	2.5	0.4	14.64
C3: Dutifulness	21.2	5.56	**10.4**	1.9	2.3	0.0	17.63
C4: Achievement striving	20.6	5.21	0.0	0.3	**6.3**	0.3	9.45
C5: Self-discipline	20.3	5.95	**12.7**	0.7	1.8	0.3	18.03
C6: Deliberation	18.4	5.81	**12.7**	0.0	3.2	0.1	17.10
Neuroticism	84.8	19.07	0.0	7.5	1.7	0.0	10.75
Extraversion	115.4	24.74	**21.2**	0.3	1.6	0.1	25.51
Openness	100.8	19.09	**14.3**	2.2	6.3	0.7	26.79
Agreeableness	104.6	24.19	**6.3**	1.5	0.0	0.3	9.96
Conscientiousness	120.3	27.01	**10.7**	0.7	4.7	0.2	18.44

Note: The strongest contribution for each scale is shown in boldface type. Total includes variance accounted for by 11 interaction terms.

respondents age 18–20, where substantial change is known to occur (Robins, Fraley, Roberts, & Trzesniewski, 2001), and had divided their sample into younger and older groups at age 30; they found only modest differences in the rates of change for younger and older adults. Our analysis included targets aged 17 and older, and we sought an empirical basis for selecting an age at which to divide the younger from the older targets. We predicted NEO-PI-R domains scores from age using a system of piece-wise linear regressions:

$$T\text{-score} = \begin{cases} a_0 + a_1 \cdot \text{Age} & \text{if} \quad \text{Age} < Q \\ b_0 + b_1 \cdot \text{Age} & \text{if} \quad \text{Age} \geq Q \end{cases}$$

Table 5.   Optimal values of a system of linear regression predicting the *T*-scores of the NEO-PI-R factors from target age

	Q	a_0	a_1	b_0	b_1	% Explained variance	% Increment
Neuroticism	27	55.8	−0.28	48.8	0.02	0.18	0.16
Extraversion	27	60.4	−0.34	53.8	−0.12	13.30	0.16
Openness	23	59.4	−0.31	54.7	−0.13	10.27	0.10
Agreeableness	39	47.9	0.01	48.7	0.05	3.66	0.07
Conscientiousness	35	36.2	0.57	51.1	0.02	6.81	0.73

Note: The least squares solution for the equation: $T\text{-score} = (\text{age} < Q) \cdot (a_0 + a_1 \cdot \text{age}) + (\text{age} \geq Q) \cdot (b_0 + b_1 \cdot \text{age})$, where Q is the break point for switching linear regressions; % increment = the improvement of the percentage of the explained variance compared with a single linear equation.

where a_i and b_j are parameters of linear regression; Q is the break point of age at which the first linear regression is replaced with the second one, and Age is the reported age of the targets. The optimal values for a_i, b_j and Q were searched simultaneously with the help of a nonlinear evaluation procedure (*Statistica*, StatSoft, Inc.) using different starting values and search algorithms. In all cases a global minimum was found; the corresponding optimal values for parameters of linear regressions and the break point are reported in Table 5. It also presents the percentage of explained variance and the incremental percentage of variance compared to a single linear approximation.

Both extraversion and openness demonstrated moderate age effects, with age accounting for 13.3% and 10.3% of their variance, respectively. Smaller age effects were found for conscientiousness (6.8%) and agreeableness (3.7%), but neuroticism did not show noticeable age differences: Only 0.14% of its variance can be attributed to age. These results replicate a general pattern known from cross-cultural data: Although neuroticism and agreeableness show age effects comparable in magnitude to the other factors in self-report data, the age effects are relatively modest in observer ratings (McCrae et al., 2005a).

The two strongest age effects, on extraversion and openness, are shown in Figures 5A and B, respectively. The continuous line shows the best least squares approximation with the breaking point at $Q = 27$ and $Q = 23$ years for extraversion and openness, respectively. The slope of regression before age Q years is $a_1 = −0.34$ and $a_1 = −0.31$ for extraversion (Figure 5A) and openness (Figure 5B), respectively, whereas after the break point it reduces to $b_1 = −0.12$ and $b_1 = −0.13$, indicating approximately a three times slower rate of change with age. In general, except for agreeableness (where the regression lines are flat, but at a different level in the two age groups), the regression slopes for the younger age group are steeper than for the older age group. These trends are consistent with McCrae and Costa's (2003) view that after age 30 the rate of personality change diminishes. Although the piece-wise linear regressions only marginally improved a single linear approximation (the last column in Table 5), they demonstrated faster developmental changes in the younger age group.

It is important to emphasize that a very good coincidence of the endpoints of the regression line with the starting points of the second line at age Q is not automatically guaranteed. There were two regressions that made two independent predictions of the break point in the region from 24 to 50 years where data points are underrepresented. Interestingly, the break points where the pace of development changes were set in the range from 23 to 39 years. Although the precision with which the age Q was determined was not
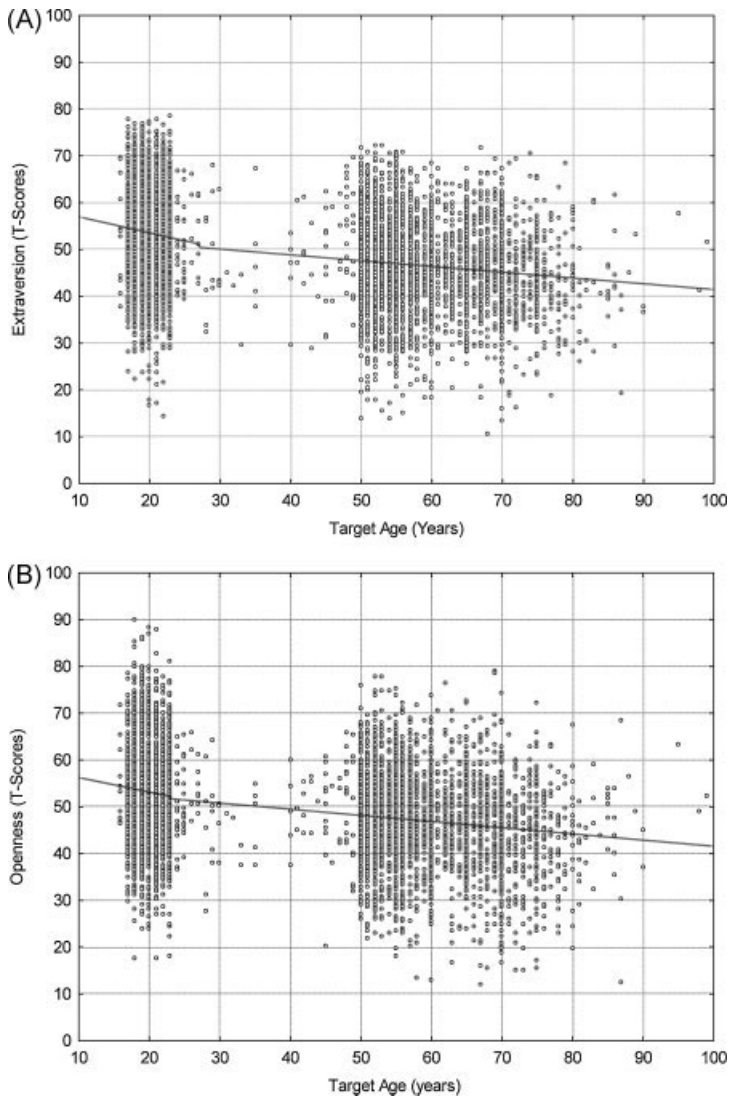
Figure 5. The *T*-scores of extraversion (A) and openness (B) as function of target's age in the total sample.

very high and several values around this age provided only a slightly worse approximation, it is still likely that, for Russians, the period of more rapid maturation in openness ends earlier than for extraversion, agreeableness, and conscientiousness.

One way in which these data differ from previous studies in both self-reports and observer ratings (McCrae et al., 2000; McCrae et al., 2005a) is the failure to find an increase in openness between adolescence and the mid-20s. We conducted regression analyses for all six openness facets for the age range from 17 to 23 and found that except for a slight increase in O5: Ideas ($r = .06$, $N = 3457$, $p = .001$), all facet scores decreased with age. The largest decrease was in O1: Fantasy ($r = -.14$, $N = 3457$, $p < .001$). It is possible that Russians increase in openness in early adolescence and peak by age 17.

DISCUSSION

The present data give strong support to idea that personality traits among ethnic Russians function much like traits in the rest of the world. Although recent genetic findings can still identify two main sources of the Russian people corresponding to the linguistic split between West and East Slavonic-speaking people (Balanovsky, Rootsi, Pshenichnov, Kivisild, Churnosov, Evseeva et al., 2008), we found only one personality structure, which was common to study samples from the Pacific Ocean to the borders of the European Union.

The results of this study also confirm and extend our understandings concerning cross-cultural uniformity in sex and age differences. Previous studies using both self-reports and observer ratings have found a consistent pattern of sex differences, with women generally scoring higher than men in neuroticism, openness and agreeableness. Those findings were replicated here. Multinational studies (e.g. Schmitt et al., 2008) have also suggested that gender differences are more pronounced in modern and wealthy societies. However, in Russia sex differences appeared to be similar in more and less developed areas. Apparently wealth and modernity in themselves are not responsible for this phenomenon, and some other culture-wide explanation must be sought (e.g. self-categorization theory; Guimond, 2008).

Cross-sectional studies have shown that personality development through the lifespan follows a universal pattern. In a variety of countries, such as the United States, South Korea, Portugal, and Russia, self-rated agreeableness and conscientiousness increase and extraversion and openness decrease with age (Costa, McCrae, Martin, Oryol, Senin, Rukavishnikov et al., 2000; McCrae et al., 1999). Generally, cross-sectional age differences in observer rated personality follow the pattern identified in self-reports, with moderate rates of change during college and slower changes in older ages (McCrae et al., 2005a).

Good agreement of Russian data with this universal pattern of development is particularly significant in the view of the rather exceptional historical experience most the targets have had. Most adult targets were born before the first satellite Sputnik was launched in 1957 and approximately 10% were born before Stalin's purges in 1937. There were even five targets born before the Bolshevik revolution lead by Vladimir Lenin in 1917. In contrast, the college-age targets had lived most of their lives in the post-Soviet era. These major historical events, very different from those experienced elsewhere in the World, might have left their imprints on the personality of targets, and uniquely Russian cohort effects might have created a distinctive pattern of Russian age differences. Instead, age differences in general showed the same pattern seen elsewhere—a finding that supports the hypothesis that intrinsic maturational changes in the mean level of personality traits are most likely genetically determined and relatively immune to social and historical influences.

Like all studies, the RCPS has limitations. Only observer ratings were collected as a source of personality information, and only students provided ratings. A large section of the life span (from 24 to 50) was essentially unrepresented among the targets, and the interpretation of age effects depends on the assumption that changes are monotonic across this interval. The instrument used was a translation of an American personality inventory and may have omitted aspects of personality unique to Russians.

Future studies of personality in Russia would ideally include both self-reports and observer ratings of adults across the full age range. Bilingual samples—for example,

Estonians who speak both Estonian and Russian—could be studied to determine which effects, if any, are due to idiosyncrasies of the Russian translation. In one important respect, the present study simplifies future research on the personality profiles of cultures: It demonstrates that the number and diversity of research sites is not a crucial variable. Certainly it would be desirable to have more than a single site, but far fewer than 39 would probably suffice in most cultures. Instead, the next focus might be on the choice of raters. Older adults might have a different view of targets than do college students.

Cross-cultural differences and their interpretation

Although universality is the overriding message of the present data, there was also evidence of subtle ways in which ethnic Russians differ from other groups. In contrast to most prior cross-cultural studies of the FFM, the present study had a sufficiently large sample to allow the inference of reliable variations from the universal patterns. A number of them were seen. In a reversal of the usual finding, O3: Feelings had its primary loading on extraversion and a secondary loading on openness. The difference between men and women on Modesty was less than the world norm; the difference on Anxiety was more. In Russians, but not in most other people around the world, N3: Depression and N4: Self-Consciousness were higher in adults than in college-age individuals. Except for O5: Ideas, facets of openness declined cross-sectionally instead of rising in the early 20s.

  These effects are small and their interpretation is speculative at present. They might be due to artefacts such as idiosyncrasies in the Russian translation, but they might also be real, attributable to history or culture or to peculiarities in the distribution of personality-related alleles. In isolation, cross-cultural differences are almost impossible to interpret, but their meaning can often be discerned by comparisons across multiple cultures. For example, the finding that there is no gender difference in agreeableness in Nigeria, but a large difference in England might be explained in any number of ways; the finding that gender differences are small in non-Western nations and large in Western nations narrows the range of possible explanations considerably. An analogy from the physical sciences may be instructive. Kepler initially assumed that planetary orbits would be circular, spaced at intervals defined by the five Platonic solids. But the data meticulously collected by Tycho Brahe did not quite fit this model, and careful consideration of small departures from the expected patterns led Kepler to formulate his revolutionary laws of elliptical planetary motion. In the same way, an accumulation of details on deviations from the universal patterns across a wide range of cultures could form the basis for a much more refined understanding of biological and cultural influences on personality traits.

ACKNOWLEDGEMENTS

REFERENCES

Allik, J. (2005). Personality dimensions across cultures. *Journal of Personality Disorders*, *19*, 212–232.

Allik, J., & McCrae, R. R. (2002). A five-factor theory perspective. In R. R. McCrae, & J. Allik (Eds.), *The Five Factor Model of personality across cultures* (pp. 303–322). New York: Kluwer Academic/Plenum Publishers.

Allik, J., & McCrae, R. R. (2004). Toward a geography of personality traits: Patterns of profiles across 36 cultures. *Journal of Cross-Cultural Psychology*, *35*, 13–28.

Balanovsky, O., Rootsi, S., Pshenichnov, A., Kivisild, T., Churnosov, M., & Evseeva, I., et al. (2008). Two sources of the Russian patrilineal heritage in their Eurasian context. *American Journal of Human Genetics*, *82*, 236–250.

Costa, P. T., Jr., & McCrae, R. R. (1992). *Revised NEO personality inventory (NEO-PI-R) and NEO five-factor inventory (NEO-FFI) professional manual*. Odessa, FL: Psychological Assessment Resources.

Costa, P. T., & McCrae, R. R. (2002). Looking backward: Changes in the mean levels of personality traits from 80 to 12. In D. Cervone, & W. Mischel (Eds.), *Advances in personality science* (pp. 219–237). New York: Guilford.

Costa, P. T., McCrae, R. R., Martin, T. A., Oryol, V. E., Senin, I. G., & Rukavishnikov, A. A., et al., (2000). Personality development from adolescence through adulthood: Further cross-cultural comparisons of age differences. In V. J. Molfese, & D. L. Molfese (Eds.), *Temperament and personality development across life span* (pp. 235–252). Mahwah, NJ: Lawrence Erlbaum Associates.

Costa, P. T., Jr., Terracciano, A., & McCrae, R. R. (2001). Gender differences in personality traits across cultures: robust and surprising findings. *Journal of Personality and Social Psychology*, *81*, 322–331.

Digman, J. M., & Shmelyov, A. G. (1996). The structure of temperament and personality in Russian children. *Journal of Personality and Social Psychology*, *71*, 341–351.

Guimond, S. (2008). Psychological similarities and differences between women and men across cultures. *Social and Personality Psychology Compass*, *2*, 494–510.

Helson, R., Kwan, V. S. Y., John, O. P., & Jones, C. (2002). The growing evidence for personality change in adulthood: Findings from research with personality inventories. *Journal of Research in Personality*, *36*, 287–306.

James, W. (1981). *The principles of psychology* (Vol. 1). Cambridge, MA: Harvard University Press. (Original work published in 1890.).

Lee, K., & Ashton, M. C. (2008). The HEXACO personality factors in the indigenous personality lexicons of English and 11 other languages. *Journal of Personality*, *76*, 1001–1053.

Martin, T. A., Costa, P. T., Jr., Oryol, V. E., Rukavishnikov, A. A., & Senin, I. G. (2002). Applications of the Russian NEO-PI-R. In R. R. McCrae, & J. Allik (Eds.), *The five-factor model of personality across cultures* (pp. 261–277). New York: Kluwer Academic/Plenum Publishers.

McCrae, R. R. (2002). NEO-PI-R data from 36 cultures: Further intercultural comparisons. In R. R. McCrae, & J. Allik (Eds.), *The five-factor model of personality across cultures* (pp. 105–125). New York: Kluwer Academic/Plenum Publishers.

McCrae, R. R. (2004). Human nature and culture: A trait perspective. *Journal of Research in Personality*, *38*, 3–14.

McCrae, R. R., & Costa, P. T., Jr., (1997). Personality trait structure as a human universal. *American Psychologist*, *52*, 509–516.

McCrae, R. R., & Costa, P. T., Jr., (1999). A five-factor theory of personality. In L. A. Pervin, & O. P. John (Eds.), *Handbook of personality: Theory and research* (Vol. 2, pp. 139–153). New York: Guilford Press.

McCrae, R. R., & Costa, P. T., Jr., (2003). *Personality in adulthood: A five-factor theory perspective*. New York: Guilford.

McCrae, R. R., Costa, P. T., Jr., Lima, M. P., Simões, A., Ostendorf, F., & Angleitner, A., et al. (1999). Age differences in personality across the adult life span: Parallels in five cultures. *Developmental Psychology*, *35*, 466–477.

McCrae, R. R., Costa, P. T., Ostendorf, F., Angleitner, A., Hřebíčková, M., & Avia, M. D., et al. (2000). Nature over nurture: Temperament, personality, and life span development. *Journal of Personality and Social Psychology*, *78*, 173–186.

McCrae, R. R., Terracciano, A., & 78 Members of the Personality Profiles of Cultures Project. (2005a). Universal features of personality traits from the observer's perspective: Data from 50 cultures. *Journal of Personality and Social Psychology*, *88*, 547–561.

McCrae, R. R., Terracciano, A., & 79 Members of the Personality Profiles of Cultures Project. (2005b). Personality profiles of cultures: Aggregate personality traits. *Journal of Personality and Social Psychology*, *89*, 407–425.

McCrae, R. R., Zonderman, A. B., Costa, P. T., Jr., Bond, M. H., & Paunonen, S. V. (1996). Evaluating replicability of factors in the revised NEO personality inventory: Confimatory factor analysis versus Procrustes rotation. *Journal of Personality and Social Psychology*, *70*, 552–566.

Pullmann, H., Allik, J., & Realo, A. (2009). Global self-esteem across the life span: A cross-sectional comparison between representative and self-selected Internet samples. *Experimental Aging Research*, *35*, 20–44.

Roberts, B. W., & Mroczek, D. (2008). Personality trait change in adulthood. *Current Directions in Psychological Science*, *17*, 31–35.

Roberts, B. W., Walton, K. E., & Viechtbauer, W. (2006). Patterns of mean-level change in personality traits across the life course: A meta-analysis of longitudinal studies. *Psychological Bulletin*, *132*, 3–25.

Robins, R. W., Fraley, R. C., Roberts, B. W., & Trzesniewski, K. H. (2001). A longitudinal study of personality change in young adulthood. *Journal of Personality*, *69*, 617–640.

Schmitt, D. P., Allik, J., McCrae, R. R., & Benet-Martínez, V. (2007). The geographic distribution of big five personality traits: Patterns and profiles of human self-description across 56 nations. *Journal of Cross-Cultural Psychology*, *38*, 173–212.

Schmitt, D. P., Realo, A., Voracek, M., & Allik, J. (2008). Why can't a man be more like a woman? Sex differences in big five personality traits across 55 cultures. *Journal of Personality and Social Psychology*, *94*, 168–182.

Slobodskaya, H. R. (2007). The associations among the big five, behavioural inhibition and behavioural approach systems and child and adolescent adjustment in Russia. *Personality and Individual Differences*, *43*, 913–924.

Srivastava, S., John, O. P., Gosling, S. D., & Potter, J. (2003). Development of personality in early and middle adulthood: Set like plaster or persistent change? *Journal of Personality and Social Psychology*, *84*, 1041–1053.

Terracciano, A., Costa, P. T., & McCrae, R. R. (2006). Personality plasticity after age 30. *Personality and Social Psychology Bulletin*, *32*, 999–1009.

Terracciano, A., McCrae, R. R., Brant, L. J., & Costa, P. T., Jr., (2005). Hierarchical linear modeling analyses of NEO-PI-R scales in the Baltimore Longitudinal Study of Aging. *Psychology and Aging*, *20*, 493–506.

Trzesniewski, K. H., Donnellan, M. B., & Robins, R. W. (2008). Do today's young people really think they are so extraordinary? An examination of secular trends in narcissism and self-enhancement. *Psychological Science*, *19*, 181–188.

Twenge, J. M. (2000). The age of anxiety? Birth cohort change in anxiety and neuroticism, 1952–1993 . *Journal of Personality and Social Psychology*, *79*, 1007–1021.

Twenge, J. M. (2001). Changes in women's assertiveness in response to status and roles: A cross-temporal meta-analysis, 1931–1993. *Journal of Personality and Social Psychology*, *81*, 133–145.

van Hemert, D. A., van de Vijver, F. J. R., Poortinga, Y. H., & Georgas, J. (2002). Structural and functional equivalence of the Eysenck Personality Questionnaire within and between countries. *Personality and Individual Differences*, *33*, 1229–1249.