

Supporting Online Material for

National Character Does Not Reflect Mean Personality Trait Levels in 49 Cultures

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Materials and Methods

Participants

Participation was voluntary and anonymous, and, as anonymous survey research, the project was ruled exempt from IRB review. Across cultures, a total of 4,170 individuals completed the NCS. Using exclusion criteria described below, 181 (4.3%) surveys were excluded, leaving 3,989 valid assessments. Sample sizes for each culture ranged from 39 to 351 (see Table S1). The proportion of male respondents was higher in less affluent and lower among European countries. With the exception of Sweden, the mean ages are within the range of college student samples.

In most cultures participants were students, but in a few cases data from adults were also collected. In Sweden and Hungary the samples were mixed. In Ethiopia a non-student sample was recruited in addition to the student sample. In Italy one student sample and two adult samples were recruited. In Brazil ($n = 3$), Canada ($n = 3$), New Zealand ($n = 2$), and the United States ($n = 4$) we collected samples from multiple sites.

Aggregated NEO-PI-R assessments based on observer rating data were obtained from 51 cultures (1), 47 of which overlap with the cultures assessed using the NCS. Self-report data from 36 cultures (2) were supplemented by data provided by J. Rossier from Burkina Faso and French-speaking Switzerland, and by J. Siuta from Poland; 30 of these 39 cultures were also assessed using the NCS.

National Character Survey

The NCS consisted of 30 items (Appendix S1), each corresponding to a facet of the NEO-PI-R. Item order was rotated through the five factors, and to control for acquiescence, half the items for each factor had the positive pole on the right side, whereas the other half had the positive pole on the left side. Scores for the five factors were the sum of the six relevant items after reflecting negatively-keyed items.

The survey was translated from English into 26 other languages. Translations were made by the co-authors into their native languages. Translators were instructed to choose words or phrases that best conveyed the intended construct, using as a reference the description of the 30 facets from the NEO-PI-R *Manual* (3). Translators were instructed to find a bilingual colleague to provide an independent back-translation into English. The first and senior authors independently examined these back-translations, and any items that appeared problematic were reconsidered by the co-authors/translators.

Procedure

In each culture respondents rated a typical member of their own culture or subculture and the typical American. To reduce contrast effect biases, the survey was administered in two steps, and raters were not aware that they would be asked about Americans until the first step was completed. Respondents were tested in groups, and instructions stated that:

We are interested in your opinions on _____s. You are to judge the likelihood of 30 characteristics for the typical _____. At each end of the scale, a description is written. Your task is to place a mark on each scale to describe _____s,

where blanks were filled in with the name of their culture's members.

When everyone in the group was finished, respondents from countries other than the

United States turned to the last page, and the administrator said:

“Now we would like to learn about your opinions of another group, Americans. Have any of you visited or lived in the United States? If so, please check *yes* on at the top of the page. If not, check *no*. Please write “Americans are likely to be” at the top of the page. Then complete the survey just as you did before. When you are finished, please turn the survey in. Please do not discuss this survey with other students who may participate in the study later. Thank you for your help.”

Separate analyses of raters who had ($n = 942$) and had not ($n = 2,368$) been in the United States showed little difference. ICC between American profiles for the two groups was .91.

Protocol Validity

We assessed the validity of individual protocols using rules that paralleled those used for the NEO-PI-R (3). We excluded as invalid questionnaires with more than five missing responses to the 30 items describing the participant's own culture or which showed patterns of random, repetitive responding, specifically, more than ten consecutive *equally likely* responses, or more than five consecutive *very unlikely*, *unlikely*, *likely*, or *very likely* responses. Across samples, seven cases were eliminated because of missing items and 174 were eliminated by the repetitive responses criteria. Ratings of the typical American by other cultures' members were excluded from the analysis involving such ratings when deemed invalid according to the same criteria. Missing items in valid protocols were replaced with the neutral value.

Psychometric Evaluation of the NCS scales

Internal consistency. Analyses of the 3,989 individual responses from the worldwide sample indicated that Cronbach's alpha for the five factor scales were .58, .64, .57, .69, .77 for Neuroticism, Extraversion, Openness, Agreeableness, and Conscientiousness, respectively. These reliability coefficients are acceptable for six-item scales. None of the items showed negative corrected item/total correlations, but six facets (N4: Self-Consciousness, N5: Impulsiveness, N6: Vulnerability, E3: Assertiveness, O1: Fantasy, and O3: Feelings) showed correlations lower than .30.

Analyses at the culture level using the means of all respondents in each culture ($N = 49$) indicated that Cronbach's alphas for the five factor scales were .77, .84, .75, .83, .93 for Neuroticism, Extraversion, Openness, Agreeableness, and Conscientiousness, respectively. The only facet with a corrected item/total correlation lower than .30 was N5: Impulsiveness.

Factor structure. A principal components analysis was conducted on the 30 items in the entire sample of 3,989 subjects. The first six eigenvalues were 5.5, 3.5, 2.5, 1.3, 1.2, and .9, and parallel analysis (4) indicated that five factors should be retained. The five-factor solution explained 47% of the variance.

The NCS factor structure was rotated toward the American normative NEO-PI-R factor structure to evaluate fit with the target structure (5). As indicated by the total and factor congruence coefficients in Table S2, the NCS factor solution replicates the intended target, according to Haven and ten Berge's .85 criterion (6). This is noteworthy given that only a single item assesses each facet. The departures from the target structure are all consistent with salient secondary loadings in the target structure; for example, N5: Impulsiveness shows a large (and meaningful) negative secondary loading on the Conscientiousness factor in the target matrix.

Interjudge reliability. Intraclass correlation coefficients (7) for the five factors and the 30 facets are reported in Table S2. Intraclass correlations provide estimates of the reliability of single raters [$ICC(1,1) = BMS - WMS / BMS + (k - 1)WMS$] and of the culture-average ratings

$[ICC(1,k) = (BMS - WMS)/BMS]$, where k is the mean number of raters per culture, BMS is the between-subject mean square, and WMS is the within-subject mean square from an ANOVA with cultures as the independent variable.

Table S1

Sample Description, National Character Survey Factor Scale Means, and Intraclass Correlations with NEO-PI-R Aggregate Observer Ratings and Self-Reports

Culture	Language	Raters			Mean NCS Factor Scale					ICC _R	ICC _S
		<i>n</i>	% Male	<i>M</i> Age	N	E	O	A	C		
Argentina	Spanish	51	27.5	28.1	56.2	52.6	52.3	42.4	42.0	-.08	—
Australia	English	52	26.9	23.3	40.2	58.1	50.5	54.1	49.7	.38*	—
Belgium	Flemish	82	6.2	20.9	48.9	48.4	48.2	49.9	55.4	-.45*	-.17
Botswana	English	81	30.3	21.4	44.3	48.4	52.4	57.9	50.6	-.11	—
Brazil (3)	Portuguese	149	12.8	23.2	47.5	56.7	55.1	53.0	48.2	.00	—
Burkina Faso	French	50	63.3	25.6	38.6	54.2	51.6	59.9	58.6	-.16	-.40*
Canada (3)	English	238	37.6	21.7	41.1	52.2	55.1	58.6	52.7	-.03	.19
Chile	Spanish	49	34.7	18.7	56.9	43.2	42.6	48.9	38.4	-.33	—
China	Chinese	47	61.7	22.1	43.1	41.6	43.5	51.1	51.0	-.02	-.02
Croatia	Croatian	49	8.2	21.1	55.1	47.5	43.9	47.5	40.8	-.16	.11
Czech Republic	Czech	71	26.8	21.8	54.6	44.3	46.2	45.2	49.2	-.16	.20
Denmark	Danish	63	15.9	27.7	46.5	46.6	46.2	47.6	55.5	-.40*	-.01
Estonia	Estonian	48	12.5	22.9	51.0	38.1	43.3	45.3	55.9	-.10	-.08
Ethiopia (2)	English	97	69.1	27.4	50.2	46.2	51.2	55.9	49.1	-.09	—
France	French	65	12.3	24.2	54.6	46.9	51.5	46.9	50.0	.27	.35
Germany	German	86	17.4	23.3	50.9	44.7	43.7	45.8	59.5	-.04	-.18
Hong Kong	Chinese	93	26.1	19.5	55.9	48.0	45.5	42.4	53.0	.29	-.05
Hungary	Hungarian	49	55.1	23.3	57.3	42.0	46.4	46.0	45.9	—	.24
Iceland	Icelandic	192	50.5	25.9	52.7	51.3	54.8	45.7	49.4	-.06	—
India	English	49	51.0	19.2	43.6	55.5	59.5	59.3	55.1	-.06	-.05
Indonesia	Indonesian	64	32.8	19.5	60.6	41.3	44.1	52.6	34.3	.06	.05
Italy (3)	Italian	197	45.2	26.9	51.3	55.2	54.4	50.8	44.0	.05	-.01
Japan	Japanese	50	40.0	24.1	57.5	39.5	40.8	53.5	53.7	.05	.41*
Kuwait	Arabic	66	56.1	20.5	48.9	55.4	56.4	56.5	53.0	-.07	—
Lebanon (2)	English	103	34.7	19.6	51.9	53.4	52.6	44.6	45.2	.39*	—
Malaysia	Malay	85	22.0	23.3	50.7	47.7	51.9	55.9	48.5	.13	.31
Malta	English	49	28.6	22.2	52.7	53.2	44.3	48.6	48.3	.25	—
Morocco	English	60	51.7	20.9	50.7	48.4	47.5	48.6	44.5	.25	—

New Zealand (2)	English	164	16.5	20.3	41.0	57.2	54.1	53.9	50.5	.36*	—
Nigeria	English	43	44.2	22.7	59.3	56.2	57.3	46.2	49.5	-.12	—
Peru	Spanish	47	25.5	22.2	54.9	51.0	47.9	47.8	43.0	.13	.07
Philippines	Filipino	47	23.4	20.5	43.0	55.3	53.3	53.9	52.3	.14	-.18
Poland	Polish	49	49.0	21.9	58.0	47.2	46.5	45.3	46.8	.40*	.46**
Portugal	Portuguese	46	32.6	21.6	49.6	52.6	47.1	55.5	46.2	-.01	-.19
Puerto Rico	Spanish	39	52.6	24.1	47.1	60.6	56.2	52.7	48.4	.10	—
Russia	Russian	50	38.0	19.6	45.2	56.6	61.6	56.5	45.9	-.35*	-.46**
Serbia	Serbian	69	24.6	21.4	52.0	56.8	47.1	45.5	44.7	.08	-.02
Slovakia	Slovak	47	48.9	20.5	54.9	47.3	45.6	55.6	48.2	.14	—
Slovenia	Slovene	88	14.8	20.8	54.7	41.4	44.2	46.9	55.6	.25	—
South Korea	Korean	53	20.8	21.3	49.4	49.2	49.2	55.7	51.6	-.09	-.21
Spain	Spanish	48	18.8	21.3	45.5	57.8	50.8	50.2	41.9	-.10	-.18
Sweden	Swedish	48	30.4	53.9	44.7	43.7	47.2	54.0	59.8	—	.11
Switzerland	French	68	22.1	22.7	48.9	40.8	43.9	48.3	54.9	-.29	-.29
Switzerland	German	199	19.7	25.8	50.2	42.2	44.5	49.1	62.7	.06	-.18
Turkey	Turkish	59	55.2	20.3	58.2	45.9	42.3	50.6	41.6	.00	-.09
Uganda	English	41	46.3	26.2	50.8	52.2	52.5	47.8	47.7	.28	—
UK: England	English	52	23.1	24.9	50.7	43.9	45.8	46.5	52.9	-.57**	—
UK: N. Ireland	English	46	6.5	20.2	49.8	53.2	47.1	47.4	50.7	.29	—
United States (4)	English	351	31.0	20.2	51.6	52.9	51.0	42.5	48.6	.23	-.01

Note. Multiple sites for a culture are indicated in parentheses. Mean NCS scales are expressed as *T*-scores using across-culture normative values. Dashes indicate missing data. N = Neuroticism; E = Extraversion; O = Openness; A = Agreeableness; C = Conscientiousness; NCS = National Character Survey; NEO-PI-R = Revised NEO Personality Inventory; ICC_R = intraclass correlation between mean NCS scores and corresponding aggregate NEO-PI-R observer ratings across 30 facets; ICC_S = intraclass correlation between mean NCS scores and corresponding aggregate NEO-PI-R self-reports across 30 facets. * $p < .05$; ** $p < .01$ (with Bonferroni correction for 30 profile elements, $|r|$ s greater than .56 are significant at $p < .05$).

Table S2.

Descriptive Statistics, Factor Structure of National Character Scales (NCS) after Targeted Rotation, Intraclass Correlations, and NCS/NEO-PI-R Correlations

<i>NCS Scale</i>	Mean	<i>SD</i>	Factor					VC	ICC(1,1)	ICC(1,k)	NEO-PI-R	
			N	E	O	A	C				r_R	r_S
N: Neuroticism	11.49	3.49							.25	.96	.10	-.07
E: Extraversion	14.49	3.76							.29	.97	.13	-.08
O: Openness	12.24	3.69							.21	.96	-.23	-.31
A: Agreeableness	12.93	3.90							.25	.96	.10	.30
C: Conscientiousness	13.76	4.18							.30	.97	.09	-.34
N1: Anxiety	2.23	1.07	.67	-.07	-.05	-.31	.16	.85	.24	.96	-.06	.06
N2: Angry Hostility	1.96	1.04	.58	.00	-.12	-.37	-.09	.98 ^b	.20	.95	.10	-.15
N3: Depression	1.89	1.02	.52	-.35	-.09	-.20	-.09	.84	.14	.93	-.02	-.27
N4: Self-Consciousness	1.67	0.99	.39	-.52	-.05	.05	-.09	.78	.12	.91	-.05	-.10
N5: Impulsiveness	2.13	1.06	.17	.36	.13	-.31	-.44	.86 ^a	.23	.96	.34*	-.04
N6: Vulnerability	1.61	1.00	.32	-.37	.09	.07	-.38	.82	.09	.89	.39**	.17
E1: Warmth	2.52	1.12	-.08	.61	.07	.39	-.07	.96 ^b	.25	.96	-.33*	-.24
E2: Gregariousness	2.62	1.04	-.12	.63	.06	-.05	-.07	.98 ^b	.17	.94	.06	-.08
E3: Assertiveness	2.05	1.07	-.27	.18	.22	-.46	.20	.90 ^a	.17	.95	-.11	.12
E4: Activity	2.44	1.00	-.20	.30	.23	-.19	.46	.88 ^a	.11	.91	.10	-.22
E5: Excitement-Seeking	2.46	1.06	-.17	.49	.44	-.21	.01	.82	.24	.96	.47**	.10
E6: Positive Emotions	2.40	1.01	-.26	.60	.21	.19	-.02	.92 ^a	.22	.96	-.09	-.21
O1: Fantasy	1.86	1.12	.23	.30	.32	.06	-.35	.87 ^a	.22	.96	-.18	-.37*
O2: Aesthetics	2.22	1.12	.11	.10	.56	.27	.26	.95 ^b	.12	.92	.19	-.08
O3: Feelings	2.53	1.01	.13	.60	.19	.37	.07	.70	.16	.94	-.37*	-.42*
O4: Actions	1.59	1.11	-.28	.09	.61	-.13	.00	.94 ^b	.14	.93	-.16	-.27
O5: Ideas	2.31	1.08	-.18	.18	.50	.04	.42	.84	.12	.92	.40**	.22

O6: Values	1.73	1.12	-.35	.00	.65	-.03	-.01	.92 ^a	.18	.95	.10	.11
A1: Trust	1.95	1.05	-.17	.13	.14	.45	-.15	.93 ^a	.13	.92	-.01	.09
A2: Straightforwardness	2.11	1.04	-.33	.00	.18	.44	.22	.74	.16	.94	.23	-.07
A3: Altruism	2.34	1.10	-.10	.45	.13	.53	.09	.95 ^b	.19	.95	-.05	.09
A4: Compliance	1.87	1.04	-.07	-.17	.07	.64	-.01	.98 ^b	.16	.94	.34*	.19
A5: Modesty	2.14	1.03	-.07	.00	-.04	.63	.24	.77	.17	.95	-.17	.03
A6: Tender-Mindedness	2.53	0.98	.03	.37	.24	.54	.22	.93 ^a	.12	.92	.15	.40*
C1: Competence	2.57	1.01	-.16	.12	.10	-.01	.61	.95 ^b	.13	.93	.22	.07
C2: Order	2.10	1.05	-.13	-.26	.08	.10	.65	.82	.25	.97	.16	.04
C3: Dutifulness	2.38	0.99	-.18	-.07	.00	.17	.62	.99 ^b	.17	.95	.29	-.16
C4: Achievement Striving	2.30	1.02	-.09	.00	.16	-.14	.69	.96 ^b	.18	.95	-.07	-.45*
C5: Self-Discipline	2.28	1.03	-.21	.07	.01	.06	.65	.98 ^b	.15	.94	.06	.12
C6: Deliberation	2.14	1.03	-.02	-.25	-.08	.25	.57	.95 ^b	.20	.95	.06	-.13
Factor Congruence			.87 ^b	.89 ^b	.85 ^b	.91 ^b	.93 ^b	.89 ^b				

Note: $N = 3,989$. These are principal components targeted to the American normative structure. N = Neuroticism; E = Extraversion; O = Openness; A = Agreeableness; C = Conscientiousness; VC = Variable congruence coefficient; factor and total congruence coefficient in the last row; r_R = correlation between mean NCS scores and corresponding aggregate NEO-PI-R observer ratings, $N = 47$; r_S = correlation between mean NCS scores and corresponding aggregate NEO-PI-R self-reports, $N = 30$. ^aCongruence higher than that of 95% of rotations from random data. ^bCongruence higher than that of 99% of rotations from random data. * $p < .05$; ** $p < .01$ (with Bonferroni correction for 35 NSC scales, none of the correlations is significant). Loadings above .4 are given in bold.

Appendix S1

The National Character Survey

1. Anxious, nervous, worrying	_____	At ease, calm, relaxed
2. Friendly, warm, affectionate	_____	Cold, aloof, reserved
3. Imaginative, a dreamer	_____	Practical, down-to-earth
4. Trusting, gullible, naive	_____	Suspicious, skeptical, cynical
5. Capable, efficient, competent	_____	Inept, unprepared
6. Even-tempered, easy-going	_____	Irritable, angry, touchy
7. Solitary, shy, avoids crowds	_____	Gregarious, sociable, outgoing
8. Unartistic, uninterested in art	_____	Sensitive to art and beauty
9. Crafty, sly, manipulative	_____	Frank, sincere, straightforward
10. Disorganized, sloppy	_____	Organized, neat, methodical
11. Depressed, sad, pessimistic	_____	Contented, optimistic
12. Assertive, forceful, dominant	_____	Submissive, a follower
13. Emotionally sensitive, passionate	_____	Unfeeling, unempathic
14. Generous, giving, considerate	_____	Selfish, stingy, greedy
15. Dutiful, scrupulous	_____	Unreliable, undependable
16. Poised, comfortable with others	_____	Self-conscious, awkward, timid
17. Slow, lethargic, unenergetic	_____	Active, vigorous, busy
18. Habit-bound, prefers routine	_____	Innovative, prefers variety
19. Aggressive, competitive, stubborn	_____	Compliant, cooperative, docile
20. Lazy, unambitious, aimless	_____	Ambitious, workaholic
21. Impulsive, yielding to temptation	_____	Controlled, self-restrained
22. Adventurous, fun-loving, risk-taking	_____	Avoids excitement, stimulation
23. Intellectually curious, open-minded	_____	Narrow interests, bored by ideas
24. Modest, humble, self-effacing	_____	Arrogant, conceited
25. Disciplined, persistent, strong-willed	_____	Procrastinating, quitting, weak
26. Resilient, copes well with crises	_____	Vulnerable, fragile, helpless
27. Somber, dull, sober	_____	Happy, cheerful, joyous
28. Dogmatic, traditional, conservative	_____	Liberal, free-thinking
29. Ruthless, hard-headed, unsentimental	_____	Sympathetic, humanitarian
30. Spontaneous, careless, thoughtless	_____	Cautious, reflective, careful

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