DEVELOPMENT AND VALIDATION OF THE INVENTORY OF CHILD INDIVIDUAL DIFFERENCES - SHORT VERSION IN TWO SLAVIC COUNTRIES

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Abstract: Evidence for the Five Factor model of child/adolescent personality has been demonstrated across ages, genders and countries. A culturally and age decentered instrument, the Inventory of Children's Individual Differences (ICID, Halverson et al., 2003) was designed to assess child and adolescent personality in terms of the five factors. Recently, a short version of the ICID that maintains the levels of validity and reliability previously established for the full instrument has been developed in the US (Deal et al., 2007). This study presents short versions of the ICID suitable for cross-national comparisons and provides support for the reliability and validity of 15 reduced mid-level scales and five higher-order factors in caregiver reports of 3 to 18-year-olds from Slovenia (N = 1778) and Russia (N = 1712), and in adolescent self-reports (Slovenia, N = 419; Russia N = 1186). Effects associated with culture, gender, age and their interactions were examined. Overall, cultural differences accounted for more than 10% of variance in child personality according to parental reports and 5.5% of variance according to adolescent self-reports. In comparison with Russians, Slovenes scored higher on extraversion, conscientiousness and openness and a number of mid-level traits comprising these domains. Gender and age accounted for 2 to 3% of variance. Culture-by-gender-by-age interaction indicated different patterns of personality development in boys and girls of two Slavic countries.

Key words: personality, children, development, ICID

INTRODUCTION

There is a relative consensus among researchers of personality that individual differences in adulthood can be sufficiently summarized by the five broad domains known as the Five-Factor Model (FFM; e.g., McCrae, Costa, 1997). The value of the FFM was substantially enhanced when child studies provided compelling evidence that children of different ages are perceived by their parents and teachers in terms of personality traits that are markers for the five general factors, i.e. extraversion, agreeableness, conscientiousness, neuroticism and openness (e.g., Kohnstamm, Halverson, Mervielde, Havill, 1998; Lamb, Chuang, Wessels, Broberg, Hwang, 2002; Mervielde, Buyst, De Fruyt, 1995). In investigating child individual

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differences the researchers have used instruments developed for adults (with the items rephrased to fit the developmental period) or based on personality models other than the FFM. A group of researchers aimed to construct inventories that would capture the child characteristics considered most salient by parents and caregivers. Based on the data of a cross-national parental language project (Kohnstamm et al., 1998), the Hierarchical Personality Inventory for Children (Mervielde, De Fruyt, 1999) was developed in Belgium and a similar instrument, the Inventory of Child Individual Differences (ICID; Halverson et al., 2003) was designed in the US. The latter was created as an age and culture neutral instrument based on parental descriptions of children in China, Greece, the Netherlands, and the US. Thorough analyses of the final version of the ICID resulted in 15 scales that closely corresponded to the set of FFM trait markers (e.g., Goldberg, 2001). Furthermore, the scales formed a recognizable structure of five robust personality factors (Halverson et al., 2003).

The ICID has been translated and extensively explored in Slovenia and Russia. The sound psychometric properties of the ICID scales were demonstrated (Knyazev, Slobodskaya, 2005; Zupančič, Gril, Kavčič, 2006) and a considerable convergence of personality structure with the US data was identified for parent and adolescent self-reports (Knyazev, Zupančič, Slobodskaya, 2008). Moreover, this study with data collected in Slovenia and Russia suggested a similar five-factor child/adolescent personality structure across gender and age groups: extraversion (sociability, activity, and positive emotionality), conscientiousness (organization, achievement orientation, and low distractibility), neuroticism (fear/insecurity, negative affectivity, and shyness), agreeableness (low antagonism and low strong will), and openness (openness to experience and intelligence).

The ICID has been beneficially used as an adult-report measure of child personality as well as a self-report measure for adolescents in the US, Greece, Slovenia and Russia. It was employed in research on age differences, cross-cultural and gender differences in personality traits (Halverson, 2003; Knyazev et al., 2008; Zupančič, Slobodskaya, Knyazev, 2008; Zupančič, Sočan, Kavčič, 2009), personality types (Knyazev, Slobodskaya, 2006; Zupančič, Podlesek, Kavčič, 2006), sibling relationships and differential parenting (Kavčič, Zupančič, 2006), self-concept, school performance, social behavior and behavioral problems (Besevegis, Pavlopoulos, Georgouleas, 2006; Marjanovič Umek, Sočan, Bajc, 2006; Slobodskaya, 2007).

The ICID, however, consists of 108 items, which can be considered as rather long, especially when informants participate in longitudinal studies or when the instrument is a part of a wide assessment battery. Recently, Deal, Halverson, Martin, Victor and Baker (2007) presented a short 50-item version of the ICID that maintains levels of reliability and validity comparable with those previously established for the full inventory (Halverson et al., 2003). Internal reliabilities of the 15 short mid-level scales in the US were good and their correlations with the full-item scales were high. So were the correlations between the reduced and full-item scores for the five broad-band dimensions. Both forms of the ICID showed convergent validity in relation to measures of temperament and behavior problems. Temperamental impulsivity and its converse of effortful control were related to antagonism, distractibility,

negative affect and strong will, while low temperamental inhibition and positive affect were linked to extraversion as indexed by the mid-level marker scales. Furthermore, conduct problems were negatively associated with the marker scales of conscientiousness and agreeableness, and personality problems were linked to shyness and low scores on extraversion marker scales (Deal et al., 2007; Halverson et al., 2003).

With data from the 108-item ICID obtained for parent descriptions of Slovene and Russian children as well as for adolescent self-reports we aimed at replicating and extending the findings of Deal et al. (2007). In developing a brief version of the instrument we were also striving to retain the psychometric properties of the long version. We extended the US study in several ways: we 1) examined relatively representative samples of Slovene and Russian (Western Siberian) children/adolescents; 2) took account not only of parent reports on their children but also of adolescent self-reports; 3) explored effects of culture, gender and age to determine whether the short forms of the ICID retain the sensitivity to culture, gender, and age differences previously reported for the long form of the instrument (e.g., Halverson, 2003; Knyazev et al., 2008).

METHOD

Slovene samples

The participants were selected from all of the regions of the country, accounting for urban and rural population proportionally. The target individuals were recruited from randomly sampled public (pre)schools; in each of the (pre)schools, parents of children in one or two (pre)school groups/ classes were invited to participate.

Sample 1. 1778 parents (including a small number of preschool teachers) completed ICID on 846 boys and 913 girls (missing data for 19 subjects) aged 3 to 14 years (M = 8.6, SD = 4.0). The sample was divided into 3 age groups: 3 - 6 years (N = 570; 51% girls), 7 - 10 years (N = 587; 52% girls) and 11 - 14 years (N = 580; 54% girls). 10% of the mothers and 9% of the fathers had completed eight years of school, 22% of the mothers and 35% of the fathers had completed vocational school, 28% of the mothers and 26% of the fathers had completed high school, 18% of the mothers and 13% of the fathers had had two or three additional years of higher education, 17% of the mothers and 12% of the fathers had a university degree, and 4% of the mothers and 5% of the fathers had an academic degree (M.A. or PhD). The teachers reporting on the preschoolers had had at least 13 years of schooling.

Sample 2. A sample of 419 adolescents (186 boys, 207 girls; 26 subjects did not report gender) aged 12 to 14 years (M = 13.5, SD = 0.3) provided self-reports on the ICID. 12% of their mothers and 11% of their fathers had completed compulsory school, 22% of the mothers and 34% of the fathers had completed vocational school, 29% of the mothers and 28% of the fathers had completed high school, 17% of the mothers and 8% of the fathers had higher education, 14% of the mothers and 13% of the fathers had graduated from university, 5% of the mothers and 6% of the fathers had an academic degree.

Russian samples

The data were collected in both urban and rural areas. Most data came from Novosibirsk, the third largest Russian city.

The sampling was mostly convenience-based, but the recruitment aimed to collect data from diverse socioeconomic backgrounds. The parents ranged from unskilled or manual workers to specialists and administrative staff; some of the parents were students or unemployed. The schoolchildren came from 12 Novosibirsk schools and four rural ones, and all school grades from 1 to 11 were covered. More than half the preschool children attended kindergarten.

Sample 3. 1712 parents or caregivers rated 870 boys and 840 girls (for 2 children gender is unknown) aged 3 to 18 years (M = 10.8, SD = 4.1). The sample was divided into 4 age groups: 3 - 6 years (N = 402; 44% girls), 7 - 10 years (N = 503; 47% girls); 11 - 14 years (N = 419; 49% girls) and 15 - 18 years (N = 384; 58% girls). Most data came from mothers (83%). 2% of the mothers and fathers had eight years or less of schooling, 8% of the mothers and 15% of the fathers had ten years of schooling, 43% of the mothers and 39% of the fathers had two or three years of college education, 45% of the mothers and 41% of the fathers had a university degree, 1.5% of the mothers and 4% of the fathers had an academic degree.

Sample 4. A sample of 1186 youths (497 boys, 686 girls, 3 participants did not report gender) aged 10 to 18 years (M = 14.3, SD = 1.6) completed the questionnaires. The sample was divided into two age groups: 10 - 14 years (N = 553; 54% girls) and 15 - 18 years (N = 633; 61% girls).

Instrument

Parents and adolescents completed *The Inventory of Child Individual Differences* (ICID, Halverson et al., 2003), which contains 108 adjectives and phrases describing children/adolescents in natural language. Each item is rated using a seven-point Likert scale with responses ranging from "much less than the average child or not at all" (compared with other children of the same age) to "much more than in the average child". The items represent 15 robust mid-level scales measuring achievement orientation, activity level, antagonism, compliance, consideration, distractibility, fear/insecurity, intelligence, negative affect, openness to experience, organization, positive emotions, shyness, sociability, and strong will. The scales have good reliabilities, satisfactory inter-rater agreement, short-term stability, close correspondence to FFM marker traits and links to temperament and problem behavior (Halverson et al., 2003).

Both the Russian and the Slovene versions of the ICID demonstrate sound psychometric properties, such as internal reliability, cross-observer agreement, stability and predictive validity in measuring social behavior (Kavčič, Zupančič, 2006; Knyazev et al., 2008; Zupančič, Gril, Kavčič, 2006; Zupančič et al., 2009). Confirmatory factor analyses of the 15 ICID mid-level scales with Russian and Slovene parent and adolescent self-reports demonstrated that the following model fits the data well across informants and ages: extraversion is defined by sociable, activity level, and positive emotions; (dis)agreeableness by antagonism and strong will; conscientiousness by organized, achievement orientation and (un)distractible; neuroticism by fearful/insecure, negative affect and shy, and openness by open to experience and intelligent. Two scales, considerate and compliant, were not included in the model due to their low discriminative validity (Knyazev et al., 2008). This scoring-key for the Big Five was used in the present study.

RESULTS

Selection of Items

Our goal was to develop three-to-five-item versions of each ICID mid-level scale using parental and adolescent self-reports in Slovenia and Russia, striving to make it as similar as possible to the ICID-S developed in the US. We followed the procedure used by Deal et al. (2007). They started with five-item scales, selecting items with the top five loadings from the first principal component of each ICID scale. Then they computed internal reliabilities and reduced the scales to four and then three items, checking for loss of reliability and correlations with the full scales.

Our first step was to extract the first principal component of each ICID scale in each of four samples (parent and self-reports in Slovenia and Russia). Then we selected five items that have the highest loadings across respondents and countries and that also retain items from the US ICID-S. Next, reliabilities (α) were calculated and the mid-level scales were reduced to four items, dropping the items not on the US ICID-S if the αs in all four samples were not negatively affected. Where possible, the same procedure was followed in selecting items for the three-item scales. The resulting instrument contained 62 items. For parent reports, αs ranged from .69 to .86 in Russia and from .66 to .87 in Slovenia with a mean of .78 in both samples; the correlations with the full-item scales ranged from .85 to .97 in Russia and from .88 to .97 in Slovenia with a mean of .93 in both samples. For adolescent self-reports, αs ranged from .64 to .78 in Russia with a mean of .71 and from .50 to .85 in Slovenia with a mean of .70; the correlations with the full-item scales ranged from .84 to .96 in Russia with a mean of .91 and from .84 to .97 in Slovenia with a mean of .92.

Because results for parent reports in both countries showed that most scales could be shortened further, we continued to follow this procedure with Samples 1 and 3. These iterations resulted in a 52-item version that had only two more items than the original ICID-S developed for parent reports in the US. In the Russian sample αs ranged from .68 to .86 with a mean of .75 and in the Slovene sample from .67 to .87 with a mean of .76. The correlations with the full-item scales ranged from .85 to .96 in Russia and from .87 to .96 in Slovenia with a mean of .91 in both samples.

The higher-order scale scores - neuroticism, extraversion, openness, agreeableness, and conscientiousness - were then calculated. For the parent reported 62-item version, αs ranged from .82 to .85 in Russia and from .81 to .90 in Slovenia with a mean of .84 in both samples; the correlations with the full-item scales ranged from .93 to .98 in both samples with a mean of .95 in Russia and .96 in Slovenia. For adolescent self-reports, αs ranged from .77 to .84 in Russia with a mean of .81 and from .76 to .88 in Slovenia with a mean of .80; the correlations with the full-item scales ranged from .89 to .97 in Russia with a mean of .93 and from .91 to .98 in Slovenia with a mean of .95.

For the parent reported 52-item version, αs for the Big Five ranged from .79 to .85 in the Russian sample with a mean of .81 and from .76 to .88 in the Slovene sample with a mean of .82. The correlations with the full-item scales ranged from .92 to .97 with a mean of .94 in Russia and from .93 to .97 in Slovenia with a mean of .95. Thus, in both countries and for both informants, the reduced mid-level and higher-order scales seemed to be measuring the

same constructs as the full scales. Tables 1 and 2 provide descriptive statistics, α reliabilities and correlations with the full-item scales for 52-item parent reported and 62-item self-reported ICID-S. These scales and the findings for the 62-item parent reported version are available on request.

Culture, Gender and Age Effects

To assess the effects of culture, gender, age and interactions among them, multivariate analyses of variance were performed with higher-order and mid-level

Table 1. Descriptive statistics, reliability and validity coefficients for the 52-item ICID-S parent ratings

Scale	No. Items	Russia (N = 1712)				Slovenia (N = 1778)			
		M	SD	α	r	M	SD	α	r
Conscientiousness	12	4.29	.82	.80	.97	4.63	.75	.76	.97
Achievement	3	4.36	.98	.73	.94	4.77	.89	.73	.93
Organized	5	4.36	.90	.74	.96	4.61	.86	.67	.96
Distractible	4	3.84	.96	.68	.94	3.48	.87	.67	.93
Extraversion	10	4.82	.84	.85	.96	5.06	.79	.84	.96
Activity	3	4.65	1.15	.82	.92	4.85	1.04	.75	.90
Sociable	4	4.59	1.01	.78	.94	5.01	1.01	.83	.94
Positive Emotions	3	5.24	1.09	.86	.90	5.32	.98	.77	.88
Neuroticism	11	3.43	.84	.82	.95	3.37	.78	.81	.97
Fearful	4	3.48	1.03	.72	.90	3.33	.97	.72	.88
Shy	4	3.26	1.05	.72	.94	3.10	.96	.69	.97
Negative Affect	3	3.54	1.17	.77	.89	3.69	1.21	.87	.93
(dis)Agreeableness	7	3.30	.96	.79	.92	3.29	.90	.82	.93
Strong Willed	4	3.80	1.03	.69	.85	3.87	1.06	.77	.88
Antagonism	3	2.78	1.14	.73	.89	2.71	.99	.71	.88
Openness	7	4.68	.86	.80	.92	5.17	.86	.88	.94
Open to Exper.	4	4.85	.91	.72	.89	5.25	.92	.84	.91
Intelligent	3	4.53	1.04	.77	.89	5.10	.99	.85	.91
Compliant	3	4.39	1.00	.71	.91	4.69	.91	.75	.87
Considerate	3	4.70	.93	.74	.92	5.05	.92	.79	.92

Note: r = correlation with long form

Table 2. Descriptive statistics, reliability and validity coefficients for the 62-item ICID-S self-ratings

Scale	No. Items	Russia (N = 1186)				Slovenia (N = 419)			
		M	SD	α	r	M	SD	α	r
Conscientiousness	14	4.64	.79	.81	.97	4.76	.73	.79	.98
Achievement	4	4.69	1.01	.68	.93	5.04	.95	.71	.94
Organized	5	4.75	.92	.65	.95	4.79	.84	.50	.94
Distractible	5	3.52	.98	.64	.96	3.56	.93	.61	.96
Extraversion	10	4.74	.93	.84	.95	4.87	.93	.88	.96
Activity	3	4.71	1.26	.76	.90	4.75	1.15	.67	.90
Sociable	4	4.66	1.09	.72	.92	5.07	1.15	.85	.95
Positive Emotions	3	4.85	1.09	.78	.90	4.80	1.06	.81	.91
Neuroticism	13	3.26	.94	.81	.94	3.17	.80	.77	.97
Fearful	5	3.10	1.10	.72	.96	3.12	.92	.61	.93
Shy	5	3.05	1.11	.69	.96	2.84	.95	.63	.97
Negative Affect	3	3.63	1.36	.75	.88	3.54	1.35	.83	.91
(dis)Agreeableness	8	3.32	1.06	.80	.92	3.40	.91	.76	.91
Strong Willed	4	3.79	1.18	.65	.84	4.20	1.07	.60	.84
Antagonism	4	2.84	1.21	.77	.90	2.60	1.09	.78	.88
Openness	9	4.59	.84	.77	.89	4.92	.83	.80	.92
Open to Exper.	5	4.39	.98	.71	.88	4.74	.99	.74	.89
Intelligent	4	4.80	.98	.73	.85	5.10	.95	.73	.89
Compliant	5	4.58	.92	.70	.95	4.77	.96	.71	.95
Considerate	4	4.81	.99	.71	.94	4.61	.90	.77	.94

Note: r = correlation with long form

personality scales. For the 52-item parent reports, the MANOVA design was 2 (Slovenia vs. Russia) x 2 (boys vs. girls) x 3 (ages 3 - 6, 7 - 10 and 11 - 14). For the 62-item self-reports, the MANOVA design was 2 (Slovenia vs. Russia) x 2 (boys vs. girls); in order to match the samples from the two countries for age, only 12 to 14 year old Russian adolescents (N = 501) were included. Significant effects were further evaluated through ANOVAs. The amount of variance explained by culture, gender, age and interactions among them was estimated by eta squared (η^2). The level of significance was set at .01.

Parent Reports on Higher-Order Traits. Significant multivariate main effects emerged for culture (Wilk's $\lambda = .897$, $p < .001$, $\eta^2 = 10.3\%$), gender ($\lambda = .973$, $p < .001$, $\eta^2 = 2.7\%$), age ($\lambda = .955$, $p < .001$, $\eta^2 = 2.3\%$) and culture-by-age interaction ($\lambda = .989$, $p < .001$, $\eta^2 = 0.5\%$). Then univariate tests were performed, addressing each of the Big Five factors. Table 3 shows culture, gender and age effects and their interactions. Significant effects of culture were observed for conscientiousness ($F (1, 3039) = 213.11$, $p < .001$), extraversion ($F (1, 3041) = 45.91$, $p < .001$) and openness ($F (1, 3041) = 240.37$, $p < .001$): in Slovenia parents rated their children higher on all three dimensions than in Russia. Effects of gender were noted for conscientiousness ($F (1, 3039) = 56.44$, $p < .001$), neuroticism ($F (1, 3037) = 16.76$, $p < .001$) and (dis)agreeableness ($F (1, 3036) = 8.02$, $p < .01$): girls were described as more conscientious, emotionally stable and agreeable than boys. Age was associated with significant effects for extraversion ($F (2, 3041) = 6.44$, $p < .01$), (dis)agreeableness ($F (2, 3036) = 35.08$, $p < .001$) and openness ($F (2, 3041) = 18.55$, $p < .001$): parents rated younger children higher on all three factors than older ones.

Culture-by-age interaction was significant for conscientiousness ($F (2, 3039) = 6.73$, $p < .01$), extraversion ($F (2, 3041) = 5.79$, $p < .01$) and neuroticism ($F (2, 3037) = 5.34$, $p < .01$). For conscientiousness, Slovene parents rated early adolescents higher than younger children, while Russian parents' ratings did not differ among three groups, but were significantly higher in late adolescence (Figure 1A). For extraversion, Slovene parent ratings did not differ among age groups, while Russian parents rated preschoolers higher than older children, and age-related decrease continued in late adolescence ($r = -.12$, $p < .001$). Neuroticism slightly decreased with age in the Slovene sample ($r = -.059$, $p = .014$) and in the Russian sample tended to increase from preschool to early adolescence ($r = .056$, $p = .041$) and decreased in late adolescence (Figure 1B).

Gender-by-age interaction was noted for conscientiousness ($F (2, 3039) = 6.11$, $p < .01$) and openness ($F (2, 3041) = 5.69$, $p < .001$). For conscientiousness, parents rated early adolescent girls higher than younger ones, while boys' ratings did not differ. For openness, parents rated preschool girls higher than girls in middle childhood and adolescence, boys' ratings were lowest in early adolescence and the two younger groups did not differ. Three-way culture-by-gender-by-age interaction was significant for openness ($F (2, 3041) = 5.16$, $p < .01$, $\eta^2 = 0.3\%$). In girls, age differences were similar in both countries; in boys, Slovene parent ratings in middle childhood were higher than in early adolescence, but the two younger groups did not differ; Russian parent ratings for boys decreased from preschool to early adolescence ($r = -.20$, $p < .001$), but were higher in late adolescence than in early adolescence ($p = .03$, Figure 1C).

Self-Reports on Higher-Order Traits. Multivariate main effects were significant for culture (Wilk's $\lambda = .945$, $p < .001$, $\eta^2 = 5.5\%$) and gender ($\lambda = .979$, $p < .01$, $\eta^2 = 2.1\%$). Culture-by-gender interaction was not significant, so the effects of culture and gender on each of the Big Five were determined by univariate one-way ANOVAs. Significant effects of culture were observed for conscientiousness ($F (1, 769) = 12.27$, $p < .001$, $\eta^2 = 1.6\%$) and openness ($F (1, 770) = 34.83$, $p < .001$, $\eta^2 = 4.3\%$): Slovene adolescents scored higher on both dimensions than Russian. Univariate tests did not show significant gender diffeences,

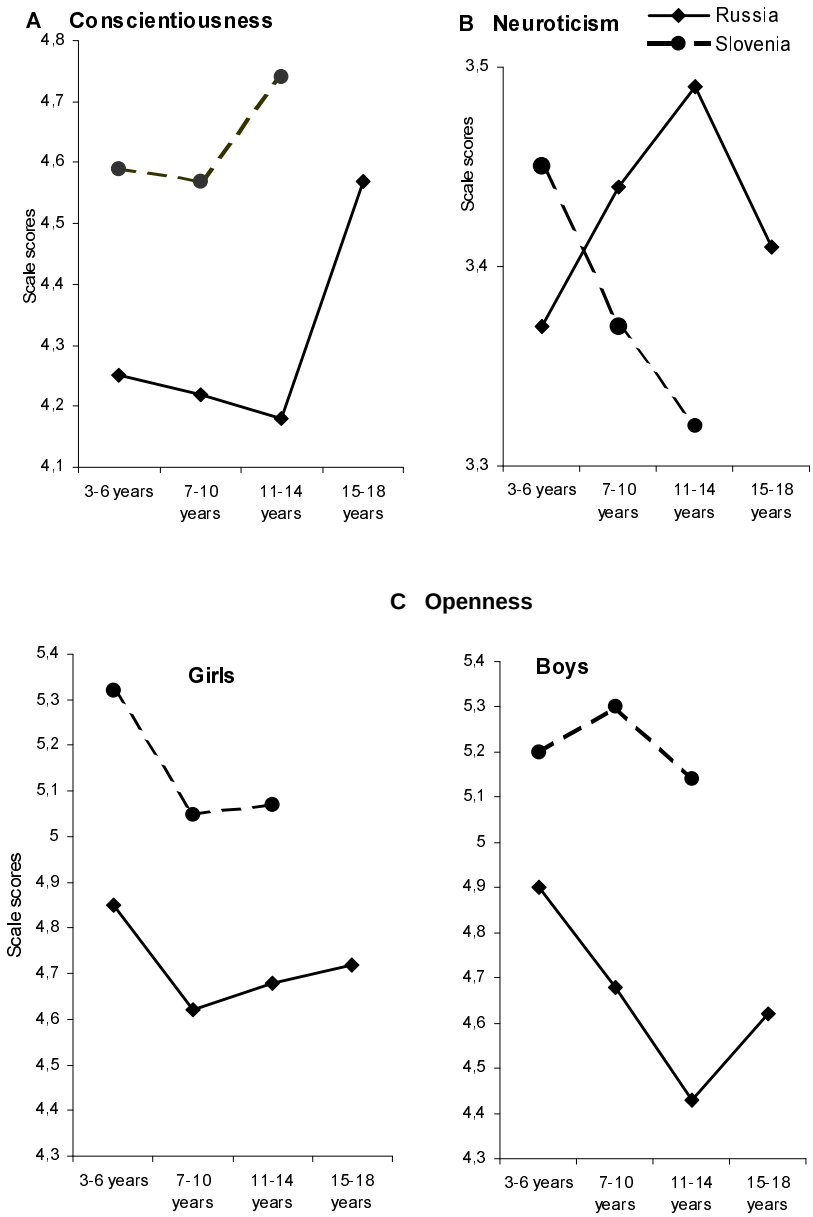

Figure 1. Effects of culture and age on the Big Five. A - Conscientiousness, B - Neuroticism, C - Openness in boys and girls

the largest effect was noted for extraversion (F (1, 766) = 4.32, p = .038, η^2 = 0.6%) with girls scoring higher than boys. Two-way ANOVAs 2 (boys vs. girls) x 2 (ages 10 - 14 vs. 15 - 18) on Russian Sample 4 showed that older adolescents scored higher than younger ones on neuroticism (F (1, 1181) = 7.94, p < .01, η^2 = 0.7%) and (dis)agreeableness (F (1, 1180) = 19.46, p < .001, η^2 = 1.6%).

Parent Reports on Mid-Level Traits. Multivariate main effects were significant for culture (Wilk's λ = .820, p < .001, η^2 = 18%), gender (λ = .946, p < .001, η^2 = 5.4%), age (λ = .887, p < .001, η^2 = 5.8%) and culture-by-age interaction (λ = .971, p < .001, η^2 = 1.5%). Table 3 shows the results of univariate tests. Significant effects of culture were observed for 13 scales: Slovene children scored higher than Russian on achievement (F (1, 3023) = 204.53, p < .001), organized (F (1, 3030) = 104.29, p < .001), activity level (F (1, 3031) = 8.74, p < .01), sociable (F (1, 3038) = 115.94, p < .001), negative affect (F (1, 3010) = 12.29, p < .001), open to experience (F (1, 3031) = 122.31, p < .001), intelligent (F (1, 3034) = 258.71, p < .001), compliant (F (1, 3023) = 134.35, p < .001), and considerate (F (1, 3022) = 141.31, p < .001). Russian children scored higher on distractible (F (1, 3029) = 161.90, p < .001), fearful/insecure (F (1, 3031) = 23.24, p < .001), shy (F (1, 3017) = 11.4 2, p = .001), and antagonism (F (1, 3002) = 9.46, p < .01).

Significant effect of gender was noted for 11 traits: parents rated girls higher than boys on achievement (F (1, 3023) = 19.37, p < .001), organized (F (1, 3030) = 50.81, p < .001), positive emotions (F (1, 3025) = 8.83, p < .01), compliant (F (1, 3023) = 30.73, p < .001), and considerate (F (1, 3022) = 14.75, p < .001). Boys received higher scores on distractible (F (1, 3029) = 56.87, p < .001), activity (F (1, 3031) = 31.34, p < .001), shy (F (1, 3017) = 9.52, p < .01), negative affect (F (1, 3010) = 17.04, p < .001), antagonism (F (1, 3002) = 14.84, p < .001), and open to experience (F (1, 3031) = 7.07, p < .01).

Age was associated with significant effects for eight traits: distractible (F (2, 3029) = 5.22, p < .01), activity (F (2, 3031) = 18.74, p < .001), antagonism (F (2, 3002) = 25.33, p < .001), strong willed (F (2, 3033) = 31.64, p < .001), intelligent (F (2, 3034) = 13.96, p < .001), open to experience (F (2, 3031) = 14.90, p < .001), compliant (F (2, 3023) = 12.41, p < .001), and considerate (F (2, 3023) = 16.53, p < .001). According to parents, activity level decreased with age (r = -.11, p < .001), compliance and consideration increased (r = .15, and r = .12, respectively, p < .001). Preschool children were perceived as more distractible than the middle childhood group, and the former appeared the more antagonistic, strong willed, intelligent, and open to experience.

Culture-by-gender interaction was significant for intelligent (F (1, 3034) = 6.80, p < .01): Russian parents rated girls higher than boys, while Slovene parents' ratings did not differ. Culture-by-age interaction was significant for distractible (F (1, 3029) = 8.58, p < .001), sociable (F (2, 3038) = 5.43, p < .01), positive emotions (F (2, 3025) = 8.83, p = .01), shy (F (2, 3017) = 5.08, p < .01), negative affect (F (2, 3010) = 8.27, p < .001), and intelligent (F (2, 3034) = 5.27, p < .01). For distractible, Slovene parents rated the middle childhood group higher than early adolescents, while Russian parents' ratings increased with age from preschool to early adolescence (r = .08, p = .003) and then decreased, so that scores in late adoles-

Table 3. Percentage of variance accounted for by significant ($p < .01$) effects of culture, gender and age on ICID-S mid-level and higher-order scales

Scale	Culture[a]	Gender[b]	Age[c]	Two-way interactions[d]		
				CxG	CxA	GxA
Conscientiousness	**6.6^{S}**	**1.8^{F}**	-	-	**.4 (S$^{3>1,2}$)**	**.4 (F$^{3>1,2}$)**
Achievement	6.4^{S}	.6^{F}	-	-	-	.5 (F$^{3>1,2}$)
Organized	3.3^{S}	1.7^{F}	-	-	-	.3 (F$^{3>1,2}$)
Distractible	5.1^{R}	1.8^{M}	.3$^{1>2}$	-	.6 (S$^{2>3}$, R$^{3>1}$)	-
Extraversion	**1.5^{S}**	-	**.4$^{1>3}$**	-	**.4 (R$^{1>2,3}$)**	-
Activity Level	.3^{S}	1.0^{M}	1.2$^{1>2>3}$	-	-	-
Sociable	3.7^{S}	-	-	-	.4 (S$^{2>1}$)	-
Positive Emotions	-	.3^{F}	-	-	.5 (R$^{1>2,3}$)	-
Neuroticism	-	**.6^{M}**	-	-	**.4 (S$^{1>3}$)**	-
Fearful/Insecure	.8^{R}	-	-	-	-	-
Shy	.4^{R}	.3^{M}	-	-	.3 (R$^{3>1}$)	-
Negative Affect	.4^{S}	.6^{M}	-	-	.5 (S$^{1>2,3}$)	-
(dis)Agreeableness	-	**.3^{M}**	**2.3$^{1>2,3}$**	-	-	-
Strong Willed	-	-	2.1$^{1>2,3}$	-	-	-
Antagonism	.3^{R}	.5^{M}	1.7$^{1>2,3}$	-	-	-
Openness	**7.3^{S}**	-	**1.2$^{1>2,3}$**	-	-	**.4 (F$^{1>2,3}$; M$^{1,2>3}$)**
Open to Experience	3.9^{S}	.2^{M}	1.0$^{1>2,3}$	-	-	-
Intelligent	7.9^{S}	-	.9$^{1>2,3}$	.2 (R^{F})	.3 (R$^{1>2,3}$)	.4 (F$^{1>2,3}$; M$^{1>3}$)
Compliant	4.3^{S}	1.0^{F}	1.9$^{3,2>1}$	-	-	.4 (F$^{3>2,1}$; M$^{2,3>1}$)
Considerate	4.5^{S}	.5^{F}	1.1$^{3,2>1}$	-	-	-

Note: [a] Direction of culture effects: S = Slovenians scored higher; R = Russians scored higher.

[b] Direction of gender effects: F = females scored higher; M = males scored higher.

[c] Direction of age effects when pairwise t-test was significant at $p < .01$; 1 = 3 - 6 years; 2 = 7 - 10 years; 3 = 11 - 14 years.

[d] C x G = culture-by-gender; C x A = culture-by-age; G x A = gender-by-age. Direction of interaction effects: e.g., R^{F} indicates that for Russians, females scored higher; (M$^{1>3}$) indicates that for males, age group 1 scored higher than age group 3.

cence were significantly lower than in the three younger groups (Figure 2A). For sociable, Slovene parents rated the middle childhood group higher than preschoolers, while Russian parents' ratings did not differ. For shy, Slovene parents' ratings from preschool to early adolescence did not differ, while Russian parents' ratings increased with age ($r = .10$, $p < .001$) and in late adolescence were higher than in preschool (Figure 2B). For positive emotions, Slovene parents' ratings did not differ, while Russian parents rated preschoolers higher than older children and early adolescents (Figure 2C). Negative affect showed an opposite pattern: Slovene children's scores decreased with age ($r = -.10$, $p < .001$), while Russian children's scores did not differ (Figure 2D). For intelligent, Slovene parents' ratings did not differ, while Russian parents rated preschoolers higher than older children.

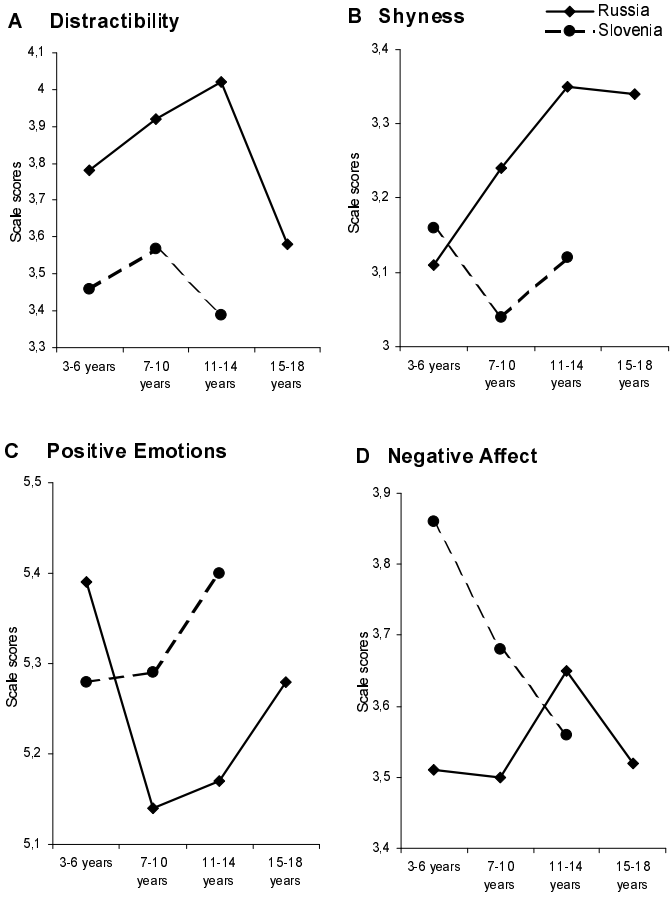

Figure 2. Effects of culture and age on the ICID mid-level traits: A - Distractible, B - Shy, C - Positive Emotions, D - Negative Affect

Gender-by-age interaction was noted for achievement ($F(2, 3023) = 7.83$, $p < .001$), organized ($F(2, 3030) = 4.75$, $p < .01$), intelligent ($F(2, 3034) = 5.96$, $p < .01$), and compliant ($F(2, 3023) = 5.51$, $p < .01$). For achievement, parents rated girls higher than boys in preschool and early adolescence, but in middle childhood boys' and girls' scores did not differ (Figure 3A). For organized, parents rated early adolescent girls higher than younger girls, while boys' ratings did not differ (Figure 3B). For intelligent, parents rated girls higher than boys in preschool and early adolescence, but in middle childhood boys' scores were somewhat (non-significantly) higher than girls' (Figure 3C). For compliant, parents rated girls higher than boys in preschool and early adolescence, but in middle childhood boys' and girls' scores did not differ (Figure 3D).

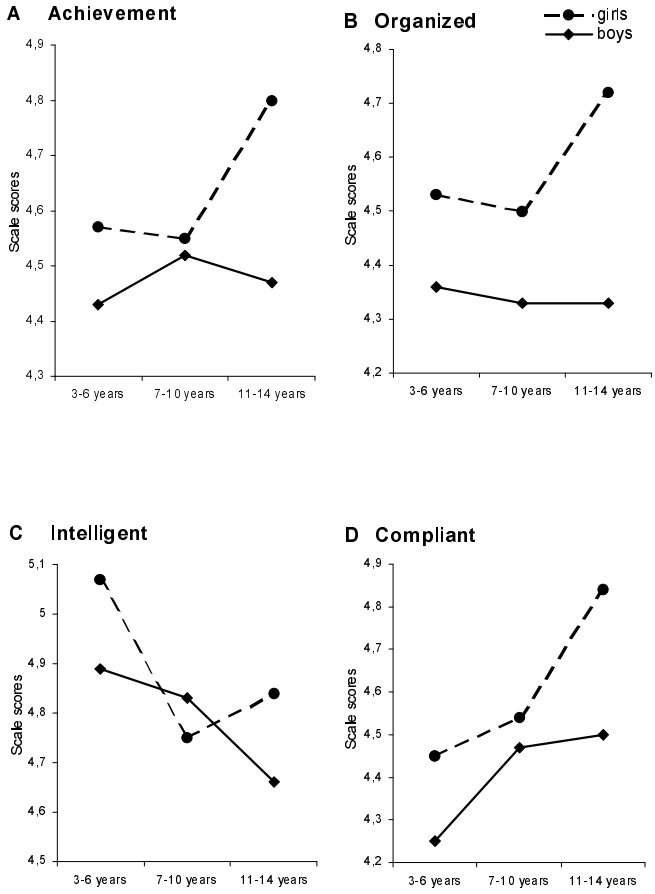

Figure 3. Effects of gender and age on the ICID mid-level traits: A - Achievement, B - Organized, C - Intelligent, D - Compliant

Three-way culture-by-gender-by age interaction was significant for open to experience ($F (1, 3031) = 4.88$, $p < .01$, $\eta^2 = 0.3\%$). In Slovenia, age differences were significant in girls: preschoolers received higher scores than the two next older groups, while in Russia age differences were significant in boys: the two younger groups scored higher than early adolescents.

Self-Reports on Mid-Level Traits. Multivariate main effects were significant for culture (Wilk's $\lambda = .746$, $p < .001$, $\eta^2 = 25.4\%$) and gender ($\lambda = .888$, $p < .01$, $\eta^2 = 11.2\%$). Culture-by-gender interaction was not significant, so the effects of culture and gender on each of the 15 traits were determined by univariate one-way ANOVAs. Cross-cultural differences were significant for eight traits: Slovene adolescents rated themselves higher than Russians on achievement ($F (1, 769) = 43.48$, $p < .001$; $\eta^2 = 5.4\%$), sociable ($F (1, 768) = 33.68$, $p < .001$; $\eta^2 = 4.7\%$), strong will ($F (1, 766) = 37.88$, $p < .001$; $\eta^2 = 4.7\%$), open to experience ($F (1, 755) = 34.34$, $p < .001$; $\eta^2 = 3.1\%$), intelligent ($F (1, 770) = 24.27$, $p < .001$; $\eta^2 = 3.1\%$), and compliant ($F (1, 767) = 16.02$, $p < .001$; $\eta^2 = 2.0\%$), while Russian adolescents scored higher on shy ($F (1, 760) = 10.44$, $p = .001$; $\eta^2 = 1.4\%$) and antagonism ($F (1, 765) = 8.66$, $p < .01$; $\eta^2 = 1.1\%$).

Significant effect of gender was noted for three traits: girls rated themselves higher than boys on positive emotions ($F (1, 756) = 17.65$, $p < .001$; $\eta^2 = 2.3\%$) and considerate ($F (1, 757) = 11.88$, $p = .001$; $\eta^2 = 1.5\%$), while boys scored higher on antagonism ($F (1, 762) = 10.23$, $p = .001$; $\eta^2 = 1.3\%$). Two-way ANOVAs 2 (boys vs. girls) x 2 (ages 10 - 14 vs. 15 - 18) in the Russian sample showed significant age effects for five traits: older adolescents rated themselves higher than younger on distractible ($F (1, 1149) = 6.82$, $p < .01$, $\eta^2 = 0.6\%$), fearful/insecure ($F (1, 1172) = 10.61$, $p = .001$, $\eta^2 = 0.9\%$), negative affect ($F (1, 1156) = 10.18$, $p = .01$, $\eta^2 = 0.9\%$), strong will ($F (1, 1178) = 23.26$, $p < .001$, $\eta^2 = 1.9\%$), and antagonism ($F (1, 1170) = 6.58$, $p = .01$, $\eta^2 = 0.9\%$).

DISCUSSION

Our study provided further empirical evidence that the ICID (Halverson et al., 2003), a new age and culture neutral instrument designed specifically to assess personality traits in children and adolescents, can be utilized in a shorter version, ICID-S. The results with Russian and Slovene samples replicated the findings of Deal et al. (2007) with parent reports on child personality in the US non-representative sample. Following the procedure applied in the US, our analyses resulted in a 62-item instrument that showed adequate reliabilities of 15 mid-level and five higher-order scales and strong correlations with the full-item ICID for both parent and self-reports in the two Slavic countries. This suggests that the 62-item ICID-S is suitable with multiple informants and for cross-national comparisons. For parent reports, a 52-item ICID-S retains the same levels of reliability and convergence with the full-item instrument as the 62-item ICID-S does. This lends further evidence that an even briefer parent-report version offers an appropriate assessment tool for cross-cultural comparisons.

The results further suggest that the 52-item ICID-S for parents and the 62-item version for adolescents are sensitive to cultural, gender and age differences. The effects of culture on higher-order and mid-level traits were relatively stronger

than those of gender and age, while the directions of these effects were remarkably similar to those obtained with the full ICID (Knyazev et al., 2008; Zupančič, Gril, Kavčič, 2006). Parent and adolescent reports concurred in rating Slovenes higher than Russians on conscientiousness, openness and, to a lesser extent, extraversion, and the corresponding mid-level traits. Hofstede and McCrae (2004) suggested the following explanations of cross-cultural differences in personality: 1) among national populations, genetic personality predispositions differ systematically; 2) children acquire common personality during the process of socialization in a given culture; and 3) culture affects responses to personality inventories.

In line with the first explanation, cultural differences in personality were present in preschool children. And they did not increase with age: for the Big Five, the multivariate effect of culture in early childhood (preschoolers) was 12%, in middle childhood - 10%, and in adolescence - 12%. On the trait level, the multivariate effect of culture in early childhood was 23%, in middle childhood - 19%, and in adolescence - 18.9%. Culture-by-age interactions indicate that patterns of personality development in the two countries may differ. For some traits, developmental trends from preschool to early adolescent years went in opposite directions: in Slovenes, neuroticism decreased with age, while in Russians it increased. The same pattern emerged for negative affect; in addition, Russian children became increasingly distractible and shy. By contrast, positive emotionality increased with age in Slovenes and decreased in Russians.

These differences might reflect cultural influences on parent ratings. A better economic situation and higher subjective well-being in Slovenia (Inglehart, Klingemann, 2000) may contribute to higher evaluation of socially desirable traits, such as conscientiousness, openness and the respective mid-level traits (Knyazev et al., 2008) and lead to accumulation of positive scores with age. One might rightly expect that adversities experienced by Russian children (Goodman, Slobodskaya, Knyazev, 2005) could lead to low scores on socially desirable personality traits and high scores on some unwelcome traits, such as neuroticism, distractibility, shyness and negative affect that could accumulate with age. The additional analyses on Russian data showed that some trends in parent ratings changed direction from early to late adolescence: conscientiousness and positive emotions sharply increased, while neuroticism, distractibility and negative affect decreased. As a result, cultural differences in late adolescents could be smaller than in younger children. However, self-reports do not support this assumption: late adolescents in Russia rated themselves considerably higher than early adolescents on a host of socially undesirable traits in the domains of neuroticism and (dis)agreeableness (distractibility, shyness, fear/insecurity, negative affect, antagonism and strong will). Much more work is needed to understand the development of cultural differences in personality, especially in cultures undergoing a process of rapid transition.

All gender effects were small, explaining less than 3% of variance. Most of the differences lay in the domain of conscientiousness: parents rated girls higher than boys on all three traits comprising this factor. In turn, they ascribed to boys higher levels of neuroticism and (dis)agreeableness. The direction of the perceived gender differences in trait expression is consistent with previous Russian and Slovene findings using the long form of the ICID: dif-

ferent informants tend to rate girls somewhat higher on socially desirable traits than boys, who are perceived to exhibit slightly higher levels of less desirable traits (Zupančič, Gril, Kavčič, 2006; Zupančič et al., 2008). Fewer gender differences in adolescent self-reports than in parent reports suggest that parental perceptions of their children's personality may be gender-biased. In addition, our results indicate that development of gender differences in personality might follow different pattern in different cultures: for openness, in both countries girls' scores decreased between early and middle childhood; in Slovene boys the scores decreased between middle childhood and early adolescence, and in Russian boys they successively decreased and rose after early adolescence.

Age effects were small: a small number of them explained around 2% of the variance. Parents rated younger children higher than older on extraversion, mostly due to activity, and (dis)agreeableness, due to strong will and antagonism. In the openness domain, parents perceived preschoolers as higher than older children on both openness to experience and intelligence traits. It is worth noting that the ICID compares the target child with his/her age group and this may underestimate age differences. Whether the ICID is suitable for tracking developmental changes (Knyazev et al., 2008; Zupančič, Gril, Kavčič, 2006) awaits future inquiry.

Along with the authors who developed a short ICID in the US (Deal et al., 2007) we believe that short forms would help psychologists to utilize the instrument widely, easily and in a variety of settings, minimizing the time required to complete it. For example, it would be reasonable to ask both parents to rate all their children or (pre)school teachers to assess many children in their group/class or sports coaches to report on multiple children in their club, especially in follow-up studies. The ICID-S is also more practicable for cross-cultural research with large samples because it is less time consuming than the full version and retains sensitivity to cross-cultural differences.

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ZOSTAVENIE A OVERENIE SKRÁTENEJ VERZIE DOTAZNÍKA INDIVIDUÁLNYCH ROZDIELOV DIEŤAŤA - V DVOCH SLOVANSKÝCH KRAJINÁCH

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Súhrn: Päťfaktorový model osobnosti dieťaťa/adolescenta sa potvrdil na výberoch rôzneho veku, pohlavia i krajiny. Kultúrne a vekovo nešpecifický Dotazník Individuálnych Rozdielov Dieťaťa (ICID, Halverson et al., 2003) skúma osobnosť dieťaťa a adolescenta v rámci päťfaktorového modelu. Nedávno v USA (Deal et al., 2007) vytvorili skrátenú verziu tohto dotazníka, ktorá si zachováva úroveň validity a reliability pôvodnej, plnej verzie. Vo výskume sme použili skrátené verzie ICID vhodné pre medzinárodné provnanie a potvrdili sme reliabilitu a validitu 15 redukovaných škál strednej úrovne a piatich faktorov vyššieho rádu v odpovediach opatrovateľov 3 - 18 ročných detí zo Slovinska (N = 1778) a Ruska (N = 1712) a v sebahodnoteniach adolescentov (Slovinsko, N = 419; Rusko, N = 1186). Skúmali sme vplyvy kultúry, rodu a veku a ich interakcie. Podľa výpovedí rodičov kultúrne rozdiely zodpovedali za viac ako 10% variancie v osobnostiach detí a 5,5% variancie podľa výpovedí adolescentov. V porovnaní s ruskou vzorkou, Slovinci dosahovali vyššie skóre v extroverzii, svedomitosti a otvorenosti a viacerých črtách strednej úrovne obsahujúcich tieto domény. Pohlavie a vek zodpovedali za 2 až 3% variancie. Kultúrno-rodovo-vekové interakcie naznačovali rozdiely v osobnostnom vývine chlapcov a dievčat v dvoch slovanských krajinách.