Personality structure in Slovenian three-year-olds: The inventory of child individual differences

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Abstract: The paper presents data on the validity of the newly developed culturally- and age-decentered instrument (International Inventory of Individual Differences, ICID), an internationally designed measure of individual differences in children, aged 3 to 12 years, based on a child personality lexicon from parental free descriptions. Using the fifteen of the ICID mid-level scales, three hundred and fifty-two Slovenian three-years-old children were assessed independently by their mothers, fathers and preschool teachers. The preschool teachers also rated children's social adjustment on the Social Competence and Behavior Evaluation Scale. Data on satisfactory internal reliability of the childhood personality scales, their congruence across multiple observers and occasions of observed behavior as well as evidence of differential links of these scales to other measures of individual differences (social competence and maladaptive behavior) are reported. The factor structure of the ICID scales across the observers is also shown in comparison to the data collected in other countries. The composition of the mid-level scales into four broad-band personality dimensions (Extraversion, Conscientiousness, Agreeableness, and Neuroticism) appeared remarkably similar when the factor structures of mothers' and fathers' assessments of three-year-old children were compared, while the preschool teachers' perceived organization of the child personality was found somewhat less differentiated (represented by the combined Conscientiousness/Openness, Extraversion/Neuroticism, and Agreeableness dimensions) in comparison to the parental one.

Key words: personality, broad-band dimensions, mid-level traits, validity, early childhood

Struktura osebnosti pri slovenskih triletnikih: vprašalnik individualnih razlik med otroki

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Povzetek: V prispevku predstavljava podatke o veljavnosti novega starostno in kulturno decentriranega pripomočka za ugotavljanje individualnih razlik med otroki, starimi od 3 do 12 let (Vprašalnik individualnih razlik med otroki – VIRO). Vprašalnik so avtorji razvili v okviru mednarodnega projekta, postavke v vprašalniku pa temeljijo na starševih prostih opisih otrokove osebnosti. V vzorec pričujoče študije je bilo vključenih tristo dvainpetdeset triletnih slovenskih otrok, ki so jih na petnajstih VIRO lestvicah neodvisno ocenile njihove mame, očeti in vzgojiteljice v vrtcu. Vzgojiteljice so pri istih otrocih ocenile tudi njihovo socialno prilagajanje, in sicer na Vprašalniku socialnega vedenja. V prispevku prikazujeva

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zadovoljive merske značilnosti otroških lestvic osebnosti, ki sestavljajo VIRO, t.j. njihovo notranjo zanesljivost, skladnost med več ocenjevalci, ki otroka opazujejo v različnih kontekstih, in podatke o povezanosti lestvic z drugimi merami individualnih razlik (socialna kompetentnost in oblike manj prilagojenega vedenja). Faktorsko strukturo VIRO lestvic prikazujeva za vsako skupino ocenjevalcev posebej in jo primerjava s strukturo, ki so jo raziskovalci ugotovili v drugih državah. Faktorska struktura lestvic je med mamami in očeti pokazala na zelo podobno sestavo štirih dimenzij otrokove osebnosti (ekstravertnost, vestnost, sprejemljivost in nevroticizem), medtem ko je bila med vzgojiteljicami njihova zaznana organizacija otrokove osebnosti (predstavljajo jo kombinirani dimenziji vestnost/odprtost in ekstravertnost/nevroticizem ter dimenzija sprejemljivost) nekoliko manj diferencirana v primerjavi s starševo.

Ključne besede: osebnost, dimenzije, poteze, veljavnost, zgodnje otroštvo

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In the adult personality literature there is an emerging consensus regarding the main personality dimensions as the Five-Factor Model (FFM) has been found to summarize the organization of personality traits in adults in many countries and language communities (McCrae & Costa, 1997). No such consensus has been achieved in child developmental literature. Analyzing the discussions of "personality" in current introductory texts of child psychology, Halverson, Havill, Deal et al. (in press) have reported that until very recently, almost no interest in child "personality" structure beyond the summaries of different temperamental structures (e.g. Buss & Plomin, 1984; Rothbart, 1981; Thomas & Chess, 1977) existed. In addition, the empirical studies of the FFM have been done mostly with adult samples, however with some extensions into adolescence and late childhood (e.g. Digman, 1963, 1990; Digman & Inouye, 1986).

Following Digman's pioneering work in the field of child personality the search for developmental precursors of the Big Five began during the last decade of the twentieth century. Using three different general strategies in investigating individual differences in child personality (Elphick, Slotboom & Kohnstamm, 1997), several authors supported the validity of the FFM in childhood (e.g. Digman & Shmelyov, 1996; Halverson et al., in press; Havill, Baker, Halverson et al., submitted; Little & Wanner, 1998; Mervielde, Buyst & De Fruyt, 1995). The first strategy uses an adult FFM measure for assessing non-adult's personality traits, usually with an item phrasing and/or rating instructions slightly adapted to make them more relevant for children or adolescents (e.g. De Fruyt, Mervielde, Hoekstra & Rolland, 2000; Mervielde et al., 1995; Zupančič, Kavčič & Fekonja, 2003). The second strategy derives FFM scores from child or adolescent inventories constructed to serve a personality model other than FFM (e.g. Abe & Izard, 1999; Lamb, Chuang, Wessels, Broberg & Hwang, 2002), i.e. rearranging items and scales in order to form reliable markers for the FFM factors. The third strategy is aimed at the construction of specific FFM inventories reflecting observable differences in characteristics of children that are most salient

for their parents (e.g. Halverson et al., in press; Havill et al., submitted; Mervielde & De Fruyt, 1999, 2002).

Generating the child inventory items

Based on a free-descriptive approach (for an overview see Kohnstamm, Halverson, Mervielde & Havill, 1998; Zupančič, 2001) and using the third of the aforementioned approaches, a so-called bottom-up strategy (Elphick et al., 1997), several age and culture specific inventories to assess individual differences in children were constructed (e.g. Besevegis & Pavlopoulos, 1999; Halverson, 2001).

During the first phase of a multi-national collaborative project (Kohnstamm et al., 1998) parental free language descriptions of three- to twelve-years-old children were collected in order to obtain inventory items that would best represent child individual differences as perceived by the adults who know the children well and interact with them in everyday contexts. The free descriptions gathered in seven different language communities (Belgium, China, Germany, Greece, the Netherlands, Poland and the U.S.A.) were reliably coded using a rational system (Havill, Allen, Halverson & Kohnstamm, 1994; see also Kohnstamm et al., 1998 and Zupančič, 2001 for details). A strong support for the usefulness of the FFM for coding the generated descriptors was found, i.e. the vast majority of parental descriptions were coded in Big Five categories, demonstrating that parents in all countries construed the basic structure of child personality in much the same way (Kohnstamm et al., 1998). Striking similarities to these international data were also revealed with samples of Slovenian parents of one- to seven-years-old children (Zupančič, in press).

In the next phase of the collaborative project, research teams in each of the participating countries developed instruments to assess child personality characteristics coded from the taxonomy compiled from parental free descriptors for three different age groups of children, i.e. three-, six- and nine to twelve-year-olds. Parental descriptions for children in each country were written on index cards which were sorted by focus groups of four people (naive to the FFM) within a dimension (e.g. Openness) into homogeneous clusters. Based on clusterings of the parental descriptions, subsets of inventory items were assembled for each age group. Items from each cluster collated into preliminary instruments of up to 150 items at each age (Halverson et al., in press). This means that several age specific inventories were produced in different countries (somewhat different items in each country for at least three specific ages of the target children) which led to an unwieldy and unworkable set of measures unsuitable for cross-country (Halverson, 2001; Halverson et al., in press) and age comparisons. Therefore, the research teams aimed at the development of a cross-age and cross-cultural instrument to assess child individual differences that would capitalize on the overlap and redundancy of items across age and country (Halverson et al., in press; Havill et al., submitted).

Development of the age- and culture-decentered child inventory

Halverson and his collaborators (Halverson et al., in press) selected items for an age- and culturally-decentered inventory from those found on all of the Chinese, Dutch, Greek and U.S. age-specific inventories. A multi-national team of researchers, blind to the origin of the item, then sorted these items into clusters. The researchers were also asked to select two or three phrases that they thought were the most prototypical of the items contained in a given cluster. Prototypical items were selected for each cluster. If such an item was represented in the lexicon of the majority of samples, and present at each age group of children described, it was retained for the first version of the Inventory of Child Individual Differences (ICID). It contained 144 items that matched the distribution of the Big Five phrases in the parental lexicon established during the collections of parental free descriptions of their children (e.g. 26% of the descriptions were coded as belonging to Extroversion in the FFM taxonomy, thus 38 of the ICID items describing Extroversion were retained). Most ICID items had representation in at least three of the four countries and across all ages from three to twelve years of age.

This preliminary version of ICID was then rated by large samples of Chinese, Greek and U.S. parents of children aged from three to thirteen years. Exploratory oblique and orthogonal maximum likelihood factor analysis were calculated on data collected within each of the three countries. A factor structure resembling the Big Five was recovered across the countries (Havill et al., submitted). To obtain mid-level scales within each country, each of the domains (e.g. Neuroticism, Conscientiousness) was further factored (maximum likelihood factor analysis with orthogonal rotations). The resulting mid-level clusters were further examined across countries. Scales that contained nearly identical items as indigenously derived mid-level scales were formed. Items specific to only one country or age group were dropped if the internal consistency coefficient for the mid-level scale was not negatively affected by the removal of that item. Following this procedure 108 items were retained in the ICID. The final iterations resulted in fifteen mid-level scales that were strongly reliable for all samples of the target children (Halverson et al., in press). A further comparison of data using parent ratings of children aged from three- to thirteen years on ICID, collected in China, Greece, Slovenia and the U.S. showed additional evidence for reliability and validity of the fifteen mid-level scales, while a consistent structure for four (Extroversion, Agreeableness, Conscientiousness, and Neuroticism) of the five factors was clearly demonstrated (Havill et al., submitted).

The remainder of this report focuses on the characteristics of fifteen mid-level scales (internal reliability, inter-rater agreements, convergence with measures of social behavior) and the structure they generate for the Slovenian three-year-old children as targets when rated by the adults in different roles, interacting with these children across different everyday contexts (home and preschool).

Method

Participants

352 three-year-olds (age range from 31 to 46 months; *M* age = 37.9 months; *SD* age = 2.5 months) participated in the study, 180 of whom were girls and 172 boys. All of the children attended preschool institutions in different Slovenian regions for at least three months. Each child was rated by his/her mother, father and preschool teacher. Due to some missing data, the exact *N*s of the children assessed are reported in correspondent tables of the Results section.

Instruments

Mothers, fathers and preschool teachers rated the target child's characteristics using the ICID (Halverson et al., in press). It consists of 108 items rated along a 7-point scale (from 1 = *the characteristic is present much less than in the average child or not at all* through 7 = *the characteristic is present much more than in the average child*). The items form 15 robust mid-level scales: *Achievement Orientation* (e.g. persistence, focus on goal attainment), *Activity Level* (the level of energy output indicated by vigorous locomotion and being constantly on the move), *Antagonism* (the amount of confrontational behavior indicated by being discourteous, rude, aggressive), *Compliance* (cooperative behavior in response to interpersonal authority), *Consideration* (being concerned about what happens to others, socially close, emphatic), *Distractibility* (showing a poor concentration and being low on sustained directed attention), *Fearfulness/Insecurity* (easily upset, tending to be apprehensive, distressed, and quick to panic), *Intelligence* (quick to understand what is said or going on; learning oriented), *Negative Affect* (negative emotions experienced in interpersonal situations, e.g. moodiness, irritability), *Openness to Experience* (tendency to explore, find out about things, ask a lot of questions), *Organization* (carefulness, perfectionism, orderliness, tidiness), *Positive Emotions* (cheerfulness, happiness, getting along well with others), *Shyness* (being socially reticent, withdrawn, quiet, preference to be alone), *Sociability* (desire to be with other people, actively seeking company, outgoing) and *Strong Will* (bossy, self-assertive, tendency to take charge, manipulate to get things the own way). The internal consistency estimates based on coefficient alpha for the ICID scales from parental ratings in China, Greece, and the U.S. were consistently high in each country and across all ages of the target children (3 to 14 years) with alphas averaged over three countries ranging from 0.71 to 0.88 for children's ages 3 to 5 years. For the 15 scales, the mother-father agreement (U.S. data only) was consistently high as well, ranging from 0.50 to 0.74. Convergent and discriminant validity of the ICID scales was established through temperament and behavior problem measures. Conduct problems as indices of external-

izing behavior were consistently related to the ICID scales linked to impulsivity/control (e.g. Antagonism, Strong- Will), and personality problems as markers of internalizing behavior have been linked with shyness, low levels of sociability and positive emotion (Halverson et al., in press).

Preschool teachers described children's social behavior in preschool using the Slovenian version of Social Competence and Behavior Evaluation Scale (SV-O; LaFreniere, Dumas, Zupančič, Gril & Kavčič, 2001). The SV-O consists of 80 items, rated along a 6-point scale (from 1 = *almost never occurs* to 6 = *almost always occurs*). The SV-O offers eight basic scales and four summary scales. Only the data for three summary scales were used, i.e. *Social Competence*, *Internalizing Problems* and *Externalizing Problems* because of the substantial overlap of these scales with the fourth one (*General Adaptation Index*), which taps the presence of socially competent behavior and the absence of internalizing as well as externalizing behavior. The *Social Competence Scale* consists of 40 items that assess the positive qualities of a child's adaptation (e.g. social adjustment, emotional maturity, prosocial behavior; i.e. the positive poles of the eight basic scales). The *Internalizing Problems Scale* (reversed coding) comprises 20 items reflecting anxious, depressed, isolated, and withdrawn behavior, while the *Externalizing Problems Scale* includes 20 items reflecting angry, aggressive, selfish, and rebellious behavior in a child. The internal consistency of these summary scales ranges from 0.85 to 0.95 and the retest reliability from 0.74 to 0.89, while the concordance between preschool teacher and assistant preschool teacher ratings were estimated as ranging from 0.69 to 0.89 (LaFreniere et al., 2001). Preschool teacher ratings of children's social competence converge with the socialization index on the Questionnaire of Behavioral reactions (QBR; Horvat, 1985), internalizing problems share a substantial amount of variance with preschool teachers' assessments of children's anxiety on QBR, while externalizing problems relate to children's behavioral problems as assessed with QBR (Zupančič, Gril & Kavčič, 2000). The concurrent criterion validity of the three SV-O scales was estimated with regard to children's sociometric status in preschool, as obtained through peer ratings. Socially competent children were more popular within their preschool peer group, compared to less competent children, while those who displayed internalizing behavior appeared to be neglected, and those who exhibited externalizing problems were more frequently rejected by their peers, compared to both the socially competent and internalizing children (Zupančič, Gril & Kavčič, 2001).

Procedure

The 108 ICID items were translated to Slovenian language by two psychologists independently. Minor discrepancies in the two translated versions were solved through consensus and consultations with one of the U.S. authors. The preliminary Slovenian version of the ICID was further examined with samples of preschool teachers (over two hundred of them) attending in-service training course on child development and

learning as a part of their permanent professional education. Each of the teachers rated a child from their preschool group (ages 3 to 7 years), chosen on the basis of alphabetical order of his/her first name (e.g. ten teachers assessed the first girl according to alphabetical order, ten of the teachers the first boy, ten of them the last girl etc.). Considering the internal reliabilities, factorial structures and many of the preschool teachers' comments on the meaning of the preliminary item descriptors, minor amendments of some items were made. This version was then back translated by an expert in English language and consulted with the U.S. collaborator. Some slight ambiguities were resolved and additional amendments were taken into account when creating the final Slovenian version of the ICID (Zupančič & Kavčič, 2002).

Written consent forms were collected from parents who agreed to their child's and own participation in a larger research project *The effects of preschool on child development and his/her school achievement*. The present contribution is only a part of this project. Preschool teachers were asked to rate personality characteristics and social behavior of each child in their group, whose parents gave a written consent. The teachers had two weeks to assess their group of children and they were also asked to give sets of instruments to the children's parents. Besides the ICID for each of the parents separately, the set also included several other questionnaires on demographic data and family environment. The parents had two weeks to fill out the questionnaires, which they returned back to their child's preschool teacher in sealed envelopes. As already reported, the present study includes only the data on child personality and his/her social behavior in preschool.

Results

Internal consistency of the ICID scales and inter-rater agreements

Internal consistency estimates based on coefficients α for 15 ICID scales obtained from mothers', fathers' and preschool teachers' ratings of children's personality are presented in Table 1.

The internal consistencies across the three raters appear satisfactory. The highest degree of coherence across raters was estimated for Intellect, Openness and Sociability, and relatively lowest with respect to Fearful/Insecure, Organized and Shy. The alphas were somewhat higher when the children were rated by their preschool teachers compared to parental (mothers and fathers) ratings.

Table 2 presents inter-rater agreement estimates based on Pearson's *r* coefficients for the 15 ICID scales obtained for parental, mother-preschool teacher and father-preschool teacher agreements.

Mother-father agreement was consistently high for all of the 15 scales, while the preschool teacher-parent agreement across all of the scales was notably smaller, although all the correlations (teacher-mother and teacher-father) were found positive

Table 1: Internal Reliability of the ICID Scales.

ICID Scale	Mothers	Fathers	Preschool teachers
Achievement	.72	.74	.79
Active	.86	.84	.86
Antagonistic	.82	.80	.87
Compliant	.76	.74	.85
Considerate	.84	.84	.91
Distractible	.74	.75	.84
Fearful/Insecure	.70	.65	.71
Intelligent	.89	.91	.95
Negative Affect	.85	.83	.87
Open to Experience	.88	.89	.91
Organized	.67	.71	.77
Positive Emotion	.87	.87	.89
Shy	.74	.76	.80
Sociable	.89	.89	.93
Strong-Willed	.81	.75	.86

Table 2: Inter-Rater Agreements for the ICID Scales.

ICID Scale	Mothers – Fathers (N=325)	Mothers – Teachers (N=341)	Fathers – Teachers (N=322)
Achievement	.63**	.31**	.21**
Active	.69**	.33**	.25**
Antagonistic	.62**	.19**	.13*
Compliant	.69**	.26**	.22**
Considerate	.65**	.22**	.19**
Distractible	.62**	.21**	.17**
Fearful/Insecure	.63**	.28**	.19**
Intelligent	.78**	.42**	.38**
Negative Affect	.54**	.16**	.13*
Open to Experience	.72**	.32**	.31**
Organized	.69**	.35**	.27**
Positive Emotion	.61**	.23**	.18**
Shy	.66**	.27**	.23**
Sociable	.74**	.44**	.34**
Strong-Willed	.67**	.30**	.24**

Note. **$p < .01$; *$p < .05$.

and significant. Nevertheless, mother-teacher agreement was slightly higher across the 15 scales in comparison to father-teacher agreement.

Links of ICID scales to other domains

The convergence among preschool teachers' ratings of children's social behavior in preschool (social competence, internalizing and externalizing behavior) and the 15 ICID scales as rated by three different adult observers (mothers, fathers and pre-school teachers) can be seen in Table 3. The convergence estimates are based on Pearson's *r* coefficients.

Table 3: Convergence of ICID Scales with Social Competence and Problem Behavior.

ICID Scale	Social Competence			Internalizing Problems[a]			Externalizing Problems[a]		
	Mother	Father	Teacher	Mother	Father	Teacher	Mother	Father	Teacher
Achievement	.23**	.18**	.67**	.23**	.17**	.44**	.17**	.08	.23**
Active	.16**	.11	.37**	.16**	.15*	.48**	-.12*	-.12*	-.33**
Antagonistic	-.13*	-.13*	-.34**	-.09	-.07	-.06	-.21**	-.23**	-.56**
Compliant	.24**	.24**	.68**	.23**	.23**	.38**	.21**	.13*	.42**
Considerate	.20**	.18**	.68**	.14**	.19**	.31**	.14*	.13*	.42**
Distractible	-.24**	-.12*	-.60**	-.22**	-.16**	-.43**	-.17**	-.11	-.26**
Fearful/ Insecure	-.21**	-.15**	-.51**	-.27**	-.21**	-.60**	.05	.03	-.07
Intelligent	.24**	.22**	.62**	.20**	.20**	.45**	-.01	-.07	-.04
Negative Affect	-.14*	-.07	-.32**	-.13*	-.06	-.18**	-.18**	-.13*	-.58**
Open to Experience	.24**	.16**	.64**	.24**	.19**	.50**	-.07	-.08	-.12*
Organized	.19**	.20**	.58**	.18**	.18**	.38**	.12*	.10	.18**
Positive Emotion	.26**	.20**	.68**	.22**	.23**	.46**	.11*	.10	.22**
Shy	-.20**	-.16**	-.55**	-.33**	-.29**	-.60**	.06	-.03	.06
Sociable	.33**	.27**	.66**	.40**	.37**	.68**	-.01	-.02	-.04
Strong-Willed	.02	-.02	.03	.04	-.01	.19**	-.26**	-.28**	-.63**

Note.**p < .01; *p < .05; Mother (*N* = 333); Father (*N* = 315); Teacher (*N* = 337); [a] reversed coding.

The ratings of children's personality across the raters in different adult roles were consistently related to the children's social behavior in preschool as assessed by the preschool teachers. The teachers' ratings on ICID scales were in general moderately or strongly related to their ratings of children's social behavior in preschool, while the relations between parental (mothers and fathers separately) ratings of children's characteristics and the children's behavior in preschool were low (albeit significant) to moderate.

In general, and across the three raters, there was a relatively stronger overlap between ICID scales and preschool teachers' ratings of children's internalizing behavior than between ICID scales and their externalizing behavior. Nevertheless, the children's internalizing and externalizing behavior in preschool was distinctively related to their personality characteristics. Those who were rated higher on internalizing problems were also rated higher on fearfulness/insecurity, shyness, and lower on intellect, sociability and activity, respectively. Those who were rated higher on externalizing problems were rated higher on antagonism, strong-will and activity. The children's socially competent behaviors were, on the other hand (and across the different raters) most strongly related to compliance, consideration, positive emotionality, sociability and achievement orientation, and negatively to distractibility.

Exploratory factor analyses of the ICID scales across the raters

The structure of parent and preschool teacher ratings of children's personality on 15 ICID scales was derived using a principal component analysis, followed by a Varimax rotation of the extracted components. This analysis was performed for mother, father and preschool teacher ratings separately (see tables 4 to 6).

Mothers' ratings of child personality

Four components (eigenvalues: 6.93; 2.56; 1.38; and 0.92, respectively) accounting for 78% of the total variance on the fifteen ICID scales derived from ratings by the children's mothers and rotated according to the Varimax criterion (see Table 4), reveal the following factors: Extroversion (46% of the total variance explained), Conscientiousness (17% of the variance), Neuroticism (9% of the variance) and Agreeableness (6% of the variance).

Extroversion was defined by children's expression of positive emotions, their consideration of others, sociability, activity level, openness to experience, and compliance. Conscientiousness was characterized by children's organized behavior, distractibility (reversed), achievement orientation, and intelligent behavior. Neuroticism was described by children's fearfulness/insecurity and shyness, while Agreeableness emerged as a set of disagreeable characteristics that can be easily described by children's strong will, expression of negative affect, and antagonistic behavior. The last two factors show no significant secondary loadings (all are below 0.40) for other factors, whereas three of the ICID scales that were revealed to belong to Extroversion and Conscientiousness factors also have notable secondary loadings for other factors. Beside their primary loadings for Extroversion, the scales Sociable and Open to Experience negatively load for Neuroticism, and Compliance positively loads for Conscientiousness. The scales Achievement and Intelligence which primary load

Table 4: Varimax Rotated Principal Components for Mother Ratings of Children (N = 344).

	E	C	N	A[a]
Extroversion				
E_1 Positive Emotion	.87			
E_2 Considerate	.84			
E_3 Sociable	.68		-.56	
E_4 Active	.67		.30	.36
E_5 Open to Experience	.65	.38	-.43	
E_6 Compliant	.62	.57		
Conscientiousness				
C_1 Organized		.80		
C_2 Distractible		-.73	.42	
C_3 Achievement	.56	.67		
C_4 Intelligent	.50	.56	-.35	
Neuroticism				
N_1 Fearful/Insecure			.85	
N_2 Shy	-.31		.83	
Agreeableness[a]				
A_1 Strong-Willed				.87
A_2 Negative Affect			.34	.77
A_3 Antagonistic				.71

Note. [a]...reversed coding (factor reflects disagreeable characteristics).

for Conscientiousness, also positively load for Extroversion, while the Distractibility scale (negative primary loadings for Conscientiousness) positively loads for Neuroticism.

Fathers' ratings of child personality

Four components that explain 79% of the total variance on the fifteen ICID scales (eigenvalues: 7.11; 2.64; 1.27; and 0.87, respectively), derived from ratings of the children as provided by their fathers and followed by the Varimax rotation (see Table 5), indicate that the data may be represented using four factors: Extroversion (47% of the total variance explained), Conscientiousness (18% of the variance), Agreeableness (8% of the variance), and Neuroticism (6% of the variance).

Striking similarities between the factorial structures derived from father and mother ratings of child personality were revealed, with a reversed order of the extracted factors for Agreeableness and Neuroticism. Nevertheless, these two factors show very similar loadings with the same ICID scales (and no substantial secondary loadings for any other factors) in both, the mothers' and fathers' ratings of their children's personality. In comparison to the Conscientiousness factor recovered from the mothers' ratings, the same factor extracted from the fathers' ratings of child personality does not include the Intelligence scale, which shows its primary loading for Extroversion (note that with the sample of mothers the Intelligence scale double

Table 5: Varimax Rotated Principal Components for Father Ratings of Children (N = 325)

	E	C	A	N
Extroversion				
E_1 Positive Emotion	.90			
E_2 Considerate	.82	.30		
E_3 Sociable	.80			-.38
E_4 Active	.74			
E_5 Open to Experience	.73	.33		-.37
E_6 Intelligent	.63	.48		-.32
E_7 Compliant	.63	.58		
Conscientiousness				
C_1 Organized		.81		
C_2 Distractible		-.74		.46
C_3 Achievement	.54	.68		
Agreeableness[a]				
A_1 Strong-Willed	.34		.84	
A_2 Negative Affect			.77	.34
A_3 Antagonistic			.75	
Neuroticism				
N_1 Fearful/Insecure				.84
N_2 Shy	-.38			.79

Note. [a]...reversed coding (factor reflects disagreeable characteristics).

loads for Conscientiousness and Extroversion), but also has a substantial secondary loading for Conscientiousness. As with the mothers' ratings, the Organized scale shows a single loading for Conscientiousness with the fathers' ratings of child personality, while the Distractibility scale (reversed) primary loads for Conscientiousness and has a significant secondary and positive loading for Neuroticism. Except for including the Intelligence scale, the first factor extracted in fathers' ratings of child personality (Extroversion) is composed of the same ICID scales (with very similar loadings) than Extroversion derived from the mothers' ratings. In addition, the same pattern of secondary loadings of the scales Compliant (also contributing to the Conscientiousness factor), Sociable and Open to Experience was found with regard to the mothers' and fathers' ratings of child personality. However, the last two scales demonstrated lower negative loadings for Neuroticism in the factorial structure of the fathers' ratings compared to that recovered from the mothers' ratings.

Preschool teachers' ratings of child personality

As shown in Table 6, principal component analysis of preschool teacher ratings of children on fifteen ICID scales followed by Varimax rotation produced a three-component structure (eigenvalues: 7.81; 2.92; and 1.23, respectively). It explains 79% of the total variance, and indicates three factors: a combined Conscientiousness/Openness (52% of the variance explained), Extroversion/Neuroticism (19% of the variance), and Agreeableness (8% of the variance).

Table 6: Varimax Rotated Principal Components for Preschool Teacher Ratings of Children (N = 346).

	C/O	E/N	A
Conscientiousness/Openness			
C/O_1 Compliant	.90		
C/O_2 Achievement	.88		
C/O_3 Considerate	.85		
C/O_4 Organized	.83		
C/O_5 Positive Emotion	.77	.38	
C/O_6 Intelligent	.72	.49	
C/O_7 Open to Experience	.67	.58	
C/O_8 Distractible	-.67	-.41	
Extroversion/ Neuroticism			
E/N_1 Shy		-.87	
E/N_2 Fearful/Insecure		-.85	
E/N_3 Sociable	.57	.67	
E/N_4 Active		.64	.46
Agreeableness			
A_1 Strong willed		.30	-.87
A_2 Negative affect			-.86
A_3 Antagonistic	-.31		-.82

Note. [a]...reversed coding (factor reflects disagreeable characteristics).

The factorial structure derived from the preschool teachers' ratings of child personality appears less differentiated compared to those recovered from the parental ratings. It seems that the Agreeableness factor (reversed, for it consists of disagreeable characteristics) is the most stable across the observers, since its structure remains the same across different raters, the loadings of the composing scales are very similar and they also share no significant secondary loadings for any other factors in either group of the adult observers. Mothers, fathers and preschool teachers consider a disagreeable three-year-old child to be strong-willed, antagonistic and frequently expressing negative affect in relation to other people. On the other hand, the preschool teachers do not seem to differentiate between extroverted and emotionally stable (low on Neuroticism) three-year-old children as the parents do, since the marker scales of Extroversion and Neuroticism constituted a combined factor recovered from the preschool teachers' ratings, while the two factors appeared relatively independent with respect to parental ratings (mothers' and fathers'). Thus, from the point of view of the teachers, an extroverted child is sociable, active, not shy and not fearful or insecure, but from the parental perspective, he/she is sociable, active, open, and while interacting with others, expresses positive emotion, and amiable (Considerate) as well as cooperative (Compliant) behavior. In the preschool teachers' perceived organization of child personality, activity is also linked to disagreeable behavior (a significant secondary loading of the Activity scale for Agreeableness), while the Sociability scale shows a substantial secondary loading for the combined Conscientiousness/Openness factor, the first and largest dimension derived from preschool teacher ratings of child personality. It includes the three ICID scales (Organized, Achievement and Distractible-reversed), which constitute an independent factor of Conscientiousness when parental ratings are considered, the two marker scales presumed to represent openness (Intelligence and Openness to Experience; which load for Extroversion and Conscientiousness in factor structures obtained with the parental ratings), and the three scales which, in parental ratings, primarily represent markers of Extroversion (Compliant, Considerate and Positive Emotion). The openness marker scales also secondary load for the combined Extroversion/Neuroticism, as well as the Distractibility scale (reversed).

Discussion

The results presented in this report focused on the characteristics of the fifteen mid-level scales and the domain structure they generate for the Slovenian target sample of three-year-old children. Data on the internal reliability of these childhood scales across multiple informants demonstrate a satisfactory degree of coherence for each of the scales. The alpha coefficients established closely resemble those obtained through parental ratings of three- to five-year-olds in China, Greece and the U. S. (Halverson et al., in press). The internal consistency estimates for the scales ap-

peared even slightly higher with the Slovenian preschool teacher ratings as compared to parental assessments.

The congruence of the childhood scales across the raters was also established satisfactory, the mother-father agreement was even obtained slightly higher than agreements reported for an age heterogeneous (3-to 12-year-olds) large group of children taking into account all available parental ratings in the three above mentioned countries (Halverson et al., in press). The differences between parental (high) and preschool teacher-parent agreement (low or moderate, but significant) can be attributed to the fact that parents and teachers rated the children from different role perspectives and perceived children in different contexts (i.e. home vs. educational). It has been previously demonstrated that various contextual factors may have important implications for inter-rater agreement: e.g. a child's response to different behavior by the person who interacts with him/her may vary (Goldsmith & Campos, 1990); some characteristics are less easily observed than others (Funder & West, 1993; Rothbart, Ahadi, Hershey & Fisher, 2001). In the present study, for example, the consensus across the raters was shown relatively lower for the scales of Negative Affect, Positive Emotion than those of Open to Experience, Intelligence, Sociable; the information on which a person's judgment about a child is based may vary, and so may his/her relationship with the child; the child's important others differ to a greater or lesser degree in their personalities, all of which may lead to somewhat different judgments about the characteristics of the same child (Funder & West, 1993). In addition, the mother-preschool teacher agreement was established higher in the present study than the father-teacher agreement, which might reflect the differences in the amount of communication on children which is usually more frequent between mothers and teachers than fathers and teachers. However, caution is needed when inferring a child's real attributes, even when parental agreement about the child's characteristics is strong, since consensus does not strictly imply accuracy, nor would lack of agreement necessarily imply inaccuracy (Funder & West, 1993). This suggests the possibility that both agreeing raters could be wrong in their judgment, while those who do not agree could both be right.

Evidence of the link of the ICID mid-level scales to other measures of individual differences like social competence and maladaptive behavior were found consistent with the findings of other authors on older children, using different measures of behavior problems or personality (e.g. Halverson et al. in press; Reed-Victor & Pelco, 2001; Zupančič & Kavčič, 2003). As with older preschool and school-age children and adolescents, even the three-year-old children who were (across different raters) perceived more fearful/insecure, shy (the Neuroticism marker scales), and low on characteristics marking Extroversion (e.g. sociable, active), exhibited more internalizing behavior in the preschool context, i.e. they were rated by the preschool teachers to express more anxiety and depressed affect in their preschool group, to appear more isolated from their peer group and more dependent on the teacher compared to the children scoring higher on Extroversion scales, and lower on

fearfulness and shyness. On the other hand, the three-year-olds who were consistently rated (across the observers) to demonstrate a higher degree of disagreeable mid-level traits (high on Antagonism, Strong-Will and Negative Affect), a personality domain most strongly related to interpersonal relationships, were observed to show more externalizing behavior in their preschool group as observed by their preschool teachers (expressions of anger, intolerance, less prosocial behavior toward their peer, and more oppositional behavior toward the preschool teacher) as compared to their more agreeable group-mates. In addition, the child's socially competent behavior in preschool was most strongly linked to the mid-level personality traits that were empirically found to represent markers of Extroversion (Compliant, Considerate, Positive Emotion), Conscientiousness (Achievement, Distractible-reversed, Organized) and Openness (Intelligent, Open to Experience) in children (Halverson et al., in press; Havill et al., submitted). These results are considered to provide further evidence for the construct validity of the ICID scales.

However, the relations between preschool teacher assessments of child personality and his/her social behavior in preschool were stronger than between parental personality ratings of the same children and their behavior in the preschool group. This is hardly surprising, because the preschool teachers' ratings on both instruments (ICID and SV-O) were based upon their everyday observations of the children's behavior in the same context, besides the fact that both ratings were provided by the same person. The parental ratings were based on children's observations in the home setting and from a perspective of the parental role, so it is important to notice that their ratings of child personality showed the convergence with his/her social behavior in the preschool setting as observed by the preschool teachers, and the characteristic links between personality measures and social behavior appeared in the same direction as demonstrated with the preschool teacher ratings. In general, these results indicate that identifying mid-level personality traits as well as broad-band dimension patterns might be a useful approach in assessment of children's individual characteristics associated with problem behavior at the beginning of early childhood, as has also been suggested by other authors (Ehrler, Evans & McGhee, 1999; Huey & Weisz, 1997; van Leeuwen, 1999; Zupančič & Kavčič, 2003) investigating the relations between personality and adaptive as well as maladaptive behavior in older preschoolers, school-age children and adolescents.

The results also provided evidence that these traits combine into a broader set of dimensions assumed to represent the precursors of the Big Five. Compared to the five-factor structure of parental ratings of their children, aged 3 to 12 years (Halverson et al., in press), and obtained by a comprehensive exploratory factor analysis (Browne, Cudeck, Tateneni & Mels, 1999), the parental perceived organization of a three-year-old child's personality resulted in a four-factor structure, with the presumed Openness marker scales (Openness to Experience and Intelligence) combining into the dimension of Extroversion. However, even in the study of Halverson and his collaborators (in press) the scale Openness to Experience showed a primary loading

for Extroversion and a secondary loading for the Openness factor. Whereas in this study, children high on Extroversion were active, sociable, positive in their emotional expression, considerate and open, the extroverted Slovenian three-year-olds were perceived by their parents as showing the same traits, but were in addition also seen as intelligent and compliant (this scale was dropped in Halverson et al. analysis). The Conscientiousness factor showed almost the same structure in both of the studies, i.e. conscientious children were perceived to be organized, achievement oriented, showing a good concentration and not easily distracted (in the organization of maternal perception of a three-year-old conscientious child, he/she was also considered bright and inquisitive). The structure of Agreeableness and Neuroticism was found similar as well. The children high on Agreeableness were characterized to express low antagonistic, assertive and dominant traits, whereas those high on Neuroticism were defined by their fearfulness/insecurity and shyness. While in the study of Halverson et al. (in press) emotionally instable children (high on Neuroticism) were also described to express high levels of negative affect, this trait was more characteristic for the younger sample of Slovenian children who were perceived as disagreeable (low on Agreeableness). The results suggest that the parents of younger children (three-year-olds) might conceptualize their irritability, moodiness, quick temper and alike as disagreeable traits, and with increasing age of children, they start to relate them to neuroticism.

The structure of the data on ICID scales obtained from mothers and fathers was remarkably consistent demonstrating that both parents perceive their child's organization of personality traits in a very much the same way. Except for their ratings of child's intelligence, which is linked stronger to Conscientiousness than to Extroversion in maternal conceptions, and vice versa in paternal organization of their child's personality, the factorial structure shows the same patterns when considering ratings of both parents independently. It is important to notice that the same four factors of a very similar structure were found congruent in four diverse societies where the parental ratings of three- to twelve- year-olds were factored and compared against the U.S. standard sample (Havill et al., submitted). Our findings add to this evidence for universality of the four factors domains (Extroversion, Conscientiousness, Agreeableness and Neuroticism) from the adult Big Five research, for they demonstrate that similar four factors already exist in parental perceptions of an age homogenous group of very young children (at the beginning of early childhood).

However, the preschool teacher's conceptions of a three-year-old child's personality were found somewhat less well differentiated. Whereas the Agreeableness factor retains the same structure compared to that recovered from parental ratings, the preschool teachers do not differentiate between an extroverted and emotionally stable child, i.e. from their perspective, sociable and active three-year-olds are also considered to be confident, secure, not easily distressed, quick to warm up to new people or new situations (i.e. not shy). At least as far as the structure of a combined Extroversion/Neuroticism dimension is concerned, it might partly be due to the fact

that over 100 of children assessed by the teachers entered preschool very recently (about three month before they were rated on the ICID) (Zupančič & Kavčič, in press). This relatively short period of continuous everyday interactions between the preschool teachers and children was established to be long enough for the teachers to reliably assess the child's very concrete social behavior in preschool as measured by SV-O (LaFreniere et al., 2001), while it might not be sufficient for the teachers to distinguish between more general personality traits in children, i.e. to see that the extrovert children can concurrently express emotional instability and those low in extroversion can be emotionally quite stable. On the other hand, and as previously demonstrated in several other studies on preschool children's personality following other strategies in investigating individual differences (e.g. Little & Wanner, 1998; Mervielde et al., 1995; Zupančič et al., 2003), the preschool teachers in the present study tend to perceive the child's conscientious traits closely linked to his/her open-ness (as represented in a combined Conscientiousness/Openness factor). Thus, a well organized, orderly, tidy, self-disciplined, persistent child, who is focused on goal attainment, is not easily distracted and does not give up easily, is also perceived by the preschool teacher as curious, interested in new things, eager and quick to learn, as well as cooperative in response to authority. Since the activities in preschool are relatively more "work like" compared to those the children are engaged in with their parents at home, the aforementioned traits might be perceived by the preschool teachers as contributing to the child's performance of these activities. But, the preschool teachers do not differentiate well between the child's performance which is due to his/her effort and that which is more dependent on his/her ability (Mervielde et al., 1995; Mervielde & De Fruyt, 2000).

Conclusions

In sum, we have found evidence that the fifteen mid-level personality traits can be reliably measured as early as at three years of children's age and by different raters who know the children well. The structures of adult perceptions of child personality were obtained to be somewhat different across the raters (parents and preschool teachers), which were suggested to reflect different adult perspectives from which the children are perceived and different experiences the caregivers might have with children in different contexts of their everyday life. This means that the ICID scales are not sensible only to the age, gender and cultural differences (Halverson et al., in press; Havill et al., submitted), but also to the context of everyday interactions with the children. The new age- and culturally-decentered inventory, based on free de-scriptive studies, demonstrates that adults who know the children well find certain personality dimensions useful in conceptualizing individual differences in children. Like suggested by Goldberg (2001) and Halverson et al. (in press), knowing the structure of child personality will allow the researchers to explore the links between

child and adult personality. The use of a common age- and culture- decentered instrument will also allow examining differences in mid-level traits by age, gender, culture and from a perspective of different adults. We believe that the use of a common personality inventory for children will contribute to a productive future investigation of child personality, and from a developmental point of view while using longitudinal data, especially to the exploration of stability and change in mid-level traits as well as in their structure.

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