SLOVAK VALIDATION OF THE BASIC EMPATHY SCALE IN PRE-ADOLESCENTS

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Abstract: The aim of the two studies presented here was to validate the Slovak version of the Basic Empathy Scale (BES, Jolliffe, Farrington, 2006), which reflected on conceptual changes of empathy by measuring both its affective and cognitive components. The first study (n = 429) confirmed the two correlated factor model of the Slovak adaptation of BES as consisting of affective and cognitive component of empathy on a sample of pre-adolescents. The second study (n = 318) provided evidence to support both the convergent and discriminant validity of the BES using two other measures of empathy and two mindreading measures. Taken together, our results are consistent with previous validation studies of the BES and provide additional evidence supporting the two factor model of empathy. Our findings also show that the Slovak validation of BES has satisfactory psychometric qualities and thus endorse use of the BES in research and practice.

Key words: Basic Empathy Scale, empathy, mindreading, Slovak adaptation

Empathy is an important construct to study because it predicts many outcomes in culture such as a prosocial behavior and better relationships with peers (Eisenberg et al., 1991). Empathy was, for the first time, described in a therapeutic context but since then it has widely spread into other areas of scientific and naive psychology. It seems obvious that everybody knows what empathy is and that it is good to "have it". However, closer scrutiny of literature reveals that empathy is usually not clearly specified in research literature and the measuring methods used reflect this ambiguity.

The research concerning empathy usually follows one of the three traditions: 1) empathy consisting predominantly of emotional components (e.g., Mehrabian, Epstein, 1972), 2) empathy as accuracy in perceiving others (e.g., Ponnet et al., 2004; Roeyers et al., 2001; Ickes, 1997) and 3) empathy as a group of constructs that require a multidimensional approach (e.g., Cliffordson, 2002; Davis, 1983).

Recently, the notion of empathy has become differentiated and more and more researchers emphasize the multidimensional

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nature of this construct. Blair (2005) emphasizes three kinds of empathy from the neurocognitive perspective: cognitive (change of perspective), motor (emotional contagion) and emotional (affective reaction that is congruent with the feelings of others). Other authors (Smith, 2006; Vreeke, van der Mark, 2003) highlight the need of integration of affective and cognitive aspects in the definition of empathic response, especially with regard to prosocial behavior. Cliffordson (2002) suggests hierarchical structure of empathy. Based on her research she concludes that the general empathic dimension is created by integrated wholeness with the main emphasis on affective reactivity towards others and that cognitive processes contribute to these emotional outcomes. The common feature of these definitions is that the term empathy refers to the two related human abilities (Smith, 2006): mental change of perspective (i.e., cognitive empathy) and vicarious sharing of emotions (i.e., affective empathy). Therefore, affective and cognitive components in empathy can be considered as a minimal structure for multidimensionality (Andrew, Cook, Muncer, 2008; Paal, Bereczkei, 2007; Smith, 2006; Eisenberg, 2000; Davis, 1983).

Smith (2006) suggests that true empathy integrates cognitive and affective empathy. He proposes seven models of interaction between CE and AE (ranging from complete separateness of the two components to seeing CE and AE as inseparable aspects of one unitary construct). However, he provides most evidence for the model, in which cognitive and affective empathy are relatively distinct systems cooperating together.

Jolliffe and Farrington (2006) developed a measure of empathy that reflects the multidimensionality of empathy, consisting of affective and cognitive components, as well as their interconnectedness. Their Basic Empathy Scale (BES) is a response to existing measures of empathy that they consider as insufficient, on the basis of one or both of the following reasons: 1) unidimensional understanding of empathy (case of traditional measures of empathy, such as HES -Hogan Empathy Scale by Hogan, 1969, and QMEE – Questionnaire Measure of Emotional Empathy by Mehrabian, Epstein, 1972); 2) imprecise distinction between empathy and sympathy (case of more recent measures reflecting the multidimensional nature of empathy, such as IRI - Interpersonal Reactivity Index by Davis, 1983). Basic Empathy Scale (Jolliffe, Farrington, 2006) overcomes these difficulties by building on clear theoretical conceptualization of empathy put forth by Cohen and Strayer (1996) that defines empathy as "understanding and sharing another's emotional state or context" (cited in Jolliffe, Farrington, 2006, p. 592), while in case of sympathy the affective reaction to the other person's situation may not necessarily be the same emotion. BES also reflects the multidimensional nature of empathy by positing two components of empathy - cognitive (understanding of another's emotion) and affective (affect congruence). Validity of the BES was empirically supported by its good psychometric qualities (internal, test-retest and discriminant validity). Also, confirmatory factor analysis verified the two factor solution - affective and cognitive component of empathy. Furthermore, BES showed good psychometric properties in related validation studies in other European countries as well (French study by D'Ambrosio et al., 2009 and Italian study by Albiero et al., 2009).

The rationale for conducting validations study on BES in Slovakia is therefore twofold: 1) we want to add to the validity of BES by verifying its psychometric properties and two-factor structure and 2) in Slovakia there is no validated scale to measure empathy (especially its cognitive component) particularly in pre-adolescents, beside the widely used ESI by Caruso and Mayer (1998), which does not measure cognitive component of empathy.

The aim of the present paper is to examine psychometric properties of BES on the population of Slovak pre-adolescents. The population of pre-adolescents was chosen because this is the crucial age in forming personality traits, such as empathy. As the empathy predicts various outcomes in Western culture, it is important to have a tool for its identification at an early age. We were particularly interested in the relation of empathy and mindreading (theory of mind), which are two similar constructs and in some cases (e.g., Smith, 2006) considered to be the same. While affective empathy refers to emotional responses to another person's emotion or situation and cognitive empathy refers to one's ability to recognize and identify another person's feelings, mindreading denotes broader ability to understand, explain and predict other person's mental states, such as beliefs, thoughts, desires and feelings.

The findings are presented in the form of two related studies. The first focused on confirmation of the two-factor model of BES and predicted gender differences, as it was described by Jolliffe and Farrington (2006) and these results were replicated in two other validations – in the French sample (D'Ambrosio et al., 2009) and the Italian sample (Albiero et al., 2009). The second study examined the convergent and discriminate validity of BES, with two other widely used empathy scales and the related construct "theory of mind" (ToM).

STUDY 1

CONFIRMATION OF THE TWO CORRELATED FACTORS MODEL OF EMPATHY AND GENDER DIFFERENCES

METHOD

The study focuses on confirmation of the two correlated factors model of BES and its validation on 426 pre-adolescents. We have also explored gender differences, because females tend to score higher on self-reported measures of empathy (Albiero et al., 2009; Davis, 1983; D'Ambrosio et al., 2009; Jolliffe, Farington, 2006, etc.).

Participants and Procedure

A total of 426 pre-adolescents (215 boys, 210 girls, 1 unreported gender) aged from 10 to 16 years (M=13.49, SD=0.501) from three towns in the northern (n = 110) and western (n = 316) parts of Slovakia participated in the study. All of them received school permission to participate prior to the data collection and no incentives were given for participation.

Measures

BES: Basic Empathy Scale. We used the Slovak adaptation of the BES (Jolliffe, Farrington, 2006), which was back-translated by two psychologists and then modifications were made at a panel review with the whole

research team¹. It consists of two subscales detecting two different components of empathic responsiveness: the Affective Empathy subscale (AE subscale, 11 items, $\alpha^* = .85$), measuring emotional congruence with another person's emotions, and the Cognitive Empathy subscale (CE subscale, 9 items, $\alpha^* = .79$), measuring the ability to understand another person's emotions. Responses were made on a five-point Likert scale ranging from "strongly disagree (1)" to "strongly agree (5)". Scores could range from 9 to 45 points for cognitive empathy; from 11 to 55 for affective empathy.

Procedure

The BES was administered together with some other questionnaires (Study 2) in one classroom lesson in the pupils' own classrooms by their teachers of ethics or school psychologist. They were encouraged to fill the questionnaires as honestly as possible, as there were no right or wrong answers and the results were anonymous. Although they were able to see each other's answers, they were encouraged to work on their own.

Statistical Analysis

A confirmatory factor analysis (CFA) was run in order to evaluate several measurement models of BES using structural equation modeling in AMOS Version 16. CFA was chosen because it 1) enables us to test theoretically-driven hypotheses about the structure of empathy and 2) allows a comparison with similarly conducted studies in other countries employing the same procedure (e.g., D'Ambrosio et al., 2009). We tested three first-order factors models using the covariance matrix confirmatory factor analysis: 1) two correlated factors model, 2) two uncorrelated factors model and 3) one general factor model. These models were estimated using the maximum likelihood method. In order to make a comparison with other validation studies (Jolliffe, Farrington, 2006; D'Ambrosio et al., 2009), the same goodnessof-fit indices as in previous studies were used. Specifically, we used the chi-squared test (χ^2), the standardized root mean squared residual (SRMSR), the root mean square error of approximation (RMSEA) and the goodness-of-fit index (GFI) and the adjusted goodness-of-fit index (AGFI). Following the advice of Cole (1987), Marsh, Balla, and McDonald (1988), Jöreskog and Sörbon (1986) and Byrne (2010) the indices can be interpreted as satisfactory when they fulfill the following criteria: SRMSR < .08; RMSEA <.08, GFI>0.85; AGFI>0.80. Given the relatively large sample size, we expected that the chi-square will be statistically significant. We also tested a significance of the difference in fitting the data between the models as they have a nested structure.

RESULTS

Verification of the Two Correlated Factors Model of BES Consisting of Affective and Cognitive Components of Empathy

A confirmatory factor analysis of the Slovak adaptation of BES showed that the *two*

¹ BES was chosen as testing tool for wider research, but first it had to be validated. Reported studies are part of the general project VEGA 1/ 0541/09.

^{*} Cronbach's alpha is reported here for the original British study. Reliability of Slovak sample is reported in the Results section of the Study 1.



Figure 1. Confirmatory factor analysis – *two correlated factors model* for the entire sample

correlated factors model (Figure 1) fitted the data best, compared to the other tested models. Specifically, comparing indices of estimated models showed that the *two correlated factors model* had satisfactory indices of goodness-of-fit [$\chi^2(169) = 518.82$, p < .001; SRMSR=0.072; RMSEA=0.070; GFI=0.884; AGFI = 0.856]. In contrast, the *two uncorrelated factors model* did not meet some of the criteria of goodness-of-fit indices [$\chi^2(170) = 577.76$, p < .001; SRMSR=0.106; RMSEA= 0.075; GFI=0.877; AGFI=0.848]. Similarly, goodness-of-fit indices for the *one general factor model* did not reach all satisfactory levels [$\chi^2(170) = 718.53$, p < .001; SRMSR=

0.085; RMSEA=0.087; GFI=0.821; AGFI=0.779].

Furthermore, as the models are nested we tested the hypothesis of the statistically significantly better fit data (Kline, 2011). The two correlated factors model fitted data significantly better than the two uncorrelated factors model, $(\chi^2_{\rm D}(1) = 199.71, p < .001)$ and better than the one general factor model $(\chi^2_{\rm D}(1) = 58.94, p < .001)$.

In order to further test the structural validity of the two correlated factors model we tested structural invariance between boys and girls (e.g., Byrne, 2010). We found that the groups were not different

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at the model level as the configural invariance test was satisfactory [$\chi^2(338) = 741.18$, p < .001; SRMSR = 0.086; RMSEA = 0.053; GFI = 0.843; AGFI = 0.805]. The invariance was supported in addition by the finding that the metric invariance test was not significant: the difference between the unconstrained ($\chi^2(338) = 741.18$, p < .001) and fully constrained model ($\chi^2(358) =$ 762.43, p < .001) did not reach the significance level ($\chi^2(20) = 21.25$, p = .383). Both of the tests imply that the factorial structure is invariant between boys and girls. Consequently, these results provide further support for two correlated factors solution.

In conclusion, a confirmation analysis confirmed the best fit of the two correlated factors structure of BES. Internal consistencies (Cronbach's α) for the presented data are 0.76 for affective empathy factor of BES and 0.70 for cognitive empathy factor of BES. Variance of the factors was 13.1% for CE and 16.3% for AE.

	Gender										
		Boys	(n = 122)		Girls ($n = 116$)				T-test		Cohen's
	Min	Max	М	SD	Min	Max	М	SD	t	р	d
Cognitive empathy (BES)	17	44	33.53	4.95	20	45	36.08	4.41	-5.584	<.001	0.54
Affective empathy (BES)	11	46	30.62	5.85	17	50	37.10	6.02	-11.247	<.001	-1.09
Total score BES	28	85	64.15	8.41	45	92	73.18	8.70	-10.862	<.001	-1.05
Suffering (ESI)	8	40	27.65	5.98	10	40	31.10	5.83	-4.498	.000	-0.58
Positive sharing (ESI)	7	25	17.97	4.09	5	25	19.79	3.82	-3.535	.000	-0.45
Responsive crying (ESI)	3	13	6.66	2.45	3	15	8.96	2.72	-6.853	.000	-0.88
Emotional attention (ESI)	6	20	13.46	2.75	6	20	14.48	2.84	-2.796	.006	-0.36
Feel for others (ESI)	4	18	10.80	3.09	7	18	13.15	2.74	-6.162	.000	-0.80
Emotational contagion (ESI)	2	10	6.98	1.97	2	10	7.31	1.65	-1.380	.169	-0.18
Perspective taking (IRI)	12	35	24.47	4.43	15	40	28.25	4.11	-6.799	.000	-0.88
Fantasy (IRI)	3	15	7.87	2.80	3	15	8.64	2.64	-2.178	.030	-0.28
Empathic concern (IRI)	3	15	10.46	2.26	5	15	11.48	2.09	-3.621	.000	-0.46
Personal distress (IRI)	11	35	25.41	4.63	8	38	28.03	4.38	-4.487	.000	-0.58

Table 1. Participants' scores on empathy measures

Gender Differences in BES

Girls had significantly better results in all measures of empathy. The participants' scores on the empathy scales are presented in Table 1.

The mean score of our sample is somewhat lower than the mean scores of the British and French samples, but it could have been caused by a wider age range of our sample. Otherwise, the results concerning gender are consistent with the original and validation studies and girls had significantly better results in all measures of empathy; the difference for BES was most pronounced in affective empathy, as expected.

DISCUSSION

In the study, we confirmed the two-factor solution of two separate but inter-correlated components - affective and cognitive component of empathy. Moreover, we found the same classic gender effect as all the other studies: Girls scored significantly higher than boys and this effect was more pronounced in affective empathy. This effect can reflect either artifact of self-reporting measures results of studies using other than self-reporting measure, such as Ickes et al. (1997), showed that in actual empathic accuracy differences between males and females disappear. On the other hand, it can reflect the actual difference at this stage of development, when girls are generally considered to be few years ahead in physical and emotional development as their male counterparts. Also, Smith (2006) argues that better empathic abilities of females can be explained by the evolutionary viewpoint. If his model of interconnectedness of CE and AE is correct,

relatively reduced separability of AE and CE in females would facilitate higher AE in females necessary for childcare and social bonding.

STUDY 2

CONVERGENT AND DISCRIMINANT VALIDITY OF THE BES

METHOD

We have explored convergent validity of the BES with two other widely used empathy scales (ESI, IRI) and discriminant validity with two tests measuring the theory of mind (IMT, AMT) in the subsample of 318 participants from the previous study.

Participants and Procedure

A total of 318 children (160 boys, 157 girls, 1 unreported gender) from the previous sample participated in the follow-up study. Participants were from 2 towns from Western part of Slovakia with mean age of 13.57 (SD = 1.5). Tests of mindreading skills were completed two months after Study 1 and this time they were administered by two researchers unknown to the participants. Again, it was done in participants' classrooms during one school hour.

Measures

ESI: Empathy Scale. ESI by Caruso and Mayer (1998) is the most widely used empathy measure in Slovakia; therefore we have chosen it as the first comparison measure of empathy. The full version consists of 30 items that reflect 6 factors (Suffering, Positive sharing, Responsive crying, Emotional attention,

Feel for others, and Emotional contagion), all of which represent only the affective component of empathy, as criticized by Jolliffe and Farrington (2006).

IRI: Interpersonal Reactivity Index. IRI (Davis, 1980) is an empathy measure, which is the most widely used in studies of empathy, because it also measures Perspective Taking considered to be a cognitive empathy component. It consists of 28 items and all responses are made on a five-point Likert scale ranging from "strongly disagree (1)" to "strongly agree (5)".

IMT: Imposing Memory Task. IMT (Kinderman, Dunbar, Bentall, 1998) featured a series of five stories that were read aloud to the participants at the same time as being presented via computer projection. Four of these stories involved complex social situations that required listeners to understand various intentions and perspectives of actors (such as complicated love affairs or attempt to deceive a boss to get a pay rise). Fifth story was the "control" as it involved only one actor and a chain of causal events (the old man who unfortunately burnt himself in sleep with a cigarette). Children answered memory questions presented in a booklet and they had to choose between two alternative options, one correct and one incorrect. Questions either concerned mindreading elements in the stories (the expectations or beliefs of participants) or were memory questions. Both types of questions involved a number of levels of complexity, e.g., first-order mindreading questions related to what the actor thought; second-order mindreading questions related to what the actor thought that another person thought; third-order mindreading questions related to what the actor thought that the other person thought about another person

or the actor and so on. The highest order question was the fifth order. (Example of the story and the related questions are presented in Appendix 1.) The scores range was from 0 indicating low level of mindreading abilities to 40 indicating high level of mindreading abilities.

AMT: Awkward Moments Test. AMT (Heavey, Phillips, Baron-Cohen, Rutter, 2000) was created as a more ecologically valid measure of mindreading, featuring 6 short clips from television commercials that introduce characters in awkward or socially embarrassing situations, with three questions to each film to be answered after watching each film: 1) control question (memory and attention), 2) emotion question (correct recognition of target character's emotion) and 3) mindreading question (inferring the intention of the character). Television commercials were used, because they represent an appropriate stimulus due to their high quality technical production, short duration, complete storyline, and no requirement of any prior knowledge of the characters (Heavey et al., 2000).

We adapted this test to the age and background of our sample using similar clips from television commercials (summaries of clips are available upon request). We tried to use same or similar commercials as the original authors, but only those that were available in Slovak broadcasting. We preferred the coding system of answers used by Bosacki and Astington (1999) over the system used by the original authors of the test (Heavey et al., 2000), because it represents levels of interpersonal understanding based on increasing complexity of responses. We considered a 3-point scale as more sensitive for pre-adolescent age, at which we can find different levels of developing abilities of social cognition.

RESULTS

Convergent Validity of BES Examined by Two Other Measures of Empathy

The correlations between BES and other measures of empathy were significant, with the exception of Responsive Crying and Emotional Contagion from ESI and Fantasy from IRI. BES also showed stronger correlations with ESI than IRI. Although moderate correlations suggest an overlap between the measures, it seems that all the measures are somewhat differentiated in what they tap.

Also, a different pattern of correlations emerged for boys and girls. Girls showed stronger correlations with all other measures of empathy than boys.

Discriminant Validity of BES Testing with Two Measures of Mindreading

Because many authors consider cognitive empathy and mindreading (theory of mind) as equivalent terms (e.g., Smith, 2006), we

Table 2. Correlations between empathy measures

		Boys $(n = 215)$			Gir	ls (n = 2)	10)	Total $(n = 436)$		
		BES	BES	BES	BES	BES	BES	BES	BES	BES
		CE	AE	tot	CE	AE	tot	CE	AE	tot
DES CE	r		206	.733		.377	.768		.369	.760
BES CE	р		<.01	<.001		<.001	<.001		<.001	<.001
DESAE	r	206		.817	.377		.883	.369		.884
DES AE	р	<.05		<.001	<.001		<.001	<.001		<.001
DES tot	r	.733	.817		.768	.883		.760	.884	
DES IOI	р	<.001	<.001		<.001	<.001		<.001	<.001	
		Boys (n = 124)			Gii	ls (n = 1)	57)	Total (n = 239)		
Suffering (ESI)	r	.408	.250	.429		.243	.246	.348	.345	.422
Suffering (ESI)	р	.000	.005	.000		.009	.008	.000	.000	.000
Positive sharing	r	.320	.246	.371	.253		.222	.332	.275	.364
(ESI)	р	.000	.006	.000	.006		.017	.000	.000	.000
Responsive	r		.374	.240		.559	.468	.163	.573	.482
crying (ESI)	р		.000*	.008		.000	.000	.012	.000	.000
Emotional	r	.331	.193	.341	.325	.360	.412	.357	.323	.411
attention (ESI)	р	.000	.033	.000	.000	.000	.000	.000	.000	.000
Feel for others	r		.431	.407	.250	.533	.489	.279	.569	.540
(ESI)	р		.000	.000	.007	.000	.000	.000	.000	.000
Emotational	r							.166		.170
contagion (ESI)	р							.010		.009
Perspective	r		.196	.236	.455	.379	.489	.345	.423	.473
taking (IRI)	р		.030	.009	.000	.000	.000	.000	.000	.000
Fonteau (IDI)	r				.185	.286	.288		.230	.211
Fantasy (IKI)	р				.047	.002	.002		.000	.001
Empathic concern	r	.235	.209	.292	.323	.492	.498	.310	.399	.441
(IRI)	р	.009	.020	.001	.000	.000	.000	.000	.000	.000
Personal distress	r	.246	.310	.369	.251	.406	.404	.297	.434	.458
(IRI)	р	.006	.000	.000	.007	.000	$.000^{*}$.000	.000	.000

Note: r - Pearson correlation coefficient. p - statistical significance

		Boys (n=129)			0	birls (n=118	3)	Total (n= 247)		
		BES CE	BES AE	BES tot	BES CE	BES AE	BES tot	BES CE	BES AE	BES tot
IMT TOT	r	.121	.101	.145	.332	.232	.331	.257	.262	.317
	р	>.05	>.05	>.05	<.01	<.05	<.01	<.001	<.001	<.001
AMT emotion	r	055	134	127	.283	.104	.219	.151	.098	.148
	р	>.05	>.05	>.05	<.01	>.05	<.05	<.05	>.05	<.05
AMT intention	r	.168	.143	.203	.161	.075	.135	.217	.222	.268
	р	>.05	>.05	>.05	>.05	>.05	>.05	<.01	<.01	<.001

Table 3. Partial correlations between empathy and ToM measures, controlling for control questions in AMT

Note: r - Pearson correlation coefficient. p - statistical significance

expected to find high correlation between these two constructs measured by cognitive component of the BES and two other tests of mindreading.

Although our results (Table 3) showed significant correlations between components of BES and mindreading tests (especially in girls), the correlations were not as high as expected. It suggests that the constructs are based on similar theoretical grounds and low correlations could be caused by different format of the empathy scales and mindreading tests.

DISCUSSION

Correlations between BES and other two measures of empathy (ESI and IRI) revealed some interesting findings. Despite being largely criticized, ESI correlated more strongly with BES than the more popular IRI. However, in line with the criticism of other empathy measures concerning their ambiguous differentiation between empathy and sympathy, we found no or weak correlations between cognitive and affective empathy (BES) and Responsive Crying and Emotional Contagion (ESI). These results support the notion that empathy is not manifested through tears, when seeing someone else in distress, as it is often misinterpreted. People tend to react more emotionally to things that disturb them personally than when they are being empathetic with others, but because of lack of self-knowledge they tend to confuse their own personal distress with being empathetic with others.

Interestingly, all factors of ESI correlated more strongly with Cognitive Empathy of BES, with the only exception of Feel for Others. It could suggest a relative greater (though overlooked) importance of cognitive ability to represent others' emotional states in order to empathize with others, while experiencing affective states during empathy comes more "automatically" (without cognitive effort).

On the other hand, Perspective Taking from IRI showed no correlations with CE and weak correlations with AE in boys; it showed expected correlations (stronger correlations with CE than AE) only in girls. The same was true for the Fantasy factor (it correlated with CE and AE only in girls). However, in a British study, Jollife and Farrington (2006) found no correlations of CE and AE and Empathic Concern and Perspective Taking from IRI in either boys nor girls, while Albiero et al. (2009) in an Italian sample found significant correlations in both boys and girls. These contradictory findings suggest that IRI is either not a very suitable empathy measure to be used cross-culturally or that it is flawed and its factors do not reflect the underlying constructs it claims to measure.

We found significant and moderate correlations between all empathy scales and mindreading tests, except AE of the BES and emotion questions of AMT in the whole sample of participants. Again, relationships were more pronounced in the sample of girls; in the boys' sample there was only a relationship between intention questions of AMT and total score of the BES. These results suggest that it is probably right to see empathy and mindreading as related constructs, which is also supported by the fact that correlations are significant, given the different format of measures. Relationships between measures with different format (such as projective tests and questionnaires or self-reported scales and performance tests) are not typically as strong as measures with the same format (Jocic, 2005), therefore we consider our results to be highly important. Also, stronger relationships between empathy and mindreading in girls are in the line with Smith's (2006) hypothesis of relatively reduced separability of the two empathic systems in females.

GENERAL DISCUSSION AND CONCLUSION

Our results are globally similar to those obtained by Jolliffe and Farrington (2006) as the original authors of the measure and they are also in line with the subsequent validation studies by D'Ambrosio et al. (2009) and Albiero et al. (2009). Relationships between affective and cognitive components of BES are very similar to those reported by D'Ambrosio et al. (2009). Except that in our case the relationship between cognitive and affective components in our sample was more pronounced for girls and the difference is greater for boys (it was opposite in the French sample). Our results were also consistent with the results of D'Ambrosio et al. (2009) and Albiero et al. (2009) in terms of the relationship between affective and cognitive components of empathy and measure of empathy, considered mainly as the measure of the affective component (ESI in our case, BEES in the French and Italian study).

Same holds also for the relationship between BES and IRI. These results generally support the notion that all the measures tap a slightly different aspect of empathy. However, it seems that the measures overlap to some degree, so there arises the question of the suitability of the hypothesized underlying factors². Based on the results of various empathy studies, we believe that a two factor model of empathy (consisting of a cognitive and an affective component) has the highest empirical support, and that many theoretical factors in other measures (such as Responsive Crying, Fantasy, etc.) do not stand against empirical testing. Also, a better distinction between various aspects of empathy is needed.

We also tested relationships between empathy and mindreading, as these two constructs are very similar in their nature, as shown in other studies. In the French study (D'Ambrosio et al., 2009) there were no (or very small) correlations for mindreading and nonverbal empathy tests (Völlm's et al. nonverbal test, 2006), probably because of the ceiling effect and unsatisfactory internal con-

² We thank an Anonymous Reviewer for pointing out this issue.

sistency of the measures used in their study. The mindreading tests used in our study, however, do not show the ceiling effect, since they are considered to be "advanced mindreading tests" (Kinderman et al., 1998; Ponnet et al., 2004) and although they all use verbal answers, the stimuli are resented both in written (IMT) and visual (AMT) format. Generally, we can conclude that our results support the notion of cross-cultural universality of empathy, consisting of at least two dimensions – cognitive and affective.

The aim of the present paper was to adapt the BES to the population of Slovak pre-adolescents and to verify its psychometric properties. Our results suggest that we 1) confirmed the two-factor model of BES reflecting empathy as consisting of an affective and a cognitive component in the sample of Slovak preadolescents, which points to its high level of cross-cultural stability (D'Ambrosio et al., 2009); 2) supported the findings of previous studies with BES (Jolliffe, Farrington, 2006; D'Ambrosio et al., 2009; Albiero et al., 2009); 3) verified good psychometric qualities of the BES. Based on these findings, we can conclude that BES would fill in the gap in Slovak psychodiagnostics of empathy and that it is a valuable and modern measure reflecting current trends in research and measurement of empathy. Future studies should focus on further investigation of its applicability to other populations and the standardization of the test in a broader Slovak population.

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REFERENCES

ALBIERO, P., MATRICARDI, G., SPELTRI, D., TOSO, D., 2009, The assessment of empathy in adolescence: A contribution to the Italian validation of the "Basic Empathy Scale". Journal of Adolescence, 32, 393-408.

ANDREW, J., COOKE, M., MUNCER, S.J., 2008, The relationship between empathy and Machiavellianism: An alternative to empathizing-systemizing theory. *Personality and Individual Differences*, 44, 1203-1211.

BLAIR, R.J.R., 2005, Responding to the emotions of others: Dissociating forms of empathy through the study of typical and psychiatric populations. *Consciousness and Cognition*, 14, 698-718.

BOSACKI, S., ASTINGTON, J.W., 1999, Theory of Mind in preadolescence: Relations between social understanding and social competence. *Social Development*, 8, 237-255.

BYRNE, B., 2010, Structural equation modeling with AMOS. Basic concepts, applications and programming. New York, NY: Routledge, 2nd edition.

CARUSO, D.R., MAYER, J.D., 1998, A measure of emotional empathy for adolescents and adults. Unpublished Manuscript.

CLIFFORDSON, CH., 2002, The hierarchical structure of empathy: Dimensional organization and relations to social functioning. *Scandinavian Journal of Psychology*, 43, 49-59.

COLE, D.A., 1987, Utility of confirmatory factor analysis in test validation research. *Journal of Consulting and Clinical Psychology*, 55, 584-594.

D'AMBROSIO, F., OLIVIER, M., DIDON, D., BESCHE, C., 2009, The Basic Empathy Scale: A French validation of a measure of empathy in youth. *Personality and Individual Differences*, 46, 160-165.

DAVIS, M.H., 1980, A multidimensional approach to individual differences in empathy. JSAS Catalog of Selected Documents in Psychology, 10, 85. Available at: http://www.eckerd.edu/academics/psychology/files/Davis 1980.pdf

DAVIS, M.H., 1983, The effects of dispositional empathy on emotional reactions and helping: A multidimensional approach. *Journal of Personality*, 51, 167-184.

DOHERTY, M.J., 2009, *Theory of Mind: How children understand others' thoughts and feelings*. Hove: Psychology Press.

EISENBERG, N., 2000, Emotion, regulation, and moral development. *Annual Review of Psychology*, 51, 665-697.

EISENBERG, N., MILLER, P.A., SHELL, R., MCNALLEY, S., SHAE, C., 1991, Prosocial development in adolescence: A longitudinal study. *Developmental Psychology*, 27, 849-857. HEAVEY, L., PHILLIPS, W., BARON-COHEN, S., RUTTER, M., 2000, The Awkward Moments Test: A naturalistic measure of social understanding in autism. *Journal of Autism and Developmental Disorders*, 30, 225-236.

ICKES, W., 1997, *Empathic Accuracy*. New York: Guilford Press.

JOCIC, D.D., 2005, Correlation of the Rorschach Method and the NEO PI-R Questionnaire. In: A. Andronikof: *Rorschachiana XXVII Yearbook of the International Rorschach Society* (pp. 11-29). Göttingen: Hogrefe & Huber Publishers.

JOLLIFFE, D., FARRINGTON, D.P., 2006, Development and validation of the Basic Empathy Scale. *Journal of Adolescence*, 29, 589-611.

JÖRESKOG, K.G., SÖRBON, D., 1986, *LISREL* 8: Structural equation modeling with SIMPLIS command language. Hillsdale, NJ: Lawrence Erlbaum Publisher.

KLINE, R.B., 2011, *Principles and practice of structural equation modeling* (3rd edition). New York, US: The Guilford Press.

KINDERMAN, P., DUNBAR, R., BENTALL, R.P., 1998, Theory-of-mind deficits and causal attributions. *British Journal of Psychology*, 89, 191-204.

MARSH, H.V., BALLA, J.R., MCDONALD, R.P., 1988, Goodness-of-fit indexes in confirmatory factor analysis: The effect of sample size. *Psychological Bulletin*, 103, 391-410.

MEHRABIAN, A., EPSTEIN, N., 1972, A measure of emotional empathy. *Journal of Personality*, 40, 523-543.

PAAL, T., BERECZKEI, T., 2007, Adult theory of mind, cooperation, Machiavellianism: The effect of mindreading on social relations. *Personality and Individual Differences*, 43, 541-551.

PONNET, K.S., ROEYERS, H., BUYSSE, A., DE CLERCQ, A., VAN DER HEYDEN, E., 2004, Advanced mind-reading in adults with Asperger syndrome. *Autism: The International Journal of Research and Practice*, 8, 249-266.

PROCTOR, T., BEAIL, N., 2007, Empathy and theory of mind in offenders with intellectual disability. *Journal of Intellectual and Developmental Disability*, 32, 82-93.

ROEYERS, H., BUYSSE, A., PONNET, K., PICHAL, B., 2001, Advancing advanced mind-reading tests: Empathic accuracy in adults with a pervasive developmental disorder. *Journal of Child Psychology and Psychiatry*, 42, 271-278.

SMITH, A., 2006, Cognitive empathy and emotional empathy in human behavior and evolution. *The Psychological Record*, 56, 3-21.

VREEKE, G.J., VAN DER MARK, I.L., 2003, Empathy, an integrative model. *New Ideas in Psychology*, 21, 177-207.

APPENDIX 1

EMMA'S DILEMMA

Emma worked in a greengrocer's. She wanted to persuade her boss to give her an increase in wages. So she asked her friend Jenny, who was still at school, what she should say to the boss. "Tell him that the chemist near where you live wants you to work in his shop," Jenny suggested. "The boss won't want to lose you, so he will give you more money," she said. So when Emma went to see her boss, that is what she told him. Her boss thought that Emma might be telling a lie, so he said he would think about it. Later, he went to the chemist's shop near Emma's house and asked the chemist whether he had offered a job to Emma. The chemist said he hadn't offered Emma a job. The next day the boss told Emma that he wouldn't give her an increase in wages, and she could take the job at the chemist's instead.

Please tick the correct answer to each question:

1. a) Emma worked for a greengrocer

b) Emma worked at a chemist's

Appendix continues

Appendix 1 (continued)

- 2. a) Emma wanted more moneyb) Emma wanted a different job
- 3. a) Emma's friend, Jenny, was still at schoolb) Emma's friend, Jenny, worked in a bank
- 4. a) Jenny thought the boss would believe Emma's storyb) Jenny knew the boss would not believe Emma's story
- 5. a) Emma told her boss, the greengrocer, that she had been offered a job in an bank b) Emma told her boss, the greengrocer, that she had been offered a job at a chemist's
- 6. a) Emma thought the boss believed that the chemist wanted her to work for himb) Emma thought the boss knew that the chemist had not offered her a job
- 7. a) Emma's boss, the greengrocer, asked the chemist if he had offered Emma a jobb) Emma's boss, the greengrocer, asked Jenny if Emma had been offered a job
- 8. a) Jenny thought that Emma hoped that the boss would believe that the chemist wanted Emma to work for him
 - b) Jenny thought that Emma believed that the boss knew that the chemist did not want Emma to work for him
- 9. a) The chemist's shop, where Jenny had suggested that Emma tell her boss that she had been offered a job, was near where Emma lived
 - b) The chemist's shop, where Jenny had suggested that Emma tell her boss that she had been offered a job, was in a different town

VALIDIZÁCIA SLOVENSKEJ VERZIE ZÁKLADNEJ ŠKÁLY EMPATIE U PRE-ADOLESCENTOV

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Súhrn: Cieľom predkladaných dvoch štúdií bolo validizovať slovenskú verziu Základnej škály empatie (Basic empathy scale, Jolliffe, Farrington, 2006), ktorá odráža nové trendy v chápaní empatie, keďže meria nielen afektívne, ale aj kognitívne komponenty empatie. Prvá štúdia (n = 429) potvrdila tento dvoj-faktorový model empatie aj na slovenskej vzorke pre-adolescentov. Druhá štúdia (n = 318) priniesla podporu pre konvergentnú ako aj diskriminačnú validitu Základnej škály empatie pomocou dvoch ďalších dotazníkov empatie a dvoch testov chápania mysle. Celkovo vzaté, naše výsledky sú konzistentné s predchádzajúcimi validizačnými štúdiami dotazníka BES a poskytujú dodatočnú podporu pre dvoj-faktorový model empatie. Naše výsledky tiež ukazujú, že slovenská verzia Základnej škály empatie má dostatočné psychometrické vlastnosti a je prínosom pre používanie v psychologickom výskume aj praxi.