

A RUSSIAN VERSION OF THE ENGAGEMENT WITH BEAUTY SCALE: THE MULTITRAIT-MULTIMETHOD MODEL

P.A. SABADOSH^a

^aInstitute of Psychology of the Russian Academy of Sciences, 13/1 Yaroslavskaya str., Moscow, 129366, Russian Federation

Abstract

The aim of the study was a Russian adaptation of the EBS 2.0 questionnaire (Diessner, Solom, Frost, Parsons, & Davidson, 2008) measuring aesthetic responsiveness to the beauty of nature, art, ideas and moral behaviour. Besides, the hypothesis of responsiveness to technics' beauty as part of aesthetic responsiveness and the multitrait-multimethod (MTMM) model additionally distinguishing engagement scales (cognitive, somatic, emotional, spiritual) in the EBS structure were tested. The original EBS was translated into Russian, extended by an experimental Technical Beauty scale, and completed by 191 Russian lyceum students, 48% females and 52% males, 14–17 years old from classes with advanced study of mathematics, or natural sciences, or humanities. The CFA demonstrated the consistency of the Beautiful Ideas subscale added to EBS 2.0 with the rest of the EBS. The Technical Beauty scale did not revealed such a consistency, and was excluded from analysis. The MTMM model showed good fit, with half of loadings on engagement scales being insignificant. In the reliability analysis Cronbach's α reached 0.92 for the EBS total score, 0.82–0.90 for beauty scales and 0.66–0.75 for engagement scales. The ANOVA revealed that girls rated in EBS total scores higher than boys, while humanitarians and physicists did higher than chemists and mathematicians. Furthermore, girls and boys differed in beauty scales and engagement scales profiles. Within-group factors of beauty and engagement interacted too. Thus, the EBS Russian version demonstrated good psychometric qualities in the sample of academically successful adolescents; the MTMM model matched the data. The revealed differences in aesthetic responsiveness profiles also confirm that the questionnaire is valid and the proposed model is appropriate.

Keywords: aesthetic responsiveness, psychometrics, gender differences, educational specialization, multitrait-multimethod model.

Measurement of the individual's mental characteristics related to aesthetic experience has a long history in psychology and has been practiced almost as long as the science of psychology. In particular among the first attempts to develop tests of aesthetic abilities were those made by E. Thorn-

dike for visual senses and C. Seashore for aural senses; aesthetic value was regularly included in values surveys by different authors: G. Allport, M. Ro-keach, Sh. Schwartz. Contrarily to other aesthetic psychological characteristics, aesthetic responsiveness had no measure until recently. Meanwhile,

from A. Maslow's works to modern positive psychology aesthetic responsiveness is considered as personal growth factor influencing subjective well-being and even as a benefit to recovery from depression and anxiety disorders (Peterson, Park, & Seligman, 2006). Overall, this personal trait should be deemed an important psychic resource (though undervalued until recently), thus meriting a dedicated valid measure.

Few self-report instruments developed in the last decades tap into the domain in question, two amongst them being personality inventory subscales: the Aesthetics facet of the Openness scale of the NEO Personality Inventory–Revised (NEO PI-R) (Costa & McCrae, 1992), and the Appreciation of Beauty and Excellence subscale (ABE) (Haidt & Keltner, 2004) of the Appreciation of Values in Action Inventory of Strengths (VIA-IS) (Peterson & Seligman, 2004). Not surprisingly the Aesthetics facet conceptualizes aesthetic responsiveness as openness to (as well as sensation seeking of) corresponding specific experiences, while the ABE primarily deals with self-transcendent experiences of awe, admiration, elevation. The former has a narrow focus on art issues, while the latter is devoted to responsiveness in two different matters: (1) beauty and (2) excellence, including its non-aesthetic forms of mastery and moral goodness. Besides, the fact of both being subscales makes them embarrassing to operate as independent instruments.

The two other measures are stand-alone scales conceived specially to fill the gap: the Engagement With Beauty Scale (EBS) (Diessner, Solom, Frost, Parsons, & Davidson, 2008), and the

Appreciation of Beauty and Excellence Test (ABET) (Güsewell & Ruch, 2012). Conceptually both are similar to the ABE, positing a second-order general factor of aesthetic responsiveness behind various kinds of specific experiences. The EBS authors replaced the term *appreciation* with *engagement with beauty*, accentuating its specific experiential nature and thus confining the theoretical trait model solely to different kinds of *beauty experience*. The ABET is based on a more comprehensive responsiveness model similar to that of the ABE including non-aesthetic goodness as well. Güsewell and Ruch assumed the intra-individual variance of subscales due to a personal responsiveness profile in the good-beautiful continuum. In the mentioned authors' study the ABET showed a significant convergent validity with the ABE and the EBS, bringing evidence that all three instruments measured the same construct. The ABET differs from the rest of the measures in that its procedure implies stimuli's rating by a participant, therefore representing not a self-report, but rather a kind of test (just reflected by its name) that immediately faces it with a lot of generic problems of aesthetic testing (see Sabadosh, 2015b, 2016). Besides, the procedure of testing makes the ABET more time-consuming and rather not easy to administrate.

Thus, the EBS appears to be a more convenient aesthetic responsiveness measure, being short (14 items in Version 1.0), with a clear underlying theory ascending to Kantian views, and a corresponding three-(sub)scales structure of the engagement with (1) natural, (2) artistic, and (3) moral beauty. Each scale contains four items relevant to dif-

ferent aspects of the aesthetic response: (1) cognitive, (2) somatic, (3) emotional, and (4) spiritual, each expressed in the same terms differing just in the object experienced, plus two Moral Beauty items concerning the desire to be better. In the questionnaire items are grouped by subject and come always in the same order starting with the cognitive aspect; there are no reverse items in the list.

EBS 1.0 demonstrated good structural and concurrent validity as well as retest reliability in the authors' initial studies using the North-American sample (Diessner et al., 2008). There are a few translations into different languages; in corresponding validation studies the initial finding about the three-factor structure of the questionnaire was reproduced in rather modest samples (Richel et al., 2008; Dachs & Diessner, 2009).

Recently Rhett Diessner, the principal author of the EBS, added the fourth scale, that of engagement with beautiful ideas (Ideal Beauty) to the initial questionnaire version, thus converting it into EBS 2.0. It was translated into Chinese, and the first validation study conducted in Hong Kong brought an unexpected result: instead of the hypothesized four-factor structure, the most of the variance accounted for a unique factor (Hui & Diessner, 2015). The authors explain the finding by the holistic mentality of the Cantonese sample. Meanwhile the new Ideal Beauty subscale still needs to be validated.

The latter case raises some theoretical questions along with the EBS 2.0 validation task. There are plenty of potentially aesthetic objects in the world; if we add a scale to the existing

structure, why not to continue, and when to stop? Does the last finding with the Chinese sample mean that the kinds of beauty's list depend on culture? Then in particular, how long is the list in Russian? As the next subscale candidate we can consider the engagement with beauty revealed in appliances, constructions, facilities, machineries and other technical stuff. The technical beauty phenomenon, though having some intersections with artistic and ideal beauty, is distinct enough to be conceptualized in its proper categories of industrial design and technical aesthetics. Therefore, we can anticipate its independence as a new factor in the EBS structure.

In their paper Güsewell and Ruch (2012) suggested the use of the ABET subscales and the corresponding continuum "beauty – goodness" for determining individual profiles of responsiveness besides general trait measurement. The same possibility may be examined for the EBS, with the individual profile of beauty subscales presumably indicating the kind of preferred beauty and thus being related to personal motivational attitudes. The other promising plane for analysis is items tapping into different aspects of aesthetic response. In Diessner's model they are just correlated, while obviously pointing out important psychic processes behind them. According to my assumption, there is a possibility of their aggregation into factors, or subscales, constituting another continuum "appreciation – engagement", i.e. cognitive – emotional, mentioned by Güsewell and Ruch but not included in their model. Thus I proposed the multi-trait-multimethod model (MTMM) comprising two planes: "objective", i.e.

kinds of beauty, and “subjective”, i.e. aspects of engagement (Sabadosh, 2015a).

There has been no sufficiently validated self-report aesthetic responsiveness measure in Russian until now. Though NEO-PIR and VIA-AS were adapted in Russian (Oryol & Senin, 2004; Burovikhina, Leontiev, & Osin, 2007), no evidence of concurrent validity of the former’s Aesthetics facet or the latter’s ABE Russian versions has been reported. As it appears from the above, translation of the EBS into Russian and its validation is the optimal solution to fill the gap.

1. Along with the task of EBS adaptation we can put in a set of hypotheses:

2. The EBS in Russian has a factor structure similar to the original English version.

3. The new EBS 2.0 Ideal Beauty, and freshly introduced Technical beauty subscales are consistent with the EBS structure.

4. There are individual differences not only in general engagement with beauty level but in the subscales profile.

5. There is another plane of subscales in the EBS besides the kinds of beauty: that of engagement aspects.

6. The Russian EBS has acceptable internal and concurrent validity.

To test these hypotheses I ran an empirical study.

Method

Participants

Participants were a convenience sample of 191 Russian lyceum (highly selective specialized school) students from the city of Yekaterinburg, Ural

region, 48% females and 52% males, 14–17 years old ($M = 15.71$; $SD = 0.67$) from classes with advanced study of mathematics, or natural sciences, or humanities.

Measure

The EBS 2.0 was translated from English into Russian by two psychologists, and translated back by a native English speaker. The back-translation was approved by the principal author of the original EBS. In addition I created a supplementary Technical Beauty subscale intending to measure the engagement with beauty revealed in industrial design objects: machinery, constructions, appliances, etc. Its items were composed by putting the term “technics” in the same four types of sentences as in the original subscales.

To preliminary test the EBS Russian version content validity a pilot study was run involving 14 school teachers, who did not find any incomprehensible or ambiguous items or other inconsistencies.

Procedure

Testing was organised according to generally accepted ethical norms. Students completed the EBS in class as part of development control tasks. Parental consent was obtained for minors accordingly to the lyceum’s rules. There were 8 participants who skipped a total of 15 individual items in various scales. The missing data was substituted via multiple imputations in CFA, pairwise deleted in reliability analysis, and casewise deleted in ANOVA. Analyses were performed using the *R* software environment (*R*

Core Team, 2016), with packages: *lavaan* (Rosseel, 2012), *mice* (Buuren & Groothuis-Oudshoorn, 2011), *Diagrammer* (Sveidqvist et al., 2017), and *ez* (Lawrence, 2015).

Results

The EBS total scores had an actual range of 24–126 with a possible range of 18–126. The Moral Beauty scores ranged from 8 to 42 with a possible range of 6–42. Those of Ideal Beauty actually ranged from 5 to 28 with a possible range of 4–28. Cognitive Engagement scores had an actual range 7–28 with a possible range of 4–28. Actual scores of the rest of the scales matched their possible ranges of 4–28.

Scores distributions of all the scales were left-skewed with average scores above the neutral baseline, except for Technical Beauty with a reverse pattern (see Table 1).

Structural validity

To validate the structure of EBS scales I conducted a confirmatory factor analysis (CFA). As items scores distributions differed from normal, the maximum likelihood estimation method with robust (Huber-White) standard errors and the Yuan-Bentler scaled test statistic were applied.

Five measurement models were fitted in total.

Model 1 comprised four kinds of beauty: Natural, Artistic, Moral, and Ideal, as primary factors dominated by a second-order factor of General Beauty. It allowed correlations between the residuals for thematically similar items within five groups of cognitive, physiological, emotional, spiritual responses, and of change for the better. The entire model matched the structure of revised EBS 2.0.

Model 2 differed from the Model 1 in Ideal Beauty factor being independent.

Table 1

Descriptive statistics of the EBS and its subscales plus the experimental Technical Beauty scale

Gender	Both		Female		Male	
Statistic	Mean	SD	Mean	SD	Mean	SD
<i>Beauty</i>						
Natural	4.82	1.36	5.37	1.03	4.31	1.44
Artistic	4.51	1.42	5.16	1.12	3.91	1.41
Moral	4.74	1.31	4.99	1.21	4.51	1.36
Ideal	4.55	1.27	4.81	1.22	4.31	1.28
Technical	3.53	1.5	2.96	1.34	4.06	1.45
<i>Engagement</i>						
Cognitive	5.49	0.99	5.78	0.83	5.23	1.05
Somatic	4.05	1.28	4.48	1.08	3.66	1.32
Emotional	4.71	1.25	5.2	1.02	4.26	1.28
Spiritual	4.07	1.33	4.54	1.18	3.63	1.32
<i>Total score</i>	4.66	1.05	5.07	0.86	4.28	1.07

The rest of the three-factor structure was adjusted to match the original EBS 1.0 study, where the residual variances of Natural Beauty and Moral Beauty were constrained to be equal. Model 2 represented an alternative hypothesis of Ideal Beauty's inconsistency with initial EBS subscales.

Model 3 consisted of all five kinds of beauty as primary factors dominated by the single General Beauty factor while allowing thematically similar items to correlate like in Model 1. It represented my hypothesis of Technical Beauty scale as a part of the extended EBS.

Model 4 differed from the Model 3 in that Technical Beauty was independent; in other words, Model 4 consisted of Model 1 with an additional independent Technical Beauty factor. It represented an alternative hypothesis of Technical Beauty inconsistency with EBS 2.0.

Model 5 comprised two groups of primary factors: kinds of beauty (Natural, Artistic, Moral, Ideal), and kinds of engagement (Cognitive, Somatic, Emotional, Spiritual), the former group being dominated by a single second-

order factor while allowing to correlate the two items related to the desire to be better. It represented the hypothesized MTMM model of EBS.

CFA results for all the five models are reported in Table 2.

Results for Model 1 showed its good fit. All factor loadings were significant positive.

Models 1 and 2 fit comparison delivered strong evidence in support of Model 1: all the fit indices of Model 1 were far better than these of Model 2; the χ^2 difference test also revealed its superiority: $\chi^2 = 87.48, p < 0.001$, indicating that Model 2 must be rejected in favour of Model 1. Thus, Ideal Beauty is consistent with the initial EBS version and therefore may be included in further analysis as part of the EBS.

CFA results for Models 3 and 4 were very close both reporting acceptable fit; the χ^2 difference test revealed no superiority of Model 3, indicating that it must be rejected in favour of Model 4. Thus, Technical Beauty is not consistent with EBS 2.0 and therefore was not included in the further analysis.

Table 2

CFA results: fit indices of the EBS five models by ML method using robust (Huber-White) standard errors

Model	χ^2	df	p^*	CFI*	TLI*	AIC	RMSEA*	RMSEA 90% CI*	SRMR
1	145.05	106	0.007	0.976	0.965	11710.51	0.044	0.030–0.060	0.05
2	208.47	107	0	0.937	0.91	11764.06	0.07	0.057–0.084	0.172
3	235.07	163	0	0.966	0.952	14447.79	0.048	0.035–0.061	0.072
4	237.58	164	0	0.966	0.951	14422.9	0.049	0.035–0.061	0.078
5	143.67	108	0.013	0.978	0.968	11868.77	0.048	0.031–0.063	0.051

*Indices with Yuan-Bentler correction

Model 5 results showed its good fit, being the only one with χ^2 test's p -value > 0.01 . The model with standardized parameter estimates is presented in Figure 1. Factor loadings were all positive while 8 of 16 loadings on engagement scales and specifically all loadings on Cognitive Engagement did not reached the significance level $p < 0.05$. Besides, the information-based AIC prioritized Model 1 as being more parsimonious. Nevertheless, as Model 5 had been theoretically grounded, more comprehensive and encompassing Model 1, it was implicat-

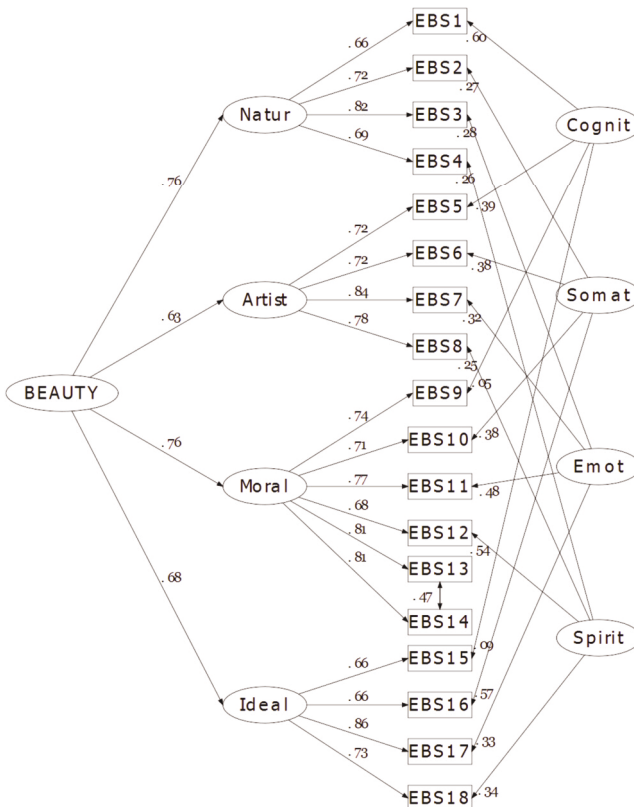
ed in the further analysis. Indeed, it is better to treat with an engagement factor instead of a bunch of inter-items correlations posited in Model 1 (or than to not consider them at all).

Reliability

Standardized Cronbach's α reached 0.92 for EBS 2.0 total score; it ranged 0.82–0.90 for beauty scales and 0.66–0.75 for engagement scales.

Corrected item-total correlation coefficients had the range of 0.50–0.68 for EBS total score except for two

Figure 1
CFA results of the EBS multitrait-multimethod model (Model 5) with standardized ML parameter estimates



Cognitive Engagement items below 0.50, and of 0.54–0.78 for beauty scales. Those coefficients were ranged from 0.36 to 0.49 for Cognitive Engagement; two more of them were below 0.50 for Somatic Engagement; those for the rest of engagement scales having the range of 0.50–0.57.

Concurrent (known-group) validity: gender and specialization effects

Girls and boys had uneven distribution across specializations: more than half the girls (54%) were in humanities classes, while only less than one-fifth (19%) of the boys did. In order to treat specialization effect separately from

that of gender as well as to check these factors for interaction mixed effects Type II (hierarchical SS) analysis of variance (ANOVA) was applied, with beauty and engagement scales as within-subject factors. In order to balance item number across scales, only the first four items of Moral Beauty were included in the analysis, omitting the two items related to the desire to be better. A subsample was composed from classes specializing in chemistry, humanities, physics, or mathematics selected as having enough members, with $N = 157$ after the three lowest scores were omitted as outliers.

The ANOVA results are presented in Table 3. Besides that of Gender, analysis

Table 3

Mixed effects Type II ANOVA results of the EBS

Source of variation	df	df err	SS	SS err	F	η^2_c
Gender	1	149	176.71	1919.38	13.72***	0.03
Specialization	3	149	284.26	1919.38	7.36***	0.048
Beauty	3	447	54.9	1681.73	4.86**	0.01
Engagement	3	447	827.41	834.85	147.67***	0.127
Gender×Specialization	3	149	28.17	1919.38	0.73	0.005
Gender×Beauty	3	447	60.42	1681.73	5.35**	0.011
Specialization×Beauty	9	447	42.78	1681.73	1.26	0.007
Gender×Engagement	3	447	15.25	834.85	2.72*	0.003
Specialization×Engagement	9	447	25.46	834.85	1.51	0.004
Beauty×Engagement	9	1341	44.92	1241.59	5.39***	0.008
Gender×Specialization×Beauty	9	447	24.1	1681.73	0.71	0.004
Gender×Specialization×Engagement	9	447	20.98	834.85	1.25	0.004
Gender×Beauty×Engagement	9	1341	9.54	1241.59	1.15	0.002
Specialization×Beauty×Engagement	27	1341	29.67	1241.59	1.19	0.005
Gender×Specialization×Beauty×Engagement	27	1341	14.48	1241.59	0.58	0

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$. The p -values of the tests including between-subject factors are reported with Greenhouse-Geisser correction.

revealed the Specialization main effect. Pairwise comparisons with the Holm-Bonferroni correction revealed that young humanity scholars and physicists scored significantly higher on EBS than chemists and mathematicians did. No interaction of the Gender and Specialization factors was found.

The two within-subject factors also produced significant effects: of small size for kinds of beauty and of medium size for aspects of engagement. The both factors interacted with Gender and with each other. Pairwise comparisons revealed that girls' scores of Natural and Artistic Beauty were higher than those of Moral and Ideal Beauty; contrarily with this finding, boys were scored lower on Artistic Beauty than on the rest of the beauty scales. Cognitive Engagement mean scores were higher than all other engagement scales in the sample, while Emotional Engagement scores were higher than Somatic and Spiritual Engagement ones. Boys, while scoring in general lower than girls did not differ from them in Cognitive Engagement. Besides, post hoc tests revealed within-subject factors interaction exact details: Emotional and Spiritual Engagement with Natural Beauty were higher than with other beauty kinds, while there were no statistically significant differences between kinds of beauty scores in the rest of engagement aspects.

Discussion

All initial EBS scales demonstrated good discriminative power as it appears from the descriptive statistics. The positive bias in aesthetic traits scales was reported and interpreted by other

authors as a subjective value of aesthetics (Lundy, Schenkel, Akrie, & Walker, 2010). On the other hand, the fact that EBS contains only unipolar subscales with no reverse items may explain the bias as well.

The new Ideal Beauty scale of EBS 2.0 being theoretically grounded showed good reliability, structural consistency with the rest of the scale, interacting in a similar way with Gender and Specialization, thus demonstrated different aspects of validity as part of EBS and should be used as one of its subscales.

The situation with the experimental Technical Beauty scale is quite opposite: while internally reliable, it showed no significant relation to EBS, and its frequencies distribution had opposite bias. These features may be explained in the same logic as above, i. e. by Technical Beauty not being a part of the "engagement with beauty" construct and (consequently) having a less subjective value. An alternative explanation may be given to its distribution's features: EBS items are grouped by kinds of beauty and Technical Beauty came the last; few participants reported that the questionnaire was boring. Thus there may be an order effect. In all the cases Technical Beauty's lack of relation with EBS may be treated as an evidence of the latter's discriminant validity.

Engagement scales are theoretically well grounded, and the corresponding measurement model fits well the data. On the other hand, the latter finding cannot serve as a strong evidence of the model's priority because of lack of its statistical superiority over the alternative (initial) model. Engagement scales were especially less reliable than beauty

scales. Again, these results may be explained by the order effect of the items: while they are grouped by kinds of beauty, aspects of engagement are in turn dispersed that may cause their lower reliability.

Cognitive Engagement had the biggest lack of internal consistency while demonstrating the highest average scores. Firstly as it appears from the items content, cognitive engagement means any form of beauty awareness while other kinds of engagement are focused on more definite, particular engagement aspects. Subsequently Cognitive Engagement obtains the highest scores as the most generalized scale. Then secondly, as the Cognitive Engagement score distribution is the most biased, left-skewed one, its correlations indices may be lowered by the ceiling effect.

Thus the overall fit of the MTMM model may be affected by the mentioned EBS design flaws. However we have enough evidences to consider this model as matching the data and helpful for various research and diagnostic tasks.

Distinct gender bias was revealed in the study, general aesthetic responsiveness being significantly higher in girls in comparison to boys. The finding is in line with traditional gender stereotypes as well as with results obtained in some of previous EBS validation studies. Another important finding is the specialization effect where the humanity scholars self-reported the highest engagement with beauty level. The result is anticipated and accordant with those obtained in English version EBS studies. The differences between specialization in physics and other natural sciences are in turn unexpected

while also demonstrating the discriminative power of EBS, but they need to be investigated more in depth for accurate interpretation, and in fact may be due to the peculiarities of the sample.

Beauty subscales profiles depended on the participants' gender: girls were particularly aesthetically responsive to arts and nature, while boys paid the least attention to artistic beauty. As to engagement scales, while the order was the same for all with Cognitive Engagement being the most rated (that again may be due to its overgeneralization) followed by Emotional one, gender affected the comparative degree of engagement in that boys demonstrated the same level of cognitive engagement as girls while being much less responsive in the affective plane. This result stays in line with the traditional male gender role as less emotional than the female one. The reported boys' relatively high cognitive engagement can be alternatively explained by the social desirability effect, probably due to the focus on the pupils' cultural level in the lyceum. The observed effects of gender may be also due to its role in developmental differences in adolescents.

Finally there is a relationship between kinds of beauty and aspects of aesthetic responsiveness: emotional and spiritual engagements were more intense in the case of natural beauty while this difference was not shown in cognitive and somatic aspects of engagement. This relationship is awaiting explanation, but meanwhile it demonstrates the usefulness of engagement scales assignment.

Thus, in the presented study conducted on a sample of academically successful adolescents EBS 2.0 Russian version showed good psychometric

qualities: discriminative power, reliability, as well as different aspects of validity: content, structural, concurrent. The freshly created and introduced technical beauty scale showed no relationship with the engagement with beauty construct as operationalized in the EBS, the result we can see again as an evidence of the EBS discriminative validity. The proposed MTMM model of EBS, more complex as compared to the original one, demonstrated its statistical fit and effectiveness. Aesthetic responsiveness dependencies from

respondent's gender and educational specialization were revealed. The generalizability of these findings needs to be justified by further studies.

Acknowledgements

I wish to thank Dr. Rhett Diessner and Yana I. Varvaricheva for their help in the course of EBS 2.0 translation. I equally thank my colleague Dr. Elena V. Volkova as well as the lyceum AESC UrFU staff for their help in organizing the study.

References

- Burovikhina, I. A., Leontiev, D. A., & Osin, E. N. (2007). Sily kharaktera kak resursy lichnosti podrostka: opyt primeneniya oprosnika Profil lichnyh dostoinstv [Character strengths as adolescent personality resources: experience of Personal Virtues Profile questionnaire application]. *Psikhologicheskaya Diagnostika*, 1, 107–127.
- Buuren, S. van, & Groothuis-Oudshoorn, K. (2011). Mice: Multivariate Imputation by Chained Equations in R. *Journal of Statistical Software*, 45(3), 1–67.
- Costa, P. T., & McCrae, R. R. (1992). *Revised NEO personality inventory (NEO PI-R) and NEO five-factor inventory (NEO-FFI) professional manual*. Odessa, FL: Psychological Assessment Resources.
- Dachs, I. F., & Diessner, R. (2009). German version of the Engagement With Beauty Scale. *Psi Chi Journal of Undergraduate Research*, 14(3), 87–92.
- Diessner, R., Solom, R. D., Frost, N. K., Parsons, L., & Davidson, J. (2008). Engagement with beauty: Appreciating natural, artistic, and moral beauty. *The Journal of Psychology*, 142(3), 303–332.
- Güeswell, A., & Ruch, W. (2012). Are there multiple channels through which we connect with beauty and excellence? *The Journal of Positive Psychology*, 7(6), 516–529. doi:10.1080/17439760.2012.726636
- Haidt, J., & Keltner, D. (2004). Appreciation of beauty and excellence. In C. Peterson & M. E. Seligman (Eds.), *Character strengths and virtues: A handbook of classification* (pp. 537–551). Oxford, UK: Oxford University Press.
- Hui, R., & Diessner, R. (2015). Engagement with beauty in Hong Kong. *Indian Journal of Positive Psychology*, 6(4), 356–360.
- Lawrence, M. A. (2015). *Ez: Easy analysis and visualization of factorial experiments. R package version 4.3*. Retrieved from <https://CRAN.R-project.org/package=ez>
- Lundy, D. E., Schenkel, M. B., Akrie, T. N., & Walker, A. M. (2010). How important is beauty to you? The development of the desire for aesthetics scale. *Empirical Studies of the Arts*, 28(1), 73–92. doi:10.2190/EM.28.1.e
- Oryol, V. E., & Senin, I. G. (2004). *Lichnostnyj oprosnik NEO PI R. Rukovodstvo po primeneniyu* [Personality inventory NEO PI R. Manual]. Yaroslavl: NPC Psikhodiagnostika.

- Peterson, C., Park, N., & Seligman, M. E. P. (2006). Greater strengths of character and recovery from illness. *The Journal of Positive Psychology, 1*(1), 17–26. doi:0.1080/17439760500372739
- Peterson, C., & Seligman, M. E. P. (2004). *Character strengths and virtues: A handbook and classification*. New York: Oxford University Press.
- R Core Team. (2016). *R: A language and environment for statistical computing. (Version 3.25)*. Vienna, Austria: R Foundation for Statistical Computing. Retrieved from <https://www.R-project.org/>
- Richel, T., Diessner, R., Merchi, J., Dachs, I., Addison, D., Wilson, K., & Nasrullah, S. (2008). *International reliability studies of the Engagement with Beauty Scale (EBS)*. Poster presented at the International Counseling Psychology Conference, Chicago, IL.
- Rosseel, Y. (2012). Lavaan: an R package for structural equation modeling. *Journal of Statistical Software, 48*(2), 1–36.
- Sabadosh, P. (2015a). Aesthetic responsiveness as mental resource: personality trait models and measurement. In *Possibilities of actualization of human mental resources: Collection of scientific articles (2nd international scientific-practical seminar)* (pp. 111–115). Riga: International Higher School of Practical Psychology.
- Sabadosh, P. A. (2015b). Razrabotka metodov diagnostiki esteticheskikh sposobnostej: testy esteticheskoy chuvstvitel'nosti [Development of aesthetic abilities measures: aesthetic sensitivity tests]. In *Modern studies of intellect and creativity* (pp. 250–262). Moscow: Institute of Psychology of Russian Academy of Sciences.
- Sabadosh, P. A. (2016). Metodologiya diagnostiki esteticheskikh sposobnostej [Methodology of aesthetic abilities assessment]. In M. A. Kholodnaya & G. V. Ozhiganova (Eds.), *Personality's mental resources: theoretical and practical studies: Proceedings of the 3th International Symposium* (pp. 153–159). Moscow: Institute of Psychology of Russian Academy of Sciences.
- Sveidqvist, K., Bostock, M., Pettitt, C., Daines, M., Kashcha, A., & Iannone, R. (2017). Diagrammer: create graph diagrams and flowcharts using R (Version 0.9.0). Retrieved from <https://cran.r-project.org/web/packages/DiagrammeR/index.html>

Appendix

The Russian version of the Engagement with Beauty Scale (EBS 2.0)

Относительно всех нижеследующих ответов: имейте в виду, что мы спрашиваем только о Вашем *опыте восприятия и чувствования* чего-то как *красивого*. Вообще, многие вещи могут нам нравиться или мы можем считать их важными, в то же время фактически не замечая в них красоты. В связи с этим в последующих вопросах мы не спрашиваем, нравится ли Вам нечто; мы не спрашиваем, считаете ли Вы нечто важным; мы спрашиваем только, есть ли у Вас чувство, что это красиво.

Отметьте каждое из нижеследующих утверждений числом от 1 до 7:

1 = очень непохоже на меня; 2 = непохоже на меня; 3 = немного непохоже на меня; 4 = нейтрально; 5 = немного похоже на меня; 6 = похоже на меня; 7 = очень похоже на меня.

Утверждения 1–4 ниже относятся к переживаниям, связанным с природой и физическим миром, включая горы, скалы, реки, озёра, океаны, пустыни, растения, цветы, деревья, животных и т.д. (но НЕ человеческое тело).

_____ 1. Я замечаю красоту в одной или более гранях природы.

_____ 2. Наблюдая красоту в природе, я чувствую изменения в моем теле, такие как ком в горле, перехваченное дыхание, учащенное биение сердца или другие телесные отклики.

_____ 3. Наблюдая красоту в природе, я чувствую волнение, это меня трогает — например, испытываю чувство благоговения, удивления, возбуждения, восхищения или подъема.

_____ 4. Наблюдая красоту в природе, я чувствую что-то вроде духовного переживания, возможно — чувство единения, слияния со вселенной или любви ко всему миру.

Утверждения 5–8 ниже относятся к переживаниям, связанным с искусством, например живописью, скульптурой, музыкой, танцем, архитектурой, поэзией, романами, литературой и т.д.

_____ 5. Я замечаю красоту в искусстве или рукотворных объектах.

_____ 6. Наблюдая красоту в произведении искусства, я чувствую изменения в моем теле, такие как ком в горле, перехваченное дыхание, учащенное биение сердца или другие телесные отклики.

_____ 7. Наблюдая красоту в произведении искусства, я чувствую волнение, это меня трогает — например, испытываю чувство благоговения, удивления, возбуждения, восхищения или подъема.

_____ 8. Наблюдая красоту в произведении искусства, я чувствую что-то вроде духовного переживания, возможно — чувство единения, слияния со вселенной или любви ко всему миру.

Утверждения 9–14 ниже относятся к переживаниям, связанным с людьми, когда Вы наблюдаете кого-то (или слышите о ком-то), кто демонстрирует *впечатляющий акт милосердия, преданности, доброты, сочувствия, прощения, самопожертвования или искреннего служения другим*. Мы относим их к нравственно красивым поступкам.

_____ 9. Я замечаю нравственную красоту в людях.

_____ 10. Наблюдая нравственно красивый поступок, я чувствую изменения в моем теле, такие как ком в горле, перехваченное дыхание, учащенное биение сердца или другие телесные отклики.

_____ 11. Наблюдая нравственно красивый поступок, я чувствую волнение, это меня трогает — например, испытываю чувство благоговения, удивления, возбуждения, восхищения или подъема.

_____ 12. Наблюдая нравственно красивый поступок, я чувствую что-то вроде духовного переживания, возможно — чувство единения, слияния со вселенной или любви ко всему миру.

___ 13. Наблюдая нравственно красивый поступок, я обнаруживаю в себе желание стать лучше.

___ 14. Наблюдая нравственно красивый поступок, я обнаруживаю в себе желание делать добрые дела и больше сил отдавать служению другим.

Утверждения 15–18 ниже относятся к **опыту переживаний идей, таких как философские идеи, политические идеи, религиозные или духовные идеи, научные или математические идеи и т.д.**

___ 15. Я обращаю внимание на красивые идеи.

___ 16. Задумываясь над красивой идеей, я чувствую изменения в моем теле, такие как ком в горле, перехваченное дыхание, учащенное биение сердца или другие телесные отклики.

___ 17. Задумываясь над красивой идеей, я чувствую волнение, это меня трогает — например, испытываю чувство благоговения, удивления, возбуждения, восхищения или подъема.

___ 18. Задумываясь над красивой идеей, я чувствую что-то вроде духовного переживания, возможно — чувство единения, слияния со вселенной или любви ко всему миру.



Pavel A. Sabadosh — research fellow, Institute of Psychology of the Russian Academy of Sciences, Ph.D.
Research area: musical psychology, psychological aesthetics, differential psychology, psychometrics.
E-mail: sabadosh@psychol.ras.ru

Русская версия Шкалы сопричастности красоте EBS (the Engagement with Beauty Scale): многочертная-многOMETодная модель

П.А. Сабadoш^a

^a *Институт психологии РАН, 129366, Москва, Россия, ул. Ярославская, д. 13, к. 1*

Резюме

Целью работы была адаптация на русском языке опросника EBS, измеряющего эстетическую отзывчивость на красоту природы, искусства, идей и нравственного поведения. Кроме этого проверялись предположение об отзывчивости на красоту техники как составляющей эстетической отзывчивости, а также многочертная-многOMETодная (MTMM) модель, выделяющая в структуре EBS дополнительно шкалы сопричастности: когнитивной, телесной, эмоциональной, духовной. Перевод оригинального опросника был дополнен экспериментальной шкалой Красоты Техники и заполнялся учащимися лицея г. Екатеринбурга 14–17 лет, $n = 191$, девушек 48%, юношей 52% из классов с углубленным изучением математики, естественных либо гуманитарных наук. Конфирматорный факторный анализ подтвердил консистентность шкалы Красоты Идей первоначальной структуре EBS (шкала добавлена позднее и требовала отдельной валидизации). Красота Техники не обнаружила консистентности с EBS, поэтому была исключена из анализа. MTMM модель показала хорошую пригодность, при том что половина нагрузок у шкал сопричастности не достигала значимого уровня. В анализе надежности коэффициент α Кронбаха достигал 0.92 для суммарного показателя EBS; 0.82–0.90 для шкал красоты и 0.66–0.75 для шкал сопричастности. Дисперсионный анализ выявил более высокие общие показатели EBS у девушек относительно юношей, а также у гуманитариев и физиков по сравнению с химиками и математиками. Кроме того, у девушек и юношей различались усредненные профили шкал как красоты, так и сопричастности. Внутригрупповые факторы вида красоты и сопричастности также взаимодействовали. Таким образом, на выборке академически успешных подростков русская версия EBS проявила хорошие психометрические характеристики; MTMM модель соответствовала данным. Выявленные различия в эстетической отзывчивости, связанные с полом и учебной специализацией респондента, также подтверждают валидность опросника и уместность предложенной модели.

Ключевые слова: эстетическая отзывчивость, психометрика, гендерные различия, учебная специализация, мультичертная-мультиметодная модель.

Сабadoш Павел Александрович — научный сотрудник, Институт психологии РАН, кандидат психологических наук.

Сфера научных интересов: музыкальная психология, психологическая эстетика, дифференциальная психология, психометрика.

Контакты: sabadosh@psychol.ras.ru