DISSERTATIONES PSYCHOLOGICAE UNIVERSITATIS TARTUENSIS
25

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RENÉ MÕTTUS

Universal and specific features of personality traits in their various representations

TARTU UNIVERSITY
PRESS

Department of Psychology, University of Tartu, Estonia

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LIST OF ORIGINAL PUBLICATIONS

This dissertation is based on the following original publications, which will be referred to in the text by their respective Roman numerals.

I. **Mõttus, R**., Pullmann, H., & Allik, J. (2006). Toward more readable Big Five personality inventories. *European Journal of Psychological Assessment, 22*, 149–157.

II. Kaare, P.-R., **Mõttus, R**., & Konstabel, K. (2009). Pathological gambling in Estonia: Relationship with personality, self-esteem, emotional states and cognitive abilites. *Journal of Gambling Studies* (in press).

III. **Mõttus, R.**, Allik, J., & Pullman, H. (2007). Does personality vary across ability levels? A study using self and other ratings. *Journal of Research in Personality, 41*, 155–170.

IV. **Mõttus, R**., Allik, J., Konstabel, K., Kangro, E.-M., & Pullmann, H. (2008). Beliefs about the relationships between personality and intelligence. *Personality and Individual Differences, 45*, 457–462.

V. **Mõttus, R**., Indus, K., & Allik, J. (2008). Accuracy of only children stereotype. *Journal of Research in Personality, 42*, 1047–1052.

VI. Allik, J., Realo, A., **Mõttus, R**., Pullmann, H., Trifonova, A., McCrae, R. R., et al. (2009). Personality traits of Russians from the observer's perspective. *European Journal of Personality*, *23*, DOI:10.1002/per.1721.

VII. Allik, J., Realo, A., **Mõttus, R**., Pullmann, H., Trifonova, A., McCrae, R.R. et al. (2009). Personality profiles and the "Russian Soul:" Literary and scholarly views evaluated. *Journal of Cross-Cultural Psychology* (in press)

VIII. Allik, J., **Mõttus, R**., Realo, A., Pullmann, H., Trifonova, A., McCrae, R. R., Meshcheryakov, B.G., et al. (2009). How national character is constructed: personality traits attributed to the typical Russian. *Psychological Journal of International University of Nature, Society and Human "Dubna", 2*, 1–23. [In Russian: Аллик Ю., **Мыттус Р**., Реало А., Пуллманн Х., Трифонова А., МакКрэй Р.Р., Мещеряков Б.Г. и 55 участника проекта "Русский характер и личность". (2009). Конструирование национального характера: свойства личности, приписываемые типичному русскому. *Культурно-историческая психология* (in press)].

The author of the dissertation contributed to these publications as follows:

- in studies I, III, IV: formulating the research questions, creating research design, carrying out data collection and analyses and writing manuscripts;
- in study II: supervising the master's thesis of Pille-Riin Kaare, on which the publication is based and writing the manuscript with the first author;
- in study V: supervising the bachelor's thesis of Kristjan Indus, on which the publication is based and writing the manuscript;
- in studies VI, VII and VIII: formulating the main research questions; coordinating the international research project on which the studies are based (Russian Character and Personality Survey; RCPS); organizing data collection, controlling and validating data; carrying out some of the data analyses; participating in writing the manuscripts.

Principal aims of the studies:

- creating a comprehensive multi-scale personality instrument which is based on the empirically validated five-factor personality model and has the benefit of being more widely usable than previous similar instruments due to its linguistic simplicity (Study I);
- validating the newly developed instrument and studying the psychological characteristics of pathological gamblers (Study II);
- studying the limits of potentially universal features of human personality such as structure, sex differences and age-related changes (Studies III and VI);
- investigating laypeople's implicit theory with respect to the co-variation of cognitive abilities and personality traits and the potential sources of the implicit theory (Study IV);
- investigating the content and validity of the personality stereotype of the people raised up without brothers and/or sisters (only children; Study V);
- investigating the content, validity and potential sources of literary and lay stereotypes of the Russian national character (Studies VII and VIII).

INTRODUCTION

Personality universals and their limits

After a period of doubts in the existence of permanent personality traits, sometimes called the Michelian ice-age (Westen, 1995), a new era of research has demonstrated that many features of personality appear to be surprisingly well replicable across languages, samples, and measuring instruments. One of the central issues in personality psychology has been the search for a universal trait taxonomy. The development of valid trait models is essential as they lay the groundwork for much of the other research in the field. Although the issue of the most comprehensive trait taxonomy is not completely settled as yet, there has been a substantial breakthrough during the recent decades. Much of the relevant research has shown that the five-factor version of trait models, the Big Five, can be replicated in most of the samples and in numerous cultures (Digman, 1990; Goldberg, 1993; McCrae & Costa, 1997). The five-factor model (McCrae & John, 1992) has been demonstrated to be robust across methods (e.g. Botwin & Buss, 1989; Goldberg, 1990; McCrae, Terracciano, & 78 Members of the Personality Profiles of Cultures Project, 2005a), its personality traits have substantial heritability (Jang, Livesley, & Vernon, 1996) and, perhaps most importantly, are related to key real-life outcomes (Roberts, Kuncel, Shiner, Caspi, & Goldberg, 2007). Of course, the five-factor model is not necessarily the only universal personality structure. Eysenck's three-factor and psycho-lexical six-factor structures have also been replicated in numerous cultures and languages (Barrett, Petrides, Eysenck, & Eysenck, 1998; Lee & Ashton, 2008). However, it has been claimed that although at different levels of abstraction other trait models are also more or less universal (e.g. DeYoung, 2006; Rushton & Irwing, 2008), the Big Five is the most optimal level for the comprehensive description of human personality differences (Markon, Krueger, & Watson, 2005).

Other relatively well replicable personality features include age and sex differences. In most of the cultures women describe themselves as more neurotic, agreeable and conscientious, while men are more assertive and excitement-seeking (Costa, Terracciano, & McCrae, 2001; Schmitt, Realo, Voracek, & Allik, 2008), As of age-related changes, most of the studies report that age is positively correlated to Agreeableness and Conscientiousness and negatively correlated to Neuroticism, Extraversion and Openness (McCrae, Costa, de Lima et al., 1999; McCrae et al., 2004; Robins, Fraley, Roberts, & Trzesniewski, 2001).

The replicability of the basic personality features is important both theoretically – as this suggests some fundamental facts about human nature, and methodologically – as it proposes a solid groundwork for the description of personality. However, along with mounting evidence that validates the universal features of personality, it is also important to test their limits. Clearly documented exceptions to the general rules are likely to provide informative insights into the nature of the phenomena. For instance, let us imagine that we

could systematically find that in people who are "different" in some well-defined way, the co-variation of personality descriptors would not reveal the usually replicable five-factor solution at any level of description. Instead, at maximum, a four-factor solution with an undifferentiated Extraversion-Openness dimension would emerge. This information about the limits of the otherwise universal personality structure would be useful because it would help to specify the condition for normative personality development. Similarly, if we could ascertain the conditions in which the usually replicable age-related changes in personality traits are absent, it would inform us about the factors influencing normative maturation. Realo, Voracek, and Allik (2008) studied the universality of sex-differences of personality traits and found that although the sex differences were relatively universal across numerous nations, there was a systematic regularity in their magnitude: sex-related differences were more pronounced in affluent nations compared to less prosperous societies. Authors hypothesized that the variations in the magnitude of sex differences might be related to variability in the expression levels of men's innate personality traits that are caused by males' greater responsiveness to different environmental conditions. Thus, the sex differences appear to be universal but they also demonstrate systematic variations. Furthermore, these variations in the universal pattern are potentially informative about development of personality traits.

Limits of a universal personality model: Low intelligence and use of everyday concepts

The validity of the five-factor model has been debated on several grounds (Block, 1995; Hakel, 1969; Westen, 1995). A relatively recent critique was made by Toomela (2003) who claimed that personality structure is shaped by specific cultural mechanisms. Particularly, Toomela argued that personality structure depends on the way people encode information about the world. Following Luria's ideas he attempted to distinguish people on the basis of their dominant word meaning structure: some people encode information using predominantly scientific (abstract) concepts while others describe the world using everyday (concrete) concepts. The dominant word meaning structure (use of either scientific or everyday concepts) depends on socio-cultural factors (e.g. degree of formal education), which vary across and within cultures. Although the dominant word meaning structure is theoretically distinct from psychometrically measured intelligence, they are difficult to separate in practice: people who use scientific concepts typically score higher on intelligence tests. Word meaning structure is a set of "mental tools" while cognitive ability is the level of mastery of the tools. Therefore Toomela hypothesized that personality structure may also depend on the level of cognitive development. The latter idea, of course, was not original to Toomela. For example, Brand, Egan, and Deary (1994) had proposed that individuals with higher levels of cognitive ability have a more differentiated personality structure (e.g. they might need a greater number of dimensions for a comprehensive description of their personalities or they may have more orthogonal traits than lower-ability

individuals). The empirical support to the idea, however, has been modest (e.g. Austin, Deary, & Gibson, 1997).

Toomela (2003) analyzed data from a large sample of military recruits and officers who had completed the Estonian version of the Revised NEO Personality Inventory (NEO-PI-R; Kallasmaa, Allik, Realo, & McCrae, 2000) and tests of cognitive ability and dominant word meaning structure. He divided the sample into five groups on the basis of the participants' cognitive ability and dominant word meaning structure and carried out exploratory factor analyzes on the NEO-PI-R scores. He found that in the groups of low cognitive ability and "everyday thinkers" the Varimax-rotated factor structures poorly replicated the typical NEO-PI-R structures. From these results Toomela concluded that " … it should be evident that the Big Five structure of personality is not universal to every culture and to every healthy man" (Toomela, 2003, p. 372). According to Toomela, the cross-cultural evidence supporting the validity of the five-factor model had resulted from sampling inadequacies – in most studies predominantly student samples with high levels of formal education had been used. Allik and McCrea (2004a) reanalyzed Toomela's data using targeted Procrustes rotation instead of Varimax rotation. They found that after rotating the factor matrices reported by Toomela towards the NEO-PI-R normative structure (Costa & McCrae, 1992), the typical five-factor structure could generally be replicated. Although the fit was far from perfect in the group of the most extreme "every-day thinkers", the intended personality structure was recognizable.

If true, Toomela's conclusions would have important theoretical and practical implications for personality research. The claim of the universality of the basic "building blocks" of human personality would turn out to be wrong. The applicability of nomothetic models for the description of personality would turn out to be questionable. Below average cognitive ability and the use of everyday concepts for coding information about the world are not rare and marginal conditions. Therefore, if they were important determinants of the core features of personality, they would need to be inseparable accompanies of any personality research. Toomela's claim indeed tested the limits of a supposedly universal personality feature – its describability in terms of five broad dimensions.

However, Toomela's (2003) study had a serious limitation. The study was entirely based on self-report ratings, which are prone to measurement errors. It is plausible that the "everyday thinkers" – who also tend to have low cognitive ability – have difficulties with giving reliable self-ratings, which in turn might bring along "anomalies" in personality structure. The difficulties might occur either at the level of properly understanding questionnaire items, or at the level of analyzing item relevant information and making judgments on the basis of this information. Indeed, there is evidence consistent with this explanation. Austin and her colleagues (1997) noticed that internal reliabilities of scales were lower in the group of individuals with lower cognitive ability. They concluded that it was impossible to distinguish measurement artifacts from real ability-related differences in personality. Unfortunately Toomela (2003) did not discuss

this possibility. Neither did he report information concerning the quality of data in different ability groups (e.g. internal consistencies). Therefore, by and large, his results were inconclusive and the issue – the replicability of the five-factor version of trait models at different levels of word meaning structure and cognitive ability – waited for a more careful experimental design.

A more appropriate design for testing the limits of five-factor model

Fortunately there appears to be a simple solution to the problem of differential quality of personality ratings at different levels of ability and word meaning structure. The limitations of self-report ratings can be overcome by obtaining supplementary ratings from multiple well-informed external observers ("judges"). First, assuming a reasonable degree of agreement, aggregated ratings are more reliable. Depending on the research design (i.e. who are the raters), the cognitive ability level of external raters may co-vary with that of targets and therefore raters of low-ability targets, may also provide ratings of lower quality – aggregation should compensate this problem. Second, it has been demonstrated that aggregated observer ratings are more valid in predicting behavioral criteria than self-ratings (Kolar, Funder, & Colvin, 1996). Thus, to demonstrate the validity of Toomela's (2003) claim one has to show that "anomalies" in the personality structure related to low ability and predominant use of everyday concepts are also present in aggregated ratings of external observers. Failing to demonstrate it would rather support the alternative view that the variations in personality structure at different levels of cognitive ability and word meaning structure are artifacts caused by measurement errors (Allik & McCrae, 2004a). We decided to test this but in addition to using multiple raters we also planned to use a more readable personality measure than the standard NEO-PI-R.

A more readable five-factor personality measure

The main purpose of the first study (**Study I**) was to develop a more readable personality measure on the basis of *International Personality Item Pool* (IPIP; Goldberg, 1999). The new measure, which we entitled Estonian Personality Item Pool NEO (EE.PIP-NEO[1]), was a replica of the NEO-PI-R: it measured the same Big Five traits defined through the same 30 facet scales. Like the NEO-PI-R, the EE.PIP-NEO consisted of 30 x 8 = 240 items. The only systematic difference between the measures was the linguistic complexity of items. The items of the EE.PIP-NEO were on average 3 words, 7 syllables, or 18 characters shorter than the NEO-PI-R items. The average number of commas was also nearly five times lower in the EE.PIP-NEO, indicating its relative syntactic simplicity.

[1] In the published articles the instrument is referred as EPIP-NEO but in order to avoid ambiguity we decided to use a two-letter country code to distinguish different versions.

In fact, it was a study in its own right because, besides the development of a comprehensive multi-scale personality measure, we sought to answer the question of whether in relatively highly educated populations the linguistically minimalist personality measure can demonstrate reliability and validity, comparable to more sophisticated standard measures like the NEO-PI-R. In principle it is possible that short and minimalist items are ambiguous, lacking the necessary shades of meaning, and therefore impair reliability and validity of measurement. We administered the two instruments in parallel to 297 people, which made it possible to directly compare them. The facet scales of the EE.PIP-NEO demonstrated on average higher internal reliability than the facet scales of the NEO-PI-R. Factor structures of the instruments were highly similar to each other and to the "normative" North American structure of the NEO-PI-R (Costa & McCrae, 1992). The relationships with demographic variables like age and gender were similar in both measures and confirmed the pattern of relationships found elsewhere (Costa et al., 2001; McCrae, Costa, de Lima et al., 1999; McCrae et al., 2004; Schmitt et al., 2008). The relationships with the self-reported frequency of behavioral acts like taking medication against depression or attending social events were similar in the two instruments, and consistent with our predictions. The correlations between corresponding domain and facet scales were generally high. Thus, in a standard sample the linguistically simpler measure performed at least as well as its more sophisticated analogue. Given that, it is reasonable to assume that in the case of samples with below average ability the EE.PIP-NEO would be superior due to its linguistic simplicity.

In the next study (**Study II**) we used the EE.PIP-NEO along with measures of self-esteem, cognitive ability and emotional states to differentiate pathological gamblers from non-gamblers. The study was designed to delineate the psychological correlates of pathological gambling but its tacit side purpose was estimating the validity of the EE.PIP-NEO. Is the EE.PIP-NEO able to differentiate gamblers from non-gamblers, and do the results converge with previous findings? On the basis of previous results (e.g. Bagby et al., 2007; Slutske, Caspi, Moffitt, & Poulton, 2005) we expected that at the domain level pathological gamblers would score higher on Neuroticism and lower on Conscientiousness. At the level of facets scales we expected Impulsivity to be the far most powerful correlate of pathological gambling (Steel & Blaszczynski, 1998; Vitaro, Arseneault, & Tremblay, 1997). All these predictions were confirmed.

Although these analyses are not presented in the article **(Study II)** we can formally compare our results to previous findings. Using the NEO-PI-R, Bagby and his colleagues (2007) examined the personality differences between non-treatment seeking pathological gamblers and non-pathological gamblers. They presented Cohen *d*s showing the difference between pathological and non-pathological gamblers, as well as mean T-scores for both groups. We can compare the *d*-values describing group differences in 30 facet scales of the EE.PIP-NEO calculated in our study to those reported by Bagby and colleagues.

The correlation between the two vectors consisting of *d*-values is as high as r = .80 ($p < .001$), showing that in our study pathological gamblers differed from non-gamblers in much the same way as pathological gamblers differed from non-pathological gamblers in the study of Bagby and colleagues. Furthermore, when we converted the mean scores of our pathological gamblers and non-gamblers into T-scores, using the norms reported in Study I, and compared these T-scores to those presented by Bagby and colleagues, evidence for good convergent and divergent validity appeared. The T-scores of our pathological gamblers were significantly related to T-scores of both pathological and non-pathological gamblers of Bagby and colleagues (r = .65 and .57, $p < .001$ and .01, respectively), whereas T-scores of our non-gamblers were related to neither pathological nor non-pathological gamblers of Bagby and colleagues (r = –.19, and –.09, n.s., respectively). Thus, available evidence supports the validity of the readable five-factor personality measure EE.PIP-NEO.

Testing the five-factor model at different levels of cognitive ability and education

Having demonstrated the validity of our readable personality measure, I can return to the relationship of personality structure to cognitive ability and dominant word meaning structure. In the third study we tested the cognitive ability of 154 people with very different demographic backgrounds and asked them to rate their own personality traits (**Study III**). In addition, we asked the participants to find two external observers who could also rate their personality traits. We then divided the participants into two groups on the basis of their ability test scores and compared the groups with respect to the quality of personality ratings and personality structure.

Internal consistencies and cross-observer agreement were somewhat lower in the less able group, and in some scales the group differences in α-values and cross-observer correlations were significant. In general, however, the differences were not large. Thus, in the case of less able targets the five-factor model personality traits existed – as raters agreed upon them – and were rated relatively reliably and accurately.

The ability-related differences in personality structure were estimated in several ways. To test the personality differentiation hypothesis (Brand et al., 1994) we looked at the inter-correlations between the EE.PIP-NEO domain scores and facet scale scores. If the hypothesis was correct, inter-correlations would have been higher in the low ability group. Indeed, the hypothesis was confirmed in the aggregated observer-ratings but not in self-ratings. To test Toomela's (2003) claim that the five-factor structure of personality descriptors does not appear in the ratings of lower-level individuals, we compared the factor structures of the EE.PIP-NEO to the normative NEO-PI-R and EE.PIP-NEO structures. After targeted Procrustes-rotation (McCrae, Zonderman, Costa, & Bond, 1996) the factor structures of the low- and high-ability groups generally replicated the normative NEO-PI-R and EE.PIP-NEO structures in both self-reports and aggregated observer-ratings. The congruence coefficients

exceeded or were close to the threshold value of clear replication (.90). Did this mean that ability had no effect on personality structure? On the one hand, yes. Given the small *N*s in the groups, we can say that this was even surprisingly good replication. On the other hand, however, in aggregated observer-ratings the fit was systematically and significantly lower in the case of less able targets. Although the difference was not large, it was consistent with Toomela's (2003) prediction.

Of course, the low-ability group in our study probably consisted of more or less healthy and relatively well-functioning individuals. To thoroughly test the limits of the applicability of the five-factor model we should go further along the ability-education continuum. Fortunately there is relevant unpublished data. Recently, we used EE.PIP-NEO and its Russian version RU.PIP-NEO in a sample of young male prison inmates (86 Estonians and 75 Russian-speaking offenders; mean age 18.7 ± 1.4; age range from 15 to 23). The offenders had very low levels of education: the majority of them had completed 6 to 9 years of education, and only 5% of them had education beyond the 9th grade. They were also tested with Raven's Standard Progressive Matrices. On average their IQ deficit was at least 9 IQ points compared to students of vocational schools, and around 30 IQ points compared to high school students.

As expected the internal consistencies of the EE.PIP-NEO and RU.PIP-NEO were lower in offenders than in adult samples (Studies I and II). In Estonian offenders the α-values of domain scales varied between .80 and .90, whereas in Russian-speaking offenders they were slightly higher (.82 to .91). In facet scales the α-values varied from .32 to .86 (mean .66) and from .47 to .75 (mean .63), respectively for Estonians and Russian-speaking prisoners. Apparently, offenders were less consistent in responding to personality test items than individuals in standard samples. Nevertheless, the differences were not catastrophically large.

There were no systematic differences between offenders and non-offenders with respect to intercorrelations between the Big Five domain scores. The average intercorrelations were very similar in all four groups (average r = .23 – .30). Comparing the factor structures of EE.PIP-NEO and RU.PIP-NEO obtained from the sample of offenders to the normative structure of EE.PIP-NEO (Study I), showed that the fit was not perfect but generally the normative structure was recognizable. After targeted Procrustes-rotation (McCrae et al., 1996) the factor congruence coefficients varied from .78 to .91 (total congruence.86) and from .84 to .91 (total congruence .89), respectively for Estonians and Russian-speaking prisoners. When we compared the factor structures obtained from the data of offenders to those obtained from their non-offending normally educated age-mates (N = 792 and 226, respectively for Estonians and Russian-speakers), the factor congruence coefficients varied from .76 to .95 (only the congruence of Neuroticism factor was below .85, total congruence was .88) in Estonians and from .88 to .95 (total congruence .91) in Russian-speakers. Thus, in the case of prison inmates the personality test structure was far from being chaotic. Although with some deviances, the co-variation of personality traits generally

followed the predicted pattern even in this group with very low average ability levels and education. Given the small *N*s in the groups of offenders and, compared to typical samples, poorer psychometric properties of personality tests, these are remarkable results.

Overall, these results indicate that the structure of personality traits might slightly differ across ability levels. Similarly to the domain of cognitive traits (Jensen, 2003; Spearman, 1927), higher general cognitive ability might be associated with somewhat greater differentiation of personality traits (Study III). Although the effects are not large these findings are not to be ignored. They seem to suggest that low cognitive ability – or some other variables related to it such as low education, predominant use of everyday concepts or low socio-economic status – sets some constraints to the delineation of individuals' personality profiles. High IQ is likely to be an indicator of the conditions that offer more choices and freedom in the development and maturation of personality (Brand et al., 1994). Thus, it is possible that the attempt to test the limits of a supposedly universal personality model gave us information about potential factors influencing personality development.

However, it must be borne in mind that testing the limits of the five-factor model did not lead to refutation of its universal applicability. In our research the ability-related differences in personality structure were not large enough to say that the five-factor model is not an adequate way to describe the personality traits of people with low ability and education – and perhaps "everyday" thinking. Thus, Toomela's claim that " … it should be evident that the Big Five structure of personality is not universal to every culture and to every healthy man" (Toomela, 2003, p. 372) seems to be premature in the least.

Personality and intelligence in lay people's eyes

After working on the associations between cognitive ability and co-variation of self- and observer-rated personality traits we were interested in lay beliefs. Do people attribute to highly intelligent individuals different personality traits than to less intelligent persons? Lay perceptions (or implicit theories) about the co-variation of traits are important for at least two reasons. First, lay theories may be important determinants of behaviour. For instance, when an employer considers introverts to be smarter than extraverts she might be inclined to prefer quiet and reserved people in posts demanding complex reasoning and quick responses. Second, lay perceptions may influence personality ratings of actual people, especially when there is an insufficient amount of trait-relevant information or it is ambiguous (Kunda & Thagard, 1996). For example, I have a new neighbour and the only thing I know about him is that he is a professional chess player. From this knowledge I deduce – based on a widely held but apparently erroneous stereotype (Bilalic, McLeod, & Gobet, 2007) – that he must be highly intelligent. Because I believe that smart people are agreeable and conscientious I feel great relief: unlike the older neighbour, the new one will probably not listen to loud music all night long and throw fag ends on the street. Smart people are considerate and orderly.

In the fourth study we provided people with a short textbook-like definition of general ability, asked them to imagine a typical person with very high or low mental ability and to rate his or her personality traits (**Study IV**). Ratings were given using the National Character Survey (Terracciano et al., 2005) which consists of 30 bipolar items that are intended to measure the 30 NEO-PI-R (or EE.PIP-NEO) facet scales (one bipolar item for each scale). The results indicated that typical high-ability people were believed to be significantly less neurotic and more extraverted, open (except for openness to fantasies) and conscientious than typical low-ability people. In Agreeableness the differences were not so clear. We repeated the study with an independent sample by defining ability in terms of practical competencies − the results were nearly identical. Then we once more repeated the study by asking about the ability-personality relationships the other way around: we presented an independent sample of people with short descriptions of the positive or negative poles of each of the 30 NEO-PI-R (EE.PIP-NEO) facet scales, and asked them to rate the typical ability levels of the individuals who corresponded to the descriptions. The results were still similar: Neuroticism traits were associated with low ability, Extraversion, Openness and Conscientiousness traits with high ability, and Agreeableness with average ability. Thus, there appeared to be robust stereotypes concerning personality traits of typical high- and low-ability people.

If the lay perceptions are accurate (i.e. if they correspond to the "true" characteristics of their object), they will enhance the validity of judgments and help to make correct decisions; otherwise they will impair the validity of judgments and lead to erroneous decisions (Jussim, Cain, Crawford, Harber, & Cohen, 2009). Therefore, one of the key issues with lay beliefs is their accuracy. As a result, in parallel with describing lay beliefs we should also attempt to estimate their accuracy. Although we did not formally study the accuracy of the ability-related personality judgments in the published article (Study IV), we reviewed literature and concluded that there may be a "kernel of truth" in the beliefs but generally they are not "based on empirically observed small personality differences between intellectually more and less talented individuals" (Study IV, p. 461). Nevertheless, I will carry out some formal analyses concerning the accuracy of the ability-related beliefs here. I assume that psychometrical measures of personality and ability provide us with appropriate criteria.

I take the data presented in Study III and calculate the correlations between cognitive ability test scores and the EE.PIP-NEO facet scale scores. Then I convert the correlations into Cohen *d* metrics. Now I can calculate correlations between these *d*-values and the *d*-values and mean ability ratings presented in Study IV that show the perceived differences between low- and high-ability people (Study IV, Table 1, columns 1 – 3). The correlations are presented in Table 1. The relationships of self-reported personality traits to cognitive ability converge with the perceived ability-personality relationships, but not significantly. However, in the case of averaged observer-ratings the correlations are highly significant, indicating that the observer-rated personality differences between high and low ability targets follow the lay perception pattern of these

relationships. Note that the same people are rated in both cases, only the observer perspective differs. As one possibility, higher congruence of lay beliefs with true ability-related personality differences in the case of observer-ratings may indicate that the ability-related lay beliefs influence the judgments made about actually existing targets.

To further test the accuracy of the lay perceptions about the ability-personality relationships I use two unpublished datasets. In one set of data, 307 male recruits (mean age 20.3 ± 1.4 years) rated their own personality traits using the EE.PIP-NEO. They were also tested with the Raven's Standard Progressive Matrices. In this data the ability-personality correlations (expressed in *d*-metrics) follow to some extent, but not significantly, the pattern of the perceived ability-personality relationships (Table 1, row 5). In the other set of data, 260 students attending introductory psychology courses rated their own personality traits using the EE.PIP-NEO. They also filled out a paper-pencil ability test that consisted of three parts: verbal (31 items; α = .69), math (19 items; α = .68) and spatial problems (18 items; α = .74). In this data the ability-personality correlations (expressed in *d*-metrics) significantly correlate to the *d*-values describing the perceived-ability personality relationships (Table 1, row 6).

Table 1. Congruence between perceived and empirical personality-ability relationships.

Empirical relationships between personality and ability (*d*-values)	Perceived relationships between ability and personality [1]		
	Academic ability (*d*-values)	Practical ability (*d*-values)	Mean ability ratings
Self-ratings [2]	.25	.25	.33
Averaged observer-ratings [2]	.49**	.47**	.56**
Self-ratings (recruits; N = 307)	.34	.21	.36
Self-ratings (students; N = 260)	.49**	.40*	.59***

Note: [1] Study IV; [2] Study III; * p < .05; ** p < .01; *** p < .001.

The overall impression from these results is that the lay beliefs about the relationship between personality and ability do not perfectly match the empirical correlation between these domains, but there is considerable overlap. In fact, the correlations around r = .40 could even be taken as large (Jussim et al., 2009).

In the published article (Study IV) we also offered an alternative explanation for the robust ability-related personality stereotypes. We noted that the perceived relationships between ability and personality corresponded to the socially desirable levels of personality traits: high-ability people were attributed socially desirable trait levels. This tendency was very clear in the case of four of the five broad domains (Neuroticism, Extroversion, Openness and Con-

scientiousness). Because Agreeableness traits did not distinguish typical high-ability persons from typical low-ability individuals, social desirability was also not relevant here. Thus, social desirability may also affect the perception of a typical smart person. Intelligence, a highly desirable trait, is associated with most of the other socially desirable characteristics except for Agreeableness. To explain the perceived neutrality of Agreeableness in relation to ability we hypothesized that, according to lay theories, it is not always wise to be agreeable with other people. Sometimes it is disagreeableness that predicts success.

Only children's personality: stereotypes may function as social regulators

In the fifth study we also investigated lay beliefs and their accuracy (**Study V**). We reviewed studies describing the personality of people without any siblings (only children) and concluded that both "experts" and lay people tended to describe these people in negative terms. However, it appeared that the accuracy of the negative stereotype had barely been tested.

We carried out a straightforward test to assess the accuracy of the only child stereotype. One hundred people were asked to think of an only child and rate his or her personality traits, whereas the other hundred participants rated personality of a child who had grown up in the family with multiple children. Mean level differences were statistically significant in 23 of the 30 facet scales. Only children were rated as more neurotic, assertive and prone to fantasy. Non-only children were rated as more agreeable, conscientious, warm, gregarious and open to feelings, ideas and values. To assess the validity of the stereotypes we used self-ratings of 725 university applicants, 81 of whom where only children. In self-ratings, there were no differences between only children and non-only children above chance level. The two profiles of *d*-values indicating group differences in stereotype ratings and self-ratings across the 30 NEO-PI-R facet scales were not correlated ($r = –0.10$, ns). Thus, the stereotypes of only and non-only children were not valid.

As in previous studies only children were portrayed in predominantly negative terms. We tested the relative positivity/negativity of the stereotype by comparing the stereotypic personality profiles to socially desirable trait levels. Mean ratings given about only children (stereotypes) were not related to socially desirable trait levels, whereas mean ratings given about people from multiple children families were highly correlated to the social desirability profile. We also included the Estonian normative personality profile and calculated correlations between all possible pairs of profiles. The emerging picture was very clear: all profiles were highly positively correlated to each other except for that of stereotypic only children. Obviously only children were perceived to be the "outcasts". We hypothesized that the apparently inaccurate negative stereotype of only children is a social mechanism that functions as a negative reinforcer. The stereotype may force people to have more than one child as they want to avoid the negatively stigmatized only-child. There is some evidence that indirectly speaks for this explanation. An important reason why women want to have more than one child is providing company for the first child. However, we

do not know exactly why they think that providing company is important. This question is yet to be answered.

Testing the universal features of personality in the world's largest country

The hypotheses of universality of personality trait features found powerful support in a recent Personality Profiles of Cultures (PPOC) project involving college students from 50 different cultures. Students identified an adult or college-age man or woman they knew well (N = 11,985) and rated the target using the Revised NEO Personality Inventory (NEO-PI-R; McCrae et al., 2005a). The typical five-factor structure was replicated in most of the cultures. Sex differences and age differences were more or less similar in most samples.

However, large-scale cross-cultural studies such as PPOC or International Sexuality Description Project (ISDP; Schmitt et al., 2003) have dealt with the problem of power by combining relatively modest samples from a large number of cultures. This is an appropriate method for detecting robust cross-cultural universals, but it is not optimal for identifying limitations of the universals. When we have samples of 100 or 200 students and we find some deviations from expected "normative" trends, it is impossible to say whether the deviations reflect true culture-related specifics or just random fluctuations. In other words, failing to support the universal pattern renders the results largely inconclusive. For example, in PPOC, adults scored slightly higher than college-age targets on Agreeableness in most of the cultures (average $d = .11$, $p < .001$), replicating the effect of previous studies. In Japan and Portugal, however, adults scored significantly lower on Agreeableness (ds = –.29, $p < .05$). Given the large number of samples and small effects, these deviations could be random. However, it might be that the Japanese and Portuguese indeed mature differently than people in most of the other cultures. If the latter was true, it could be informative to study the reasons of these "anomalies". Taken together, to study culture-related specific features of personality traits, much larger samples are needed. It is probably the next step of cross-cultural research to start from the robust universals in order to look for culture-related specifics – if and where these exist and what they can tell us about the nature of the phenomena.

In the sixth study we focused on the universals and specifics of the personality traits of Russians **(Study VI)**. There are several reasons to study personality traits in Russia. First, Russia is a country of enormous size. Geographically it is the largest country in the world, covering substantial parts of both Europe and Asia. Russia is also among the largest by population. However, validity of otherwise relatively universal personality features has not been thoroughly tested in Russia. Second, Russians are claimed to have unique mentality and character (Huntington, 1993; Shlapentokh, 2005). Third, although most of the more than 140 million inhabitants identify themselves as ethnic Russians, Russia is a country of remarkable ethnic and cultural diversity (Shlapentokh, 2005). There are more than 160 ethnic groups speaking more than 160 languages. By population density Russia is among the lowest in the world, meaning that different subpopulations of Russia are geographically

relatively loose. Thus, we have reasons to expect within-country variability in personality traits and we can start looking for regularities in this variation. At the same time it is extremely convenient to study the variation of personality traits in Russia because the majority of people living there speak Russian, regardless of their ethnicity. Therefore, when investigating cross-regional variation we can hold language as a potential confounding under control. Taken together, the aims of the study were (a) to test the validity of universal personality features such as structure, age trends and sex differences in Russia and (b) to examine their limits (i.e. document cases where they do not apply). Finally we aimed to investigate within-Russia variations in personality traits, expecting that the cross-regional variability is related to several region-level characteristics. More specifically, we expected to replicate the relationships of region-level aggregate personality scores to regional positions in the east-west dimension (the Western and Eastern borders of Russia are separated by more than 6,500 km) and levels of social and economic development (Allik & McCrae, 2004b; McCrae, Terracciano, & 78 Members of the Personality Profiles of Cultures Project, 2005b).

To address these issues, 56 members of the Russian Character and Personality Survey (RCPS) collected data from 40 samples in 33 administrative regions of the Russian Federation. Geographically, the samples covered Russia relatively well. With respect to design, the study repeated the format of the PPOC project (McCrae et al., 2005a). Overall 7,065 students identified a college-aged (17–23 years old) or adult (50+ years of age) man or woman they knew well and rated his or her personality traits using the Russian NEO-PI-R.

Roughly, the usually found universal features were replicated. At the level of the whole sample, factor structure of the NEO-PI-R closely resembled the expected pattern (Costa & McCrae, 1992; McCrae et al., 2005a). After Procrustes rotation towards the PPOC structure, only one (Openness to Feelings) of the 30 facet scales had primary loading on the "wrong" factor – it loaded more strongly on the Extraversion factor than on the intended Openness factor. At the level of regional samples the replication was also very good. Across the 39[2] samples the average total congruence was 0.96. In individual factors the minimal congruence coefficients were 0.84, 0.88, 0.80, 0.93 and 0.93, and mean coefficients were 0.96, 0.96, 0.93, 0.97 and 0.97 (respectively for Neuroticism, Extroversion, Openness, Agreeableness and Conscientiousness). These values indicate the intended structure of the NEO-PI-R was clearly replicated in most of the samples.

Sex differences, too, generally replicated previous findings. When sex differences found in the RCPS data were plotted against sex differences found in the PPOC data, the profiles of differences were highly similar. However, there were some small differences. Due to large sample sizes these results might not be just random fluctuations, but instead they might reflect true peculiarities

[2] Since the sample from Moscow city was too small to be treated separately in these analyses, it was merged with the sample from Moscow oblast (Dubna).

of Russian sex differences in comparison to average sex differences in the rest of the world. Specifically, gender differences are exaggerated in Russians with respect to Anxiety, Vulnerability and Openness to Aesthetics, and they are muted with respect to Openness to Ideas and Modesty. It is curious that the hypothesis of Schmitt and his colleagues (2008) that gender differences are more pronounced in more prosperous regions was not supported. It is possible that the within-Russia variability in living conditions is not large enough to elicit the pattern.

Similarly to sex differences, when cross-sectional age differences found in RCPS data were plotted against age differences found in the PPOC data, the profiles of differences were similar. However, there were also some remarkable differences: Russians' observer-rated depression and self-consciousness increased with age while in the international data these traits showed age-related decline. The relatively higher depressiveness and self-consciousness of older Russians may reflect societal changes in Russia during recent decades. Another remarkable deviation from previous findings was the continuous decline of Openness in Russian. In previous studies, the Openness of young people has shown to increase until their early twenties (McCrae et al., 2005a; Robins et al., 2001). It seems that the peak of Openness is reached several years earlier in Russia than in, for instance, the US (Robins et al., 2001). It is possible that earlier regression towards adult-like conformity and practical way of living in young Russians is related to some unique social or cultural conditions in Russia. On the basis of these findings, can we say that we touched the limits of a universal feature of personality – uniform age-related changes? Did these deviations from the pan-cultural normative trends contradict the hypothesis of universal biologically determined maturation of personality traits (McCrae & Costa, 1999)? If these results will be replicated in future and if there will be no alternative explanation for them, then yes.

We estimated the effects of the targets' age, sex, education and place of residence (urban or rural) on the total variance of personality test scores by treating these variables as random effects in variance component analyses. Depending on the scale, these variables and their interactions explained from 3 to 45% of variance (with the average of 14%). Generally, age was most strongly and place of residence most weakly related to personality test scores.

To our surprise, cross-regional variation in personality trait scores was relatively small. The differences between the 39 samples explained, on average, only 1.4% of the total variance in observer-ratings. We attempted to discover regularities in these variations. Although we found only a few significant or nearly significant relationships between aggregate personality scores and other sample-level characteristics, these relationships were consistent with findings of cross-cultural research. For example, aggregate Openness scores were significantly positively correlated to the Human Development Index rank of the respective regions (especially its wealth facet). Also, longitude was nearly significantly negatively related to Extroversion, showing that Russians living in the East were rated as slightly less extraverted than Russians in the European

part of Russia. However, it must be borne in mind that with respect to differences between regions and samples, the study had power to detect only the effects with above average size. The number of samples was 39, which means that only correlations of at least 0.32 (d = 0.67) are significant at $\alpha = 0.05$.

The overall conclusion with respect to Study VI is that the basic features of personality traits such as structure, sex differences and age trends were generally replicated in the observer-ratings of large and representative sample of Russians. However, there were some deviations, and due to large sample size it is likely that they were not just statistical flukes but reflected true specifics of Russians. For some reason young people in Russia do not appear to have their highest level of Openness in their early twenties, but much earlier. There is also no good explanation why older cohorts of Russians were rated as more depressed and self-conscious than younger cohorts while in other cultures it tends to be the other way around.

Russian national character in the literary and folk perspectives

In the last two studies we focused on the personality traits considered to be typical of Russians. The portraits of typical Russian were obtained from two complementary sources: literature (both scholarly and fictional) and opinions of ordinary people. We studied the content, accuracy and sources of these portraits.

In **Study VII** we reviewed the literary and scholarly views of the Russian character. Numerous authors believe that the Russians' unique geographical, historical, religious and political circumstances have formed their culture to be like no other culture in the world, and this cultural uniqueness is also reflected in their distinctive national character – the "Russian soul" ("*Русская душа*"). In literary and scholarly accounts Russians are depicted as spiritual, self-sacrificing, displaying extreme and inconsistent reactions, unambitious, passive, fatalist and procrastinating. We decided to test whether the belief in the uniqueness of Russian character is true and if the literary and scholarly views match the personality descriptions of actual ethnic Russians.

We considered two ways in which Russians may be unique: qualitative and quantitative. To test the idea of the qualitative uniqueness of the Russians' personality we created 15 emic items, capturing potentially unique personality traits of Russians (extreme and erratic responding, fatalism and self-sacrifice), and investigated whether these items formed independent traits beyond the five-factor model. To formally test the hypothesis that the Russian character is unique in quantitative terms, we compared the mean observer-rated NEO-PI-R scores of Russians to the respective mean scores obtained from an international sample. Assuming that the ratings given about other people might be affected by the raters' beliefs and values, we distinguished the raters on the basis of their relevant beliefs, religiousness and ethnicity. In addition, we operationalized the literary and scholarly views of the Russian character into the five-factor model and compared the resulting profile to the mean ratings of actual ethnic Russians. The issues were addressed using the same RCPS dataset that was used in Study VI.

It appeared that Russians are not as unique as could be considered on the basis of literary and scholarly views. The emic items were generally not independent of the five-factor model traits. In the joint factor analysis of the 30 NEO-PI-R facets and 15 emic items, most of the latter had substantial loadings on at least one of the five NEO-PI-R factors. The canonical correlation between the emic items and the scores of the five NEO-PI-R factors was high (0.73), suggesting that linear combinations of emic items could quite well predict the combinations of the scores of the five NEO-PI-R factors. Thus, along with the results of Study VI which showed that the typical five-factor structure of the NEO-PI-R was clearly replicated in the observer-ratings of Russians [in the RCPS data first five factors explained even slightly more of the variance of the 30 facet scale scores than in most of the other nations (McCrae et al., 2005b)], the present results show that the personality traits of Russians are not qualitatively different from those found in people living elsewhere. At least, the items generated on the basis of literary and scholarly views of the Russian character were not able to demonstrate unique qualities of Russians' personality traits.

Observer-rated personality traits of Russians were not unique in terms of quantity either. The Russian mean scores on the five-factor model personality traits were relatively similar to the mean levels observer-rated personality traits found in other cultures (McCrae et al., 2005b). In none of the scales differences from the international mean scores were greater than 0.4 standard deviations. Thus, with respect to the levels of the five-factor model personality traits, Russians are pretty "average" people. Furthermore, the profile of mean observer-ratings, with only modest deviations from the grand average of the international sample (McCrae et al., 2005b), was not at all consistent with the hypothetical profile of the typical Russian created on the basis of literary and scholarly views. With exception of Extroversion, the two profiles were nearly diametrically opposed to each other. The literary-scholarly view of the Russian character was therefore not at all related to the assessed personality traits of actual ethnic Russians.

We also investigated whether the observer-ratings where influenced by the characteristics of the raters. This would mean that either raters chose targets on the basis of their own characteristics or the raters' characteristics caused biases in the ratings they gave. For instance, we asked participants whether they believed that the Russian character was similar to that of other nations or unique: more than 71% respondents believed that it was unique and not comparable to that of any other group of nations[3]. However, this and other characteristics of the raters we studied – ethnicity, religiousness and belief in the causal

[3] The results of this study were widely covered in the media. Russian BBC (http://www.bbcrussian.com) organized a poll among the readers of the news describing the study and asked whether readers believed in the existence of "Russian soul". As of April 10, 2009, 1,752 people had responded and 73.7% of them believed in the existence of "Russian soul". This is consistent with our result that about 71% of students believed in the uniqueness of the Russian character.

importance of nationality in determining behavior – substantially influenced their ratings.

The overall conclusion of Study VII is that, although widely held, the claim of the uniqueness of the Russian character and its literary-scholarly portrayal are probably unfounded.

In **Study VIII** we looked at the Russian national character from the folk perspective. Some years ago Terracciano and colleageues asked students in 49 nations, including Russia, to rate the typical representative of their country and compared the obtained ratings to mean self- and observer-rated personality traits of the actual members of the nations (Terracciano et al., 2005). They found that the personality traits perceived to be typical of a nation member did not correspond to the aggregate personality traits in most of the nations. In Russia, the relationship between the two personality profiles was even significantly negative (Terracciano et al., 2005). From these results they concluded that national character (i.e. personality trait levels perceived to be typical of a nation) is an unfounded stereotype. We replicated the study in Russia using a much larger sample of raters. This enabled us to get more reliable portraits of typical and actual Russians, and to study within-nation variability in perceptions of national character and potential correlates of the variability. Previous research has shown that the trait levels considered to be typical of nation members may vary considerably across regions within a country (McCrae, Terracciano, Realo, & Allik, 2007).

Again, we used the data collected in the course of RCPS. In addition to the observer ratings of 7,065 people, 3,705 students rated the personality traits of the typical Russian using the NCS. Agreement between individual raters was modest but the aggregated ratings, of course, were much more reliable. Because the NCS was also used by Terracciano and his colleagues (2005) to collect national character ratings in the 49 cultures, we could standardize our ratings in relation to these "international norms". As a result we could investigate in which way the Russian national character differed from those of other nations (i.e. Russians' distinctive national character).

On average, Russians rated their typical compatriot slightly lower on Neuroticism and slightly higher on Extroversion, Openness and Conscientiousness than members of other nations rated their typical compatriots. Thus, according to the students' perceptions the Russian national character – like trait levels of actual ethnic Russians – was not at all unique. This means that the lay perceptions differed from the literary and scholarly views of Russian character. When formally tested, the profile of Russian soul created in Study VII on the basis of literature was not related to the mean profile of students' ratings of typical Russian found in Study VIII ($r = .06$, ns.). According to literary and scholarly views Russians are high on Neuroticism and low on Conscientiousness while on the basis of students' ratings the typical Russian is lower on Neuroticism and higher on Conscientiousness than, on average, typical representatives of other nations. Does this mean that the students' ratings of typical Russians were closer to the mean observer-rated personality traits of

ethnic Russians? Indeed, the mean profile of the ratings of typical Russians was to some degree related to the mean observer-rated personality profile of college-aged ethnic Russians (Cohen's r = 0.33, p = 0.07). However, older Russians were not similar to the students' perceptions of typical Russian (Cohen's r = –0.20, ns). The most remarkable inconsistency between national character and personality traits of actual Russians was in Openness. The typical Russian was considered to have Openness above international mean but actual Russians had below-average Openness.

Thus, it appeared that typical personality trait levels were not the primary source of perceived national character. Therefore we needed to investigate other potential determinants of how people portray their typical compatriot. We expected that people who were better adjusted in social life would describe typical Russian in socially more desirable terms than those people who were more poorly adjusted. As an indicator of people's social adjustment we considered their level of social capital, which is defined as "the sum total of the resources, actual or virtual, that accrue to an individual (or a group) by virtue of being enmeshed in a durable network of more or less institutionalized relationships of mutual acquaintance and recognition" (Bourdieu, 1986, p. 248). We measured social capital with five items asking about the levels of trust and importance of family, friends and helping other people. Indeed, although effect sizes were quite modest, people with higher social capital rated typical Russian in a socially more favourable manner – less neurotic and more extraverted, open, agreeable and conscientious.

The overall conclusion from the Studies VII and VIII is that the general beliefs about the distinctive character of Russians – the mystical Russian soul – are, by and large, not based on perceived personality traits of actual ethnic Russians. From the two independent operationalizations of Russian soul, literary-scholarly and lay perceptions, the former seemed to be extremely far from being valid. Literary-scholarly beliefs may be unfounded myths – and not even self-fulfilling myths. However, instead of being inherently wrong their discrepancy from mean assessed trait levels may have other reasons. First, the Russian character may have changed during recent decades – literary-scholarly views are inert in reacting to such changes. Second, our operationalization of the literary-scholarly views may be wrong. There was much arbitrary in the procedure translating the literary views into the "language" of five-factor model. However, this seemed to be the best view to test the idea of the validity of unique Russian soul in a formal and falsifiable manner.

Lay perceptions seemed to be slightly more valid because observer-rated personality traits of young Russians were to some degree similar to the mean rating of typical Russian. In fact, with the small number of degrees of freedom (in case of the profile-correlations df = 28) a relationship has to be quite strong to be significant (r > 0.36). Given that assessments of typical and actual Russians were made with different instruments, the nearly significant (Cohen's r = 0.33, p = 0.07) relationship between the two resulting profiles might be considered as a quite good result. If all ratings had been made with an identical

instrument, perhaps the relationships would have been even stronger. Indeed, Realo and her colleagues (2009) studied the relationship between perceived national character and self-rated personality traits in seven countries – Finland, Estonia, Latvia, Lithuania, Belarus, Poland, and Russia – and found moderate agreement between the two (intraclass correlations between profiles varied from 0.07, ns, to 0.52, $p < 0.01$, with the mean of 0.29 and median of 0.35). In their study all ratings were made using the 30-item NCS. Thus, further studies may show that lay perceptions of distinctive typical personality traits of nations might not be entirely groundless, after all.

SUMMARY AND CONCLUSIONS

According to people's self-description or the ratings they give about other people they know well, the basic features of personality trait descriptions, such as co-variation between traits or differences across sex and age groups, are surprisingly robust and enduring. It is certainly not trivial that in samples with extremely different cultural, ethnic, religious, and educational background personality ratings co-vary and are related to external criteria in a very similar manner. This robustness readily tempts us to think that there is something fundamental in human personality that is to certain extent "built in" in the human nature. However, at times researchers come across results that differ from the supposedly universal patterns. Sometimes these deviations from expected patterns are simply flukes, so common in social and behavioural sciences. But sometimes they reflect true exceptions to general laws that may turn out to be very informative. For example, describing personality only at the level of universally replicable features may force us to favour the idea of strong biological determination. Adding clearly documented variations from the universal features to the description may help us to see other determinants of personality traits as well. Therefore, linking empirically validated specifics with the empirically validated universals is likely to result in more refined understanding of personality development and variation. To reach this, it is necessary to carefully collect information about the limits of the universal features (i.e. to document the cases where they are not valid) and to rule out measurement artifacts.

One of the main outcomes of the present dissertation was to show that the level of cognitive ability has a small effect on the structure of personality (**Study III**). The typical five-factor structure was recognizable at lower ability levels, even in a sample of prison inmates with very low levels of intelligence and formal education, but the congruence with "normative" structure was somewhat lower even when more reliable aggregated observer-ratings were analyzed. Thus, although weakly, low cognitive ability or its covariates such as low education or less differentiated mental "tools" may hamper the normative delineation of human personality. Another outcome of the dissertation was to show that the universal features of personality can generally be replicated in numerous samples from different parts of the geographically large and historically and culturally unique Russia (**Study VI**). However, some of the usually found personality features such as the highest levels of Openness in people's early twenties and age-related decline in Depression and Self-Consciousness were not replicated. Because these variations from expected age trends were found in a large and heterogeneous sample they are likely to reflect true distinctive features of Russians' personalities. Presently we do not have an explanation for these findings but they may constitute a valuable addition to the catalogue of culture-related specific features of personality. Provided that these results will be confirmed in the future studies, this may a solid proof that life

experience and socio-cultural past could leave a permanent imprint on the basic dispositions of personality (cf. McCrae & Costa, 1999).

Personality can be conceived as variations in the ratings people give about themselves or other people they know. However, this is not the only source of information about personality. We can also study the beliefs that people hold with respect to individual and group differences in personality traits. These two sources of information do not always agree with each other. For instance, we found that people without siblings were described as more neurotic and less agreeable and conscientious compared to those raised with brothers and/or sisters (**Study V**). According to self-descriptions, however, the only-children and non-only children are nearly identical in their personality traits. In another study we explored the unique Russian soul as it is usually presented in the relevant fictional and scholarly literature (**Study VII**). When mean personality trait levels of more than 7,000 ethnic Russians were compared to the mean personality trait levels of nearly 12,000 people from 50 cultures, Russians appeared to be quite similar to the people from other cultures. Thus, empirical findings do not support the idea of uniqueness of Russians' personality traits. Moreover, the modest differences from international average trait levels did not correspond to the literary views of the distinctive Russian soul.

Of course, after a considerable period of research demonstrating countless ways people misperceive social information, also called "error paradigm" (Funder, 1999), the erroneousness of lay and even expert beliefs about variation of personality traits is not surprising. Therefore, it is even more surprising to see that some lay beliefs are not entirely groundless after all. We found that people readily ascribe low neuroticism and high levels of extraversion, openness, and conscientiousness to individuals they know nothing about except for the fact that the individuals are highly intelligent (**Study IV**). In lay theory the ability-related differences in personality traits are huge but to some degree they reflect the empirically found, more modest relationships between ability and personality traits. In another study we found, contrary to some previous reports (Terracciano et al., 2005), that ratings of the personality traits of a typical Russian corresponded to some degree to the mean observer-rated personality traits of young ethnic Russians (**Study VIII**). According to the findings of a more recent study, certain methodological improvements could have made the correspondence even somewhat higher (Realo et al., 2009). In fact, in the research area, where signal-to-noise ratio is not high, any non-trivial significant relationship may be considered as a little miracle. And after a long period of research capitalizing on errors in human judgments, results showing that social perception is not always inaccurate are certainly not trivial (cf. Jussim et al., 2009).

Hopefully this dissertation contributed to the understanding that human personality reflects in various levels of descriptions – e.g. self-ratings, observers' ratings, general beliefs about personality trait variation – each of which portrays personality from its specific angle. Sometimes, however, the different reflections of personality partly overlap.

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SUMMARY IN ESTONIAN

Universaalset ja spetsiifilist isiksuseomaduste erinevates kirjeldusviisides

Isiksuse uurimine on näidanud, et mitmed isiksuseomaduste põhijooned on hämmastavalt universaalsed. Näiteks on aastakümned uurimusi näidanud, et sõltumata uuringu läbiviimise kohast ja meetodist on väga erinevad omadused, mis kirjeldavad püsivaid inimestevahelisi erinevusi käitumis- või emotsionaalsetes reaktsioonides, suurema informatsiooni kaota taandatavad viile põhilisele üldomadusele ehk isiksuse põhiseadumusele. Samuti on leitud, et soolised erinevused ning ealised muutused isiksuseomadustes avalduvad paljudes maailma paikades suuremal või vähemal määral sarnaselt. Samas tuleb ette ka olukordi, kus need üldjuhul korratavad tulemused ei ilmne. Mõnikord on selliste erandite näol tegemist lihtsalt juhuslike hälvetega, mõnikord aga võivad need viidata tingimustele, kus isiksuseomaduste universaalsed jooned tõepoolest ei kehti. Isiksuse universaalsete joonte kehtivuspiiride hoolikas dokumenteerimine võimaldab meil paremini mõista näiteks tegureid, mis mõjutavad isiksuse arengut ning inimestevaheliste erinevuste põhjuseid.

Käesoleva doktoriväitekirja üheks osaks ongi isiksuseomaduste universaalsete joonte kehtivuspiiride otsimine.

- Töö esimeses blokis (**I – III uurimus**) kontrollime oletust, et isiksuseomaduste struktuur (koosesinemise muster) sõltub inimese kognitiivsest võimekusest ning haridustasemest. Varasemate sarnaste uurimuste puuduseks on olnud suutmatus lahutada tõelisi võimekuse ja haridustasemega seotud inimestevahelisi erinevusi mõõtmisprobleemidest tingitud erinevustest. Nende probleemide ületamiseks kogusime erineva võimekuse tasemega inimeste isiksuseomaduste kohta informatsiooni mitmest erinevast allikast. Lisaks inimestele endile hindasid nende isiksuseomadusi ka neid hästi tundvad teised inimesed. Samuti koostasime (**I uurimus**) ja valideerisime (**II uurimus**) keeleliselt lihtsa isiksuseküsimustiku, mis oleks paremini kasutatav erineva võimekusetasemega inimestel. Erinevast allikatest saadud isiksusehinnangute uurimisel leidsime, et madalama kognitiivse võimekusega inimeste isiksuseomaduste struktuur oli tõepoolest pisut erinev – vähem diferentseeritud – võrreldes kõrgema võimekusetasemega inimeste isiksuseomaduste struktuuriga (**III uurimus**). Samas oli võimekuse seos isiksuseomaduste struktuuriga siiski üsna nõrk, mis lubab öelda, et n-ö viie-faktoriline isiksusemudel on kasutatav ka madalama võimekusetasemega inimeste isiksuseomaduste kirjeldamiseks. Ka väga madala hariduse- ja võimekusetasemega noortelt kinnipeetavatelt saadud andmestiku analüüsimine kinnitas (ehkki mööndustega) viie-faktorilise mudeli kehtivust.

- **VI uurimuses** testisime isiksuseomaduste põhijoonte universaalsust ning nende universaalide kehtivuspiire suurel etnilistest venelastest koosneval valimil. Enam kui seitse tuhat tudengit 34 erinevast Venemaa halduspiirkonnast valisid ühe neile hästi tuttava inimese ning hindasid tema isiksuseomadusi. Selgus, et mujal maailmas enamasti kinnitust leidnud viie-faktoriline isiksusestruktuur ilmnes väga selgelt ka venelaste kohta antud isiksusekirjeldustes. Suuresti olid korratavad ka mujal maailmas leitud soolised ja vanuselised erinevused. Siiski esines venelaste isiksuseomadustes ka unikaalseid jooni. Näiteks ei leidnud kinnitust üldiselt normatiivseks peetav avatuse tõus kuni kahekümnendate eluaastate esimese pooleni. Samuti ilmnes, et keskealised ja vanemad venelased said noortest kõrgemaid skoore depressiivsuse ja alaväärsuse skaaladel. Mujal maailmas on need ealised erinevused neis omadustes leitud vastupidised olevat. Kuna uuring viidi läbi suurel ja esinduslikul valimil, võib saadud tulemusi pidada usaldusväärseteks. Leitud iseäralikud vanuselised erinevused ei sobi hästi kokku hetkel populaarse viie-faktori teooriaga, mille järgi on inimeste põhilised isiksusemadused tugevasti bioloogiliselt determineeritud ja seetõttu on ka nendes esinevad ealised muutused keskkondlike mõjude suhtes immuunsed ning kõikjal ühesugused. Kui tulevased uuringud kinnitavad saadud tulemusi, seab see ühe viie-faktori teooria põhipostulaatidest kahtluse alla.

Uuringu teise osana vaatlesime, kuidas peegelduvad inimestevahelised isiksuseerinevused inimeste isiksuseomadusi puudutavates uskumustes.

- **IV uurimuses** vaatasime, milliseid isiksuseomadusi peetakse omaseks kõrge ja madala intelligentsuse tasemega inimestele. Selgus, et tavainimeste arvates eristuvad kõrge ja madala vaimse võimekusega inimesed selgelt ka isiksuseomaduste osas. Kõrge vaimse võimekusega inimestele omistati sotsiaalselt soovitavaid isiksuseomadusi: neid peeti emotsionaalselt stabiilseteks, ekstravertseteks, avatuteks ning meelekindlateks. Samas ei eristunud võimekad inimesed vähevõimekatest sotsiaalsuse osas, mida üldjuhul peetakse samuti väga soovitavaks loomuomaduseks. Seega arvatakse, et intelligentsed inimesed on muidu väga meeldivad, aga vajadusel suudavad "teistel naha üle kõrvade tõmmata". Kui kõrvutasime kõrge ja madala võimekusega inimeste vahelised isiksuseerinevused ühelt poolt tavainimeste uskumuste ning teiselt poolt tegelikel inimestel saadud empiiriliste tulemuste järgi, ilmnes et tavainimeste uskumused peegeldasid mingil määral tegelikke inimestevahelisi erinevusi. Seega oli neil uskumustel teatav tõepõhi all.
- **V uurimuses** palusime inimestel kirjeldada tüüpilist õdede-vendadeta kasvanud inimest ning tüüpilist mitmelapselisest perest pärit inimest. Ilmnes, et n-ö ainulast peeti neurootilisemaks ning vähem sotsiaalseks ja meelekindlaks. Enese kirjeldatud isiksuseomaduste järgi aga ainulapsed õdede-vendadega kasvanud inimestest ei erinenud. Ainulaste

ning mitmiklaste stereotüüpsete isiksuseprofiilide võrdlus sotsiaalselt soovitavate ning normatiivsete isiksuseomaduste tasemetega näitas, et mitmiklapsele omistatud isiksuseomadused olid sarnased soovitavaks peetavatele ja normatiivsetele, stereotüüpne ainulapse isiksuseprofiil oli aga iseäralik. Oletasime, et stereotüübi funktsiooniks on motiveerida potentsiaalseid lapsevanemaid vältima ainulapsi ning saama rohkem lapsi.

- **VII uurimuses** vaatlesime kirjanduses kujutatud unikaalset Vene hinge. "Tõlkisime" kirjandusliku nägemuse Vene hingest viie-faktorilise isiksusemudeli "keelde" ning võrdlesime saadud portreed VI uurimuses kogutud andmetega seitsme tuhande vene rahvusest inimese kohta. Selgus, et kirjanduslik nägemus Vene hingest ei lange vähimalgi määral kokku tegelike vene rahvusest inimeste kohta antud isiksusekirjeldustega. Liiati olid tegelike venelaste isiksuseomaduste keskmised tasemed väga sarnased mujal maailmas leitule. Seega ei toeta empiirilised andmed unikaalse Vene hinge olemasolu.
- **VIII uurimuses** palusime enam kui 3 700 vene tudengil 34 erinevas Venemaa halduspiirkonnas kirjeldada tüüpilist venelast. Erinevates piirkondades antud hinnangute vahel süstemaatilisi erinevusi ei õnnestunud leida. Tudengite ettekujutusi tüüpilisest venelasest tegelike venelaste kohta antud isiksusehinnangutega võrreldes selgus, et ettekujutus tüüpilisest venelasest sarnanes pisut noorte venelaste isiksusekirjeldustega, ent üldse mitte keskealiste ja vanemate venelaste kohta antud hinnangutega. Suurema sotsiaalse kapitaliga inimesed kirjeldasid tüüpilist venelast positiivsemana.

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