Personality Traits Structuring Can Lead to Uncovering Its Adaptive Function

Arcady A. Putilov

Research Institute for Molecular Biology and Biophysics, Novosibirsk, Russia

Email address:

putilov@ngs.ru

Abstract: There exists a clear distinguishable personality variation along a big amount of dimensions, such as dependability, honesty, cooperativeness, generousness, humorousness, friendliness, competitiveness, and so on. The practice of classification of trait words indicates that each original list consisting of hundreds of these words of personality lexicon can be replaced by 5-6 broad factorial dimensions. Usually, the personality psychologists do not explain the nature of such empirically derived personality traits structures. Instead, they often stress that neither theory is supported by such factorial models of personality traits structure due to their pure empirical origin. The author proposed a three-dimensional ("rugby cake") model allowing the replacement of a six-factor representation of personality traits structure by a more parsimonious representation with only three spatial (underlying) dimensions named Advantageousness (A), Benignity (B), and Controllability (C). In the present paper he proposed that the human capability to distinguish between numerous personality traits dimensions evolved as an essential life skill determined by a relatively autonomous, automatic, and specialized computational device. This device makes nearly everyone well enough in navigating between hundreds of narrow personality traits dimensions without much effort and outside of awareness. People can unconsciously organize the personality perception process in the framework of a very parsimonious three-dimensional ABC system. It provides a sense to which extent a particular narrow personality trait is advantageous (A), benign (B), and controlled (C) to solve the adaptive problems of predicting and controlling others' behavior via perception, classification, judgment, and signaling of fitness correlated personality traits.

Keywords: Personality Traits Structure, Evolutionary Psychology, Adaptive Problem, Factor Analysis, Social Cognition

1. Introduction

There exists a clear distinguishable variation along a big number of personality dimensions including dependability, honesty, cooperativeness, generousness, humorousness, friendliness, competitiveness, etc. The practice of classification of trait words indicates that each original list consisting of hundreds of these words of personality lexicon can be replaced by 5-6 broad factorial dimensions. The examples are the models with 6±1 factors suggested in McCrae & Costa [1], Goldberg [2], Almagor et al. [3], De Raad et al. [4], Saucier [5], and Ashton et al. [6]. Usually, the personality psychologists do not explain the nature of such empirically derived personality structures. Instead, they often stress that neither theory is supported by such factorial models of personality traits structure due to their pure empirical origin. The exceptions are scarce, but, as early as in year 1983, Hogan [7] has put forward a socio-analytic interpretation of the two-factorial structure of the Big Five with "meta-traits" "Stability" and "Dynamism" allowing the distinction of the traits for "getting along" and "getting ahead", respectively. According to this interpretation, people are deeply concerned with solving two great problems, to not be shunned (or to get along) and to not lose status (or to get ahead). This implies that all social interactions can be explained by two very wide motives: to seek the acceptance and recognition of peers and to seek status and power relative to peers, respectively (Hogan, 1983, 1996) [7, 8]. This idea, however, does not explain the emergence

of less broad 5-6 personality traits that are reliably revealed by factor analysis of personality lexicons.

Earlier [9-11], the author proposed a three-dimensional model allowing the replacement of a six-factor representation of personality traits structure by a more parsimonious representation with only three spatial (underlying) dimensions named Advantageousness (A), Benignity (B), and Controllability (C). The empirical results on development and testing this model were provided in more detail in Putilov [11]. Therefore, two sections of the present paper (Methods and Results) contain very short description of these earlier reported results to introduce the idea formulated in the following section (Hypothesis). This section contains the major proposition of the present paper on a possibility to explain adaptive function of the theoretically predicted and

empirically revealed personality traits structure (Figure 1). It is suggested that the structure of personality lexicon in a three-dimensional shape of rugby cake (scalene ellipsoid) can reflect human's capability to perceive and judge any narrow personality trait in accordance with its relevance to these just three most important dimensions. In other words, humans can be adapted to discriminate the positions of any of a huge number of personality-relevant words in the space formed by the underlying orthogonal dimensions of Advantageousness, Benignity, and Controllability (A, B, and C). Therefore scientific research in the field of personality psychology leads to uncovering 5-6 factorial dimensions reflecting such ABC system (Figure 1) aimed on navigation among numerous personality traits dimensions.
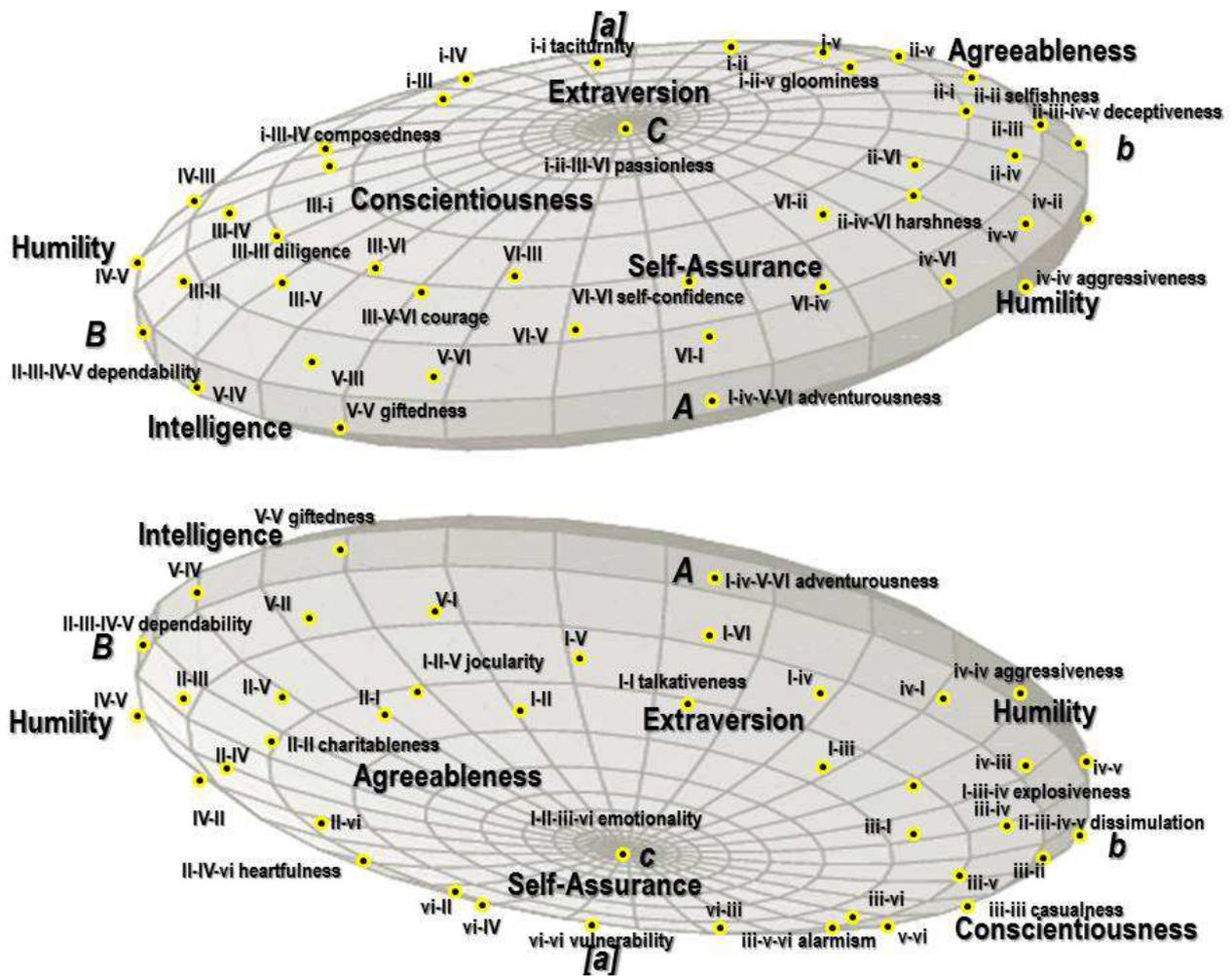

Figure 1. Rugby cake model of the personality traits structure.

Figure illustrates structural relationship between six factorial dimensions and three spatial (underlying) dimensions of the personality traits structure, Advantageousness, Benignity, and Controllability (A vs. [a], B vs. b, and C vs. c). Each of the six factorial dimensions, Extraversion (I), Agreeableness (II), Conscientiousness (III), Humility (IV), Intelligence (V), and Self-Assurance (VI),

includes a "core" narrow personality trait (e.g., I-I vs. i-i for Extraversion with example words for poles of "core" narrow personality trait "I-I talkativeness" vs. "i-i taciturnity") whereas the underlying dimensions point at the narrow traits representing "mixture" of four such dimensions (e.g., "I-iv-V-VI" vs. ["i-IV-v-vi"] with example words "adventurousness" vs.["reservedness"], respectively, "II-III-

IV-V" vs. "ii-iii-iv-v" with example words "dependability" vs. "deceptiveness", respectively, "i-ii-III-VI" vs. "I-II-iii-vi" with example words "passionless" vs. "emotionality", respectively). The pole symbol of a spatial dimension on the far side of the rugby cake shape is taken in [square brackets].

2. Methods

To address an issue of more parsimonious (three-dimensional) representation of a set of 6 factorial dimensions, the Russian personality lexicon was structured in two independent questionnaire studies. Russian speaking respondents used the lists of 496 and 296 personality-relevant nouns for judging 1242 and 447 peoples, respectively. Each respondent provided three ratings (of self, of liked one, and of disliked rather than disliked one). To visualize the revealed 6 factorial dimensions of the Russian personality traits structure, a three-dimensional rugby (ball) cake model was suggested [10] and examined by comparison of model-predicted and observed patterns of correlation of each noun with 6 factorial scales [11].

3. Results

Using results on classification of correlation patterns, each noun was linked to one of 43 narrow personality traits predicted by the rugby cake shape [11]. A shorter list of nouns was selected for exemplifying each pole of these traits and all these nouns were evenly written on the surface of the rugby cake shape [10, 11] or, in other words, the structure with underlying spatial dimensions A, B, and C [9]. Figure 2 illustrates one of possible ways of combination of the vast majority of these 43 narrow personality traits into 6 broad traits resembling the sets of 5-6 factors uncovered by applying the traditional factor-analytic approach to structuring personality trait descriptors in different languages and cultures [1-6]. The results, in particular, highlighted the existence of remarkable difference between the three underlying axes of the ABC structure in their length, with B-axis (left-right) being the longest while C-axis (up-down) being the shortest one [11].
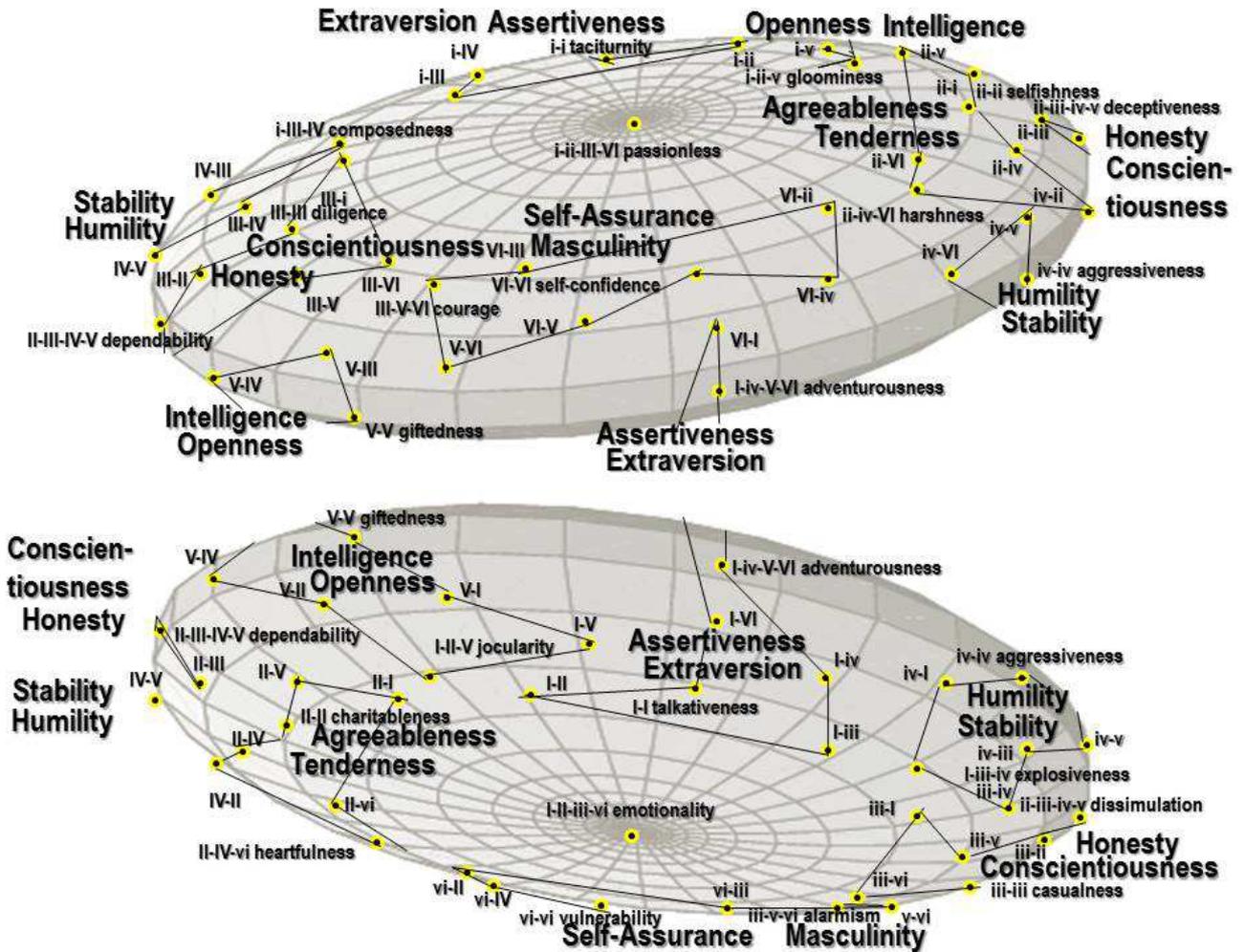
Figure 2. *Six constellations of narrow personality traits predicted by the rugby cake model.*

Figure illustrates one of possible ways of clustering of the vast majority of narrow personality traits predicted by the rugby cake model in a more manageable set of 6 broad personality traits. Six dimensions yielded by factorial analysis can be mapped on the surface of scalene (triaxial) ellipsoid or, simpler, rugby cake. Each of the six factorial dimensions, Extraversion (I), Agreeableness (II), Conscientiousness (III), Humility (IV), Intelligence (V), and Self-Assurance (VI), includes a "core" narrow personality trait (e.g., I-I vs. i-i for Extraversion with example words for poles of "core" narrow personality trait "I-I talkativeness" vs. "i-i taciturnity") whereas "mixed" narrow traits emerged as the combinations of these dimensions (e.g., I-II vs. i-ii for combination of Extraversion with Agreeableness). To extend the 6 areas of factorial dimensions, they can be paired with 6 intermediate areas located between them, Assertiveness (I), Tenderness (II), Honesty (III), Stability (IV), Openness (V), and Masculinity (VI), respectively. Lines connect the locations of narrow traits mapped within each of such six pairwise combinations of factorial and intermediate areas. Each of six factorial areas includes four and each of six intermediate areas includes three narrow traits. Only one of 43 model-predicted narrow traits, "I-II-iii-vi emotionality" vs."i-ii-III-VI passionless", was not included in any of these clusters with 7 traits each (7*6=42) due to its remote location at the north vs. south pole of the rugby cake shape.

The following nouns were selected as example words to characterize two poles of 42 narrow personality traits grouped into trait' clusters I-VI:

I. Extraversion:

Eloquence, talkativeness, friendliness, gregariousness, boisterousness, restlessness, cockiness, theatricality vs. taciturnity, terseness, reticence, secretiveness, pensiveness, quietness, modesty, prudishness

I+. I-II-iv-VI. Assertiveness:

Adventurousness, hazardousness, hardiness, refractoriness, assertiveness, eagerness vs. reservedness, shyness, bashfulness, timidity, inhibition, lethargy

II. Agreeableness:

Charitableness, kindness, generousness, responsiveness, affability, understanding, compassionateness, trustfulness vs. selfishness, stinginess, distrustfulness, suspiciousness, boorishness, tough-mindedness coldness, sternness

II+. II-IV-vi. Tenderness:

Heartfulness, tender-mindedness, forgiveness, meekness, cordiality, unpretentiousness vs. harshness, ruthlessness, spitefulness, stiffness, self-assumption, haughtiness

III. Conscientiousness:

Diligence, orderliness, gravity, seriousness, efficiency, purposefulness, austerity, perfectionism vs. carelessness, casualness, frivolousness, tomfoolery, idleness, laziness, laxity, negligence

III+. II-III-IV-V. Honesty:

Dependability, scrupulousness, dutifulness, frugality, benevolence, fidelity vs. deceptiveness, unconscientiousness, insubordination, irresponsibility, dissimulation, slyness

IV. Humility:

Calmness, peacefulness, humbleness, mildness, tactfulness, tolerance, compliance, manageability vs. aggressiveness, hostility, forwardness, quarrelsomeness, crudity, rudeness, rebelliousness, willfulness

IV+. i-III-IV. Stability:

Composedness, sedateness, patience, tranquility, moderation, temperance vs. explosiveness, hot-temperedness, ill-temperedness, nervousness, fickleness, volatility

V. Intelligence:

Giftedness, inventiveness, inquisitiveness, versatility, perspicacity, wisdom, prudence, sanity vs. commonness, ordinariness, ignorance, immaturity, illogicality, light-mindedness, light-heartedness, rashness

V+. I-II-V. Openness:

Exuberance, jocularity, artistry, wittiness, emancipation, relaxedness vs. gloominess, moodiness, backwardness, impersonality, constraint, restraint

VI. Self-Assurance:

Rigidity, self-confidence, coolness, imperturbability, inflexibility, toughness, headstrongness, imperiousness vs. indecisiveness, vulnerability, sentimentality, susceptibility, flabbiness, hopelessness, docility, submissiveness

VI+. III-V-VI. Masculinity:

Courage, masculinity, ambitiousness, leadership, competitiveness, resourcefulness vs. alarmism, cowardice, dependence, obsequiousness, clumsiness, incompetence

(Plus 43rd narrow trait outside the six clusters): I-II-iii-vi. Emotionality:

Emotionality, oversensitivity vs. impartiality passionless.

These selected words can also serve as a set of items of inventory designed for further exploration of the personality traits structure predicted by the model. Figure 3 illustrates a one-page version of such an inventory, the 172-item RCIP (Rugby Cake Inventory of Personality).

172-itemRCIP ■Last name, first name:...
          ■Gender: ■Year of birth:
Filled or crossed square indicates your response to a question: Is it a trait of this person? Chose one of 3 response options:

Yes/?/No	Yes/?/No	Yes/?/No	Yes/?/No
□□□001 adventurousness	□□□045 explosiveness	□□□087 jocularity	□□□134 secretiveness
□□□002 affability	□□□046 exuberance	□□□088 kindness	□□□135 sedateness
□□□003 aggressiveness	□□□047 fickleness	□□□089 laxity	□□□136 self-assumption
□□□004 alarmism	□□□048 fidelity	□□□090 laziness	□□□137 self-confidence
□□□005 ambitiousness	□□□049 flabbiness	□□□091 leadership	□□□138 selfishness
□□□006 artistry	□□□050 forgiveness	□□□092 lethargy	□□□139 sentimentality
□□□007 assertiveness	□□□051 forwardness	□□□093 light-heartedness	□□□140 seriousness
□□□008 austerity	□□□052 friendliness		□□□141 shyness
□□□009 backwardness	□□□053 frivolousness	□□□094 light-mindedness	□□□142 slyness
□□□010 bashfulness	□□□054 frugality	□□□095 manageability	□□□143 spitefulness
□□□011 benevolence	□□□055 generousness	□□□096 masculinity	□□□144 sternness
□□□012 boisterousness	□□□056 giftedness	□□□097 meekness	□□□145 stiffness
□□□013 boorishness	□□□057 gloominess	□□□098 mildness	□□□146 stinginess
□□□014 calmness	□□□058 gravity	□□□099 moderation	□□□147 submissiveness
□□□015 carelessness	□□□059 gregariousness	□□□100 modesty	□□□148 susceptibility
□□□016 casualness	□□□060 hardiness	□□□101 moodiness	□□□149 suspiciousness
□□□017 charitableness	□□□061 harshness	□□□102 negligence	□□□150 taciturnity
□□□018 clumsiness	□□□062 haughtiness	□□□103 nervousness	□□□151 tactfulness
□□□019 cockiness	□□□063 hazardousness	□□□104 obsequiousness	□□□152 talkativeness
□□□020 coldness	□□□064 headstrongness	□□□105 orderliness	□□□153 temperance
□□□021 commonness	□□□065 heartfulness	□□□106 ordinariness	□□□154 tender-mindedness
□□□022compassionate-ness	□□□066 hopelessness	□□□107 oversensitivity	
	□□□067 hostility	□□□108 passionless	□□□155 terseness
□□□023 competitiveness	□□□068 hot-temperedness	□□□109 patience	□□□156 theatricality
□□□024 compliance		□□□110 peacefulness	□□□157 timidity
□□□025 composedness	□□□069 humbleness	□□□111 pensiveness	□□□158 tolerance
□□□026 constraint	□□□070 idleness	□□□112 perfectionism	□□□159 tomfoolery
□□□027 coolness	□□□071 ignorance	□□□113 perspicacity	□□□160 tough-mindedness
□□□028 cordiality	□□□072 illogicality	□□□114 prudence	
□□□029 courage	□□□073 ill-temperedness	□□□115 prudishness	□□□161 toughness
□□□030 cowardice	□□□074 immaturity	□□□116 purposefulness	□□□162 tranquillity
□□□031 crudity	□□□075 impartiality	□□□117 quarrelsomeness	□□□163 trustfulness
□□□032 deceptiveness	□□□076 imperiousness	□□□118 quietness	□□□164 unconscientious-ness
□□□033 dependability	□□□077 impersonality	□□□119 rashness	
□□□034 dependence	□□□078 imperturbability	□□□120 rebelliousness	□□□165 understanding
□□□035 diligence	□□□079 incompetence	□□□121 refractoriness	□□□166 unpretentious-ness
□□□036 dissimulation	□□□080 indecisiveness	□□□122 relaxedness	
□□□037 distrustfulness	□□□081 inflexibility	□□□123 reservedness	□□□167 versatility
□□□038 docility	□□□082 inhibition	□□□124 resourcefulness	□□□168 volatility
□□□039 dutifulness	□□□083 inquisitiveness	□□□125 responsiveness	□□□169 vulnerability
□□□040 eagerness	□□□084 insubordination	□□□126 restlessness	□□□170 willfulness
□□□041 efficiency	□□□085 inventiveness	□□□127 restraint	□□□171 wisdom
□□□042 eloquence	□□□086 irresponsibility	□□□128 reticence	□□□172 wittiness
□□□043 emancipation		□□□129 rigidity	
□□□044 emotionality		□□□130 rudeness	
		□□□131 ruthlessness	
		□□□132 sanity	
		□□□133 scrupulousness	THANK YOU!

Figure 3. The 172-item RCIP (Rugby Cake Inventory of Personality) designed for further exploration of the personality traits structure predicted by the model.

4. Hypothesis

It seems that people across the globe have enduring personality traits that are useful in predicting human behavior and in making important social decisions on the basis of such prediction. Since humans are a species with very complex social organization, the perception and judgments of socially important personality traits in themselves and others must be good enough to help an individual in solving such problems as forming important alliances, making friends, finding long-term mate, negotiating hierarchy, avoiding enemies, protecting and educating kids, to name but a few. Therefore, humans had to develop a number of skills including the automatic gauging the numerous personality traits for successful solving the problems of valid predictions of own and other behaviors. Such predictions can be regarded as important adaptive problems for solving, in turn, the most general problems of survival and reproduction. In other words, discrimination between individuals who are high and low on particular personality dimensions can be crucial for deciding with whom to cooperate, whom to obey, whom to help, whom to avoid, whom to select as a long-term mate, etc. A better navigation among several thousands of personality traits dimensions allows a better discrimination between individuals, better behavioral predictions, and better social decisions which finally help in solving the most general problems of survival and reproduction. Further, it seems to be impossible to deal with these problems in a complex social environment without a specialized skill allowing the correct navigation among numerous narrow personality dimensions. Given the importance of such a skill, one can expect that scientific research in the field of personality psychology can lead to uncovering and explaining such a navigation system.

Moreover, given that an evolved propensity for accurate discrimination between personality traits dimensions is more likely to arise for those dimensions that have most importance for survival and reproduction, the results pointing on different lengths of A, B, and C axes can be interpreted as indicating a relatively greater importance of traits associated with B-axis compared to traits associated with two other axes, especially with those associated with C-axis.

It seems that both B and A axes represent the major underlying dimensions of individual differences. They reflect the universal significance of discriminating others' tendencies to be good partners in alliances and to climb the social hierarchy. Definitely, this importance has been captured by the Hogan's idea of the two major "meta-traits" for "getting along" and "getting ahead" [7, 8]. Nevertheless, the present empirical results additionally suggest that the accurate discrimination along the narrow personality dimensions linked to the former tendency (to be good partners in alliances) seems to be of most importance. Finally, in accord with these empirical results, the third axis, C, is also of importance. However, although this underlying dimension is needed for solving some of crucial adaptive

problems, it is, definitely, of less importance in comparison with the dimension linked to the latter tendency (to climb the social hierarchy).

In particular, the results suggested the difference between traits of dimensions A and B that was already highlighted by the Hogan's classification distinguishing between traits to get ahead and along. These dimensions summarize the observers' tendency to discriminate between those who will successfully exploit group resources and those who will successfully contribute to them. Therefore, the socially desirable B-traits and status-relevant A-traits can be seen as the two most important axes of the structure of human attitudes toward those personality traits that are central to social adaptation. The perception might be aimed at recognizing and differentiating these traits, since their knowledge might have a high adaptive value in small groups of cooperative ancestors for predicting behavior of group members in a demanding social environment. These two dimensions can be viewed as representing two distinct kinds of benefits. The dimension A seems to include the most advantageous and powerful traits of an individual. These traits might provide benefits for self in any human societies because resources are always constrained. On the contrary, the dimension B appears to include the most socially salient features of an individual. These traits might provide benefits for others. While the traits of one of these two dimensions are useful for competition and can be used to surpass others, the traits of another dimension might be the best characteristics for cooperating and helping others.

For instance, the traits of the high pole of dimension A include a half of the traits of the low poles of the dimensions Agreeableness (II) and Conscientiousness (III). Low Agreeableness individuals might be better able to profit from competitive situations, and both low Agreeableness and low Conscientiousness individuals might be better able to escape over-exploitation by their group members. The empirical results [9] suggested that the differences between three ratings (of self, of liked one, and of disliked rather than disliked one) can serve as empirical confirmation of this interpretation of the benefits of these traits. Comparison of self-ratings with the liked-peer ratings revealed that the liked peers were seen as being somewhat better than their evaluators on all socially praised traits of A- and B-dimensions. The differences between self- and disliked peer ratings were the most pronounced along B-dimension, less pronounced along A-dimension, and only minor along C-dimension. The disliked peers were seen as less suitable for cooperation but more suitable for competition (lower in B and higher in A). Consequently, the biggest contrast between ratings was found for the traits beneficial for cooperation but not for competition.

In general, the distinction between traits of dimensions A and B might be one of the most critical distinctions in trait perception. People with competitive A-traits might benefit through success in competing with other people rather than by means of cooperation with them. People with helping B-

traits can provide benefits to others by cooperating rather than competing with them. The antipodal traits can be classified as maladaptive for competition, and as maladaptive for cooperation.

In short, the structure of personality traits can reflect the adaptive ability of humans to solve the problem of categorizing narrow personality traits along the three most important dimensions – Advantageousness (A), Benignity (B), and Controllability (C). Such a three-dimensional system can allow the categorization of humans in accordance with their expressed traits. It meets the need to discriminate personality types when confronted by a challenge of social adaptation in which profit or loss is most probable for an individual with certain personality traits. Therefore, knowledge about Advantageousness, Benignity and Controllability of personality traits can be used to gravitate toward the individuals with whom solving specific adaptive problems appears to be most promising.

5. Discussion

The identification of psychological adaptations lies at the heart of the paradigm of evolutionary psychology [12, 13]. The uncovering of the most useful and, presumably, natural taxonomy of personality traits might be the first step toward understanding the evolution and adaptive significance of personality structure in the theoretic framework of this direction of modern psychology. Once the universality and replicability of a psychological structure is assumed, the question that naturally follows concerned its adaptive significance and evolutionary origin. Although it is very natural to ask about the adaptive significance of psychological traits structures, this question is relatively rare discussed in the literature on personality psychology. In a search for comprehensive understanding of the adaptive significance of individual personality differences, one can ask questions such as: What is adaptive in each of 5-6 factorial dimensions of a personality traits structure? However, given that a narrow trait appears to be the most suitable level of inquiry about the adaptive significance of personality variation, a more appropriate question might be: What is common for specific adaptations related to the traits associated with the dimensions A, B, and C? In 1983 Hogan put forward an interpretation of his version of the Big factors' taxonomy which appears to be most clearly linked to the modern evolutionary psychological perspective [14, 15]. Namely, he [7] has proposed a socio-analytic view of the two-factorial structure of the Big Five with "meta-traits" "Stability" and "Dynamism". These "meta-traits" suggest that people are deeply concerned with solving two great problems, to get along and to get ahead [7, 8]. This idea, however, does not explain the emergence of less broad 5-6 personality traits that are reliably revealed by factor analysis of personality lexicons [1-6]. The present results indicate that the personality traits structure seems to be more parsimonious. It is three- rather than 5-6-dimensional in terms of the underlying rather than factorial dimensions. The present results also indicate that two of these dimensions are bigger than the third and they both, indeed, correspond well to the Hogan's "meta-traits". The third dimension, however, seems to be also of importance for classifying the whole set of narrow personality traits.

It seems that the human capability to distinguish between numerous personality traits dimensions evolved as an essential life skill determined by a relatively autonomous, automatic, and specialized computational device ("module" in terminology of evolutionary psychology). This device makes nearly everyone well enough in navigating between hundreds or even thousands of narrow personality traits dimensions without much effort and outside of awareness. Figure 1 illustrates such feature of this device as the capability to organize the personality perception process in the framework of a very parsimonious three-dimensional ABC system. It provides a sense to which extent a particular narrow personality trait is advantageous (A), benign (B), and controlled (C) to solve the adaptive problems of predicting and controlling others' behavior via perception, classification, judgment, and signaling of fitness correlated personality traits.

If humans are, indeed, skilled at perceiving personality traits according to their relevance to as few as three dimensions, it would be fruitful for future research to consider whether such a person-perception ability can point to the role played by several well-known evolutionary mechanisms in shaping personality variation in our species (see [9] for further discussion).

In sum, the proposed three-dimensional structure in the shape of rugby cake [11] seems to reveal the algorithm of ABC assessment of personality traits. It could help in solving the problem of categorizing personality traits along the three most important dimensions, Advantageousness (A), Benignity (B), and Controllability (C). A particular trait that is cued by behavior typical for a person can be differentiated from another trait as being more or less advantageous, more or less benign, and more or less controlled. The rugby cake shape also suggests that differentiation of narrow personality traits along Benignity dimension is of most importance, whereas the differentiation along Controllability dimension is of least importance. This algorithm of ABC trait assessment can be a psychological adaptation in its own right. It provides a parsimonious way of organizing information on everyday perceptions of personality traits.

6. Conclusion

The practice of classification of trait words indicates that each original list consisting of hundreds of these words of personality lexicon can be replaced by 5-6 broad factorial dimensions. Usually, the personality psychologists do not explain the nature of such empirically derived personality traits structures. Instead, they often stress that neither theory is supported by such factorial models of personality traits structure due to their pure empirical origin. In contrast, the proposed three-dimensional rugby cake model allows the

replacement of a six-factor representation of personality traits structure by a more parsimonious representation with only three spatial (underlying) dimensions named Advantageousness (A), Benignity (B), and Controllability (C). Such structural representation pointed at the possibility that the rugby cake shape reflects a human capability to unconsciously organize the personality perception process in the framework of a very parsimonious three-dimensional ABC system. It can provide a sense to which extent a particular narrow personality trait is advantageous (A), benign (B), and controlled (C) to solve the adaptive problems of predicting and controlling others' behavior via perception, classification, judgment, and signaling of fitness correlated personality traits. Given that an evolved propensity for accurate discrimination between personality traits dimensions is more likely to arise for those dimensions that have most importance for survival and reproduction, the results showing the difference in length of A, B, and C axes can be interpreted as indicating a relatively greater importance of traits associated with B-axis compared to traits associated with two other axes, especially with those associated with C-axis. In sum, it is likely that this ability to parsimoniously distinguish between numerous narrow personality traits dimensions evolved as an essential life skill determined by a relatively autonomous, automatic, and specialized computational device ("module" in terminology of evolutionary psychology) that makes nearly everyone well enough in navigating between hundreds of such traits dimensions without much effort and outside of awareness.

Acknowledgements

References

[1] McCrae, R. R., & Costa, P. T. (1987). Validation of the five-factor model of personality across instruments and observers. Journal of Personality and Social Psychology 52: 81-90.

[2] Goldberg, L. R. (1990). An alternative "Description of Personality": The Big-Five factor structure. Journal of Personality and Social Psychology 59: 1216-1229.

[3] Almagor, M., Tellegen, A., & Waller, N. (1995). The Big Seven model: A cross-cultural replication and further exploration of the basic dimensions of natural language of trait descriptions. Journal of Personality and Social Psychology 69: 300–307.

[4] De Raad, B., Perugini, M., Hrebickova, M., & Szarota, P. (1998). Lingua franca of personality: Taxonomies and structures based on the psycholexical approach. Journal of Cross-Cultural Psychology 29: 212-232.

[5] Saucier, G. (2003). An alternative multi-language structure for personality attributes. European Journal of Personality 17 (3): 179-205.

[6] Ashton, M. C., Lee, K., Perugini, M., Szarota, P., de Vries, R. E., Di Blas, L., Boies, K., and De Raad, B. (2004). A six-factor structure of personality-descriptive adjectives: Solutions from psycholexical studies in seven languages. Journal of Personality and Social Psychology 86: 356-366.

[7] Hogan, R. (1983). Socioanalytic theory of personality. In M. M. Page (Ed.), 1982 Nebraska Symposium on Motivation: Personality—current theory and research (pp. 55-89). Lincoln: University of Nebraska Press.

[8] Hogan, R. (1996). A socioanalytic perspective on the Five-Factor Model. In J. S. Wiggins (Ed.) The Five-Factor Model of Personality: Theoretical Perspectives (pp. 163–179). New York: Guilford Press.

[9] Putilov, A. A. (2010). Geometry of Individual Variation in Personality and Sleep-Wake Adaptability. (Series: Psychology Research Progress). Nova Science Pub Inc, New York, 270 pp.

[10] Putilov A. A. (2016). Three-dimensional structural representation of the sleep-wake adaptability. Chronobiology International, 33 (2): 169-180.

[11] Putilov, A. A. (2017). A 3-D look at the Russian personality traits structure. Current Psychology, 36: DOI: 10.1007/s12144-016-9535-y (online first: http://link.springer.com/article/10.1007/s12144-016-9535-y?wt_mc=Internal.Event.1.SEM.ArticleAuthorOnlineFirst)

[12] Tooby, J. and Cosmides L. (1990). On the universality of human nature and the uniqueness of the individual: The role of genetics and adaptation. Journal of Personality 58: 17–67.

[13] Sefcek, J. A., Brumbach, B. H., Vásquez, G., and Miller, G. F. (2006). The evolutionary psychology of human mate choice: How ecology, genes, fertility, and fashion influence our mating behavior. Journal of Psychology and Human Sexuality 18 (2/3): 125-182.

[14] Buss, D. M. (1996). Social adaptation and five major factors of personality. In J. S. Wiggins (Ed.) The Five-factor Model of Personality: Theoretical Perspectives (pp. 180-207). New York: Guilford.

[15] Buss, D. M. (2009). How Can Evolutionary Psychology Successfully Explain Personality and Individual Differences? Perspectives on Psychological Science 4: 359-366.