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THE BIG FIVE AND BEYOND:
PERSONALITY TRAITS AND THEIR MEASUREMENT

The article is an introduction to the volume devoted to personality traits and their measurement. It consists of two parts. The first part presents two research traditions that use the taxonomy of five personality traits: the lexical tradition (using the term "Big Five") and the psychometric tradition (using the term "Five-Factor Model of Personality"). Similarities and differences between these traditions are outlined and the basic elements of other models that have appeared in recent studies – such as the Big Six or the Big Two – are introduced in it. The second part of the paper presents selected issues of measurement, discussed in detail in several texts included in the current issue of *Annals of Psychology*. Special attention is drawn to differences between various questionnaires in the operationalization of the five traits as well as to the growing popularity of short scales for measuring personality traits. The paper also outlines problems involved in the measurement of personality traits and the psychometric instruments used.

Keywords: personality traits, the Big Five, psychological measurement.

Traits, defined as nomothetic interindividual characteristics, have become one of the key concepts used in the psychology of individual differences (e.g., Strelau, 2002) and in personality psychology (e.g., Oleś, 2009). It is assumed that

a certain set of traits shared by all people makes it possible not only to describe individuals but also to make comparisons between them. When analyzing personality traits, we therefore study what is common and relatively stable, excluding from analysis the characteristics that are specific to particular individuals: those that determine their uniqueness and change in various moments and situations (Mischel, 2004). In proposals aimed at integrating various approaches to personality, traits are treated as the basic level, biologically determined to a great extent and responsible for the consistency of a person's functioning in different situations (McAdams, 1995). On further levels, personality description may include characteristic adjustments and personal life stories, being the levels covering the most specific and unique features of a particular person (McAdams, 1995).

The history of research on personality traits is fairly long, dating back to the first half of the 20th century (John & Srivastava, 1999; Szarota, 2008). The use of the concept of traits in psychology gave rise to a few approaches, the most popular of which has currently been the Big Five model. The papers included in the present volume deal with the issues of personality traits, the models describing them, the instruments for measuring them, and the problems involved in their measurement. In this article, which we treat as an introduction to the entire volume, we will focus on refining the concepts used and outline selected issues connected with the measurement of personality traits.

THE BIG FIVE
– TERMINOLOGICAL DISTINCTIONS

The Big Five model is probably one of those psychological theories that are quite commonly known not only in psychology. This theory usually functions as a regular and virtually necessary element of even the shortest textbook or companion to psychology. It turns out, however, that the Big Five model – though seemingly complete and codified in textbooks – is currently an object of intensive research, debates, and scientific investigations (e.g., Oleś, 2000; Szarota, 2008). One may even have the impression that these debates have been intensifying in recent years (Strus & Cieciuch, 2014).

Despite the common and instant associations it evokes, *the Big Five model* is not at all an unambiguous expression. If one tried to reconstruct the knowledge of an average psychology student about the Big Five model, one would probably identify three components of that knowledge without much difficulty: (1) the

catalog of five traits (neuroticism, extraversion, openness to experience, agreeableness, and conscientiousness), which are supposed to be the basic, orthogonal dimensions of personality description, (2) usually associated with the names of Costa and McCrae and (3) two measures – the NEO-FFI and the NEO-PI-R. It turns out, however, that none of these three components defining this model is as obvious as it seems and that accepting them without deeper reflection oversimplifies matters. The traits are understood and named somewhat differently in various models (De Raad & Perugini, 2002), and their nonorthogonality has, by and large, been proved by now (Digman, 1997; DeYoung, 2006; Musek, 2007; Rushton & Irving, 2008), contrary to the original assumptions of the model's creators. Costa and McCrae (1992) created one of many versions of the model, and there are many more questionnaires for measuring the five traits – used for assessment purposes as well as in scientific research.

Today, *the Big Five* is an expression used as a kind of mental shortcut and a general term referring to two models: the Big Five Model (e.g., Goldberg, 1990) and the Five-Factor Model of Personality (e.g., Costa & McCrae, 1992), generated in two research traditions, respectively: lexical and psychometric, the latter also known as the questionnaire tradition. Historically, the Big Five model – developed in the lexical tradition – is the earlier one; the Five-Factor Model of Personality, developed in the tradition of questionnaire-based research, came second. In the lexical tradition the model of five personality traits was devised and provisionally verified, and in the psychometric tradition it was interpreted and theoretically elaborated.

Lexical research is founded on the lexical hypothesis, according to which all the important personality traits are reflected in language (Cattell, 1943). The task that researchers representing this tradition set themselves was to organize those linguistic traces and to discover their structure, which – in accordance with the lexical hypothesis – would describe not only language but *also*, perhaps *above all*, personality (Goldberg, 1981). The instrument of that organization was usually various types of factor analysis, which allowed to reduce the large number of expressions describing dispositions to a few basic dimensions. Lexical research was carried out in English at first, and it was then that the multiplicity of linguistic expressions for personality traits turned out to be reducible to five basic dimensions, referred to in the lexical tradition, using Roman numerals, as Factors I, II, III, IV, and V (Goldberg, 1981). The meaning of these factors was determined on the basis of adjectives with the strongest loadings in factor analysis, and their order followed from the number of adjectives that each of them comprised.

In other words – Factor I had the largest representation in the language and Factor V had the smallest representation.

This manner of conducting research was consistent with the ideals of inductionism, a position in the philosophy of science according to which the recipe for a good theory is to abandon all theoretical assumptions and focus on facts and then proceed to generalizing them. This position was proposed and advocated by Bacon (cf. Popper, 1997), the lawmaker of empiricism, who encouraged his readers to abandon the "wings of theory" and weigh their minds down with the "lead of empiricism" that would keep them close to facts (cf. Cieciuch, 2008). Lexical research seems to be the most complete and the most perfect psychological implementation of those recommendations. Instead of pursuing theoretical deliberations on personality structure, researchers began to analyze language and dictionaries, looking for facts – in this case, for specific words describing personality – and then went on to organize those linguistic facts and generalize them.

The point of destination in the lexical approach, namely the Big Five that was discovered, became the point of departure for the psychometric approach, in which the Five-Factor Model of Personality was constructed (incidentally, psychometric research led to the construction of this model as well, independently of lexical research). The dimensions distinguished in this model were operationalized by means of questionnaires. Empirical research started, too, whose aim was to answer the question of what significance the dimensions distinguished had in explaining other variables, including behavior prediction (e.g., McCrae & Costa, 1999).

With the conceptualization and operationalization attained in questionnaires, lexical inductionism slowly gave way to deductionism, founded on the opposite position in the philosophy of science, whose main promoter was Popper (1997; cf. Cieciuch, 2008). According to this approach, inductive generalizations are always burdened with some theoretical assumptions, in this case by the choice of language, the choice of words in the language, or the reduction procedures applied in factor analysis. Moreover, theory should not only generalize what has been observed but also predict what is as yet unknown. The psychometric tradition as manifested in this approach is more deductive and theoretical than the lexical tradition, although the Five-Factor Model of Personality has often been criticized for its exclusively descriptive character and the lack of the explanatory aspect (Block, 1995; Digman, 1997; Strelau, 2002).

Research in the two traditions was and still is carried out fairly independently. In the lexical tradition, more and more languages are subjected to analysis. It turned out that the Big Five discovered in English was fairly well replicated in

German and Dutch (Angleitner, Ostendorf, & John, 1990; De Raad, 1992), but in other languages – including Polish (Szarota, Ashton, & Lee, 2007) – problems occurred (De Raad et al., 2010). Based on the analysis of lexical material, a model was developed comprising six factors (Ashton, Lee, Perugini et al., 2004). The article by Oleg Gorbaniuk, Natalia Szczepańska, Monika Suchomska, Ana Ivanova, and Milena Zygnerska (2014) is devoted to the Big Six as identified in the Polish lexicon and to the manner of measuring it.

The recent cross-cultural research by Saucier and colleagues (2014) demonstrates that, by and large, only the Big Two is cross-culturally replicable. This is a kind of challenge also for the psychometric approach since, after all, the five dimensions in questionnaires have been operationalized on the basis of the discovery of the original Big Five. It is worth adding, anyway, that similar tendencies, pointing to the possibility of reducing the number of dimensions, have also appeared in the psychometric tradition, in which Musek (2007) and, subsequently, Rushton and Irwing (2008) formulated the concept of the General Factor of Personality. The article by Bogdan Zawadzki and Jan Strelau (2014) presents this concept and reports the results of empirical research challenging its usefulness.

PROBLEMS INVOLVED
IN THE MEASUREMENT OF PERSONALITY TRAITS

Despite alternative models, the Big Five remains an object of interest to numerous researchers. A number of methods have been developed that measure five personality traits. They not only allow to analyze the role of personality traits in the functioning of a person but also contribute to the development of trait theory, leading to its refinements. It should be stressed that the operationalization of the five dimensions of personality in questionnaires entailed making certain theoretical and definitional decisions. Lexical studies resulted in distinguishing five sets of adjectives. In their essential form, those sets determined the theoretical meaning of the dimensions but left a substantial margin for their theoretical refinement. As a result, Five-Factor Models of Personality emerged, operationalized in questionnaires that differed slightly from one another. The most popular one is indeed the model proposed by Costa and McCrae, operationalized in the NEO Five-Factor Inventory (NEO-FFI, McCrae & Costa, 1992) and the NEO Personality Inventory Revised (NEO-PI-R, Costa & McCrae, 1992). There are other models, too, such as the one operationalized by Italian researchers in the Big Five Questionnaire (BFQ; Caprara, Barbaranelli, Borgogni, & Vecchione, 2007).

Differences between models are not only a matter of differences between measures but also stem from subtle differences in how the five basic dimensions are defined, a symptomatic consequence of which are the names of the five factors. Factor I can be mentioned as an example, conceptualized as Extraversion in NEO and as Energy in the BFQ. Traditional lexical research focused on lexical material and on generating so-called trait markers, which have usually been adjectives. However, there have also been attempts at constructing sentence-based questionnaires for measuring the lexical Big Five. The questionnaire that has already won international recognition is Goldberg's (1999) 50-sentence Big Five Markers, from the resources of the International Personality Item Pool (IPIP). Its Polish adaptation is presented in the current volume by Włodzimierz Strus, Jan Cieciuch, and Tomasz Rowiński (2014).

It seems that in recent years there has been an observable tendency, which we have noted above, to blur the differences in the methods of trait measurement between the lexical and psychometric approaches. Moreover, attempts are made in empirical studies to introduce personality variables into the analysis of the determinants of many other investigated variables. The inclusion of personality variables in research of this kind often involves organizational, economic, or time limitations that make traditional personality questionnaires too long and, as such, not very useful.

A kind of solution to this problem is the recently growing popularity of short measures of personality traits (Credé, Harms, Niehorster, & Gaye-Valentine, 2012; Gosling, Rentfrow, & Swann Jr., 2003). Despite a number of limitations that such simplified measurement involves, the increasing popularity of multivariate analyses, repeated measurements in intensive research, and online studies often makes it necessary to use short measures. The present issue contains two articles presenting such short measures: Ewa Topolewska, Ewa Skimina, Włodzimierz Strus, Jan Cieciuch, and Tomasz Rowiński (2014) present the shortened 20-sentence version of Goldberg's Big Five Markers questionnaire, while Mariola Łaguna, Wacław Bąk, Ewelina Purc, Emilia Mielniczuk, and Piotr K. Oleś (2014) present the Polish adaptation of the Ten-Item Personality Inventory (TIPI), whose authors are Gosling, Rentfrow, and Swann (2003).

Both in scientific research, carried out on large groups of people, and in individual assessment studies, the quality of data is essential, and the identification of random or careless responders is particularly so. In his article, Krzysztof Fronczyk (2014) presents two indices enabling the identification of such individuals filling in the NEO-FFI in a random manner. This is particularly important, since questionnaire measures of personality seldom have additional control

scales. The analysis of the way of responding to questionnaire items allows us to estimate to what extent we are dealing with the phenomenon of participants sabotaging the study.

Thus, the current issue of *Annals of Psychology* provides Polish researchers with new measures as well as with new analyses concerning personality structure related to the Big Five. We hope that it will contribute to the intensification of both empirical research and theoretical reflection, the need for which is more and more strongly stressed in various currents in psychology (McAdams, 1995; Strelau, 2002; cf. Strus & Cieciuch, 2014). Even though the Big Five model appears to be completed, refined, and ready, it continues to inspire research and debate.

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