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Prospects for psychological knowledge integration

Abstract. One of the possible prospects for the development of psychological science is the integration of the knowledge accumulated in it and the creation of a universal methodology for new theoretical studies. The article briefly outlines the modern scientific context of psychology integration, emphasizes the difficulties of universalization of the representation of scientific knowledge and synthesis of results obtained within the framework of the natural and humanitarian paradigms. Outlined the methodological positions of prof. G. Ball and the author of the article, which are connected with the integrative problems, and the prospect of the nearest stage of research.

Keywords: natural and humanitarian paradigm, psychological science, culture, modus of culture, formalized descriptions in psychology, integration of knowledge.
The studies of historical development of scientific knowledge, identifying of its trends, and projecting its future prospects are the subject of research and professional interests not only for specialists in the philosophy and theory of science. There is an interest of many other researchers in formation as much as possible clear understanding of the history and prospects of their science or discipline. This kind of studies presents in the psychological literature too - they refer to methodological features of psychology in the system of sciences, discuss the possible prospects of its development. One of these perspectives is the integration of psychological knowledge. For its implementation, as supporters note, there is certain cultural and methodological background, however the opponents give the reasonable objections. Later in the article will presented some, in my opinion, of the significant theoretical positions and proposals relating to the integration of the principles and methods in psychology and discussed the direction of research that seems a consequential extension of methodological study carried out by prof. G. Ball and V. Medintsev in collaboration.

Modern scientific context of knowledge integration

In the philosophy of science is steadily dominate the idea of the archaic «unsplit» knowledge and the historical chronology of its differentiation in scientific branches and disciplines. The predominant characteristic of the present stage of development of science is a term «postnonclassical». The main feature of the post-nonclassical science is its subjectivity (A.P. Nazaretyan defines the latter as a methodologically subjectness connection of object and subject of knowledge [14]). In the context of an integrative perspective, among other features of post-nonclassical science is of interest the «postdisciplinarity» in which the most notable results have been obtained at the in-
tersection of disciplines, and the interrelated problems are the key points for the organization of scientific knowledge [ibid].

Modern «methodological liberalism» in psychological science (as defined by A.V. Yurevich [18]) is a sign of multiparadigmality, but that does not rule out its integration prospects. It is noted that the integration of psychological knowledge is hardly possible without its systematization [19], and this is without any doubt, but I suppose, that to implement such a systematization it is necessary to develop, acceptable for the scientist community, some general principles and a conceptual system. Although the entropy tendency of psychological knowledge is still rising, it can be balanced by a special version of the system approach with its own "systemforming" factor (orientation to the unity of cognitive, emotional and behavioral sides, phenomenological, social and psychophysiological determination) [ibid].

In another viewpoint, integrative problems were considered by V.A. Mazilov, namely as redefining the subject of psychology, in which it is necessary to combine elements of the natural science and hermeneutic paradigms [13]. The arranging on this basis the accumulated in psychology array of knowledge will allow psychology to become a fundamental science. Two stages of this work are defined: a formal description of the subject and filling the concept «subject of psychology» [ibid]. I draw your attention to the fact that under the formal in this description is meant only the features which must perform the object, and to what criteria to correspond.

In his works V.A. Mazilov explain some proposals for the organization and implementation of the integration process. In particular, he suggests the need to develop a special integrative methodology (hereinafter see [11; 12]) – a general methodology of psychology, which deals in interrelation problems of object, method, explanation of the theory, etc. Such a methodology should be sufficiently wide, i.e. to include the main components of the methodology, and to be universal. As a component of this methodology has been
proposed the *scheme the relation between theory and method in psychology*. This scheme is presented as the primary, in the sense that, based on it, it can be developed an integrative methodological model. Integrative methodology, among other things, should become a tool to ensure mutual understanding of researchers oriented to different paradigms, such a tool can be a communicative methodology of psychological science that is to be developed. [10].

Dialogical ideas of MM. Bakhtin and V.S. Bibler applies V.A. Yanchuk in his methodology of integrating the psychological knowledge. He believes that these ideas should be implemented in the context of inter-paradigm dialogue and consist in determining the overall objectivity of psychological knowledge, taking into account the specificity of the subject matter of each of the systems of paradigmatic coordinates and qualitatively different nature of psychological phenomenology [21]. Within the framework of the socio-cultural-interdeterministic dialogical metatheatery proposed by the author for the integration of psychological knowledge, the latter can be mapped in four-dimensional continuums (spaces), each of its components is in a state of cultural inter-determination (see [20, 21], etc.). This is about the following continua:

- the continuum of different quality natures: biological – mental – social – culturally conditioned;
- spheres of reflected reality: the conscious – the unconscious – the existential – the culturally determined;
- research areas: personality – environment – activity.

The author notes that in his approach spaces reflect the external description of psychological phenomenology, they do not describe it deeper layers of.

In the elaboration of the problem of integration of psychological knowledge, it is necessary to consider not only theoretical constructions, but also organizational arrangements. I will give two examples of such events.
Example 1. Analyzing a number of problems of the methodological organization of psychological science, G.P. Schedrovitsky describes an episode of the work executed in this direction (see [16]). Further I bring this description close to the text. In 1958 under the leadership of P.A. Shevarev the Commission on Psychology, Logic and Thinking began to work, and representatives of various scientific disciplines gathered in it. They had to join their efforts, find a common language, organize themselves in order to develop a form of methodological organization - not to explore, but create it. In the context of the discussion at the seminar, there could be two ways for each of the participants. Either to find out the difference in their realities, or to consider collective work to be valuable and look for other means of co-organization that are different from one or another objective reality. In this work, everyone carried out a reflection and tried to translate into their reality what others were saying. It was necessary to make sure that the divergence of opinions helped the development of the corresponding of subject representations - logical, psychological, sociological, etc. Everything that happened at those seminars required the development of fundamentally new means of description and fixation, means that can be considered as organizational tools. Rejection of the position that someone "reflects" incorrectly, because someone else has other ideas, or someone thinks that he is the Lord God and knows the truth, presupposes a clear inventory of all that has already been developed in psychology. And also it presupposes such a co-organization of collective communication within psychology, the cooperation of its various directions and schools, of different techniques and practices, and of various scientific subjects that would ensure the maximum development of this sphere. As I understood, the participants of that seminar did not negotiate, they got no methodological product, but the experience of its carrying out is useful.
Example 2. The basic organizational principles of the «Psychological community for mutual understanding and mutual support» are set out in five theses of the «Manifesto of Integrative Psychology» [9]. In the introduction, its authors argue that the development of psychology has reached a level where the desire for unity coincides with the ability to achieve such a unity. Then the Manifesto outlines the main ideas of integration. «The idea of consistency» is to strive to create such a system of psychology and a community of psychologists, in which there will be no conflicts and intransigence, i.e. psychologists should strive for unification and live in a spirit of consistency. «The idea of a psychological community of mutual understanding and mutual support,» I guess, is clear from its formulation. «The idea of complete equality» extends to representatives of all psychological schools – of any gender, race, caste or nationality. Finally, the «Idea of Recognition of a Common Source» refers to the recognition of the deep unity of all ideas about the psyche, including world religions, spiritual traditions, etc. Ten years have passed since the publication of this Manifesto, but as yet there are no significant results of this direction of integrative activity.

In English-language psychological publications, the problem of integrating psychological knowledge is at the periphery of researchers’ attention, which is evidenced by the insignificant number of works of this field. The prospective integration is called by A. Cleeremans as «The Great Challenge» to Psychological Science in the 21st century [23]. Developing the model of the structure of psychological knowledge (by J.T. Cacciopo [22]), he presents a three-dimensional matrix (calling it the Rubik’s Cube due to structural similarity with the latter), which presents the various components of psychological science: levels of description (biological, individual, group); perspectives (normality, change and development, pathology); method (intervention, experimentation and modeling). He got a reasonably compact model, but not a model of integration, but a model of systematization of disciplines and subjects for research in psychology.
(J.T. Cacciopo correctly indicated that it represents a description of the structure of psychology, and not its integration). Another thing is that compact models of the structure of psychological knowledge will be useful in developing models for its integration, and they also should be developed.

The pertinence, relevance and even inevitability of the integration of psychological knowledge is defended by J. Valsiner [25]. He calls the «core of psychological science» the study of culturally constructed worlds, in each of which universal principles are obvious. The displacement of the postmodern deconstruction of scientific knowledge that has been observed in recent years is due to the international activity of scientists, which shift the creation of general theories to the focus of attention. The global nature of modern psychology is manifested in the fact that in this sphere it is no longer possible to dominate the socio-political worldview of any one country. The balanced contribution of the international community of researchers is a condition for innovation in the core of discipline and protection against attempts to consolidate any particular cultural mythologeme in the status of the axiomatic basis for all psychological science.

In the recent works devoted to the perspectives of psychology, I will note the article of B.A. Spellman [24], which touches on the topic of prospects for the psychology development. The paper considers modern trends in the development of world psychology, they are characterized as revolutionary («Revolution 2.0»). Actual and predictable changes in this science the author sees in improving the process of selection and arranging of publication in psychological journals the research results. And this, of course, is very important, but the position of the author is not stated concerning the more substantial methodological problems of psychological science. And statements that in the editorial policy when selecting materials are equally valuable the data, the theory, the confirmation and the original studies seem rather banal.
The philosophical perspective of integration problems is presented in the paper of J. Wettersten [26], where some methodological questions are also posed. In particular, it has been shown that it is possible to develop an integration of views that are aimed at solving problems arising from conflicts between integrable directions, by describing how one direction of research serves as the basis for another. But at the same time, it is possible to discover difficulties both in each separate area and in their integration. Results obtained using one direction can be used to criticize those obtained in any other direction. And all this will create new problems for attempts at integration, and such attempts can create new problems for methodology and psychology. In this sense, the development of integrative approaches will always remain «open».

For researchers predicting the trends in the development of psychological science, the opinion of the psychologists themselves is of particular interest. Not so long ago the Institute of Psychology of the Russian Academy of Sciences conducted an expert survey aimed at revealing their opinions about what psychological science and practice will become by 2030 [15]. Among the questions were also those concerning the prospects for the integration of psychology. On the question of whether a unified paradigm will be developed in psychological science by 2030, or this science will remain multi-paradigmatic, 46% of respondents answered that it will remain multi-paradigmatic; 38% chose the answer that it would rather remain multi-paradigmatic; 14% said that a single paradigm will be worked out, but private paradigms will remain influential; 2% were at a loss to answer. And no one chose the answer options "Yes, it will be worked out" or "More likely to be worked out than not." The experts who conducted the survey concluded that the old dream of many psychologists about a single paradigm that will put an end of abundance of psychological schools and directions, according to the majority of respondents, will not be reached to an end by 2030.
Integration problems in the works of G. Ball & V. Medintsev

This research direction is directly related to the ideas of Georgy A. Ball concerning the improvement of the theoretical and methodological apparatus of psychology and, more broadly, human studies, including the development of formalized descriptions of phenomena in this vast subject area (see the list of G. Ball publications). Our joint ideas for the approach to solving the problems of integrating psychological knowledge were first outlined in [4]. This approach was formed in the development on the three topics. Further I will introduce the results obtained by us at the stages of this studies.

Integrative-personal approach

The main idea of the integrative-personal approach ([2; 5]) is that the category of personality can characterize the embodiment of culture in the human individual. The theoretical and methodological result obtained by us in the development of the integrative-personal approach is the following system of concepts.

**Culture.** A system of processes and results of the functioning of mankind are considered as models; The models that serve as components of this system are called cultural models.

**Modus of culture.** We consider universal, especial and personal modi (Plural from Lat. modus) of culture as cultural models of the processes and results of functioning, respectively, of humanity as a whole, of individual communities, of individuals.

**Personal modes of culture.** The processes and results of the person's functioning, considered as cultural models.

**Personality.** A system of characteristics for a personal psychological modus of culture.
Cultural function of psychological science

The theoretical and methodological development of the theme was carried out in the context of a model interpretation of culture (the culture at any level of its description is represented by its modi possessing the properties of primary or secondary models, see [2, 5], etc.). Description for culture and all its components has been improved by using the basic elements of the mathematical apparatus of set theory [4, 8]. As a result, a system of concepts for description of the cultural function was constructed.

**Order structure.** For any pair elements of the set, there is a relation that is expressed by the words "less than or equal to" or "greater than or equal to"; in the descriptions of culture, the structure of order is represented in various kinds of universal classifications; the order structure is defined on the set of cultural modi included in the hierarchical (multilevel) classification.

**Algebraic structure.** A structure in which a relation is defined between three elements that defines each element as a function of the other two; this concept is used in the analysis the processes for changing of culture's modi.

**Culture modi.** The component of culture selected by some criteria; each modus of culture is a set of "more fractional" modi; modi are divided into material and ideal (in the latter, the substrate is absent or not taken into account).

**Changes in cultural modi.** We distinguish the quantitative changes and changes in the structure of modi, that is, changes in the relations between its components; changes in cultural modi may be an effect of cultural and other processes; in the language of set theory the change in the modus of culture can be described as preimages and images and written as mappings of sets; each modus of culture can be considered as a preimage or image, or as an agent whose activity is described by a function in mappings of sets.

**The cultural function of psychology.** On the basis of the presented system of concepts, the description of this function can be carried out using, in particular,
The universal classification of UDC, considered as a order structure of the set of cultural modi; a formal description of the interaction of the modus of psychological science (159.9) with all other modi will describe the relations in which they are composed (see [4]); these relations can be investigated on the certain time intervals when studying the processes of changes in the corresponding modi by analyzing their various mappings.

The systemness of psychological knowledge at the present stage

The actual problem of using systemic descriptions in psychology is the improvement of the forms of presentation and systematization of already accumulated and new knowledge. The choice of strategies for the universalization of the representation of knowledge (URK), effective in the current conditions and in the long term, is an integral part of the solution of the general problems of the functioning of science (hereinafter see [6]). The leading methodological guideline in this process should be recognized technologies and standards developed by IT professionals in the context of the ideology of the development of World Wide Web. The set of possible strategies of URK can be represented as elements of an n-dimensional space, its dimensions, in the simplest form, can be:

- **the area of use of the URK** – such areas can be, in particular, global, option-global, national and option-national. The criterion for the selection of options can be the identification of knowledge in the scientific discipline to which it refers, or a group of related disciplines, or the object of study (given that it is studied by different disciplines) or the sphere of knowledge application;

- **the degree of URK** - a complex characteristic in which it can be distinguished as measurements (parameters), for example: the depth of the URK (from the topic of study to the standardized presentation of the results obtained by the author) and the degree of IT use (from the use of reference web resources to the
integrated use of IT at all stages professional activity of the scientist).

In the scientific process, the interaction of humanitarian and natural science paradigms is constantly spontaneous or purposeful. It happens in the use by the natural scientists the elements of the theory and methodology of psychological science, as well as natural-science tools by psychologists. In the natural sciences, all descriptions are systemic, all of which in one way or another are conjugated to formal representations of the subjects of research (a description of the structures and processes of their changes) in their graphic and / or algebraic presentations. The use of elements of natural science tools in psychology means the use of means of formal description for objects of psychological research. Various strategies of such descriptions can be used, we (see [7], etc.) have identified three such strategies.

**The first strategy** - to select suitable mathematical models for the principles described by the «humanitarian» language,

**The second strategy** - to search for the possibilities of applying in the human sciences particular types of mathematical models used in physics, biology and other natural sciences.

**The third strategy** - to begin from the most general mathematical models and look for the possibilities of their application in human studies.

We use the third strategy (see [4, 7, 8]). In the set-theoretic method for process description (ST-method), the most common mathematical tool (set theory) is applied to the most common humanitarian concept of "culture". The method is based on the results of previous studies, namely: the model concept of culture (see above) and the approach to describing the cultural function of psychological science. The application of the ST-method in psychology means that the object of any psychological research should be presented as a component or characteristic of the processes taking place in the psyche and outside it, and each process as a change in mental and other modi. As mental modi can be considered psyche in general and
its various components: values, meanings, motives, images, roles, stereotypes of perception or thinking, etc. Moreover, any modus can be considered consisting of number of modi at a deeper level description.

The procedure for applying the method consists of the following steps.

To distinguish the components of the object of research. On the basis of the chosen approach (or at the discretion of the researcher) to identify the modi that are supposedly related to the object of the study.

To select one or several time intervals of the processes under consideration. The time intervals are selected depending on the design and completeness of the study.

To construct a mathematical space of mappings. The mathematical space of all theoretically possible mappings that are process descriptions, with the previously chosen modi, are constructed on the basis of the general ST-method provisions.

To select the mappings for description the object of study. The choice for analysis of certain processes among all theoretically possible can be determined differently, but primarily by the object of study.

To perform a description for the object of research on the basis of the obtained theoretical model. I.e. to clarify the interpretation of individual mappings, to compare the treatment of mappings with the phenomenology of the object of research, to formulate the criteria for selecting the types of this object.

To repeat the previous steps with the modified composition of the considered modi. This need may be due, for example, to the fact that the principle of selection of modi was not optimal for this subject of research.

The method is not a theory, that is, a description of specific regularities; it is a means of system analysis for any object of research, before such regularities are revealed in empirical procedures. The method is a variant of the universal research tool for human studies. The method allows to order existing knowledge about the object under study, to formulate hypotheses and outline the research strategy.
Integration of psychological knowledge at the present stage of its development

The choice of this research topic, given the foregoing, seems quite natural. The direction of such a study, as already mentioned, was outlined by us in [4]. There it was noted, in particular, that in conducting research on previous topics, a theoretical toolkit was proposed for the integration of human studies, including psychological knowledge, by: a) universalizing the ways they were presented; b) synthesis of the results obtained within the framework of the natural-scientific and humanitarian paradigms. At the core of the developed toolkit lie: the category of culture in its broad interpretation as the totality of the components of human existence that serve as the bearers of social memory and the focus of socially significant creativity; utilizing for the characteristics of these components of the concept of "modus of culture"; the use of the set-theoretical model for culture and cultural processes.

The toolkit in question is an ST-method for process description [7]. In this and other studies, we gave examples of the use of this method for describing processes in various mental subsystems and in various social situations. Now the task is to show how to use it to implement the above two components of integration. This is the task of the nearest perspective, but for the time being it makes sense to examine in more detail the components of the proposed path of integration of psychological knowledge and related problems.

Universalization of knowledge representation. In [6], we identified the difficulties with which such an universalization is associated, namely:

a) contradictions caused by economic, political, ethno-cultural, worldview, social and psychological tensions, disunity between scientific disciplines, between competing scientific schools, between long-term and short-term, academic and pragmatic priorities;
b) historically formed among human scientists a different vision of the status and position of their disciplines in the system of science;

c) difficulties in formalizing the content of human knowledge.

Overcoming difficulties a) and b) is possible only when the conditions under which these contradictions will seem to be insignificant to the interested persons and social groups in comparison with the benefits from the development and implementation of universalization will develop. Here, one can not do without the organizational arrangements, for example, according to the type presented above.

Difficulties c), for their part, are already overcoming by specialists solving practical problems related to new information technologies. On the other hand, there are more or less specific proposals aimed at overcoming them in humanitarian disciplines, where there is no one-to-one correspondence between the terms used and their content. In [1], Georgy Ball noted that the basis for standardized procedures – experimental, psycho-diagnostic, etc. – may become the theories composed of logically relevant concepts. For this, a "two-level model of the categorical-conceptual apparatus for human studies" can be used. He viewed that model as one of the mediators for the interaction between the humanitarian and natural-scientific traditions. I draw your attention to the fact that the described by him is not a model (we recall the definition of the concept "model" in the works of Georgy Ball himself), but rather the design of a model that can be used for a universal system of psychological concepts, taking into account the difficulties listed above. But before it should be developed.

Synthesis of the results obtained within the framework of the natural-science and humanitarian paradigms. In the works of Georgy Ball, as in our joint works, this topic was repeatedly considered, but it is not clearly stated what is called (and what we call) the natural-science and humanitarian paradigms, and how to implement their synthesis (integration). The
concepts of «natural science paradigm» and «humanitarian paradigm», if we analyze their descriptions in scientific discourses, turn out to be very fuzzy (as a rule, the formulation begins with the words «a set of representations ...»). This is all the more surprising, since the word paradigm in translation means a model. And how something can be exemplary and unconditionally supported by the scientific community (see the article «Paradigm» in [17]) that is described in essentially different formulations that can be differently understood? In scientific texts, terminological formations with the word paradigm are used in one synonymous series with the words «tradition» and «approach», which can be illustrated, in particular, by our article [3], as well as the statements of other researchers mentioned in it. Thus, it is possible to set the next problem of knowledge integration: a much clearer description of what is to be synthesized (integrated) is needed. Also, we need to clarify how we understand the processes of paradigm synthesis, and whether these processes should be distinguished from those described by the phrase «interaction of paradigms», as well as in expression «paradigm dialogue» (or «inter-paradigm dialogue») used in some works.

In addition to seeking solutions to these problems, in the development of the integration methodology at the first stage the solution of the following research problems is also topical.

a) to carry out an analysis of scientific materials in which various natural and cultural integrative processes are examined in order to distinguish their forms that can be proposed and implemented in the solution of the task of integrating psychological knowledge;

b) to analyze examples of the processes of «spontaneous integration» in psychological science (see [10], etc.), to show the difference between the processes of integration and methodological eclecticism;

c) to develop variants of inter-paradigm dialogue, as well as dialogues between representatives of various scientific schools, as a result of which an integral psychological paradigm can be created.
Conclusion

The results of research carried out in the development of the integrative-personal approach, the cultural function of psychological science and the systemness of psychological knowledge at the present stage of its development can be the theoretical basis for substantiating the need and methodological development of a vast complex of problems of integrating psychological knowledge. The main results are embodied in the following developments.

- A system of concepts for describing culture as a structure of modi and personality as characteristics of a personal psychological modus.
- Theoretical and methodological tools for a formalized description of the interaction of psychological science as a modus of culture with its other modi.
- The method of set-theoretical description of processes (ST-method) and its application in psychological research.

On this methodological basis, in the short term it is necessary to justify and develop a concept for the integration of psychological knowledge. Among the problems to be solved, such are the priority ones.

- Difficulties in universalizing the representation of scientific knowledge (see above).
- Problems of synthesis of results obtained within the framework of natural and humanitarian paradigms (see above).

To determine the conditions for ensuring the integration of research approaches and concepts in the development of topical problems of psychological science, it is also necessary to solve the research tasks outlined above.

In the context of the presented discourse, the task of integrating scientific and psychological knowledge is to develop universal forms of describing psychological research subjects and presenting scientific-psychological knowledge acceptable to the psychological community.
References


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Перспективы интеграции психологических знаний

Аннотация. Одной из возможных перспектив развития психологической науки является интеграция накопленных в ней знаний и создание универсальной методологии новых теоретических исследований. В статье кратко очерчен современный научный контекст интеграции в психологии, выделены трудности универсализации представления научных знаний и синтеза результатов, полученных в рамках естественнонаучной и гуманитарной парадигм. Представлены методологические позиции проф. Г. Балла и автора статьи, связанные с интегративной проблематикой, намечена перспектива ближайшего этапа исследований.

Ключевые слова: естественнонаучная и гуманитарная парадигмы, психологическая наука, культура, модус культуры, формализованные описания в психологии, интеграция знания.
В.О. Мєдінцев
Перспективи інтеграції психологічних знань

Анотація. Однією з можливих перспектив розвитку психологічної науки є інтеграція накопичених в ній знань і створення універсальної методології нових теоретичних досліджень. У статті коротко окреслено сучасний науковий контекст інтеграції в психології, виділено труднощі універсалізації подання наукових знань і синтезу результатів, отриманих в рамках природничонаукової і гуманітарної парадигм. Представлени методологічні позиції проф. Г. Балла і автора статті, пов’язані з інтегративною проблематикою, окреслена перспектива найближчого етапу досліджень.

Ключові слова: природничо-наукова та гуманітарна парадигми, психологічна наука, культура, модус культури, формалізовані описи в психології, інтеграція знання.
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