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Cultural Multidimensionality in Research Practices

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Abstract

The article considers multidimensionality as a new paradigmatic trend. The author touches the history of the emergence of the concept of multidimensionality within research practice, considers the multidimensionality of culture based on key concepts of the philosophy of multidimensionality. Culture as a complex and holistic system is an object of research, while the subject of research is multidimensionality of culture in the research practices. The article aims to demonstrate the research possibilities of cultural multidimensionality through key concepts of the philosophy of multidimensionality. The paper concludes that despite the widespread introduction of the multidimensionality ideas into the scientific discourse, multidimensionality of culture is not explicated from those positions. It is defined that there are terminological uncertainty and conceptual discord in definitions of multidimensionality. To a great extent, the term "multidimensionality" is used metaphorically. On the basis of multidimensionality philosophy, it is suggested to comprehend the ability to simultaneously measure a multitude of elements, applying various methods and various measurements, taking into account plurality of dimensions of culture, as a complex, self-organizing, nonlinear and holistic system. Accordingly, an approximation of philosophical reflection on multidimensionality with a multidimensional approach to cultural research is very promising. Multidimensionality uncovers various methodological possibilities, which, once discovered and applied, can serve as means of creation of more reliable approaches towards resolution of prominent theoretical problems in the field of culture.

Keywords: Multidimensionality, Multidimensional approach, Multidimensional space, Multidimensionality of culture.

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Introduction

Today we're witnessing the emergence of radically new scientific picture of the world. Scientists take notice of essential transformation of scientific thought, as well as expansion of boundaries of scientific knowledge, spurred by societal development towards openness, plurality of cultural alternatives. The new style of scientific thought is being formed with an aim to "synthesize methodological efforts of a certain historic period within given scientific field" (Dobronravova, 2013, p.76).

In this case, multidimensionality presents itself as a part of the modern multidimensional trend for "key definitions around which sufficiently complex paradigmatic construction is being deployed, constitute an important component of one or another paradigm. Clarification of said key definitions for modern cultural situation and exploration of connections between them could make significant contribution into understanding of paradigmatic shifts, as they happen" (Bagataja, 2010a). Taking into account reality of modern cultural situation L. Bagataja envisages multidimensionality as a key concept of the new paradigm, which has all the necessary prerequisites to obtain fundamental status.

"Multidimensionality" in Research Practices

Multidimensionality doctrine began to form in the middle of the 20th century, when a string of fundamentally new characteristics of scientific knowledge was discovered. First of all, as F. Lazarev states, it was "paradoxical nature of the very theoretical foundations of science, as well as relativism and pluralism", which were already discovered at the earlier stages of scientific development, but had yet to undergo truly dynamic evolution. "Fundamental reason of such characteristics lies in the fact that in the 20th century science started to explore fundamentally new types of objects, new areas, complex and more than complex, multifaceted levels of reality <...>. Scientific knowledge itself became acutely complex, as well as its logical and conceptual basis. Methodological reflection in the middle of the 20th century put forward the task of finding the rational approaches towards uncontroversial comprehension of complex, multidimensional and multileveled objects. The thesis of multiple qualities of being and inevitable diversity of the ways of its understanding lied at its foundation" (Lazarev, 2013, p. 298).

"Multidimensionality" was first introduced in geometry. The basis for geometrical paradigm was laid down by Albert Einstein. He deemed it possible to construct singular theory of physical fields, according to which all forces of nature were manifestations of one force, connected to geometric qualities of space-time. The concept of "multidimensionality" was first used as a part of collocation "multidimensionality of space" and was introduced in 1921 by physicist and mathematician Theodor Kaluza, who was the first scientist to consider fifth dimension as a basis for gravitational theory. Further implementation of the concept of multidimensional space was connected to the process of generalization of the subject of geometry, which became possible after discovery of relations and forms, similar to spatial ones, for multiple classes of various objects (most often for those of non-geometrical nature). In this process an idea of abstract space gradually emerged, as a system of elements of any nature between which exist relations, similar to those between the points of ordinary space, covered by elementary Euclidean geometry.

Similar reflections made it possible to expand the concept of abstract geometrical space on other spheres of human being. First of all, the idea of multidimensionality of space started to emerge in philosophy. In 1993 the journal "Questions of Philosophy" published an article of H. P. Fraiman and B. U. Britan "Concept of multidimensional space and its contents". The article considered a range of questions, answers to which, in the authors' opinion, could contribute to clarification of possibilities of dimensional geometry: "What's the real sense of multidimensional spaces? How do multidimensional spaces relate to reality? Can those spaces have a practical application?" (Bagataja, 2013, p.136). Researchers introduced some characteristics of multidimensional space, among which dimensionality is the lesser possible quantity of coordinates, needed to determine position of any point in space relating to a given point.

The notion of multidimensional spaces was expanded by B. Rimán, who proposed a “generalized definition of the concept of space as continuous totality of homogenous events and processes of any kind”. As well as, “significant progress in understanding of multidimensional spaces was achieved in the works of U. Plücker, who proposed to consider not only points, but also other geometrical constructions such as straight lines, circles, spheres and planes. Space can obtain different number of dimensions, depending on the choice of spatial element” (Bagataja, 2013, p. 136).

Philosophical reflections on multidimensionality helped to expand the notion of abstract multidimensional spaces. For example, similar reflections made it possible for P. Bourdieu to apply “the concept of abstract geometrical space to social phenomena and to introduce the category ‘social space’” (Kislova, 2009, pp. 98-103).

The notion of multidimensional approach (as one of the possible points of view) gradually took root in the process of methodological searching, exploration of socio-historical reality. A well-known specialist in the field of methodology of history M. A. Barg applied the concept of multidimensionality to historical knowledge, while critically analyzing the views of C. Lévi-Strauss. Methodology of history also made attempts to turn to the notion of multidimensionality in the context of using methods of quantitative analysis as one of the methods of approaching the truth in historical knowledge. Historian K. V. Xvostova notes that “application of methods of multidimensional quantitative analysis allows us to determine quantitative characteristics of general significance, which interpretations allow constructing a scale for multiple estimations of explored phenomena, thus avoiding ambivalence in their evaluation” (1997, p. 68).

Conceptions of variability of historical process began to emerge. Possibility of existence of historical alternatives and different directions in history, which took into account diversity of cultures and civilizations, was also acknowledged. It is in this context that the idea of multidimensionality was proposed as one of the principles of methodology of social knowledge. “Multidimensional approach does not oppose itself to other methods of social knowledge. It is close to the systematic approach, compatible but not identical to it” (Kelle, 2001, p.53).

Multidimensionality gains significant meaning within the field of non-classical sociology, which was theoretically established in the works of A. Sybétto. He defined multidimensionality as relations between social system and its separate areas, levels, subsystems and between structures, one of which is defined as basic, primal, fundamental. “These relations between structures reveal themselves on a deeper level: each of those structures is an equal, individual dimension of the social whole, which includes it” (Sybétto, 2006).

The issue of multidimensionality was a subject of wide discussion until the middle of the eighties. There were some attempts to build conceptual basis for multidimensional methodology. In the second half of the nineties, multidimensionality is mentioned mainly in the context of diversity of explored phenomena or understanding of given phenomenon, its deeper ties and relations. As V. J. Kelle noted, “One or another social process can be described from economic, political, historical or any other point of view. There is a great quantity of those points of view, and it’s perfectly natural to view this totality as multidimensional manifestation of the object of research” (Kelle, 2001, pp. 53-62).

Among scientists of the end of the 20th century the term “multidimensionality” was used to emphasize “complexity” and “profoundness” of human existence. “The interdependence of human actions is not always seen at first glance, but in the process of studying, any separate act no longer seems to be elementary...” (Kemerov, 1996, p. 79).

At the turn of the centuries the process of formation of multidimensionality as world-view attitude is taking place. First of all, it is connected with observations of philosophers, particularly Gartman, concerning layered structure of existence, which “takes the form of stratifications... There are four main stratum: Physically-material, organically alive, psychic and historically-spiritual. Each of them operates according to its own laws and principles” (Bagataja, 2013, p. 133).

Significant works of domestic and foreign scientists consider philosophy of multidimensional man (F. Lazarev, B. Yudin), multidimensionality of social manifestations (V. Altukhov), multidimensional observation (M. Mamardashvili), multidimensional rationality and multidimensional mentality (V. Porus), multidimensional truth (A. Gorelov, M. Novosyolov) multidimensional development (Ye. Rashkovskiy), principles of multidimensional thinking (M. Driuk, L. Bagataja), multidimensionality of science (S. Lebediev), etc.

Nowadays multidimensionality is a category, connected not exclusively to philosophy. Among scientific research there is a concept of “multidimensional economy” as complex, multilayered and dynamic system, which is measured not only in market and financial terms, but also by spirituality, mentality, ecology, geopolitics, cultural and historic traditions (I. Larionov, O. Gersina, M. Gureyeva); “professional multidimensionality”, which is viewed as a possibility to combine variable quantity of approaches and technologies in one’s activity, ability to engage in several types of activity, multi-functionality, mobility etc. (F. Yalalov), “multidimensional communication”, which happens by operating concepts, that simultaneously collect multiple meanings, thus ensuring multi-channeled or multidimensional communication (L. Bagataja), etc. The new approach to exploration of multidimensionality is defined by modernity. “Development of mathematical abstractions and their introduction into practice of social knowledge form the basis for a very popular nowadays tradition of discussion of cyber-space, media-space, cultural space, place of perception, etc. Moreover, all those spaces are antecedently perceived as multidimensional (Kislova, 2009, pp. 98-103).

Overview of the history of emergence of multidimensionality in research practice shows us that, first of all, definition of the very term “multidimensionality”, is absent from philosophical continuum or elsewhere. As researcher of multidimensionality L. Bagataja notes, the term “is not traditional for philosophic lexicon <...> direct inclusion into philosophic thesaurus is undefined” (Bagataja, 2013, p. 135).

Secondly, despite extensive presence of the idea of multidimensionality within scientific discourse, we can conclude that multidimensionality of culture is not explained from those positions. We can assume that directives and principles of philosophical methodology can serve as a general guide for cultural research and their adoption actually characterizes current revolution of scientific knowledge.

Philosophical Reflection on Multidimensionality and Cultural Research

First of all, we shall try to extrapolate key concepts of multidimensionality philosophy through the idea of “system”, which has expanded upon extraordinary wide area of use and become one of the key concepts of philosophical methodology, where system is defined as a complex of interdependent and interacting elements, which correlate with each other, thus creating certain unity and integrity. Such a definition could be applied to culture, which is a complex, multidimensional system itself (L. White, B. Malinovskiy, P. Sorokin, T. Parsons, M. Kagan, etc.). Culture as a system consists of several subsystems, which represent separate cultural spheres: subsystems of material and spiritual culture, subsystem of art, etc. Every subsystem can function as a relatively independent entity. High quantity of dimensions begets a lot of aspects of its functioning. Each of them can be explored either in static at a given point of time or in dynamic of evolutionary and historical development. All these aspects of the general structure of culture are interconnected with each other internally, within the frame of functioning of culture as a whole. Each system possesses a sense-forming element, which provides its stability and order. Within each system there are several types of connections between its elements.

Specific characteristics of the system are not limited to characteristics of its elements, but are related, first of all, to the character of interaction between them. Thus, in our opinion, the main principle of the system is manifested – its multidimensionality. This implies the necessity of seeing tendencies that complement each other in directly adverse phenomena, create a whole from unconnected parts, perceive opposite tendencies, which are able not only to coexist and interact, but also supplement each other as a perpetual

entity or continuum. Thus, multidimensionality demands to represent each tendency as a separate dimension. In culture such tendencies can sometimes be dynamic and barely noticeable, in comparison to rigid structures of regularities. Revealing of meanings of some tendencies in given socio-cultural circumstances and its generalization is an important constituent of knowledge in cultural studies.

The system itself is a complex structure. Apart from being one of the system's parameters, *complexity* also represents one of the key concepts of the philosophy of multidimensionality. We can assume that cultural complexity can be considered through philosophical approach to reflection upon complex structures.

Complexity in pluralistic areas of research can stimulate reflections on multidimensionality, for "the very fact of emergence of complexity demonstrates certain finality of existing dimensionality" (Bagataja, 2010c, pp. 41-45).

Complex systems are defined by high quantity of elements and inner connections, their heterogeneity and versatility and ability to perform complex function or a range of functions. Complex systems are diffusely organized systems, which include high quantity of variables, constantly interacting with each other. A system can be perceived as complex if it combines several parameters within itself. Complexity is a quantity of possible states.

These and other characteristics of complexity constitute the definition of culture as a complex system. Culture represents itself as defined within historical space and time socio-cultural system with its own economical, political, social and spiritual life. It includes various closely related and interdependent elements: religion, systems of politics and economics, education etc. Apart from that, culture includes stable as well as changeable components. Categories of culture, for instance, are the former, while new generations, situations, problems and crises are the latter. Culture is characterized by dynamic complexity, which arises when relations between elements of the system are changing. Complexity of culture as a composite object implies that its understanding is possible only through comprehension of its parts – independent elements, in their totality. For instance, analysis of cultural achievements, attempts to evaluate level of progress of a given culture, allows us to describe that culture by estimating performance of contributions, made by representatives of separate cultural spheres.

Multidimensionality of a complex system manifests itself in functioning of its levels. If we accept the idea of levels of culture, we should find a dimension for each of them, taking into account their character and ways of deployment of their levels. Comprehension of different levels of culture is reflected in a combination of levels of existence of cultural being (ontological level) and results of collecting of cultural knowledge (epistemological level), which makes it possible to consider culture as a complex phenomenon from the positions of multidimensionality.

Complex (from Latin term "complexus") literally means that which is woven, entwined together as a singular tissue, in other words, integral. *Integrity* is a fundamental characteristic of culture as a complex, multidimensional system. The meaning of culture as an integral structure is expressed through its multiple forms. Integrity arises as a result of their constant interaction. Separate forms of culture, such as art, morality, education, religion and science emerge as particularities in the context of culture as a complex, integral system, while at the same time being explored as meanings of different cultural forms.

The whole has particular qualities, which its parts do not possess. In other words, a researcher won't be able to reach a profound understanding of culture, if he or she will regard it as a simple sum of its parts. Culture can't be considered as such sum of scattered phenomena and subjects, which would define its essence. Every manifestation of culture arises from within of it, obtaining value only in unity with other manifestations of the same culture. The ability for *self-organization* is another important characteristic of complex multidimensional systems.

"Any complex phenomenon is able to preserve itself precisely because of its ability to sense its destruction" (Dobronravova, 2013, p. 88). Self-organization is an ability of complex systems to regulate their inner

structure, ability for self-development and autogenesis with the help of possibilities, contained within the system, that is, due to its own potential.

Self-organized systems are able to react flexibly in case of outside influence. In Haken's opinion such systems "obtain their inherent structures or functions without any intrusion from outside" (1985, pp. 45-51), which leads to emergence of principally new structures. Algorithm of any system's self-organization, including culture as a system, is contained within the structure of the system itself. P. Grechanovskaja argues that self-organization of culture "stems from existence of two opposite forces – the force that creates structure and the force that destroys it, thus leading to disorderly processes and chaos (dissipation) within the system. Struggle between these forces – order and chaos creates mechanism for reconstruction of the old and creation of the new socio-cultural system, which ensures its self-development as a whole" (2017, p. 4).

Culture, like any system, possesses structural and hierarchical character (value orientations, norms of conduct, moral etc.). "In the process of system's development entropic phenomena begin to reveal themselves: functional integrity diminishes, as well as systematically-hierarchical orderliness, balance between separate subsystems and within the cultural complex of community as a whole". In other words, entropy represents chaotic and disorderly state of cultural system, which in time leads to cultural crisis – the loss of personal identity, value orientation etc. Thus, culture as a system "proceeds from balanced state towards unbalanced phase of its development, initiating the process of qualitative reconstruction of its characteristics <...> leading to formation of new integral meaning of culture, emergence of its new paradigm. As a result of accumulation of the system's inner forces, entropy reaches its critical condition, which leads to bifurcation – salutatory qualitative reconstruction of the system. Revolution processes are typical processes of bifurcation, which depend on multitude of probabilistic factors (both inner and outer), which often lead to several alternative scenarios of the system's evolution. Multiple vectors of development of post-soviet countries can serve as an example of this process. Bifurcation leads to relaxation, which means gradual restitution of the system in its balanced, albeit renewed state" (Grechanovskaja, 2017, p. 4).

"Particular history of a given object can be understood as a sequence of bifurcations with random choice, which opens different possibilities and presents itself as a necessary causal action, which emergence, to a significant extent, is defined by chance. Even insignificant influence can play an important part in the system's fate, if it resonates with its environment. The understanding of arbitrary character of emergence of anything new as natural way of development (and its boundaries) is based on this concept" (Dobronravova, 2013, p. 88). In other words, self-organization as a characteristic of culture, first of all is connected with the ability of culture to develop in unstable conditions of existence, especially in crisis. "Chaos plays a role, similar to that of a sculptor, who is able to cut from a stone (system) everything that is unnecessary or excessive. That's why chaos is a necessary element of the world's self-development. The moment of instability is the most important in the process of cultural development, as it provides a momentum for self-organization. The newfound stability of cultural system is achieved through high quantity of various types of interconnection and interaction between its elements. However, interruption of any type of those connections leads to the loss of the system's stability. The more complex the structure of cultural system is the more likely it is to lose its relative stability" (Moiseev, 1987).

All of the above makes it evident that self-organization of culture is a nonlinear process. Nonlinearity means plurality of the ways of cultural evolution, which leads to their multidimensionality. Cultural nonlinearity indicates possibility of unexpected (but predictable) changes of directions of cultural processes, their multiplicity, plurality of the ways of their development, multidimensionality.

Nonlinearity of culture is similar to biological model of the species formation, with random mutations and their natural selection. Such an analogy is made to illustrate the role of eventuality in the choice of ways for further development. The concept of nonlinearity necessitates refusal from an idea of cause-effect relations

between processes and events. Nonlinear dynamic of a complex system means establishing a new phase of the system, particularly in its crisis state of bifurcation (I. Prigozhin, H. Haken, M. Ager). Bifurcation as a stage of transformation of the most chaotic state of the system leads to the emergence of new stages or attractors. Different attractors point to different possible ways of the system's stable functioning. As a rule, the role of attractors in cultural development is played by new ideas, which become common and unite people within a new community with new purpose, ideals, etc.

Apart from that, on some stages nonlinearity of the system allows for ultrafast development of the processes. The given understanding of dynamic processes makes it clear that such a complex system as culture can't be forced to choose a way of its development. It contradicts the complex and organized system's own tendencies of self-development. Despite the plurality of the evolution ways (purposes of development), points of bifurcation reveal regularities in deployment process.

The thoughts of I. Dobronravova are applicable to understanding of culture as a nonlinear system. She was the first to introduce the term "nonlinear thinking" as scientific style. "Linear thinking is directed at finding of cause-effect regularities, while nonlinear, multidimensional thinking aims to perceive the essence of the object of reflections through multidimensional combination of meanings. Linear and multidimensional thinking differ by their cognitive directions" (2013, p. 135). Dobronravova argues that nonlinear thinking becomes a way of thinking for modern culture, as principles of incipience, development, wholeness, variability, freedom of choice correspond with its modern state. For example "In modern culture nonlinear structure is widely used in relation to the Internet <...>. Network thinking is nonlinear by its nature <...>. Nonlinearity is one of the characteristics of modern literature, manifesting itself in the fragments of diverse text as the plot develops <...>. There is a demand for elements of improvisation and interactivity in modern culture" (Ibid.). Nonlinearity of modern culture is generated by essential modern transformations, unpredictability, oversaturation with events, constant variability of modernity, new dynamics of socio-cultural phenomena, which usually emerge quietly, build up spontaneously and reveal themselves unexpectedly.

In our opinion, consideration of culture as a nonlinear system within research practice could contribute towards expansion of boundaries of scientific rationality in explorations of culture. "This doesn't mean that science loses its difference from other types of spiritual mastering of reality. Its boundaries exist and can be defined by general methodological demands to theory as a product of scientific activity, as well as the way of fixation of scientific knowledge" (Dobronravova, 2013, pp. 78-85). Thus, philosophic way of reflection on multidimensionality allows us to consider culture as a complex, multidimensional and nonlinear system, which is characterized by its ability to preserve itself as a singular entity as well as ability to constantly renew itself through self-organization.

Conclusion

The idea of multidimensionality is widely applied within scientific discourse. Philosophical reflection on multidimensionality is especially fruitful. At the same time, scientific thought hasn't created a definitive interpretation of the term "multidimensionality", which means that it needs further elaboration.

The way of introduction of the concept of "multidimensionality" into cultural research, that we've presented, is based on philosophical directives and principles. In our opinion, approximation of philosophical reflection on multidimensionality with multidimensional approach to cultural research is very promising. Multidimensionality uncovers various methodological possibilities, which, once discovered and applied, can serve as means of creation of more reliable approaches towards resolution of prominent theoretical problems in the field of culture.

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