

Cognitive aspects of a temporality concept in the comparative analysis of post-nonclassical scientificity and myth

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Abstract. The paper considers ‘time’, a fundamental category of human existence, in the context of cognitive processes research in modern culture. Main methodological approaches to determining temporality in myth have been outlined. The authors validate a thesis that methods of understanding time in science and myth at the current development stage of research of the specified worldview forms as cognitive practices correlate. Main features of a ‘time’ concept and its function in mythological thinking, such as unity, interpenetrability, verticality, have been formulated. Myth creates senses, forms a steady ontological picture of the world, makes a human an active source in “constructing the reality”. In this connection, myth mostly plays the role of one of the algorithms of cognitive activity in the context of modern cognitive science. A “temporality” concept realized in myth forms conditions to use it as one of ontological foundations in the modern research of cognitive processes. Main types of temporality in classical and non-classical science have been described. The specificity of time concept transformation in non-classical science and actualization of relativity and probability of processes and their complementary nature have been revealed. D.Chou’s bootstrap theory of particles has been studied. There has been shown that temporary processes of the micro-world are discrete, diverse and do not exist within the framework of universal integrity which to a great extent correlates with the modern scientific worldview and principles of cognitive practices.

Introduction

One of the fundamental categories without which, probably, no ontological foundation of any picture of the world can do is time. On the one hand, it acts as the pivot aprioristic element conditioning world perception; on the other hand, plays the role of some conductor providing the non-controversy of constituting the latter in a concrete form of a worldview and a possibility to implement the action. As a result, in many studies connected with the comparative analysis of various types of knowledge, this category is used, first of all, as an analysis criterion that allows revealing similarities and differences of the world pictures under study. Therefore, practically all conceptions, connected with the research of both myth itself and those oriented towards the comparative analysis, contain in any case characteristics of spatial-and-temporal regularities [1]. The range of conclusions realized in these studies is dramatically wide. It is due to their various orientation as well as dependence on purposes and the logic of their authors. The absence of a unified methodological system in myth research at the moment leads to a considerable versatility in the context of the time concept considered. Hence, in

the context of this issue we are going to make an attempt to determine the main intentions in understanding the role and place of the time concept in myth in order to actualize the resulted conclusions in the conceptual field of cognitive studies in the modern scientific discourse as well as in the context of modern cognitive practices.

Methods of Research

The authors used the methods of comparative and historical analysis in the context of studying the problem of the relation of myth and science in modern conditions.

Results and discussion

It is possible to speak about several main tendencies in the comparative analysis of myth and science as heuristic practices.

The first is connected with the assertion that differences between how the category in question is understood in myth and other forms of knowledge (particularly, in science) are principal and insuperable. Besides, this assertion is rather versatile. It ranges from

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the statement that conception of time in myth in a New Time science-centered paradigm to its continuations, which are primitive relatively the rehabilitation of myth in the face of science in the works by E. Cassirer, K. Hubner and some other authors. The thesis of a possible correlation between the ways of understanding time in science and myth is the pivot postulate of the other tendency. In this case we should be more careful (than in the first case) saying that this is the *tendency* as there is danger to include various quasi-and-pseudoscientific theories in its circle, which devaluates the philosophical legitimacy of this approach. Besides, even within the context of purely epistemological research today, there are practically no conceptual studies oriented towards correlation between time definitions of science and myth. On the contrary, the question is whether there are some separate works that for the time being do not have the character of integrated conceptions [2]. Nevertheless, in the context of the issues under study it is the approach that seems to be mostly envisaging further development.

The meaning of temporality as a criterion for the comparative study of the potential of interaction between science and myth is taking on special significance within the mode according to which such potential could be revealed not from the assertion about the identity of truth concept in the forms of knowledge researched, but from the logics of their thinking compared. In this connection the value of myth as an algorithm of thinking, the whole complex of consciousness patterns conditioning the model of activity attracts attention. According to H. Lenk, the concept of “myth” or “mythical functions” becomes an analysis tool of activity. Besides, it could also be used in the study of regulatory constitutions and formation of the action patterns as well as description of the practical orientation of actions and regulatory-based justification of them by the participants themselves. “Mythical functions” could be successfully applied to the hotel spheres of life and interdependence of cultural origin actions [3].

Comparison of deployment regularities of mental operations, certain parallels in the ways of constructing the world picture, intentions in the logic of interpreting the basic ontological and gnoseological concepts, i.e. basic elements, showing how myth and science as discourse practices *function*, creates the foundation for realizing the effective complex research (despite the utility of this term). Figuratively speaking, “myth is true as it is effective” [4].

To explicate possible parallels in understanding time in science and myth we should, first of all, determine basic characteristics of temporality in these forms of knowledge. Despite the variety of conceptions and approaches used to study myth, it is possible to outline a number of invariant characteristics of the time concept and its functioning in mythological thinking [5]. In our view, to the full they are represented in the works by K. Hubner. We permit ourselves to give a lengthy quotation as its content clearly describes the core of the issue: Time in myth “firstly, is not a medium the events take place in, but time and content of time make up an insoluble unity. Secondly, for this reason, mythical

objects do not find themselves at a certain point of this medium, in the sense that they can not be marked at it, but they show on their own in accord with only some sequence of events. Thirdly, mythical time is not one-dimensional but multi-dimensional as it consists of the profane and the sacred. The profane time is in this sense open time: it is irreversible, flows from the past to the future and contains the outlined “now” as the present. The sacred time is, on the contrary, cyclical. Though it has direction (4 seasons), it does not contain the definite “now” as the present and it does not flow from the past to the future in the sense that the past events do not exist any longer and future events do not exist yet. The sacred time does not represent insoluble unity either, but consists of separate, *gestalts*, *arche* that are partly independent of each other. Fourthly, the sacred time is placed and reflected in the profane time whenever *arche* occurs. Fifthly, because of this, from the profane point of view, the past can constantly repeat itself and appear in the present. As something timeless, from the profane point of view, it is also the future. Therefore, the past and the future can coincide in the present [6]. Thus, one of the main characteristics of time in myth is its unity, interpenetrability both in the linear (past, present, future) and “vertical” (profane and sacred) aspects. Consequently, myth “thanks to its constant activity and unquenchable urgency is as if “here” and “now”. One can imagine that another reality exists for mythical thinking that is able to actualize itself in our medium and have a considerable influence on a human life” [7].

Such understanding of time asserts the syncretism of myth as a result of cosmization of the world. Time of myth is a universal continuum, pretty versatile in its forms that, however, can be connected in a harmonious way, in the first place, by means of this interpenetrability. Describing characteristics of time in the scientific discourse, we face some difficulty. The whole point is that if the time concept is used for myth, it can be described as a unified, internally uniform system of views, whereas when we describe the time concept in a scientific tradition, we should take into consideration what science is meant. It is obvious that in classical, non-classical and post-nonclassical types of scientific rationality that refund the corresponding models of science (according to V.S. Stepin’s classification) the understanding of time as a fundamental category of a cognitive process is absolutely different. It is ignoring the type of scientific rationality in comparative studies of myth and science that often leads to the loss of clear criteria for analysis, methodological mistakes, incorrect evaluation and, as a consequence, authors’ misunderstanding of each other.

On this base one should emphasize that the above-mentioned tendency, asserting the impossibility of correlation between time characteristics in myth and science, is applied to the classical type of the latter, which stipulates this intention. Strict isotropy, one-pointedness, and in the end, ignoring time as duration and variability [9] in classical natural science create the foundation to oppose it to “transparent” time of myth. Besides, classical science of New Time, first of all, requires strict parametrization of time (which is

connected with “periodically equivalent processes”) [2] refunding the use of the latter in constructing the mechanistic picture of the world. In the result of world objectification in a classical type of scientific rationality, “the sacred” time of myth as the manifestation of everything random, unique, individual leaves the arena [10]. Identity of time intervals also characterized the profane time of myth but disappearance of the concept of “the sacred” time of myth (as well as discredit of myth on the whole) brought into correlation with the profane time resulted in the transformation of the latter into the only concept of “time in general”.

In this connection most of conclusions about the impossibility to find a common ground in comparing the approaches to understanding the temporality in myth and classical type of scientificity is absolutely justifiable. Though this difference is obvious, yet there are views providing the opportunity to correlate these categories. Hence, V. Deppert points to the fact that the regulatory settings of the mechanistic picture of the world require the unified universal time, which, consequently implies considering any single time (interval, event) as the referent of the common Time. In the opinion of a German researcher it testifies to the presence of myth (“mythogenic idea”) in a scientific discourse. However, such examples often have the fragmental nature as, in all their fairness, they cannot dramatically change the interpretation of the Cartesian paradigm postulates to find in the latter the conceptual opportunities for a successful correlation with the myth ontology.

Non-classical scientificity formed in the XX century leads to great changes in the conception of time. Quantum-mechanical reality actualizes such categories as relativity and probability of processes. Disappearance of the strictly defined characteristics describing time is connected with the relativistic character of processes taking place in subatomic reality described, for example, in the postulates of Bohr’s principle of complementarity and Heisenberg’s uncertainty principle [11]. Discrete understanding of time which in the micro-world implies the absence of unidimensional continuous temporality, typical of the macro-world, is mostly formed on the basis of these principles. Referring to the time concept in the context of mythological world perception, we can find a number of characteristics that let us speak about a complementary understanding of time in non-classical science and myth. In the first place, it is the discrete character of time and events taking place in it (despite the fact that, strictly speaking, such discreteness is mostly a special feature of the sacred time). We extend this definition to the time concept in myth on the whole, as the profane time without its relation to the sacred time was not thought of. In this case, discreteness should be understood as the uniqueness of definite time fragments containing a complete event (arche). Such fragments could be connected, though not in the system of the “common” homogeneous time concept, but in the logic of “the obvious necessity” of this connection that is not conditioned by a universal time criterion. Besides, arche, being an archetypical pre-event, is not only in the past. It is present in all usual time dimensions typical of the profane time determining the present. In other words,

“correlation of mythological temporality implies the connection of any mythological moment with any moment of the profane time. “It is the ability to correlate with different moments of life that leads to the cyclical revelation of mythological temporality in the temporality of mundane reality” [12]. This way of understanding of time processes in myth correlates with the logic of self-organizing systems theory (which is one of the basic methodological foundations of post-nonclassical science) in the part that concerns the mode of time perception. In many aspects this mode is defined by the requirement to events which consists in the ability of the latter to change the direction of evolutionary processes, while being the beginning of this process [13]. The diversity of ritual acts in myth expresses nothing but reproduction of arche, a pre-event under new, modern conditions. By itself it has a timeless sacral character, but the result of this reproduction in mundane reality always varies creating diverse invariants of archetypical action. In such a way, the event in a synergic conception might be the source of a new vector of system transformation. The structure of this event often repeats, but only under new conditions, which create the foundation for the new level of system organization.

According to Hubner, in the profane time ‘there is no definite “now” as the present, and it does not flow from the past to the future in the sense that past events already do not exist and future events do not exist yet. The sacred time does not represent a continuous connection, but consists of separate time gestalts, arche, partly independent of each other. The sacred time is placed and reflected in the profane time, whenever ‘arche takes place... because of this, the past, from the profane point of view, might constantly repeat itself and appear in the present. As something timeless, from the profane point of view, it is also in the future. So the past and the future coincide in the present’ [6].

In this case we can see some interconnection in the logic of understanding the time in theory of quantum processes and myth. In myth, Hubner ‘s “time gestalts”, being relatively independent formations, by means of some approximation give birth to the integrated picture of the world, the temporality of which is the result of sequential shifting the focus from “separate” arche to syncretism. Surely, this syncretic mode of a mythical perception of time is not identical to a scientific approach to continuous time of the macro-world. The question is of some parallels in the logic of time conception transformation in the forms of knowledge considered. As it was mentioned above, the time discreteness concept, though expressed in myth and science in different modes (separate quantum as an event in the micro-world of physics and the original arche of myth), but correlating to some extent in the logic of their functioning, is a key moment in this case.

E. Cassirer writes about time discreteness in myth verifying the fact that in myth “separate time intervals by themselves possess an inherent quality and, particularly, an essence and efficacy of their own. They do not form a simple and uniform, purely extensive series; each of them, rather, comprises an intensive content which makes them similar or dissimilar, corresponding or

contrasting, friendly or hostile to one another. Myth is aware of no such division of the stages of time, no such ordering of time into a rigid system, where any particular event has one and only one position ... the stages of time – past, present, future – do not remain distinct either. On the contrary, over and over again the consciousness succumbs to the tendency and temptation to level the differences; moreover, ultimately transform them into pure identity” [14].

Like the irreversibility and synchronicity of the profane time of myth is connected with the uniqueness of arche of the sacred time, determining the event of the present, the processes, taking place in subatomic physical reality, despite their discreteness and controversy, determine homogeneity of time in the macro-world. Myth, originally based on the perception of a single result of the action and appealing, in the first place, to the spontaneous local sensual impression as a separate point of the present time, later leaves the “empirical” captivity of momentary actions and starts seeing in the set of events a certain regularity that then forms a harmonious picture of the universal world order based on the idea of an eternal round of events, (and, consequently, time) [14]. This transformation of time conception occurs as a natural process, which does not require cardinal worldview changes, whereas the acceptance of quant theory in the part concerning the approximated model of understanding time often depends on a worldview [15, 16, 17]. It is in this sense that referring to the modality of myth in interpreting the time concept might be a serious step that overcomes the barriers in understanding time in the context of modern scientific worldview [18, 19].

Conclusion

These examples of the common character of time understanding in the post-nonclassical image of science and myth (despite the evolution of quant mechanics since its origin, the postulates used as elements for comparison are still urgent in post-nonclassical science) provide a basis for ascertaining the logic legitimacy of understanding time in the structure of mythological thinking as one of the principles lying at the base of ontological postulates of post-nonclassical science and determining methodological schemes and cognitive operations realized in the process of its development.

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