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The Concept of "Multi-knowledge" in the Digital Stage: an Epistemological Analysis

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Abstract. In the article, through the prism of the interdisciplinary methodological approach, the content of knowledge in digital culture conditions and the epistemological peculiarities of the formation of new knowledge are investigated. For this purpose, knowledge is viewed as the result of intellectual activity in the cognitive-social-cultural environment.

The article shows that knowledge is transforming into "multi-knowledge" at the modern stage. It can be conceived as a processual gestalt with a multifractal character. Multifractality is used because the viewed object consists of a synthesis of different fractals (self-similarities). Therefore, this article considers knowledge a multifractal system (or network) of "fractal sub-knowledge". In that context, processual gestalt means that this multifractal system (or network) transforms from one phase to another, not fragmentarily, but entirely and whole. On this basis, the new multi-knowledge results from the creative transformation of the existing multi-knowledge as a multifractal unit due to the gestalt process.

The following methodological principles are applied in the article: non-linearity, intersubjectivity, emergent interface, and multifractality. It is accepted that there is a close relationship between them.

Applying synergistic synthesis and comparative analysis methods within the logical framework of this methodological approach allowed us to obtain concrete results.

Keywords: multifractality; gestalt transitions; intersubjectivity; hierarchy of knowledge; pluralism of knowledge; creative transformation of knowledge; emergence.

INTRODUCTION

The concept of "knowledge" has always been relevant to philosophy. Philosophical reflection of knowledge in cognitive and sociocultural contexts has been investigated. Such studies have led to several valuable conclusions [2].

Philosophers who approach the concept of "knowledge" in ancient Greek philosophy from the perspective of modern social epistemology have exciting results. In this type of research, knowledge is to be understood through the prism of the interaction of the cognitive and sociocultural aspects [8, 13].

At the current stage, the further expansion of philosophical-scientific reflection of knowledge in various aspects within the framework of modern epistemological theoretical-methodological criteria is observed in philosophical research. In

particular, as a whole, the acquisition, content and nature of knowledge are investigated in the context of close interactions of cognitive, informational, and sociocultural aspects in the digital culture. One of the exciting aspects is the connection between the expansion and deepening of the process of globalisation in the world and the "globalisation of philosophical-scientific understanding" and the intensification of research on the content nature of knowledge from that perspective. Philosophical conclusions about the pluralistic nature of knowledge usually prevail in this type of research.

One of the issues of interest in the aspect we have highlighted is the intensification of philosophical research related to the critical approach to the philosophical understanding of knowledge in the New Age phase in the light of modern epistemo-

logical criteria. In that context, the discussion around analysing the philosophical problems raised in Francis Bacon's "New Organon" regarding knowledge, truth, and reality seems interesting. That discussion started from the theses discussed in Daniel Garber's article "Bacon's Metaphysical Method" [7]. Knowledge, metaphysics, method relations [12] and other philosophical-scientific problems are widely discussed [17].

One of the exciting research directions of the formation, content, cognitive nature and sociocultural functionalisation of knowledge is related to studying this concept through the prism of the ideals and norms of science [14, 15]. For now, talking about the "post-truth era of knowledge" raises exciting questions [16, 18]. Against this background, the philosophical understanding of the pluralistic meaning of knowledge is essential against cultural and social, economic, cultural, informational, and technological globalisation [11].

Some studies include the relationship between knowledge and "objective truth" in modern science. In this direction, [9, 21, 22] and others have obtained exciting conclusions.

In this article, against the background of the approaches mentioned above to knowledge in the field of digital culture, the peculiarities of the formation and content of knowledge are examined in a philosophical-scientific context. For this, a synergetic-based methodology is applied. As a basis, we take the interdisciplinary methodology developed by [1, 4]. They defined seven basic methodological principles. On this basis, the author [10] proposed specific methodological regulations for cognitive and sociocultural systems. They are the following: non-linearity, intersubjectivity, emergence, and multi-raciality. Within these methodological conditions' framework, knowledge acquisition and transformation are conceived as a gestalt procedural structure.

Let's give a brief explanation of each of these principles.

The principle of non-linearity makes it possible to look beyond the linear approach to knowledge-new knowledge relations. At this time, not a superposition position such as "a lot of information creates a lot of knowledge", but the non-linear dynamics of knowledge-new knowledge relations is brought to the fore in understanding.

Intersubjectivity confirms that intersubjective communication leads to "cognitive transitions" during knowledge formation and transformation into new knowledge in the digital cultural environment. Philosophical and scientific understanding mainly occurs in an intersubjective climate (researchers + sociocultural environment).

The principle of emergent interface means that new information and knowledge are created in the "border zone" (emergent interface) formed by the interaction of cognitive and sociocultural factors. The cognitive potential of this principle is vast and has a more general character [10].

Procedural gestalt means that the transformation of knowledge is not an incomplete but a holistic, complete, whole process resulting from the interaction of the abovementioned principles in the cognitive aspect. We are talking about the procedural gestalt of intersubjective consciousness.

The research applies synergistic synthesis and comparative analysis methods in this methodological framework.

In the context of the cognitive specificity of knowledge in ancient Greek philosophy, A. Strull writes: "Plato accepted the Parmenidean constraint that knowledge must be unchanging. As Plato pointed out in the Theaetetus, one consequence of that view is that sense experience cannot be a source of knowledge because the objects apprehended through it are subject to change" [2]. From this context, we can understand that Plato is close to the epistemological understanding of actual and objectified knowledge, which modern philosophers value.

The author [8] looked at knowledge formation through the prism of the interaction of "individual epistemology" and "social epistemology". He writes: "...In the case of individual epistemology, the person or agent in question who seeks the truth is a single individual who undertakes the task all by himself/herself, without consulting others. By contrast, social epistemology is, in the first instance, an enterprise concerned with how people can best pursue the truth (whichever truth is in question) with the help of, or in the face of, others. It also concerns truth acquisition by groups or collective agents". Therefore, A. Goldman states that knowledge is obtained as a result of a group or collective cognitive activity and considers each to be fundamental.

The author [13] philosophical understanding of such a complex and pluralistic picture of the for-

mation of knowledge should be considered in terms of creating new knowledge. So, "...the new does not arise from the old, since it is significantly different from it, but it cannot arise from nothing, because then it remains incomprehensible" and "...To solve this problem, it is necessary to place creativity in the space between the uniqueness of the creative personality and the mechanisms of social recognition".

The approach to the formation of knowledge through the prism of the ideals and norms of science has created a pluralistic concept of the authenticity of scientific knowledge. The author [14] emphasises that this is based on forming new philosophical ideas and paradigms of scientific knowledge. The author notes: "The development of epistemology, the change of its paradigms is due to two main factors: a qualitative change in the content of science itself (its ontology and methodology) and the internal laws of the development of epistemology itself, the creation of new philosophical concepts and models of scientific knowledge.

Under this theoretical-methodological point, S. Lebedev presents the "pluralistic concept of the authenticity of scientific knowledge". In that concept, he mentions two epistemological principles: 1) recognition of the social nature of scientific knowledge and 2) acceptance of the hierarchical nature of the structure of scientific knowledge.

The author [15] discusses sense, empirical, theoretical, and metatheoretical knowledge. In the universal epistemological prism, he expresses the central thesis of the pluralistic concept of the authenticity of scientific understanding: By ontological, epistemological and methodological different levels of scientific knowledge, particular criteria of its truth function on each. All of them have only two standard features: a) each of them is a multicomponent criterion, and b) each criterion of truth has a consensual component in its structure".

In the emphasised aspect, author [16, 18] go a little further in understanding consciousness. They abstract the pluralistic nature of modern knowledge and talk about the "post-truth era of knowledge". M. McCormick believes that scientific knowledge is proper when it serves the individual and social development in the status of truth. For this, knowledge must have a hierarchical nature (a set of expertise with different levels of reality). He writes: "Truth and

knowledge are valuable because they contribute to individual and collective flourishing" [18].

In later works, M. McCormick approaches the problem from an interesting cognitive standpoint. He writes, "Truth and knowledge are valuable because they contribute to individual and collective flourishing" [18]. To put it another way, according to the author, scientific knowledge becomes valid when it serves the individual and collective development in the status of truth.

S. Levin prefers to take the concept of "truth" as the primary criterion for evaluating knowledge. However, unlike other philosophers (even verities), he proposes a separation of "deep" and "important" truths in defining truth as a value. Those "truths" are named so because of their practical value. On this basis, S. Levin claims that scientific knowledge is divided into "trivial" (simple, ordinary) and "capacity" (weighty truths). He writes: "...the intellectually virtuous inquirer is defined by their preference for the weighty truths over the trivial ones and, at the same time, we justify the epistemic superiority of weighty truths over the trivial ones through the concept of the intellectually virtuous inquirer" [16].

In the aspect we have emphasised, the historicity of knowledge formation is noted in the discussions around the analysis of philosophical problems raised about issues such as knowledge, truth, and reality in Francis Bacon's "New Organon". To the theses put forward in Daniel Garber's article "Bacon's metaphysical method" [7], D. Jalobeanu approaches in the context of the formation of new theories, considers it more correct to look at the concepts introduced by F. Bacon [12]. U. Lynch argues that F. Bacon's view of knowledge as a "mythification of the scientific method" and "new ambitions in controlling nature" does not correspond to modern ideas. The author writes: "A better approach looks at the larger significance of mythological accounts of the scientific method, that understand seventeenth-century methodological doctrines as ideologies naturalising scientific culture and outlining new ambitions for the control of nature" [17].

D. Pritchard [21] states that knowledge is not considered absolute truth as it was in the classical period. Instead, knowledge can be regarded as "near truth" or "understanding". D. Pritchard emphasises: "Two alternative conceptions of ep-

istemic axiology are now dominant. According to one, there is a plurality of epistemic goods, with the truth that most one epistemic good among others, and perhaps not even that. In particular, these other epistemic goods are not reducible to the epistemic good of truth. Alternatively, one might stick with a monistic view about epistemic value but treat the fundamental epistemic good as something other than truth, such as knowledge or understanding. Either way, veritism is rejected and, with it, the centrality of truth to epistemology" [21].

J. Greco expresses his attitude to D. Pritchard's ideas from a wider epistemological position, emphasising that truth is a knowledge component. At the same time, the epistemic value of knowledge is determined by its expression of truth. J. Greco writes: "For example, knowledge has a constitutive relation to truth, and knowledge seems to be epistemically valuable for its own sake" [9].

Another Western philosopher, Sh. Ryan, states that in the epistemological aspect, wisdom is of more fundamental importance than truth for knowledge in general. He emphasises this connection: "...it is wisdom rather than truth that is fundamental in epistemology" [22].

Finally, the Korean philosopher Y. Hui characterises knowledge at the modern phase against the background of the "absorption" of new technologies into the lives of societies and claims that technological globalisation creates "cosmo-technicism". On the one hand, this point means that knowledge has a complex hierarchical content structure. On the other hand, it makes the need to synthesise this diversity within the framework of "cosmo-technicism" [11].

RESULTS AND DISCUSSION

From the brief explanation of the philosophical ideas about knowledge, it can be seen that the philosophical concept of this has changed historically. If one source of the obtained conclusions is related to the peculiarities of epistemological approaches, the other aspect is related to the peculiarities of the sociocultural environment. In the synthesis of these two aspects, for the philosophical-scientific understanding of knowledge to be adequate, it is helpful to derive the thesis that the type of culture in the sense of M. McLuhan [19] has a fundamental influence on the philosophical-scientific activity in both thinking and social-

practical (including communicative) aspects. On that basis, through the prism of specific interdisciplinary methodological principles, it can be concluded that the cognitive and cultural features created by digitalisation are contented as "multi-knowledge".

At the modern phase, the "multi" character of knowledge is obtained as a philosophical conclusion from the mechanisms of knowledge formation, the features of acquiring new knowledge from the old one, and the fact that expertise has hierarchical structural-functional and communicative parameters at the theoretical level.

In the article, this thesis was put forward based on the philosophical generalisation of the conclusions reached through the prism of interdisciplinary methodology to the following modern approaches to knowledge:

- approach through the prism of ideals and norms of epistemology, hierarchical structure of knowledge (emotional, empirical, theoretical, and metatheoretical knowledge), the pluralistic concept of the authenticity of knowledge [14, 15];
- an approach based on the premise that knowledge is obtained as a result of a group or collective cognitive activity [8, 13],
- the approach in which the thesis of the creation of new knowledge is formed in the context of the dynamics of the complex and pluralistic landscape that has emerged related to the creation of knowledge [13];
- based on the pluralistic nature of knowledge, the approach that suggests the beginning of the "post-truth era of knowledge" [16, 18];
- philosophical-epistemological conclusions about the emergence of knowledge, the creation of new knowledge, and the philosophical understanding of knowledge-truth relations based on the modern epistemological prism approach to the concepts of knowledge of the classical period [7, 12, 17];
- the pluralism of knowledge in the context of knowledge-objective truth relations, the presence of different methods of acquiring new knowledge, "the results obtained from philosophical studies conducted in the directions of 'globalisation' of knowledge" [9, 21, 22];
- philosophical conclusions are taken from the position that the fundamental and comprehensive introduction of new technologies into socie-

ty results in knowledge becoming "cosmotech-nicism" and a single open system by combining different knowledge [11].

Based on the general analysis of these approaches within the framework of a synergetic-centred interdisciplinary approach, it allows the conclusion that modern scientific knowledge is content in the form of "multi-knowledge". "Multi-knowledge" in the epistemological context means "dynamic reality" characterised by open, inter-subjective and gestalt knowledge transformations in hierarchical, structural-functional, and communicative aspects. Intersubjectivity implies that knowledge is formed in a collective environment; "openness" means that modern knowledge is constantly open to innovation and communicative contacts in that environment of intersubjectivity. Gestalt transformations mean that knowledge is renewed as a complete, systematic process.

Philosophers do not doubt that the study of knowledge has always been relevant for philosophy and even consider it one of the fundamental aspects of philosophical research. In this regard, D. Truncellito writes: "The study of knowledge is one of the most fundamental aspects of philosophical inquiry. Any claim to knowledge must be evaluated to determine whether it constitutes knowledge..." [23]. Intensive discussions around the philosophical understanding of knowledge at the modern stage are not accidental.

Discussions are mainly conducted in several directions. Among them, the following are essential in terms of the scientific purpose of our article:

1. Discussions based on the modern epistemological approach to such issues such as the formation of knowledge, attitude to truth, peculiarities of the creation of new knowledge, etc., in the previous historical periods (ancient period, middle ages, renaissance period, and the new period up to the beginning of the XX century).

One of the highlights is comparing philosophers' ideas about knowledge in the ancient period with the approaches available in the present time, according to A. In that period, modern philosophers emphasised a position close to the epistemological understanding of actual and objectified knowledge [2]. On the one hand, this shows that knowledge-truth relations are relevant in the context of knowledge formation. On the other hand, it indicates the tendency of modern philosophical ideas about knowledge to "get closer" to

antiquity in certain aspects. All in all, this is an exciting point regarding the dynamics of philosophical thinking.

In that aspect, it is also interesting to analyse the philosophers' ideas in the example of F. Bacon, the peculiarities of the philosophical understanding of knowledge in the initial stage of the New Age. Discussions in this direction are mainly focused on the following aspects:

1) The influence of previous periods on the philosophical understanding of knowledge in the New Era;

2) The philosophical-epistemological meaning of F. Bacon's approach to the formation of knowledge, truth, and theories in the "New Organon";

3) Philosophical understanding of knowledge-objective truth-language reality relations in the early New Age;

4) Philosophical-epistemological comparison of the concepts of knowledge in the modern epistemological approach with the ideas of the New Age in the context of globalisation.

Philosophers admit that discussions in these directions have received exceptional dynamics due to the epistemological issues raised in Daniel Garber's article "Bacon's Metaphysical Method". The author, a professor at Princeton University, explains the primary purpose of his article as follows: "...In my essay, I argue that the method Bacon illustrates in *Novum Organum II* is deeply connected to this underlying view of nature. Far from being a neutral procedure for decoding nature, Bacon's method is a tool for filling out the details of a natural philosophy built along the broad outlines of the Baconian worldview" [7].

Such interesting philosophical-epistemological issues emerge with the historicity of knowledge and information, their relation to objective and scientific truths, cognitive and sociocultural features of acquiring knowledge, connections of intelligence and globalisation of knowledge, etc. From that point of view, D. Garber's conclusion in the article is also noteworthy. The author writes: "The resulting method is capable of leading us to an account of nature that allows us the sort of control of nature that Bacon seeks" [7]. Discussions about knowledge are conducted in the context of such a setting of the issue, and according to E. Cassan, in the works of F. Bacon, the ability is considered in the framework of the logic of the

early New Age against the background of factors such as reality, thinking, and language. This means that scientific knowledge and information content are historical, relative, and in the dynamic of constant renewal [5].

D. Jalobeanu emphasises the importance of a creative approach to knowledge in the aspect of the creation of new theories and writes that approaching Bacon's philosophy as an attempt to redefine "concepts of metaphysical origins" would help to understand better his position on the creation of new theories [12].

U. Lynch joins the discussion by treating Bacon's theory as an "ideology that naturalises scientific culture" and emphasises that knowledge has a relative content in each historical period [17].

A supporter of social epistemology, Steve Fuller approaches the debate in general through the prism of New Age concepts of knowledge. He writes that Bacon viewed knowledge as the result of a process within certain cognitive and sociocultural conditions. In this sense, "...humans – no less than the technologies normally found in laboratories – are instruments of knowledge production" [6].

2. The formation of knowledge and the investigation of the creation of new knowledge within cognitive and cultural conditions.

In discussions conducted in this direction, the issues of knowledge formation and the creation of new knowledge are usually investigated within the framework of a particular epistemological concept (relativistic epistemology, reflexive epistemology, complexity epistemology, social epistemology, etc.) in the synthesis of cognitive and sociocultural conditions. S. Fuller, A. Goldman, I. Kasavin attempts a philosophical understanding of knowledge within the framework of social epistemology and concludes that knowledge in modern science can be imagined as a unity of various components. In this case, knowledge can be considered a dynamically changing system (or network) with a complex structure [6, 8, 13].

Similar conclusions were reached due to approaching scientific knowledge through the prism of ideals and norms of science. For example, we have shown the research [14] above.

An important point for us in these discussions is clarifying a connection between both epistemological approaches. Therefore, in the philosophical research conducted through the prism of the

cognitive aspect and the sociocultural aspect, similar ideas are formed about the hierarchy, dynamism, openness to innovations, and heterogeneity of the composition of knowledge (Greek: ἕτερος - another + γένω - genus, species, heterogeneity). For this reason, it can be considered that those scientific ideas are generally attributes of modern scientific knowledge.

There is a logical and methodological transition from here to the discussion's third and most crucial aspect.

3. Philosophical-epistemological understanding of the formation, renewal, and creation of new knowledge in the context of "objective truth".

I. Kasavin looks at the formation of knowledge in the context of modern digital culture in synthesising the cognitive and social environment through the prism of the renewal of the nature of creativity (creativity) and the mechanism of realisation. He writes, "The ease of communication and movement distinguishes the current era" [13]. Knowledge as a "product" of creativity "begins to be considered not autonomously, but in the context of its scientific legitimation and social effect" [13]. Therefore, knowledge should have both "scientific legitimacy" and "social efficiency" due to creativity. Such an approach makes knowledge both heterogeneous and requires cognitive-cultural synthesis for its formation.

S. Fuller also emphasises in the context of legitimacy and social efficiency of knowledge: "If...knowledge is not fully utilised by those who produce it, there may be others in the future capable of doing so" [6]. Therefore, S. Fuller not only considers the pluralism of knowledge to be standard in the modern period but even puts forward the idea that knowledge whose legitimacy and social efficiency are in question now is helpful for the future.

In the highlighted context, S. Lebedev's mention of the "pluralistic concept of the authenticity of scientific knowledge" seems significant from another perspective. That point of view can be formed in social epistemology's common cognitive and methodological field by approaching knowledge in the context of scientific norms and ideals [15].

Finally, two sub-directions appear in the discussions within the framework of the direction highlighted above. One is related to the direct unity of knowledge with objective truth. The other is

based on the premise that the "post-truth era" of learning has begun.

In the context of knowledge-objective truth relations, it is clear from the above explanation of the discussions about D. Pritchard's position that the positions differ. For example, D. Prichard, J. Greco, D. Garber, D. Jalobeanu, and W. Lynch directly connect the formation of scientific knowledge with the concept of objective truth. "Objective truth" is not in the classical sense, but in the veritist sense – "truth close to the truth" [7, 9, 12, 17, 21] is regarded, and Sh. Ryan defends the thesis that "wisdom is more fundamental to knowledge" [22]. Therefore, in these discussions, knowledge is understood in a pluralistic sense.

Therefore, in the broad discussions on knowledge formation, content, and creation of new knowledge, different ideas are put forward in modern scientific cognition. They can be summarised, and concrete conclusions can be given.

CONCLUSION

In the conditions of digital culture, as the sociocultural environment is renewed and the appli-

cation of new technologies expands, knowledge becomes an object of research in philosophical-scientific approaches in a different way.

The analysis of the debates shows that with knowledge taking on new shades of content, relations in its philosophical understanding become more complex.

In the modern period, knowledge's cognitive and social contexts give rise to a new type of knowledge in content and form – multi-knowledge.

"Multi-knowledge" in modern philosophical-scientific cognition means forming knowledge as a dynamic system (or network) of expertise with a hierarchical, complex functional-communicative character and a fractal feature.

In this quality, multi-knowledge should be understood as a unit consisting of the unity of structural and functional aspects open to constant renewal.

Finally, "multi-knowledge" means that creating new knowledge is manifested as a multi-scenario but essential and gestalt-processual process.

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