Transformation of subject-centered concepts of scientific creativity in conditions of communicative sociality

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Abstract

It has been stated by the author that today in accordance with new transformations in the ways of theoretical conceptualization of reality, sociality is understood to be a symbolic, information-communication one. It is shown that the science is experiencing dramatic reconsideration of foundational characteristics caused by the change of sociocultural fundamentals of scientific knowledge. The thesis, that science is a part of culture and interacts with different of its constituents, is widely recognized, but the mechanism of this interaction has not been matured and studied yet. Today the sphere of scientific work appears to be the endless communication space within which the change of knower status assumes significance. The idea of a knower becomes a foundational category not only in philosophy and philosophy of science but in social-humanitarian knowledge as a whole. A knower can be considered as an integrating element of structural constituents of philosophical knowledge (ontology, epistemology, and axiology). The aim of the article is to demonstrate historical dynamics of conceptualization of an agent of scientific cognition caused by the change of ontological paradigm: from classical (substantialistic) to non-classical (communicational), rejecting the foundational basis. Possible approaches to formation of the model of a collective knower are demonstrated. Communications character of scientific work as a variation of creative work is emphasized.

Keywords: science, scientific creation, subject of knowledge, communication, social network of scientists, communicative society

1. Introduction

Science has gained a dominating position in the sphere of intellectual culture since the beginning of Modern Age. Currently, there is a perception of science to be a reference type of activity caused by extremely endless opportunities for personal creativity to be realized by means of scientific work, and by penetration of values and norms of professional activity of different scientists into other social groups. The peculiarity of modern science is the process of its internal integration, combination of research and other activities and forms. As a result, the philosophy of science turned into communicative research environment, with sometimes conflicting traditions.
schools and concepts which are in competition with each other. Notably, the research techniques are derived from different disciplines.

2. **Subject and methodology of investigation**

Today we can witness new transformations in the ways of theoretical interpretation of reality connected with deconstruction of metaphysics: sociality became symbolic, information-communication, i.e. it lost its foundational basis, which led to the fact that the concept of creative simulation of reality and a person as a subject of this process also changed. Consequently, society and its secondary social practices, including scientific knowledge, also lost their classical importance, which was only possible through understanding of a unitary substance. Thus, desubstantialistic (communicative) ontology, rejecting the basis of the universe, today can appear more relevant when describing socially constructive, communicative processes of modern scientific cognitive process. In the focus of philosophical considerations, pressing traditional priorities are the spheres of culture being that earlier were opposed to scientific knowledge and stayed away from consideration.

One of the specific features characterizing modern philosophy and culture situation can rudely be expressed by a metaphor “death of a subject”, or softly it means criticizing and rethinking of the concept of “a subject”. The philosophy of science needs new conceptually logic structures, due to which we could define the “presence” and the description content of a subject of scientific work, and for this purpose we have to revise the vision of a knower, learn about his influence on an object of cognition. In this regard, the problem of changing the status of a knower has an ambiguous variety of solutions.

Historical and logical techniques of cognition became the methodological basis. Besides, the author turns to the method of structure-genetic synthesis (resolution of a research program into blocks, sequential analysis of these structures, and their combination in a single methodological attitude).

3. **Results**

Branches that comprise a vast part of modern philosophy, such as post structuralism, post positivism, post modernism, have different contents but at the same time focus on one thing: all of them dramatically reexamine the category of “a subject” and even sometimes exclude it from the toolbox of philosophical discourse. “Subjectivity” in its classical sense, according to these philosophical schools, can’t be a category for understanding modern time or undergoes essential annexes.

We can trace the interrelation between the loss of substantial character by social ontology and the crisis of positivist concept, which became obvious as early as in the middle of XX c., that was greatly caused by a new attitude to the science characteristics that (as mentioned above) formed in Modern time but their revision resulted from epistemological turn. After the crisis of positivist science methodology, its new character started to form, with its prerequisite being the crisis of standard concept of science. As we know, the letter represents the integration of epistemological, gnoseological and methodological attitudes formed in the depths of classical science and which were the milestones for both positivism and neo positivism; this idea separated from social and cultural mechanisms of the origin of knowledge in science, from the idea of cultural-historical predicament of science ideals and norms, from that could be nominally called science fundamentals. Within the classical science there is a definite idea about the reality under research: the nature was seen as a Constance given once and so it was considered possible to construct a complete knowledge system. As for a subject involved in this process, it was “… seen in the abstract, as deprive (at least ideally) of any individual traits, as a kind of machine for formal-logical processing of sense data” (Mulkey, 1983).

In the middle of XX c. the conceptual foundations for “ahistoric rationalism” of neo positivism, focused on “standard science concepts” postulates were disputed. There appeared new ideas about science. For example, T. Kuhn (1975) suggested abandoning the image of science as a knowledge system, which was dominating in positivism. T. Kuhn suggested the interpretation of science as the activities of scientific societies and evolution of scientific paradigms. His main point boiled down to the fact that logical processes of science development were functionally dependent on the reigning activity of scientific societies (paradigm, disciplinary matrix, matrix of understanding). The relativity theory and quantum mechanics postulates put the traditional view on the role of a subject in cognitive process in doubt. This led to the fact that the subjective character of cognitive activity acquired more importance.
The prerequisites for research interest to social-cultural and communicative cognitive aspects in science were the works of M. Polanyi. M. Polanyi (1985) introduced the construction of personal knowledge; he called it “silent”, “implicit”, meaning practical knowing, personal skills and abilities. This is the knowing which didn’t acquire conceptual form. Moreover, implicit sense-defining operations which determine the semantics of expressions are also included into implicit knowledge. “Implicit knowledge” involves concealed informal actions (or semantic functions). Methodological attitudes suggested by M. Polanyi were the first to introduce the notion about indivisibility of such components as logical, social-cultural and psychological components, in scientific knowledge. M. Polanyi, disproving K. Popper’s ideas, rejected absolutization of objective and subjective in scientific knowledge. Forming the concept of “three worlds”, he tried to take the process of growth of scientific knowledge beyond the individual experience into the sphere of objective knowledge, stating at that that any scientific knowledge has the tracks of personal factor that gives a definite shape to all actual knowledge. Thus, there is no “pure” objective knowledge. We think that M. Polanyi’s research merit consists in the fact that speaking about personality component of knowledge he seeks for manifestations of interpersonal and universal, without absolutization of creativity of a subject, his freedom from the objective in science. M. Polanyi comes to the conclusion: the potential of personal knowledge is huge but it is always regulated by categorical system, and it’s the letter which reproduces the objective logics of science in it.

V.S. Stepin (2000) points out the formation of post non-classical image of science and scientific rationality. Its peculiarity is a so called anthropic principle which suggests the participation of a human as an integral component in “proportionate to him” complex world developments. This idea corresponds to synergetic ideas of E.N. Knyazeva and S.P. Kurdyumov (2007), who interpret “a subject” as a synergism of a human and environment. This co-creativity of a human and nature more and more fall within the philosophy of science, which can demonstrate a tendency to decrease the relevance of the term “old-fashion” subjectivity whose characteristics were formulated in opposition to a human, nature, strict subject-object demarcation.

An attempt to save a subject from the perspective of desubstantialist ontology (which rejects the basis of the universe) was made by G.B. Gutner: “Only the moment of action discloses subjectivity … we must say that a subject exists only in activity. In other words, a subject is energy or, using medieval definition, a pure action. Thus we seem to come to interpretation of subjectivity in post non-classical scientific paradigm. The described subject does create himself in his formalizing activity” (Gutner, 2004). So, according to V.N. Porus (2006), a subject is not a “prepared” form where you put different thoughts and deeds. The formation of a subject which satisfies modern science and philosophy takes place during responsible participation in scientific and educational activity and doesn’t exist aside from this participation. It’s worth noting that in spite of the fact that philosophy of science is an area which due to its peculiarity resists post modernism harder than others, it’s obvious that the revision of a standard concept of science, and hence of those characteristics of science which appeared during the formation of classical science, caused transformations in philosophy and methodology of research programs.

Interdisciplinarity and communicativeness of postmodernist approaches explains the term “research of science” demonstrating that analysis of scientific cognition belongs not only to philosophy but to sociology, history, anthropology, economics, ethnography etc.

As illustrations of communicativeness in scientific cognition we can consider social-constructivist models of science development which accumulated the potential of scientific communication analysis presented by the method of situations research – so called “case studies”. These are micro sociological researches which were started in English-speaking sociology of science by “constructivist program” of K. Knorr-Cetina (1981), and later by programs of B. Latour, S. Woolgar, Z. Kanten, T. Pinch, P. Formn, B. Winn (Timofeev, 2001).

Scientific society became a subject of scientific work and the focus is concentrated on its research work. So educational process is limited by a sociologist to analysis of social-behavioral peculiarities of scientists in this society (institute, laboratory); certain debates, conferences, texts are under research. Today a researcher analyzing the process of increase of scientific facts encountered the tendency which can be characterized as a tendency of “sociologization of modern gnoseology” reflecting the topic of epistemological pluralism. Scientists engage in self-reflection over the depth of subjective in evolution of scientific knowledge, having lost the interest to subjectless gnoseology. Moreover, there is also an original technique of social investigation of science which exploits micro sociological research where scientific facts are formed from the content of research and
communicative procedures in scientific environment. In this regard, micro situations become a technique to analyze scientific facts changing the idea of subjectivity.

Consequently, in contrast to impersonal scientific methods of positivism as a dominant method of systematization of knowledge comes forward interpretation of scientist’s actions in interpersonal communication. As social reality lacking impersonal characteristics only forms them during verbal communication of interlocutors who determine them in impersonal categories, they later become basic when reflecting reality. For instance, J.F. Lyotard (1998) points out that science is one of the forms of “language games”, a type of discourse which has no impersonal properties and univocal interpretation. Knowledge as it is, according to J.F. Lyotard, can’t reduce itself to science as a complex of universal laws. Cognition is interpreted by him as a collection of utterances that define things or describe them. Post modernism which rejects determination of social processes (naming it chaotic) believes in scientist’s involvement in the social reality he researches; thus stating that any theory is a part of social reality (studying reality we make changes in it, creating new reality).

An attempt to get away from social constructivism and subjective perspective is made by B. Latour (1996) using the technique “actor-network” in analyzing laboratory routine where knowledge appears as network interaction, i.e. interlacing of people and things, interests and ideas. Therefore, scientific result itself becomes the subject of network action or its element. Since, according to this approach, reality is understood as network, i.e. interrelation between the objects, events and actions, then ontological status and properties of any object also have unstable character as constituting in network interaction. Here as a result of mutual constituting there is a loss of understanding a human subject as unique, it is considered to be a hybrid of biological and technological, individual and social processes, as its identity is determined by network localization and relations to other members of the network (Stolyarova, 2003). We should note down that principles of network model were developed earlier than the general theory of systems and system philosophy, and were used in data processing. According to O.V. Letov (2011), within social research of science and technology (STS) the objectiveness of knowledge acquires an original interpretation and appears as analysis of types and forms of knowledge, as it’s methods of research activity of a collective knower that come under review. As we can see, it’s in network models of science organization where communicative approach is presented much more explicitly.

4. Conclusions

In reference with the above, we can make a conclusion that communications are one of the main mechanisms of development of science work which have a great influence: first, on producing new knowledge, second, on activities of scientific society, on science methodology, which in turn research the knowledge of science (forming metascientific level), third, on formation of ideas about the subject of science. It should be pointed out that philosophy of science evolves as a branch of research which follows the course of interdisciplinary synthesis, whose task is to overcome the mismatch between reality organization (whose “structural” principles aren’t always known to us) and science, which is formed using basic assumptions, hypothesis and concepts interpretations about reality and its organization.

In modern philosophy of science we can witness even bigger suppression of subject-centered concepts by a group model and a model of collective communication connecting people, social groups, and communities of scientists and so on. The notion of a subject of scientific work, to our opinion, suggests going beyond any disciplinary models of a scientist.

References


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