

Values and Science

Tomyuk O.

Ural Federal University named after the first President of Russia B. N. Yeltsin
Ekaterinburg, Russia
helgago@yandex.ru

Dyachkova M.

Ural State Pedagogical University
Ekaterinburg, Russia
dyachkova.margarita@yandex.ru

Shutaleva A.

Ural Federal University named after the first President of Russia B. N. Yeltsin.
Ekaterinburg, Russia
ashutaleva@yandex.ru

Dudchik A.Y.

Institute of Philosophy of the National Academy of Sciences of Belarus,
Belarusian State University
Minsk, Republic of Belarus
dudchik@philosophy.by

Abstract – The article presents a philosophical understanding of the problem of values in science. The current changes in society cause interest in this problem because the modern world is a world of new materiality. Changes in the modern digital era have led to a reassessment of the importance of many fundamental values that have developed in previous periods. The purpose of this article is to identify the meaning of value in science. Science forms its own, into scientific values and norms that are associated with the scientific paradigm. The paradigm sets the vector for the development of scientific knowledge and acts as a socio-cultural regulator of scientific activity. In this regard, the main philosophical and methodological approaches to the problem of values are identified. The transformation of the meaning of value is comprehended; the values underlying the scientific worldview and the scientific picture of the world are examined.

Keywords – value, individual values, social values, universal values, scientific worldview, intrascientific values, paradigm in science.

I. INTRODUCTION

The modern digital era gives rise to socio-cultural changes and leads to a reassessment of the meaning of many fundamental values that have developed over the past centuries. This circumstance leads to an appeal to axiological problems. Value is the central concept of axiology, engaged in the study of benefits as the semantic foundations of human life, setting the direction and motivation of human life, activities, deeds, and actions.

Already in the ancient era, there is an interest in the study of value. Value is considered inextricably linked with the concept of Good and the essence of being. The transformation of values and the reappraisal of the values of the ancient era is associated with theistic tradition. The highest Good embodied in God as the personification of the unity of Truth, Good, Beauty, the source of moral values. St. Augustine owns the idea according to which the knowledge of God is the knowledge of the soul: know God through the soul, and the soul through God. According to philosopher-theologians, the

value of a person divorced from God is insignificant. The anthropological turn observed in the Renaissance. The fundamental values were personality, its dignity, and rights, the conditions for the development of a strong spirit and body of a person. In the Renaissance, people developed principles of humanism, Enlightenment, humanistic ethics, and science. Erasmus of Rotterdam formulated ethical principles and values that are relevant today: moderation, "nothing beyond measure"; hard work is a means of human realization of abilities given by nature.

In modern times, thanks to the development of science, a new understanding of value is taking shape: man recognized as the highest value as an essential link in the magnificent mechanism of nature. Universal principles, ideals, and values - freedom, equality, justice, reason - formed the core in the concept of the social structure of the Enlightenment.

Despite the appeal of thinkers I. Kant gave his understanding of value. I. Kant realized the difference between questions of values and questions of being and cognition. Values do not have an independent existence, and values are requirements that turned to the will [1]. That is, the subject determines the existence of values. Freedom, affirming the "absolute value of man," is the highest value and expression of Good.

In the XX century, almost all philosophical trends outlined their attitude to values, their role in human life and society. V. Vindelband and G. Rickert, representatives of the Baden neo-Kantian school, elevated value to the rank of the highest philosophical category: values do not possess being, do not exist, but only mean; they subjugate reality, forming a world of evaluating activity [2]. G. Rickert saw in his contemporary moral culture a gap between the "world of reality" and the "realm of values" as ideas about the desired [3].

In modern philosophy and science, value is treated as a sophisticated form of universal designing of the real-life of people and their aspirations for the future. In an axiological vein, it is possible to rethink the purpose and meaning of history, the meaning of life as a whole.

The purpose of the study is to identify the meaning of value to science. Changes in the era of globalization and digitalization determine the relevance of this study.

The methodological basis of this study is an understanding of the historical and philosophical understanding of the values as a transforming basis of human life.

The main issues of the article are:

First, the genesis of the problem of values in the history of philosophical thought.

Secondly, the main methodological approaches to the problem of values.

Thirdly, the transformation of the meaning of value in philosophical directions and scientific paradigms.

Fourth, the intrascientific values underlying the scientific worldview and the scientific picture of the world.

II. CONCEPT OF VALUE IN PHILOSOPHICAL REFLECTION

In the most general sense, values are all that have special significance for people in their everyday lives and which preferred in feelings, thoughts, and desires.

The first philosophical ideas about value are formed in Antiquity. Plato not only distinguished between two planes of being – sensual and supersensible but also gave rise to the concept of their connecting principle, which is good. Good is the beginning of being. Good is origin for the whole multitude of things and a condition of value, that is, of what man aspires to in his desires. Value is a kind of good. At the same time, Aristotle calls the divine good valuable, to which he relates all the best (soul, mind, virtue), that which is revered and honored by everyone [4]. At the end of the IV century B.C., Stoics used the term *Axia* to denote value. By value, they understood the good and the idea of higher.

In the Middle Ages, ideas about the highest good (grace) and the highest value, which God is. The ancient worldview treats the past as a sinful period in the history of humanity. God, as the highest value is associated with the idea of the salvation of humanity in the future.

In modern times, ideas about value undergo changes and refinements. R. Descartes concludes that the highest good is a man as the bearer of scientific knowledge [5, 6]. The phenomenon of value is in the field of scientific interests of I. Kant. I. Kant identified two areas – the sphere of due and the sphere of existence. To the essence, he attributed what exists realistically, given in feelings and can be described. The value problem, according to I. Kant, should be singled out in the philosophy of values to explore the value problems separately from the spheres of being and cognition [7].

In the XIX century, R.G. Lotze realized the idea of highlighting a specialized discipline the task of which should be to clarify the nature of values, and their place in the structure of people's attitude to the world [8]. The philosophical discipline engaged in the study of values as the semantic foundations of human life, which determine the direction and motivation of human life, activities and specific

actions, was called "axiology" (from the Greek "Axia" – value and logos – word, teaching). The term "axiology" was first used in 1902 by the French philosopher L. Lapé, who divided moral theory into a doctrine of values and a doctrine of good.

For the doctrine of values, of great interest is the idea of F. Nietzsche on the collapse of all values – cultural, religious, and moral. The main task of philosophy, F. Nietzsche, saw in the destruction of old virtues and affirm new ones [9]. The values of the future, in his opinion, will be all that contributes to an increase in a person's sense of strength, power, and will to power.

G. Rickert believes that values do not apply to the field of objects, nor the area of subjects – they form an independent sphere that lies outside the subject and object. The condition for combining reality and value becomes a unique form of being values – their significance, which is manifested in the act of evaluation [10].

Currently, there are several areas of valuable research.

Psychologism is the direction where the source of values considers a person, his goals, feelings, will, emotions, needs, and attitudes [11, 12]. Everything that has meaning for an individual (a social group or all of humanity) is a value [13–17].

Normativism is the direction that considers the socio-cultural life activity of people as a source of values [18, 19]. Values are identified with the norm, rule, assessment, which ensure the functioning of the human community [20–24].

Transcendentalism is the direction characterized by the breeding of the immanent and the transcendent. The immanent is the reality, and the transcendent is a value that is on the other side of being [8, 10]. In this approach, values can be revealed either in the act of evaluation, or in mystical ecstasy, or the law of revelation [25, 26].

Ontologism is the direction that strives for an objective and universally valid understanding of the value world, excluding even religious values from the number of spiritual values [27, 28]. From these positions, value is intentional objects, that is, those with which human meaning is given or predetermined [29, 30].

For a person, values are an object of his interests. Values play the role of everyday human landmarks in objective and social reality. Value, like the goal, gives meaning to human activity. On the other hand, values provide a sense, not to the individual act of the individual, but his behavior as a whole. In the process of moving towards the goal, the individual defends values. The goal is a unity of knowledge and evaluation.

At the level of individual being, two main life orientations are distinguished, one of which is directed to the external world for a person, and the other – to himself. Each person in his life is forced to choose between these guidelines. In the process of life choice, values arise and become a reality. Life choices are fixed, and the accepted value takes on an ideal form, existing subjectively as a regulatory.

Value is the main category of axiology. This category reveals the phenomenon of the world through the

understanding of hierarchy and orderliness. One can single out the vertical of values from individual to universal values.

Individual values – this is all that has a value for a particular person (personal items, family heirlooms, photographs). The benefits of the group are formed as a result of the joint activity of a social community and are significant for this particular group (for example, some act, a joint business, rallying and strengthening the group).

Social values are material, socio-political, spiritual, and other values that are significant for human life in society. Social values are classified on various grounds: by subjects (carriers of values), areas of society, the role, and importance of values in society. Social values are also divided into the individual, group (or collective) and universal. The universal values that are significant for the entire human community include life, peace, and security, tolerance, protection of the social environment.

In the process of the historical development of society, those value systems that correspond to a particular culture also change.

III. VALUES AS A COMPONENT OF SCIENTIFIC WORLDVIEW

Worldview is a system of worldviews that determine a person's attitude to reality, an understanding of the world by a person, people's life position. The totality of generalized ideas forms a worldview when it is subordinated to the central issue of the worldview. The primary points are the place of people in the world, their understanding of their historical origin and purpose, the meaning of the existence of civilization and personality. The scientific worldview is enriched with many fundamental facts and conclusions obtained in various fields of science.

The subject, the bearer of the worldview, is an individual, social groups, various communities and classes, society as a whole. For many centuries, religion has had a decisive influence on the worldview of people. Science defended its right to participate in the creation of a worldview in the fight against religion. Religion addresses the emotional side of human existence. Religion is primarily based on faith, that treating many phenomena as a manifestation of a miracle. For science and the scientific worldview, the world exists on its own, being the cause of itself.

In the formation of a worldview, science acquired significant importance in the 17th century. V.I. Vernadsky notes that the scientific worldview occupied an insignificant place in the human mind. In the consciousness and cultural life of people, the significance of the scientific worldview has been growing more and more in the last 5–6 centuries. These circumstances are caused by the most important discoveries in science, such as heliocentric picture Copernicus's world, the laws of motion of the Kepler planets, the laws of Newton. Science is aimed at elucidating the laws of the world around us – nature, society, man and his thinking. Scientific knowledge, including in the worldview system, serves the purpose of orienting a person in natural and social reality. Scientific knowledge, as a rule, acquires philosophical significance after receiving a rational interpretation.

Philosophy performs the function of awareness, the theoretical justification of worldviews [31].

A scientific worldview is a confident attitude towards the world of phenomena in which the events available to scientific study can be explained. These explanations will not contradict the basic principles of scientific knowledge. V.I. Vernadsky in his work "On the Scientific Worldview" writes that the scientific worldview is not something complete, and its formation is a complex process. It consists of scientific truths, logically proven conclusions and ideas that have come into science from religion, philosophy, or art and processed by a scientific method [32]. The scientific worldview varies by epoch, while it has its laws of change and particular forms of manifestation. The scientific worldview is capable of influencing the thoughts and feelings of people because it is based on scientific truths.

The composition of the scientific worldview includes such components as knowledge and beliefs, value orientations, ideas, and norms of human activity, and it is the knowledge that is a moving element. Knowledge is a substantial component of the scientific worldview, and beliefs are a value-colored, emotional, and moral attitude to knowledge and reality. For a long time, humanity did not know electricity, the microworld, modern means of communication, computer technology. Now, these achievements of science constitute an essential element of the culture of society, the general education of people, and the foundation of the worldview of modern man.

The essential component of the scientific worldview is the scientific picture of the world. The worldview synthesis of scientific knowledge in the scientific view of the world shows that the phenomena of the material world are interconnected as moments of the eternal cycle of moving matter.

In modern science, there are prerequisites for the formation of a holistic picture of the world, including the achievements of the natural, social, and technical sciences. Such a comprehensive view of the world should become the basis of the worldview.

IV. VALUE MEASUREMENT OF SCIENCE

Science, as a peculiar social institution, forms a particular system of norms and values. Intra-scientific standards determine the permissible, possible, and acceptable behavior of members of the scientific community. The method of values of science is the totality of methodological and worldview orientations adopted in the scientific community. The scientific community characterizes the attitude of representatives of this community to the object of research, the results of scientific activity, and the development of scientific and technical knowledge.

The concept of value to the system of science has several aspects. So, at each stage of its development, science develops its own, into scientific values and norms. These include, first of all, the methodological principles used to establish the conformity of the applied methods to scientific criteria, as well as the ideals and norms of scientific theory. Besides, there are values external to science that act as socio-cultural regulators

of scientific activity, as well as in the role of factors that change into experimental values. Values external to scientific activity nevertheless have a significant impact on science.

For example, R. Merton put forward the following value requirements that govern the activities of a scientist: universalism, collectivism, selflessness, and organized skepticism. Science begins to determine goals, objectives, and technologies in all spheres of human life [Merton R.]. Currently, the responsibility of scientists for the consequences caused by scientific discoveries and research (e.g., changes in the social environment, the threat of nuclear war, etc.) is significantly increasing. The value orientations of society affect the direction of development of science (through accelerating the development of individual branches of knowledge), the implementation of the results of scientific research (in the system of social and economic requirements), and the creative process.

Values are regulators of human behavior record; people follow the following accepted norms. Not all values in science as a social institution are enshrined in any regulatory legal acts. There are many unwritten norms and sanctions in the scientific community that encourage or condemn the behavior of researchers. So, the highest positive value is the recognition of colleagues, i.e., the scientific community itself. In the case of deviations in practice from the norms accepted in science, negative sanctions are applied associated with ignoring, non-recognition by the scientific community of what the researcher who violates the model does. The normative-value system unites scientists in the scientific community, sets the rules for ensuring the integrity of this community. Experimental values ensure the coordination of motives and interests of those who are members of the scientific community and allow the community to act as a whole in interaction with other social institutions, society, and the state.

Among the values of science are universal moral requirements and prohibitions, adapted to scientific activity. Science is also characterized by many specific benefits characteristic of it (disinterested search, upholding of truth). Numerous feats of scientists who defended their beliefs even before the threat of death are clear evidence of the value of the scientific discovery, upholding the truth for the researcher. So, Galileo Galilei concluded that the Earth is only one of the planets orbiting the Sun. For this and many other scientific discoveries, Galileo for nine years remained a "prisoner of the Inquisition" [33]. Giordano Bruno, scientist, philosopher, and poet,) refuted the idea of a radical opposition between the Earth and Heaven, saying that the same laws apply in all corners of the Universe. The church tried to persuade the scientist to repent and renounce his views [34]. However, on February 17, 1600, J. Bruno, as an unrepentant heretic, was burned in the Flower Square in Rome.

Every scientist should be well versed in the field of his scientific interests, be able to provide evidence and arguments to substantiate the results. The American sociologist of science R. Merton considers science as a social institution with specific value-normative regulations. He singled out a complex of intrascientific values or "institutional imperatives," which are mandatory for human science [35].

Among these values are universalism (the openness of any knowledge for criticism and evaluation), community (the availability of research results for review, the study by other scientists), selflessness (motivation of scientists), organized skepticism (activities related to preventing absolutism and dogmatization of approaches, concepts). Intrascientific values are manifested in different aspects of the scientist's activities, at various stages of the preparation and conduct of the study, including procedures such as the publication of scientific results, as well as participation in a scientific discussion.

V. CONCLUSION

The phenomenon of value is historical. From Antiquity, values subjected to repeated and diverse interpretations, modifications, transformations depending on historical circumstances, socio-political interests, scientific paradigms, and theoretical positions of philosophers and scientists. Radical changes in the meaning of value took place at different stages of civilizational development, especially in the crucial epochs of the history of humanity.

If we consider the value concerning science, it should be noted that science develops its intrascientific values, which act as socio-cultural regulators of scientific activity. The transformation of the meaning of value in science depends on the scientific paradigm. The scientific paradigm defines the vectors of change, uniting separate groups of scientists to conduct research, which, as a result, leads to a rethinking of values, the adoption of new value guidelines in science.

At present, science is a necessary component of human life. In this regard, we can talk about the convergence of scientific and extra-scientific values, which is characterized by manifestations of humanization and greening of scientific knowledge. For a scientist, values are the object of his interests; they play the role of everyday landmarks in research and social reality. Thus, in its existence and development, science is mostly determined by the society values.

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