Sociohumanistic Knowledge and the Future of Science

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Abstract—The author’s understanding of the role of the social sciences and humanities in preserving and developing science as a sociocultural phenomenon is substantiated. This justification is built as an explication and critical analysis of the program of philosophical research in science and technology, the main content and results of which are presented in the monograph by I.T. Kasavin Science As a Humanistic Project (2020). This article describes how the search for new strategies for the study of science is carried out within the framework of Russian philosophy. The historicity of science is analyzed, and the complex topology of its genesis is shown, which does not fit into the linear scheme of historical continuity, reflecting the synchronous coexistence of different variations of science as a cultural phenomenon. The historicity of science makes us turn to the question of its cultural and historical agency; it is substantiated that this agency acquires a political character in the current activity. How can the political agency of science be perceived and consistently combined with the ethos of the expert community? According to the author, political agency and the range of interests that scientists defend in public are determined by understanding the essence of science as a cultural phenomenon. The existential and cultural-creative functions of science are emphasized; on this basis the author’s interpretation of the humanistic project suggested by Kasavin is proposed as a program for the humanization of technoscience.

Keywords: science, culture, technoscience, humanism, philosophy of science, political agency, human being, society

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Science today is one of the main objects of various disciplinary and interdisciplinary studies in the field of sociohumanistic knowledge. There is nothing surprising in this: to study a person or society at the beginning of the 21st century without taking into account the factor of scientific and technological development is, at the very least, unproductive. Science and technology are not just an integral part of the modern social landscape; they are phenomena without the analysis of which it is impossible to understand human nature and give an adequate description of the social forms of human existence and human culture. In addition, without a comprehensive sociohumanistic study of science, it is impossible to draw any conclusions about the prospects for the development of society and human civilization, which means that this is already a matter of scientific support for strategic management. However, all of the above does not exhaust the significance of sociohumanistic studies of science. This article is devoted to a discussion of the role of sociohumanistic knowledge (by the example of philosophy) in determining the future of the scientific system of knowledge production. I will build on my excursion from the monograph by I.T. Kasavin Science As a Humanistic Project [1], published at the end of 2020.

THE PHILOSOPHY OF SCIENCE: INNOVATIONS AND CONTINUITY

Among all the social sciences and humanities, philosophy claims to be the most complete and systematic representation of any object under study. As in many other cases, science became the subject of philosophical analysis long before the emergence of various disciplinary fields. At first, it was part of philosophy, entering into a holistic scientific and philosophical tradition, then philosophy participated in the emancipation of science and continued to perform descriptive, normative, and critical functions after the emancipation took place. However, toward the end of the last century, the situation began to change. The development of concepts and approaches within the philosophy of science—a specialized section of philosophy—has revealed the limited effectiveness of methodological regulation of the growth of scientific knowledge and the prospects for its change. Descriptive functions, in addition to the history of science, were taken over by sociology, which began to study not only how

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social structures engaged in the production of scientific knowledge evolve but also knowledge itself as a social process. As for the critical function, its implementation has become more and more complicated by the specialization of scientific knowledge. It is practically impossible now to comprehend science critically from a methodological point of view without a special scientific, and not only philosophical, education. Philosophy is in danger of becoming almost a kind of anachronism.

However, it is premature to leave the philosophy of science in the archive. It retains significant personnel, institutional, and theoretical opportunities for the successful analysis of its subject, and these opportunities remain in demand within the framework of the science of science. They are not compensated by historical or sociological research. For example, if we look at science-of-science works or works in the interdisciplinary field of science and technology studies (STS), we find that they refer to philosophical works and philosophical tools and attempt at philosophical generalizations. Case studies that are not supplemented by such generalizations and that are not inscribed in universal explanatory schemes create the impression of incomplete research, and such works do little not only for understanding science but also for the modern practice of managing it.

The demand for philosophy is connected, among other things, with the fact that only it considers science not just as a cultural and historical phenomenon, a social institution, a collection of anthropological types, etc., but from the point of view of its own nature, its essence, that is, as a cognitive enterprise and a process of producing knowledge of a special type. This aspect is captured only by the philosophical theory of knowledge, which makes the process of obtaining, storing, transmitting, and developing scientific knowledge its subject. It is this process that turns out to be the matrix that forms science as a cultural phenomenon, a special type of communication, a specific ethos, etc. It is also important that the example of the domestic philosophy of science demonstrates the possibility of a systematic philosophical analysis, when philosophers are able, based on the characteristics of the epistemological matrix of science, to develop its integral and multifaceted cultural and historical representation. This is evidenced by the works of I.D. Rozhanskii, P.P. Gaidenko, V.S. Kirsanov, A.P. Ogurtsov, and many other researchers.

All of the above speaks of the potential to increase the role of philosophy in the interdisciplinary study of science. However, the fact that, for example, the position of philosophy is rather weak in the STS field indicates the need not only to “do everything the way it has always been done,” (and wait for the “wind to change”) but to revise research strategies. A new book by the Russian philosopher Kasavin, *Science As a Humanistic Project*, contains a long reflection on the designated range of the author’s problems, whose professional path is connected with the search for new ways of philosophical research of knowledge in general and scientific knowledge as its most important form. The meaningful result of this search was the creation of a project for the social philosophy of science as a trend that adapts the philosophical analysis of science to the so-called sociological turn in science of science and the theory of knowledge. Organizational results are the foundation of the journal *Epistemologiya i Filosofiya Nauki* (*Epistemology and Philosophy of Science*) (included in the first quartile in philosophy on the Web of Science Core Collection platform in 2021 according to the Journal Citation Indicator), the creation of the Russian Society for the History and Philosophy of Science and other communication platforms—from periodic conferences and seminars to major research projects. The book *Science As a Humanistic Project* is a kind of guide to all this activity, mirroring the reflection on the key problems and the formulation of those answers that underlie the scientific results named.

The designated nature of the book makes reading it not only fascinating but also very productive in terms of correspondence polemics or the development of the author’s theses, but at the same time it makes it difficult for the reader to get acquainted with it in the review genre (however, this article does not apply to this genre). The text is divided into several sections. The first and fifth present the results of philosophical self-reflection over the approaches and methods of analyzing science and over the history of the formation of the philosophy of science as a special field, the rationale for the need to organize it precisely as a social philosophy of science, clarifying its relationship with special scientific study of science and suggesting various strategies for implementing social—philosophical analysis of science. This reflection is supported by the epistemological analysis of science, designed, among other things, to show which strategies and concepts are still relevant and which are not, and in which direction the methodological search should be continued. The second section deals with an impressive range of issues of scientific communication: within the scientific community, between the community and society, between the community and various social actors, and between these actors about science. The third section discusses the problems of the historical existence of science and its study as a cultural and historical phenomenon; the fourth considers the ethics of science, the norms of activity, and the behavior of scientists. Finally, the sixth section combines three essays in the genre of a polemical response to the positions of colleagues on key issues for the study of science and one dialogue on the epistemological specifics of human cognition.

A review of everything that is proposed, substantiated, or brought up for discussion by the reader in these six sections may take the form of a commentary that exceeds the volume of the monograph itself. Try-
ing to choose among the topics raised as more important or less important is an extremely thankless task, since all of them are equally significant both for the fate of the philosophy of science (which was discussed in general terms above) and for the fate of science itself, and the trajectories of human development inextricably linked with it and society. However, the title of the book indicates that it can be read in another way—from the point of view of an idea that runs like a refrain through all the chapters and sections of the book. Further on, I will try to explicate this idea consistently and analyze it critically.

THE HISTORICITY OF SCIENCE: A MULTIFACETED PAST AND CHALLENGES OF THE PRESENT

For modern social and humanities knowledge, the topic of the future society and man, refracted through one disciplinary prism or another, is becoming more and more urgent. The future of various social institutions, art and artistic creativity, the organization of economic and political processes, the future of national cultures and different worldview systems, and finally, the future of man as a subject of that history, which we speak of as human and which is called into question by projects of post- and transhuman the day after tomorrow (or even tomorrow)—this is only the most general range of topics that make up a kind of discourse of the future in sociohumanistic knowledge. In this series, we also find the problem of the future of science—as a cognitive activity, a social institution, and an element of culture. At the same time, we are talking not only about European science but about science as a phenomenon that includes both, let us say, pre-European (classical antiquity, Hellenism, Roman culture) and non-European (Arab medieval scientific tradition, Chinese and Indian science [2]) forms of their being.

Studies of the history of culture and the history of science demonstrate that, by reducing the history of science only to the era of modernity, we simultaneously lose sight of both the variability of the scientific tradition and its integrity. This integrity and continuity in development can be expressed in the concept of rational—critical systematic knowledge of various areas of reality: natural, social; ideal (culture), that is, the creations of the human spirit; and this spirit itself—human consciousness. Such a vision reveals many more links in the chain of succession than the common division into ancient, medieval, and modern European science. Moreover, the continuity turns out to be very peculiar, with a not linear but rather branching topology, where the connection is not always generative, but is often due to a common source or “family resemblance” relationship (L. Wittgenstein). Binding to major eras hides the specifics, for example, of Hellenistic or early modern European science and the eclectic scientific and philosophical tradition of the 18th century. It also obscures the fact that science of the modern type—that is, characterized by a stable system of norms of scientific activity, a clear (or gravitating towards clarity) disciplinary structure, a strict organization of the scientific process, and the presence of a system of personnel reproduction—took shape only in the 19th century, after which it did not freeze in a certain optimal state, but continued to develop, and not only in the sense of changing methodology and increasing knowledge. This process is reflected, in particular, in the concept of changing the types of scientific rationality by V.S. Stepin [3], or in the periodization of the change in organizational formats from “small” science to “big” science, and, finally, technoscience by E. Jameson [4].

Nonlinear topology reveals not only diachronic but also synchronous diversity, making it possible to speak of national scientific traditions with their specific forms of organization of science, socialization and management, and peculiarities of the sociocultural status. This topic is reflected in the book by Kasavin in relation to Victorian science, primarily through the analysis of the ideas of the English philosopher and scientist W. Whewell, the man who laid the foundations of the philosophy of science as an independent philosophical area.

The history of the British tradition is interesting in that we are talking about the development of science in the homeland of F. Bacon, the author of one of the most influential sociocultural projects for the development of science. As Kasavin notes, “the main discovery of the English thinker was that the idea of a correct scientific method needs social legitimation and adequate institutionalization, which is impossible without an appropriate state policy” [1, p. 167]. However, this legitimization was then implemented in different ways, and “Bacon’s project gave rise to two germs that practically demonstrated two types of scientific agency—the Paris Academy of Sciences and the Royal Society of London” [1, p. 162]. These national traditions coexisting in historical time showed two different types of sociocultural images of science, two different strategies for its development within the framework of the cultural and social whole. This historical precedent is still relevant today. In the context of globalization and adjusted for its own “globality” of science, which, by virtue of its nature as a free search for truth, does not recognize territorial boundaries and political barriers, national traditions continue to differ in terms of public perception of science, practices of science policy, forms of participation of science in the public space, and the decision-making process related to the functioning and development of science. Domestic science in this perspective is of particular interest to the philosophy of science as it has experienced adaptation to a radically changed sociocultural situation twice in a century. This topic is still waiting for its panoramic and at the same time deep consideration, which will allow us to understand better the cur-
rent state of Russian science and build its future more consciously.

The historical perspective, therefore, reveals the fact that science is constantly changing, and this lesson should help in understanding the current stage of the evolution of science, and hence in building scenarios for its subsequent development. As Kasavin writes, analyzing the theoretical foundations of historical epistemology, a significant trend in science research, the history of science is “not a dusty archive but a collection of handbooks” [1, p. 187]. Today, such a collection is needed more than ever. Many researchers fear that modernity threatens science as an element of spiritual culture, that science as a sociocultural project has been exhausted, as the project of modernity has been exhausted [5], and that it makes sense only as a useful science—as a tool for technical transformation of the world [6], losing its worldview and existential meaning [7]. Hence, there follows the danger of science losing its autonomy, the status of a special social practice. In the Russian literature, a quote from the collection of lectures by P. Bourdieu (2001) is well known, where he describes this danger as a threat of regression [cited from 8].

The autonomy that science has gradually won against the religious, political, or even economic powers, and, partially at least, against the state bureaucracies which ensured the minimum conditions for its independence, has been greatly weakened. The social mechanisms that were set in place as it asserted itself, such as the logic of peer competition, are in danger of being subordinated to ends imposed from outside; submission to economic interests and to the seductions of the media threatens to combine with external critiques and internal denigration, most recently presented in some “postmodern” rantings, to undermine confidence in science and especially in social science.

The position of science in society has really changed. Over the past century, society has fully realized that it is science that is the source of material innovations, and has realized it at different levels of the social system, or, in other words, in different regions of social life. The economic sphere—from industrialists to financiers—has realized that science provides something from which money can be made, that is, something that not only contributes to the growth of capital, but is itself a kind of capital. The political sphere has finally become convinced that science, and only science, provides the tools for both hard and soft power. The ideas about science circulating in civil society have been enriched by a number of diverse cases, theories, phobias, etc., and have also been supplemented by practices of consuming scientific knowledge that go beyond the scope of traditional education. All this has led to ambiguous consequences.

The project of building a new science was created by new European philosophers (whose philosophical competencies, importantly, complemented the competencies and professional practice in other, as we would say now, disciplinary areas) and developed by thinkers of the Enlightenment as a central component of a larger project to transform society. Science was assigned not just broad social functions; it was supposed to become the basis of people’s lives: how they think, what beliefs they have, and what they are capable of. However, in fact, the value, normative, and organizational principles that constitute science have only partly gone beyond the boundaries of the scientific community. In other words, a holistic implementation of what was conceived and was, in fact, science as a sociocultural project did not happen. The opposite happened: science was forced to be incorporated into a society based on somewhat different principles. Hence the blurring of the matrix of institutionalized scientific activity, which is fixed as a fact of the transformation of science.

However, this is only one side of the coin. The other side reveals the responsibility of science for the formation of two sociocultural myths, which we previously called technological and economic [9]. We are talking about the hypertrophied significance in modern society, first, of the economic subsystem [10] and, second, of the activity for the production of equipment and technologies. The emphasis on technological and economic development as two interrelated processes that support and reinforce each other displaces the importance of developing, moreover, on its own grounds, other areas of social life—family relations, citizenship, politics, education as an institution of cultural continuity, etc. Science also falls under this influence, which is reflected in the process of its “application” and commercialization and transformation into technoscience. But technological progress and a market economy on their current scale would not be possible without the development of the natural and social sciences and, above all, the economy. In this sense, they themselves are generated by science at a certain stage of its development.

The indicated ambivalence forms an actual problem: from what positions should we approach the future of science? Should we track the dynamics of culture and social transformations, or will science itself determine its own future?

THE CULTURAL—HISTORICAL AND POLITICAL AGENCY OF SCIENCE

Analysis of negative scenarios for the development of science, suggesting its further instrumentalization and devaluation of the ideal of pure science (see [11]), reveals the presence of a common prerequisite for these scenarios. It lies in the fact that science, represented by the scientific community, renounces its own agency and is carried away by the general course of the sociocultural process.
The possibility of avoiding unfavorable development should not be associated with the fact that “society will change its mind,” “authorities will begin to see clearly,” and/or there will be influential intellectuals, or even simply “intelligent people” who will spend money on science without demanding from it a guaranteed not only applied but also commercially successful result and will promote its interests as a purely educational enterprise. Science as a supplier of useful and competitive products is welcomed by the state, ordinary citizens, sharks of the market, and journalists who write about it. Science as hard every-day work, sometimes without days off, requiring concentration and discipline, and long years of study, as well as perseverance and patience, is no longer so interesting and can only be the lot of professionals. Far from everyone is enthusiastic about science that demonstrates that everything simple and familiar is in reality complex and difficult to imagine, that the world, if not hostile to humans, is indifferent, and, perhaps, humans are not destined to describe adequately all the processes taking place in it. It is futile to expect that science, as an ethically and aesthetically worthy human enterprise, will gradually change mores in society by the mere fact of its existence. Even if morals are softened, as foreign and domestic scientists convince us [12, essay one; 13], this happens not only slowly but more slowly than the technical capabilities of society grow. As a result, the risks increase that humanity will not live to its conditional civilizational age, not because it will not be able to change the trajectory of some cosmic body threatening the Earth, but because it will not be able to curb collective aggressiveness (which is still quite high), emotional instability, and irrationality in decision-making.

It may be objected to me that the correction of morals is not the business of science (the rationale for such a point of view can be found, in particular, in [6]), but such a position itself is a consequence of understanding science as a tool for the material transformation of the world. Neither the modern European tradition, nor, for example, the ancient one as the earliest scientific tradition, have ever defined the tasks of science so narrowly. Cognition has always been associated with an existential dimension—with a person’s exit from the darkness of ignorance or the twilight of delusions as a process and fact of personal transformation that many could make using certain methods of cognition. The metaphor of knowledge as light arose in culture much earlier than the “knowledge is power” metaphor. The problem is that the loss of authority by various alternatives of the optical interpretation of cognition (cognition as a reflection, vision, contemplation, etc., of objective reality), which Kasavin discusses in the first chapter of his book, casts doubt on the light allegory. Today, the concept of embodied cognition, based on research in the field of cognitive science, is gaining ever more authority in epistemology. It shows that a person is locked not in the dungeon of ignorance but in his own body, which arose in a certain environment, adapted only to it and having a specific cognitive apparatus, if anything reflecting, these are the conditions in which it was formed (for example, relative stability, periodicity of changing states, etc.). Proceeding from such a picture (which, we emphasize, is emerging on the basis of empirical research and not just speculative constructions), it is easy to recognize the correctness of epistemological antirealism, according to which science, in principle, cannot describe and explain reality, because it, being human, has no relation to many components of this reality, is not adapted, consequently, and does not have adequate cognitive tools for their description. Scientific theories are only tools for organizing practice, and scientific facts are experience organized with the help of theories.

Epistemological antirealism opens the way for variants of nonclassical epistemology, which, on the grounds that science cannot achieve truth, equates it with other forms of not only cognition but also consciousness, including ideology (according to K. Marx, let me remind you, ideology is “a transformed form of consciousness”). This is precisely what P. Bourdieu writes about as “postmodern” rantings (postmodern in quotation marks, because postmodernism, as a philosophical trend that is diverse and rich in names and concepts cannot be reduced to the criticism that Bourdieu writes about). As a result, science can be accused of dirty use of the concepts of “knowledge” and “truth” and imposing with their help a totalitarian power discourse that severely suppresses all alternative strategies for cognizing (or, more correctly, constructing) reality. In this spirit, for example, feminist criticism of science as a stronghold of muscular thinking is built [14]. Paradoxically, such interpretations spread in society no less, if not more, successfully than the “totalitarian” discourse of science, allegedly supported by “authorities and global corporations.” One recent clear example is the rise of anti-vaccinationism, in some cases integrating with a variety of conspiracy theories, as seen during the Covid–19 pandemic.

The last example shows that, by leaving behind only instrumental functions, science jeopardizes their implementation, because its instrumental effectiveness can always be challenged. If science is the key to economic growth, then society can always answer: we no longer need growth, we want a different economic system. If science is the key to technological progress, then the massive spread of technoalarmism and technophobia can undermine its social significance. If science is a guarantee of material well-being, then anti-materialism devalues it. The meaning of science is not in its effectiveness, but in what makes it effective—in the proposed cognitive strategy that simultaneously satisfies both a worldview and material—practical needs. In order to defend this meaning, and not be what the state, business, or apologists for new ideologies want it to be, science must be included.
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ary to convey it to various political and social actors? 

This idea is formulated in the book by Kasavin as a 

problem of the political agency of science. In this for- 

mulation, it sounds provocative and even repulsive, 

especially to the ear of a Russian scientist. A clear con- 

viction has formed in Russian society that professional 

politicians should be involved in politics, and scien- 

tists should be engaged in what they are experts in. 

Moreover, the idea of political involvement contra- 

dicts the principles of expert activity—one of the most 

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From the point of view of analyzing the possibility 

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When it comes to vital things, when it is necessary not only to be heard, but to ensure that what is said entails certain actions, can the scientific community afford diplomatic and political maneuvers, for example, playing on the contradictions of some participants in the social process or cooperation with others? Finally, following Kasavin, one cannot but ask the question, “Is access to public consciousness today not the most important channel of political power?” [1, p. 163] and does the very possibility of influencing minds not turn science into a powerful political force? If so, would it be right to transfer this power blindly into the hands of the state, often associated with private power interests, and not with the high goals of the well-being of society and ensuring a decent life for citizens?

The scientific ethos answers all doubts and questions dryly and cold-bloodedly: the business of the scientist is to acquire knowledge, nothing more. However, are ordinary scientists, who are also citizens of their countries and representatives of human civilization, ready to agree with this? Few agree to lead the life of a member of the House of Solomon—Bacon’s monastic order of servants of truth. And most importantly, if scientists are already involved in politics, why not act from a subjective position, and not from the position of an instrument used by various forces in their political interests? However, what interests in the political field can and should the scientific community defend? Interests of the survival and development of science—obtaining sufficient funding, ensuring the reproduction of personnel and a worthy social position of scientists, corresponding to their contribution to social welfare, or status recognition? Or is there some other agenda with which scientists can enter into a sociopolitical discussion?

THE EXISTENTIAL AND CULTURAL MEANING OF SCIENCE AND THE ROLE OF SOCIOHUMANISTIC DISCIPLINES

Answering the question of what science as a special element of culture, or rather, the scientific community as the bearer of the corresponding cultural tradition, can declare and defend in the public field, we come to the topic of the cultural identity of science, namely, the problem of understanding what values constitute science. This topic is largely expounded in the fourth section of the book by Kasavin entitled “Ethics and Normativity in Science.” Reflecting on the problem of the disciplinary status and scientific content of the ethics of science, the author comes to conclusions that characterize what can be called the sociocultural mission of science in the modern world.

The ethics of science—a problem that emerged after the Second World War and continues to become more and more acute in connection with the environmental agenda and the expansion of the study of man—is (only in the first approximation) one of the
variants of the system of professional norms that the medical worker has, as well as the teacher, the lawyer, and the military. Attention to the ethical dimension of the activity of a scientist highlights the value dimension of science, which sets not only the norms of scientific work, but also forms a model of a special social organization. Thus, the ethics of science acquires not a narrowly professional but a universal meaning for society. An important advantage of the way Kasavin constructs an analysis of ethical problems in relation to science is, in my opinion, the transfer of the personal level to the social one. So, in relation to cognitive virtues, the author notes that they “should be considered not as the abilities of the subject or personality traits, but rather as functions of the totality of interactions in which the process of cognition takes place” [1, p. 291]. It seems to me more promising not to oppose the individual subjective and social communicative visions indicated, but to consider them as complementary. Therefore, in the future, pointing to the existential dimension of scientific activity, I assume that it also has a social manifestation.

It was noted above that the essence of science is not that it is the most effective in comparison with other cognitive strategies, but how it achieves this efficiency. The value of science for more than two and a half millennia has been substantiated by the fact that it provides the correct method of cognition and opens the way to the truth for mankind (this is the position of epistemological realism as opposed to the epistemo-logical antirealism discussed in the previous section). This idea can be deprived of any utility, realizing the commitment of a person to one of the ideals fundamental for his being (along with the ideals of goodness and beauty)—the ideal of truth [16]. However, many thinkers have persistently argued that science does not reveal existentially significant but only utilitarianly valuable truth. Does this mean that science cannot be imbued with a sacred experience similar to that with which, in particular, religious experience is associated? The believer experiences the fact of the existence of God, and, although he cannot return to his kingdom, he cannot achieve grace on his own. He is happy to live in eternal striving and approaching, and most importantly, serving God as the highest and absolute value. Is it possible to describe the life path of a scientist as a selfless service to another value—the truth?

Here, at least a number of significant differences should be mentioned. First, science does not promise the achievement of an ideal, while religion not only promises the believers the Kingdom of God, but also presents the stories of people who have already reached the highest bliss of union with God. Science cannot present those who have seen the truth and have joined it, unless we consider each new step, each ever deeper and more complete understanding of the objects under study as an act of such communion. As Kasavin accurately formulates, of all types of knowledge (ordinary, artistic, religious), only science gives as a result such knowledge that is “subject to constant renewal.” Indeed, “there is nothing more shaky than scientific truth, ready for addition and revision. Any other knowledge is much more conservative and sometimes even unshakable: Christ, Sophocles, Raphael, and Mozart offer us practically timeless ways of seeing the world” [1, p. 50]. Second, truth and service to it in the form of scientific activity are not associated with a guarantee of eternal life and posthumous bliss. The scientist can only count on what contributes to the multiplication of the happiness of collective humanity, which, thanks to him, learns a little more about the world and about itself in this world. Third, faith remains a personal and intimate matter, even as it acquires large-scale social institutionalization. To believe in God, you do not need to get an education and become a priest. Science is a professional occupation, and, in order to dedicate oneself to it, one needs years of study and then appropriate socialization in the community of specialists who receive payment for their service to the truth. It is possible, of course, in the spirit of the argument from the “golden age” to say that, for example, genuine Christianity existed only in the early Christian communities, but it no longer exists in the “professional” Catholic or Orthodox Church, and something similar happened to science. However, it is possible for an ordinary person today to believe in Jesus Christ privately, but it seems that there are no opportunities to serve science privately.

Let us add to the indicated differences, first, the isolation of a number of issues that science deals with from the life horizon of the average layman. Second, let us add here the huge costs of science and the replicated stories of the actual and potential negative consequences of scientific discoveries. Finally, third, we note after Kasavin that science in an objectively neutral way tells how the world works, offering nothing as an answer to the question of what a person should do in this world. Science only indicates what a person cannot do due to the restrictions imposed by the laws of nature known today. This is usually not enough for an ordinary person.

So what can science offer man in existential terms? The light of unattainable truth, unsteady ground under your feet, the need to be always on the alert, always critical and vigilant, to make decisions, being in a situation of a fan of possibilities limited only by the known laws of nature and society, and to devote a lot of time to the distant—abstract topics and directly unobservable reality—to the detriment of the neighbor—urgent problems and reality given in direct experience? Yes, that is exactly what it offers. Such a life program requires a greater intellectual and spiritual maturity from a person than, for example, mythological knowledge and the worldview based on it. Therefore, the concept of the “New Enlightenment” introduced by Kasavin already on the first pages of the book does not sound pompous but pragmatic. The Age of Enlightenment did not lead to the coming of the age of
human civilization; so, there is nothing left but to return to this task.

Does the above mean that the cultural meaning of science is reduced to an educational mission, as I. Kant formulated it, that is, the task of bringing humanity closer to its maturity. Yes, but only if the state of maturity is not limited solely to the development of critical thinking, intellectual independence, and epistemic humility. Kasavin believes that the cultural function of science lies, first, in the fact that it contributes to the softening of morals, their purification, and second, to creating opportunities for technical creativity, since technology has an existential and cultural meaning: it “problematizes and expands the worldview horizon” [1, p. 74]. It is the latter that most accurately characterizes the cultural significance of science in general. By expanding knowledge and opportunities, changing ideas about the world, and transforming the environment, or only promising such transformations, science problematizes and expands the worldview horizon. In this understanding lies the possibility of a humanistic interpretation of technoscience, which turns out to be focused not only on solving applied problems and the demands of a market economy. The development of science and technology provokes humanity to solve such ideological problems that would never have arisen without it, and it turns eternal questions at unexpected angles, highlights important but not yet explicated aspects, and reveals deep elements that remained hidden or unidentified. Theoretical cognition expands the horizon of the imaginable, and technical creativity, that of the possible, constituting two sides of human existence, constantly striving beyond its limits. In this being, cognition and transformation turn out to be two aspects of the same process of human habitation of the world [11].

Technoscience presented in this way is no longer perceived as a distorted (transformed) form of science, as it is sometimes interpreted [17]. It is not technoscience that is bad and dangerous but the technocratic nature of its development. In other words, the problem is the lack of a sociohumanistic culture, both within and beyond the scientific community. Here we finally come to what was said at the very beginning—to the role of sociohumanistic knowledge in determining the future of science. Sociohumanistic disciplines, including—and perhaps above all—philosophy, are able to communicate to the scientific organism that self-perception that allows it to be a subject of historico-cultural creativity, since technoscience has an existential and technical creativity, that of the possible, constituting two sides of human existence, constantly striving beyond its limits. In this being, cognition and transformation turn out to be two aspects of the same process of human habitation of the world [11].

As an individual subject is formed not only as a point of intersection of influences but also projectively, choosing oneself and constructing, the collective subject, in our case, the scientific community, also projects itself. This is the significance of cultural projects for the development of science, in the development of which social scientists, humanities scholars, and, again, philosophers play a critical role. Kasavin does not impose, but suggests a possible direction for creating such a project, defining it as humanistic.

Paradoxically, the merit of the monograph is what many can interpret as a disadvantage, namely, the absence of a detailed project scheme or at least a detailed scenario for the development of the future/desired science. Kasavin, figuratively speaking, lays the foundation and erects load-bearing walls, leaving the construction of the house to collective multidisciplinary creativity. It is even possible that it is incorrect to talk about laying the foundation in this case, and we are dealing with a structure similar to the one that, according to K. Popper, is the entire science—a building without a foundation, towering on piles that need to be constantly updated or changed [18, p. 148]. Yet, some elements constitute the supporting part of the structure; they remain unchanged, but constitutive and connected with the human dimension of science. In Kasavin's understanding, his dimension is embodied in the existential motivation of a scientist (and a nonscientist who is interested in science), special types of communication, and a specific scientific ethos, in the historicity of science, and, finally, in a human-oriented, rather than technical or commodity and market orientation of the production of scientific knowledge.

The cultural—historical agency of science, therefore, cannot be based only on the instrumental justification of the meaning of science and its instrumental interpretation as a cultural phenomenon. It is this interpretive approach, and not the actual filling of the technoscientific stage of the development of science in itself, that leads to negative consequences, including the loss of worldview functions and authority in society by science, and its equalization with frankly ideological forms of mass consciousness. Therefore, a way out should not be sought in the rejection of applied research or a reduction in its share but in the development of the social and human sciences and the spread of a sociohumanistic culture both among scientists of a different specialization and in society as a whole. Of course, the future of science is determined by the processes of obtaining new knowledge and inventing technical innovations, and this factor of new knowledge imposes significant restrictions on the ability to predict the development of science. However, it can be designed by setting the boundaries not so much of what can be discovered and invented, but how it can be interpreted, what civilizational channel it will fall into and send out its shoots there. In this sense, the humanization of technoscience (as I would suggest rethinking the program proposed by Kasavin [11]) not only guarantees the preservation of science as an intrinsically valuable cognitive enterprise, but also protects society from anti-utopian development scenarios. At the same time, whatever its content, the self-consciousness of science, which always has a projective character, determines what was above called the political agency of science. Such self-awareness
forms the interests that the scientific community is ready to defend in the public and political field.

Communicating the results of scientific research to society and decision makers can be attributed to the interests of humanistically oriented science and can be consistently combined with the ethics of expert activity. Kasavin defines the sociopolitical role of science in a tougher and more specific way: “In order to bring the public good, science must take the position of social criticism and gain autonomy from the ‘bad society’” [1, p. 281]. Obviously, the function of social criticism requires the scientific community to be not only a corporation of disciplinary specialists and employees, but to unite people who are inquisitive, erudite, socially responsible, and civically active. Today, such a picture can be called utopian, but the state of society suggests that the orientation towards the designated ideal leads to a completely realistic strategy for overcoming the challenges facing the development of human civilization. I would like to ask those who do not agree with this to try and offer something better.

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**CONFLICT OF INTEREST**

The author declares that he has no conflicts of interest.

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