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Organization of Scientific Activity and Scientific Production

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Abstract

The lecture gives an understanding of scientific activity as a collective mental activity that can be organized as a flex technology. The author reveals his idea of humanistic science and humanistic education, about the role of an individual scientist in scientific activity and points to a specific ad hoc phenomenon. The text also presents a schematic diagram of scientific production, its place and functions in scientific activity.

Keywords: Problems and problematization; Technologized world of people; Exchange for money; Goals for interests

Introduction

Scientific Producing

Science in Russia, as indeed in many other countries, has lost public interest. Scientific works lie on the shelf to collect dust, no one is interested in them and does not know about their existence, and the scientists themselves have resigned themselves to their uselessness. The goal of scientific production is to provide scientific developments with practical meaning, including commercial ones. The most important component of scientific production is marketing. Marketing is not about selling what you can produce, but about producing what you can sell. Scientific and technical marketing is not about finding a consumer (as a rule, he is known in advance), but about his problems and problematization; then hallucinations and hypotheses of their solution follow, verification of these hypotheses in clients. The problem is that the modern consumer has no problems because he has no goals (the problem is the lack of funds relative to the goals). We live in a technologized world of people, not workers, but employees that is, spending time in exchange for money. The only reasonable solution to this typical problem is the substitution of goals for interests, as well as the problematization of interests. Of dealing with losses can come in handy. For the scientific organization of production, it is important to minimize the following losses allocated by Toyota.

- From the time of waiting.
- Due to excessive processing.
- Due to unnecessary movements.
- Due to marriage issue.
- Due to unrealized creative potential.

Unfortunately, the idea of business angels, popular and productive in the West, is very doubtful for Russia due to a deep ethical crisis and a crisis of trust. In America, film production and especially film distribution was first concentrated in New York, Chicago and New England. Studio photography predominated, and this business itself was part of the restaurant business, as in Europe (see the film "The Man from the Boulevard des Capucines"). To achieve independence, many filmmakers went to California, to the village of Holy Wood (Holly Wood), where there are more than 300 sunny days a year, the land costs pennies and, therefore, you can move on to location shooting. This is how the Film Academy and film production came into being. Starting with the film industry, you can talk about producing as a process. And like any production process, film production is divided into procedures and operations, therefore, we technologize.

- Script.
- Scenario.
- Casting.
- Shooting.
- Installation.

- Voice acting.
- Rental.

The producer does not participate in any of these operations - he takes a managerial and / or entrepreneurial position regarding this. The next step, even two steps on the way of production is taken by David Sarnov in 1922 he launched radio broadcasting, radio theatre and radio concerts as a global socio-cultural phenomenon, and in 1939 - television broadcasting as a commercial project. Actually, TV production has become a real diffusion of film production. The world froze in anticipation of further diffusion museum and gallery producers, spectacle producers, sports producers appeared. Everything that does not fit into industrial or agricultural, material production has become - actual or potentially - subject to production; everything, including design remember the American Albert Kahn in the USSR, education and science. Of course, there is and has the right to exist political, in particular, electoral production. Thus, production has spread and continues to spread to the entire sphere of humanitarian production, creating its own humanitarian technologies, which differ from material technologies in spontaneity, prominences of creativity, unpredictability, freedom and flexibility.

Scientific Producing Device

Scientific production begins long before the start of the actual research and consists in the formation of a certain image of the researcher, as well as in the search for a potential buyer / customer. At the same time, it quickly becomes clear that, no matter who the buyer / customer is, the consumer behind him is more significant and more important, and that this is always a self-order, an initiative of the researcher, much more demanding and demanding than any customer. Of course, the figure of the customer is very important.

- It must be a solvent entity.
- He must be in a rather vital and acute situation, need help and support.
- He must be sane: understand that he is dealing with an intellectual process, not material production, and that his initial ideas about the final result, as well as the ideas of the performer, can differ greatly from the real result - it can generally turn out to be negative.

Technology of Scientific Activity

The days of lone scientists ended in the 19th century. Modern scientific activity is a collective mental activity.

The Peculiarity of Science as a Collective Mental Activity

The concept of "collective mental activity" was developed and introduced into scientific, philosophical and methodological use by G.P. Shchedrovitsky and his followers. Science is a complexly organized and coordinated contradictions, discrepancies, different opinions are allowed and even welcomed collective activity, which is distinguished by a number of features [1].

- Scientific technology is highly flexible even in the most rigorous scientific disciplines.
- Science relies not on facts and practice, but on theoretical foundations to “if the facts contradict my theory, then so much the worse for the facts” [2,3].
- Science represents two most important processes: search (search) - literary, bibliographic, informational, statistical, forwarding, etc. - and reflection of the search theoretical, typological, conceptual, conceptual, etc, research (research). Since both processes are usually carried out by the same person, the hope that the search can be redirected to robots, cyborgs and computers is untenable.
- The role of a scientist, his personality and talent, even in very large and crowded developments, is noticeable and expressive.
- In science, the role of chance is great; it is normal if the search and all the intellectual efforts of a group of scientists, sometimes for many years, are in vain and fruitless - this should be treated calmly and calmly, since they make up the vast majority of research. Everything happens by chance, but special conditions are needed for the case: solitude and detachment (concentration).

I would like to speak in defence of science - not at all because it has been customary to attack and denigrate it for more than half a century. We are accustomed to accusing science of many sins, including non-existent ones, for example, that it serves the state for the most part in matters of armaments. But it was not science that started this dangerous game, but the state, and it is not science that adopts the laws that establish the rules of this game.

Loss of the Rights and Freedoms of Science

The history of science is, alas, the history of the loss of its rights and freedoms.

Freedom of communication

At the beginning of World War II, Great Britain and the United States, fearing that Germany could get ahead of them in nuclear physics and the creation of an atomic bomb, established a ban on publications in this area. The USSR, having obtained the secret of the bomb in a spy, illegal way, immediately introduced the secrecy of scientific research, first in this area, and then in almost all others. Even maps at a scale of 1:500,000 “half a million” and larger turned out to be classified, and distortions began to be introduced into all other, smaller scales, making these maps unsuitable for practical use and navigation. Things sometimes came to the point of ridiculousness: sea captains were forced to buy sailing directions

even to Soviet ports, but these maps, open "in the West", were immediately classified in Soviet shipping companies. Freedom of speech and communication, which is so necessary for the development of science, if only in order not to reinvent the wheel, has not yet been provided in domestic science - and this gives rise to insurmountable difficulties in the cooperation of scientists. Separated by the "first departments", developers in related industries do not know what and how their neighbours are doing. A vivid example from personal experience: at the Soyuzmorniiproekt, the head institute of the Ministry of the Navy, I headed a division engaged in foreign trade transportation of goods and passengers, as well as foreign trade, maritime transport services. We, "freight traffickers", were acutely aware that cooperation and information exchange with colleagues from other transport ministries, primarily with railway workers, was necessary. I was the only one in my team who had access to secret work of form 2 access to Soviet secret materials and documents, and therefore only once I was allowed to manually rewrite the developments of colleagues from GiprotransTEI the head economic institute of the Ministry of Railways, now Russian Railways. I was disfigured in the first department of this institute for a whole month, from dawn to dusk, for another month the materials went by special mail from the Baumanskaya metro station to the Airport metro station. When I received them, it turned out that all the notes were completely crossed out with a bold black felt-tip pen. The same thing happened with the materials of SOPS under the State Planning Committee of the USSR, for which we and 500 other institutes of the country worked. Another example is from Siberia. The Institute of Economics and Organization of Industrial Production of the Siberian Branch of the USSR Academy of Sciences developed the so-called "Siberian report" on state assignment - a sociological analysis and forecast of the situation in Siberia. The report was sent to Moscow under the heading "for official use" (chipboard), and returned to the developers with the heading "ss" and was not available to ALL performers. It is characteristic that the State Planning Committee of the USSR did not accept developments using open statistical information of the USSR State Statistics Service as unreliable which is true, allowing only departmental statistics to be used, which are an order of magnitude more reliable, but completely inaccessible outside the department.

Right to be wrong

History teaches that the path of progress is not a series of achievements and victories, but a hard path of trial and error. Step by step, science has been deprived of the margin for error because research has become too costly. The main factor in the rise in prices is the state tax policy the developers themselves receive only about 10% of the cost of scientific developments in the USSR, the norm is 8% in general, from which personal income tax taxes on the activities of individuals are deducted, including income tax in the amount of 13%. Risk has disappeared in science, and with it the passion, and with it the true achievements and victories, even if they are rare. There is nothing to expect from such a science, except for what is expected. Science has become useless because of its predictability and indistinguishable from industrial production.

False Direction

Science often goes in the wrong direction: either it seeks caloric, or the philosopher's stone , or the elixir of youth, or it raises frost-resistant macaques to collect pine nuts in Siberia the film "Garage", or it fattens the gastro-satisfied cadaver "Monday begins on Saturday" brothers Strugatsky, then builds the material and technical base of communism. These and many other delusions are inevitable after all, no one illuminates the path ahead and even necessary for those who follow to know where to go is not or is not worth it. But let's remember how many scientific directions were trampled upon by those who do not understand a damn thing about science: "genetics is the public wench of imperialism", "cybernetics is the walking wench of the bourgeoisie"; these same people removed Darwin from school biology, expelled sociology, psychology and logic from schools. Science is able to determine for itself what has gone wrong in it and establish prohibitions. As the French Academy of Sciences forbade the development of a "perpetual motion machine" back in 1775, thereby preceding the Great French Revolution. By the way, no one cancelled the laws of political economy of socialism and all economic theories like the TPK or "planned and harmonious development of the productive forces" - they died on their own.

Negative result

"A negative result in science is also a result," officials and managers from science like to say, but in all instructions of the Higher Attestation Commission, in all standards for research, in all technical tasks and requirements, there is a clear setting only for positive results. Negative results, which, by the way, in a normally developing science are much more common than positive ones, are not allowed. This taboo has led to the fact that no one undertakes research in which a negative result is possible, which sometimes advances science much more than a positive one.

Science needs to restore its freedoms and rights if it wants to remain a science and not a fiction. At present, this liberation is possible only by the institute of scientific production, only on the path of gaining sovereignty by science. Galileo argued that man is a unique being capable of idealizing, that is, transferring the visible, sensual into ideas and ideals: theories, schemes, hypotheses, models, layouts, reductions. Actually, science is built on this ability.

A Few Words about the Types of Idealizations

The simplest and most obvious is a hypothesis, an assumption. Many sciences are based on hypotheses. Especially the sciences of man and society - psychology, economics, politics, history, that is, where theories are most needed, not hypotheses. In geography, these hypotheses are simply simplified to the point of inventing names “hypo” - deep, internal, “thesis” - a name. The word "theory" appeared at the end of the 5th century BC. In Athens - this is how Pericles called the festive theatre box office for the poor. Theatre and theory are not only words of the same root, but both - a spectacle, a show, a way of translating the ordinary and visible into the principled and visible to look is physiology, to see is an intellectual ability. Danish prince Hamlet dies at 12 I was in Elsinore in 1984 and this version was given to us by a tour guide, but Shakespeare turned this spectacle into the most profound tragedy. It is clear and visible to everyone that if objects of different masses and shapes are thrown from a height, then they will fall to the ground at different speeds, but Galileo proved that g, the acceleration of free fall, does not depend on mass, shape and material “if the facts are not coincide with my theory, so much the worse for the facts. Model - identification of the most frequently occurring, occurring features, qualities, characteristics. As Teilhard de Chardin argued, evolution moves along random lines: four roots in the back teeth are characteristic of both cows and humans, but this is pure and non-functional chance. A model is almost always a reduced copy of a real object, reduced for clarity, convenience and safety of experiments, etc. All kinds of idealizations are reductions, and therefore, as Galileo honestly admitted, they are just parodies of reality, sometimes funny.

Search and research

Unfortunately, the vast majority of scientific papers and publications are limited to search, research, search, literary search, dictionary-encyclopaedic, collecting herbariums and collections of rocks and minerals, butterflies, statistics - and describing what is found: simple, for example, classification or all sorts of correlations this so much more than that, and this has grown more than that by so many percent. Sometimes this is accompanied by a search for causes and cause-and-effect relationships, although we no longer live in a causal world, or a search for meanings and goals, as a rule, too sealed for confident judgments and assessments. As soon as we move away from reality and begin to idealize it turn it into reality as a springboard for actions and activities, we enter into actual research, research, reflection search. It is clear that the reflection of the search is much more important than the search itself, because what is sought is something superficial and primary (primitive), while the reflection of what is sought and the search, research, is deep and ennobled by abstraction. Science is, of course, a search, but what are we looking for? There are several versions and each is true in its own way, does not deny all other versions, but is included in a certain composition, ikebana.

We are looking for the truth

Many people say so, and some even think so, while everyone unanimously admits that the truth is unattainable. The search for truth is not always self-deception. There are people who are sincere in their search for truth. True, there is one flaw here - this search is practically non-reflexive, and therefore does not go into research. All the searchers of truth known to me are scribblers and rhymers from science, the search process and its infinite duration are important to them (God forbid they reach the truth and discover it, but they are calm - the truth is unattainable, at least in their lifetime). Unfortunately, they are all dogmatists and sectarians, arguing with whom is like against the wind. The search for truth, or rather, Truth , is a deeply vain occupation: that Truth, Hestia , with which the world began, as a result of the Big Bang, fell apart for more than 14 billion years, first into space and time, then into smaller fragments, fragments, into the smallest and microscopic - it is no more. I have never dealt with this hopeless case**.**

We are looking for a solution to the problem

Problems arise only there and then when people have goals: the problem is the realization of a shortage or inadequacy of means in relation to goals. Science is one of the ways to solve problems, along with design, programming, inventing, intuition, and engineering. Problem-oriented science is always applied in nature and is aimed at one or another practice. I like the idealization scheme proposed by Galileo (slide 3). Science began when an ideal object appeared in it. This major revolution in theology, and science was embryonicly present precisely in theology (theology), at that time the 16th century containing not only science, but also philosophy, was made by Galileo, who with unparalleled honesty carried out all the methodological, surgically precise work on isolating sciences from theology - and precisely thanks to the introduction of the institution of the ideal object by him. The main thesis of Galileo is that human consciousness is able to penetrate reality due to its special structure, namely, due to the potential of ideologization. All other sentient beings are unable to idealize reality. The imputation of the ability to idealize, to capture reality, albeit in a distorted certainly distorted and highly individualized form, allows a person to form and retain the memory of this reality in the form of an ideal object. This ideal object has a purely ontological status and is quite far from reality, even unbelievable: all bodies fall with an acceleration g, regardless of their shape, mass and fall height. However, this freak meaning the ideal object allows a person to do something very important - to create a reality in which he can act reasonably and purposefully. In the course of developing practice, having already completely forgotten about the cardinal and almost insurmountable dissimilarity between the ideal object and reality which is never given to a person in any sensations or experience, a person begins to use the ideal object technically: g that does not exist in reality turns, for example, into a technical load

parameter during the training of astronauts and in other areas of reality. Thus, the ideal object appears twice: the first time in the transition from reality to reality as a means of penetrating and constructing reality the ideal object is a master key that allows us to penetrate the world of reality, the world of activity and actions, and the second time - as an instrument that arises in course of reality. Moreover, in the second case, this is not only an ontological representation, the ideal object acquires logical harmony and completeness, it can be mathematized, as almost all of physics was mathematized, as consciousness is mathematized by V. Lefebvre. Moreover, the ideal object-2 becomes a resource of ideologization - and we return to the first step, to the person's standing in front of reality and his attempt to penetrate it through his ability to see something ideal in it. The circle closes, however, our return to the original position means that we are no longer the same as we already have the experience of entering and leaving reality, and the experience of acting in reality, and the experience of building and using an ideal object. In fact, this is all very suspiciously reminiscent of autism: we see the world not as it really is we don't know what it really is, but as we see it and can act in it. Reality acts according to our ideal ideas about it, reality emerges or it seems to us that it emerges in accordance with them. And, since we manage to technically realize our ideal ideas and ideal objects, then we have no choice but to recognize the correctness, the truth of these formations of our consciousness, rely on the power of our own mind and not pay attention to the discrepancies that arise between ideal and real objects: "If the facts contradict the theory, then so much the worse for the facts." And this, in fact, is no different from myth and mythologization. The ideal object-2 is placed at the basis of a particular science, turns into its model core, about which science begins to form a shell of experimental data, rules and laws of circulation and application, a system of knowledge, a tuple of tasks and problems, the entire paradigm of this science, while the model itself, the ideal object itself, is the syntagmatic invariable part of science, irrefutable in principle, since refutation crosses out the entire path already travelled and it cannot be crossed out and all the outlined and planned prospects. The change of scientific paradigms, according to T. Kuhn and P. Feyerabend, is the normal state of science, but the collapse of the syntagmatic of science will lead to a shock similar to that which will engulf the world if it finds out that mathematics turned out to be false. We will talk about all this later, since I am a representative of just such a science, problem-forming and applied.

We are looking for the unknown

Socrates, in his declining years, sadly stated: "I know that I know nothing." Nicholas of Cusa, who lived long before Galileo, devoted his research to knowledge of ignorance. The greater and wider our knowledge, says Kuzansky, the greater and more spacious is the sphere of the unknown and the unknown. It is obvious that now we are in any science! We do not know much more than a hundred or two thousand years ago, and any breakthrough in science opens up new horizons and depths of the unknown for us: we do not exhaust the unknown, but increase it. And this makes the path of science and the path of all mankind endless, infinitive. One day, the project manager of the Katunskaya HPP it was at the very end of the 80s invited me to his Hydroproject. Can you establish social and environmental monitoring regarding the Katunskaya HPP? And what is it? If I had known, I would have installed it myself. Of course I can. And after all, we installed it in two years! True, the Hydroproject refused the Katunskaya HPP project, and the work on social and environmental monitoring (SEM) formed the basis of the ecological direction of the Faculty of Natural Geography of the Gorno-Altai State University.

We are looking for the future

The future is a special case of the unknown: there is no future, never was, and, most likely, never will be. In this sense, there is nothing to study here, but - you can create: predict, plan, design, program, stage, create a concept of the future, a roadmap and foresight - the palette of work with the future is variegated and diverse. And science knows how to build the future - not to study it, but to create it. And it is very reckless and exciting: in front of your eyes and by you yourself, a future is being created that just did not exist - social and environmental monitoring, a new, recreational Crimea and not a health resort for workers and members of the Politburo, Silver University, Workshop of organizational and activity technologies, scientific producer and so on. And the most exciting thing is that you, a researcher, then live in the future you created, participate in it not as a demiurge and boss, but as an ordinary, simple character, almost a mimam, and you no longer obey the creator's plan and will, but the natural course of events and the laws of life of this future that has become present.

We are looking for the normal and errors as deviations from the normal

The norm is a desperate attempt to perfect the past in the immutable imperfect of the present in the name of a beautiful and perfect future. The past, like the future, has a perfect and imperfect form, unlike the present, only imperfect. In retrospective reflection, comprehension of the past, we produce a special idealization - rationing, highlighting norms as certain supports of harmony, beauty, "correctness". According to J. Canguillaume, the Latin word Norma etymologically represents a perpendicular, the "shortest" point of view relative to an object. It is normal that we see directly in front / below / above us, and not in peripheral vision. The search for this normal, "normal vision" gives rise to the effect of reverse perspective, which is used, in particular, in iconography. The icon, therefore, is the most "normal" vision of the world, more

precisely, its spiritual essences, and not situational phenomena. Conditionally, but still quite reliably, we can consider rationing as the “iconization” of the essence of things and the world. Rationing as "direct viewing" is close in meaning to the "epoch” of E. Husserl, the fundamental concept of metaphysics and phenomenology. The norm is by no means the mode the most frequently repeated or the median the average value. Strictly speaking, the norm, like truth, is elusive and unknowable, but on the other hand, using scientific honesty, we can look not for it itself, but for deviations from the norm, that is, errors - such deviations that lead to irreversible consequences. The whole course of history and mankind is a path of trial and error. We move not from achievement to achievement, but from error to error. At the same time, the realization of the error comes only a posteriori, in retrospective reflection. That is why we are strictly told: “And remember all the way in which the Lord your God led you”.

We are looking for the beauty of the world

The search for norms and errors is a special case of the search for the beauty of the world. A. Einstein admitted that he built his theory of relativity solely because he was aesthetically dissatisfied with the Newtonian picture of the world. Any theory is not only a parody of reality, but also an attempt to embellish it. To be honest, beauty is the only thing that truly comforts us as scientists. Rodoman's cartoids are an aestheticization of the landscape, it's not for nothing that some English art gallery acquired them as works of art, and in Moscow they were shown in the premises of the Tretyakov Gallery. All this makes science akin to all the arts as a cortege of means for the aesthetic exploration of the world.

We are looking for God

Of all types of intellectual activity, science is the most intelligent. It brings us as close as possible to the Cosmic Mind, of which we are all children. The knowledge of this Mind, which is also the Navigator, which is also the Creator, the Creator, which is also God, is, in fact, scientific activity. If the ancient thesis that “the house of man is God” is true, then this is, first of all, the house of a learned person, and not a monk, priest, priest and other servants, slaves and boobies of the king of heaven. Many scientists admit that they came to God through science, through their research and research results.

We are looking for ourselves

For several years I taught at the Central Music School at the Moscow Conservatory in the class of geography. And in the eighth grade I had a horn player from Shuya, who ended each lesson with a reflexive maxim. And one day he said. I understood what we are doing here we are not studying geography, we are learning ourselves in geography. And this is true. It turns out that we seek and find ourselves in what we are doing. Once one of my teachers in geography, Evgeny Efimovich Leizerovich, told me: “You are Chopin in geography”, then I found confirmation of this many times. Large geographical works are, of course, accessible to me, but I prefer small forms. In addition, I am a romantic, and therefore the dull steppe Transbaikalia, especially the dull Kalmykia, is not for me, in general, the sunrise over the swamp is not mine. And in geography I am more attracted to travel than to office work. My other teacher in geography, Boris Borisovich Rodoman, always looked for himself, his super-sexuality in the landscape, therefore he loved the landscape of landscapes and was frankly indifferent to cities and other creations of people. To do this, one must love, if one understands by love the ability and gift to see oneself in another: in another person, in a landscape, in a text, in everything that has the property of reflecting our image, ourselves. Frankly, I certainly need to fall in love with the territory or object being studied - at first sight or after peering, it doesn’t matter.

Humanistic Science and Humanistic Education

Against the background of the total and frenzied dehumanization of everything, including science and education, all this digitalization, robotization and other things, the cries and cries of humanization look very false and inappropriate, but I think I have something to say about this.

Foundations of F. Bacon

Humanistic science has several fundamental differences from the natural sciences. These differences were laid down by Francis Bacon. In 1620, he publishes his New Organon, where he sets out a program of scientific and technical work for the next few centuries, including ours. No, of course, he did not draw up a disciplinary plan, he did not even present the main directions for the development of science and technology, and he did something more: “all from the beginning, all on his own and everything is ahead.” To do this, he had to rethink and rewrite the entire history of mankind and turn it from the past into the future. The "New Organon" revised all previous scientific and philosophical experience. Inspired by geographical discoveries and the development of new lands, Bacon realized that the explosion of the ecumene, if it had occurred in the time of Aristotle, would have forced him to revise his Organon. A red line runs through the "New Organon" the phrase of the prophet Daniel: "many will pass, and knowledge will be manifold." F. Bacon's antique distinction of nature into physis and nature reaches a tragic tension: yes, nature is a workshop of human thinking and activity, but it will never be known in its totality and completeness. Here, F. Bacon anticipated the whole tragedy of modern environmental issues, when the consequences of our economic and other utilitarian activities cease to be predicted and controlled by us, arising in the most remote and unexpected areas. F. Bacon called for stopping in mastering the

laws of nature, for the very nature of man is unnatural and unnatural: “Let people order themselves to renounce their concepts for a while and let them begin to get used to the things themselves.” He managed to understand that the world reflected in our consciousness is only a distorted image, but not the world itself. Man, his feelings, thinking, consciousness are not the measure of all things. Thus, F. Bacon disidentified the subject and object (subject) of science, separated them and, consequently, for the first time clearly expressed the position of the natural-scientific approach to nature: man is in himself, the nature he studies is in itself. He also owns the priority in posing the main epistemological problem of science: how can the mind leave the nature of the mind to understand the nature of nature? Bacon, having abandoned formal logic and syllogisms as operators of formal logic, began to follow inductive logic, the logic of science. Later we will see the development of this revolutionary move in the works of Hegel. We are all well aware of the paraphrase of the famous formula of F. Bacon: “Scientia et potentia humana in idem coincidunt “Knowledge and power of man coincide”. For a long time this paraphrase sounded like the slogan “Knowledge is power”. The Communists, not wanting to share power with anyone and fearing the intellectual attack of scientists, not only shot, drove into camps and exile any thought, any knowledge, but also remade the slogan itself: "Knowledge is power." From now on, starting with F. Bacon, science ceases to be focused on inductive reasoning - this remains the prerogative of philosophy. Experience becomes the organon of science. Nature as a complete text is fundamentally unknowable and totally indescribable: science must “objectify”, focus its attention not on the entire text of nature as a whole, but on separate and specialized aspects and directions.

Differences between the Humanistic and Natural Sciences

Immediately after him, R. Descartes , not so much a scientist as a philosopher and theologian, as well as Galileo, Newton and Leibniz , no longer so much philosophers and theologians as scientists, but simply scientists, the first "scientists only". F. Bacon separated the natural and humanistic sciences into opposite corners of the ring, but this led to the fact that the natural sciences captured almost the entire ring and foothold, doomed the humanities to the smell of charlatanism: the physicist Thomas Kuhn, in The Structure of the Scientific Revolution, frankly wondered how sociology, and together with it all other humanities, can claim to be scientific. The basis of his suspicions was the fundamental assumption, recognized in the natural sciences, in particular, in physics, that two mutually exclusive theories, systems of knowledge, etc. cannot exist - only one thing is true. Me, just out of mischief and disrespect for the respected T. Kuhn, states. Humanistic knowledge, theories, principles, recommendations are considered true if there are other, mutually exclusive knowledge, theories, principles, recommendations, etc. For example, faith in God is true, because there is faith in the absence of God or faith in the existence of another God, just as true as the first. Any humanistic truth - and this is its special strength and attraction - is versial and allows the presence of other truths on an equal footing with itself. In K. Popper, this conflict is clearly described in the correspondence, through Popper himself, a dispute between Freud and Charcot. J. Charcot convinced K. Popper that his theory and methodology were correct, because there are numerous testimonies of his patients who were cured of their ailments with the help of Charcot's soul, and Freud, Charcot's student, is an ordinary charlatan. In turn, Z. Freud convinced K. Popper that his theory and methodology were correct, because there are numerous testimonies of his patients who were cured of their ailments with the help of psychoanalysis, and Charcot, Freud's teacher, was simply a retrograde. The plurality and mutual exclusivity of humanistic knowledge should change the essence and meaning of the education system, which to this day is based on the natural science foundation and the monotruth of knowledge and theories. The second fundamental difference between humanistic science and natural science is the approach. In the natural sciences, the subject-object approach dominates, in the humanistic sciences, the subject-subject one. A person, as best he can, resists being an object of research (as well as observation, education, upbringing, management, veneration, deification, design, and any other influence on himself). A person generally avoids being an object, broadcasting something, that is, being a thing, and, consequently, being a slave and means of another person. He - and even then with great difficulty - agrees to be a servant of God, but he is forced to admit this almost daily, to convince himself of this - not God. Actually, my entire concept of regionalization and cultivation of regional subjects is built on the idea of subjectivities. This concept in the first half of the 90s stirred up Russian geography, up to the auto-da-fe arranged for me in the Geographical Society in person and in absentia. The paradigm of education that prevails to this day is built, of course, on the natural science platform and subject-object relations, where the teacher-teacher-professor acts as the subject, and the schoolchild-student-student is the object. And this is not prosthetized in any way by “reflection”, “system-thought-activity approach” and “choice of educational trajectory by students”. As it was, "I am a teacher, you are a fool, you are a teacher, I am a fool", so it remains to this day. I am glad that at least at the Silver University for the elderly, because this is the Silver University, it is possible to create and maintain in the audience an atmosphere of conversation about, conversations about an atmosphere of subject-subject relations. It is this system of relations that is capable of transforming education into self-education, into the cultivation of the human in oneself by the person himself, and not from outside. And the last fundamental

difference between natural and humanistic science. Natural science continues to affirm its purpose as a search for truth, although almost 90% of all these studies are frankly aimed at the needs of the military-industrial complex and the destruction of people and culture. Natural science has long discredited itself with anti-humanism. Humanistic science does not serve benefit and harm after all, harm and benefit have long been indistinguishable from each other - it asks a person questions, trying to answer which, we, people, know ourselves. As an eighth-grader, a 14-year-old horn player from Shuya, once said after a geography lesson at the Central Music School at the Moscow Conservatory "I understood what we are doing here: we are not studying geography, but we are learning ourselves through geography ."

How Do I Understand The Humanization Of Science?

Rejection of anti-human themes

In 1976, I, a junior researcher at a small and musty scientific institute, with an indecently low salary, but burdened with a family and expensive housing, was offered the rank of major, a colonel's position, a salary two times higher than mine, a job in the most prestigious quarter of Moscow and many small and large privileges, bonuses and benefits I was invited to the laboratory for the study of the effective use of prisoners. I did not sleep all night, and in the morning I came to the KGB department, where the offer came from, and refused "It's a pity," said the elderly Chekist curator and looked at me with pride. Academician Andrei Sakharov had to give up all blessings and conveniences, embark on a dangerous path of resistance and dissidence, when he realized the anti-humanity of what he was doing. In the end, humanistic science is not about a person and not about people, it is for a person and for people.

Subject-subject (SS) relationship

The humanization of science consists, among other things, in the transition from subject-object relations to subject-subject relations. I realized this in the mid-80s, when I began to formulate my regional theory regionality is given by the presence of a regional subject. Then, over the course of decades and work, I became convinced of the need for SS relationships.

- Social and environmental monitoring in Gorny Altai is a dialogue between the population, authorities and innovators.
- The Crimean regional program, the Shlisselburg municipal program, the program for the development of the cities of the Vuoksa valley and the Belarusian city of Kobrin are not so much documents as the education and development of people as subjects of their urban or regional environment.
- The Silver University for pensioners is a platform for the subjectivation of people whom the state has decided to put an end to.
- The workshop of organizational and activity technologies is not a report on a scientific research, but a team of subjects concerned about the development of science and their university.

SS science is fundamentally different from dramaturgy in that its characters and authors are living people interacting and communicating with each other. These are not roles at all and there is no dictate of the text or the director.

Plurality of Truth

The world of absolute truths is inhuman and therefore has the right to exist, just like the Infallible. We must know our place in the universe, and as long as we are people, we can afford a plurality of truths: this is our salvation from the slavery of God. The scientific development of the world, like the artistic one, should please the Creator with its diversity and dissonance - why does he need monotonous and monochrome cinema?

Realizability

Humanistic science is always aimed at its own realization, so as not to turn itself into a game or not to fit into archive shelves. The search for truth is a convenient form of indulgence for parasitic science, because these searches can be unsuccessfully pursued not only all your life, but even centuries. At the same time, special joy, surprise and inspiration are caused by the fact that, as a rule, the most incredible and impossible is realized, grey predictability is of no interest to anyone, and therefore is never realized.

Ad hoc and the role of the researcher

Humanistic science, no matter how complex and intricate it may be organized, is fundamentally not technologized, since any scientific product and result is unique in principle. That is why people are engaged in science: who wants to repeat and repeat existing patterns and forms - let this be done by material production, industry and agriculture. No matter how you robotize, computerize and/or automate science, you cannot throw a person out of it, because only he is given the right to ad hoc: to a happy accident, to unravel a mystery, to a combination of circumstances. Modern science is indeed a complexly organized activity, where "bookworms" and stubborn analysts with brains with a capacity of thousands of terabytes are needed, where managers and producers, floor and test tube cleaners, blond post-graduate students, be nice employees and trade union leaders are needed: all the same, all this - only to make it ad hoc for someone, namely the researcher.

Humanistic Requirements for Education

These requirements are few. Briefly, they boil down to the following:

1. Education should be based on solving real problems, but deduce, lead to the formation of abstract ideas and concepts. Thales solved the problem of calculating the height of the Egyptian pyramids and thus formulated the theorem on the similarity of right triangles, and Protagoras extracted from this case the famous phrase-lecture: “Man is the measure of all things, both existing, that they exist, and not existing, that they does not exist". The Unified Collection of Digital Educational Resources has 317 triangle-like problems and an infinite number of examples on the same topic. For almost two weeks, the unfortunate seventh-graders hammer this theorem, solve dozens of examples and problems, until, finally, misunderstanding of this problem is brought to automaticity: the correct answers bounce off teeth and ballpoint pens completely painlessly, but these exercises have no practical value.
2. Humanitarian knowledge becomes humanitarian only when it presupposes and admits a plurality of other knowledge that is as true as itself. Humanistic truth becomes truth only if there are other truths alternative to it. Knowledge is plural and versial even being opposite, they do not exclude, but complement each other. Descartes is not refuted by Newton, and Newton is not refuted by Einstein. Richmann and Lobachevsky do not reject Euclid, Charcot and Freud, declaring each other charlatans, have preserved themselves in science and medicine. Remaining within the framework of humanism, we must grant the right to the existence of all and any systems of knowledge, realizing that they are all imperfect. In this sense, all religions, churches and sects are anti-humanistic, because they serve not a person, but a god or gods, including atheistic teachings, and because they consider only themselves to be true, and all other teachings about God are false or insufficient. The truth argument testifies not to truth, but to inhumanity. There are no answers in the life problem book at the end - for every life task there is an infinite number of decisions, both already made and possible for making in the future. That is why this problem book is good, that it is pointless to look at the end in search of an answer.
3. The humanization of education should be based on the knowledge of the world, on a human scale home culture, family society, relationships with relatives and relatives. And about the sphericity of the Earth, a person can remain in blissful ignorance: in his practical activity, this sphericity is intangible and insignificant.
4. Humanitarian education should restore its ideological and ontological component. Both do not fit into tests with one "correct" answer and two to ten distractors. Worldview is a system of views and ideas of a person about the world and his place in it. The worldview can be religious, atheistic, mystical, philosophical, scientific, engineering, artistic, professional, and so on. A person can completely combine a collage of several worldviews, only from the outside seeming contradictory: you can have a scientific, philosophical, materialistic and professional worldview at the same time. Worldview is expressible - in rules, points of view, beliefs, values, belongings, etc. The worldview also allows such extremes of subjectivism as the idea of a world that the subject only dreamed of. Ontology, like reflection, which exists both in psychology and in philosophy/methodology, and therefore differs greatly in these two realities, is considered here as a philosophical essence and as a methodological concept. In philosophy, it is customary to consider ontology in tandem with and in opposition to epistemology and epistemology. In this sense, ontology deals with the problems of the world beyond and beyond the boundaries of consciousness, the subject, the Self. Another, more subtle sense of philosophical methodology is much closer to the methodological concept of ontology: the study of laws that are common to both the objective and the subjective world. Such, for example, is the ontology of human nature and culture. Finally, methodological ontology is considered as a constructive part of thinking generated by logic and generating logic. The main content of the methodological ontology are concepts in their consistent totality. Unlike a worldview, a methodological ontology is in principle indescribable: either a person has no concepts - and then he does not have ontology either, or these concepts exist, but there are so many of them that it is simply impossible to imagine them. A thesaurus of concepts is like a lexicon: we cannot list our lexicon, but it is presented in our written or spoken language, it is available to an external observer and communicator.
5. Understanding and Hermeneutical Education. The current education is not only deaf to understanding, but with all its mass is aimed at its destruction, at the formation of biorobots capable of automatic actions in binary situations: "1 - 0", "yes - no", "right - wrong", "one's own – alien”, etc. Humanities education is a hermeneutical education, it is built on understanding and for the sake of understanding.

Understanding, in our opinion, is the primary intelligence regarding thinking. In the process of communication, understanding goes from language to clusters of meanings that are equivalent for communicators to working concepts that are common to communicators, and these concepts already serve as the basis and material for thinking expressed by language, schemes, or in any other way.

My Humanistic Credo

In the scheme of the concept, the credo can replace the triad "values-theory-principles", but at the same time, unlike this triad, the creed is not only not translatable, but also not re-flexible. It should also be borne in mind that the very concept of the concept came from "conception". There are many humanist creeds. Here are some of the most impressive I quote from memory. Plato "God deliberately created this world imperfect so that a person in the struggle with it would improve himself." I. Loyola "The end justifies the means, if the end is the salvation of the soul." I. Kant "Act in such a way that the maxim of your will could be a universal law; or - never treat people only as means and do not allow them to also treat themselves as means. I. Kant "Two things always fill the soul with new and stronger surprise and reverence, the more often and longer we think about them - this is the starry sky above me and the moral law in me." I. Goethe "Man is nature that knows itself." P. Riker "A person is a meeting place." M. Heidegger "Man is a being who is forced to prove by thinking the fact of his existence." I. Ilyin "Do not blaspheme the world and the time in which you came - after all, you came here to improve it." The law of total self-justification "He did it by nature, I did the same, because circumstances forced me to do it." Once upon a time, I myself formulated my humanistic creed as a very, very strong anthropic principle of cosmogenesis.

- Each person is present in this world with a need for the world.
- And therefore no one, even he himself, can interrupt his presence in the Universe without the risk of destroying this Universe, and therefore all wars, executions and murders increase the fragility and unreliability of the Cosmos, and only love can constructively resist this violence and destruction.
- And therefore anyone is a participant and creator of world history, and not just heroes, kings and generals, and anyone is responsible for the fate of the world and must be ready for this responsibility.
- and therefore it is shameful and dangerous to patronize a person, and also to inspire him with hatred and indifference to himself and to the world as to himself a person must let himself go through suffering, like a cow passes grass through himself, a person himself must find his God and join him with love.
- Therefore, man behaves like God and like the last of those present in the universe.
- Therefore man is God to man.

But now I would like to formulate my educational humanistic credo. A person is an image of himself, which everyone strives to achieve. Note: of course, this image is not alive, it exists somewhat longer than its bearer - in the memory of children, grandchildren, students and other people, as well as in the spiritual heritage left by us.

Features of humanistic science

There are several. They are also not from a theoretical ceiling, but based on practice. Here are the most important ones.

1. Humanistic research requires scientific production and promotion:
   - In the socio-cultural environment.
   - In research and development.
   - into education.
2. The result of humanistic research should not be the achievement of truth, but know how: how and what should be done for people. In this sense, they are the only commercially viable studies
3. Humanistic studies can have several orientations:
   - Per person.
   - On society.
   - On society and other organizations of people.
   - On humanity.
   - On culture as the result and meaning of human existence.
4. Humanistic research is synthetic and complex, not analytical and systemic. Analytics is just a stage, a search for further research. From this feature it follows that they.
   - polysubject (organization of science).
   - Interdisciplinary (methodological organization).
   - Over subjective (philosophical organization).
5. Humanistic research, fortunately, is poorly scaled, broadcast and technologized - it is unique because it is built on the uniqueness of each situation.

Organization of scientific activity

Even T. Kuhn in his "Structure of scientific revolutions" discovered that science and education proper have fundamental differences and different history [4]. Domestic university science, in general, does not apply to science, just as scales do not apply to musical works, dictations - to literature, conspiracies - to medicines. What is the organization of scientific activity? First of all, it is a diverse, multifaceted activity that can be differentiated as follows.

Actually scientific activity

- Research.
- Research.
- Scientific tourism and scientific recreation.

Educational activities

- Lecturing on own past and ongoing research.
- Reading basic courses.
- Public educational lectures.

Scientific and educational activities

- work as a master and the cultivation of masters from apprentices and apprentices;
- work as an apprentice and apprentice in new directions

Scientific and communication activities

- Publications.
- Public speaking (conferences, symposiums, seminars, etc.), including international and interdisciplinary ones.
- Scientific correspondence.
- Club communication.
- Library communication with authors of different places and times.

Each scientist configures his bouquet of activities and studies according to his own taste, temperament, habits, character traits and disposition - at his own discretion. The beauty of the life of a scientist is in his freedom and independence, for the sake of this one can sacrifice prosperity, live moderately, without any frills, because freedom and will are still more precious than everything else. Whether a supervisor finds a producer or whether a producer finds a supervisor is a matter of chance. But already the supervisor carries out recruiting, casting and selection of performers. At the same time, the organization of work is behind him, and he acts according to the following concept. The level of development is determined by the order and the customer, the degree of complexity of the work is set, of course, by the supervisor. All performers can be divided into two categories/positions.

- The position of the invitee.
- The position of the inviter.

I was only at the beginning of my journey in the position of an invitee, so I have a very vague idea of its functions

- mastering, assimilation and appropriation of the idea and topic of research, turning the task into a personal goal, understanding the goals and the general scope of work, in a word, adapting to work and adapting work to one's capabilities and goals.
- Performance of your work area.
- Opposition to other sections and sections, participation in discussions and discussions.
- Cooperation and mutual assistance.

As for the inviting, first of all, supervisor, here I have much more clarity. Research is almost always a collective work, but each researcher appreciates and protects his loneliness, solitude, because it is fruitful and comfortable. Compatibility should be dosed and, if possible, regulated by regulations and schedules. The supervisor is not the bearer of the ultimate truth, especially outside of his scientific specialization, he is not a father and not the boss of his colleagues, therefore.

- he works and learns more and faster than others,
- he maintains an atmosphere of mutual trust and respect for the competence of colleagues,
- He allows for differences in assessments and opinions and does not require an indispensable consensus, this, by the way, makes it possible to identify the negative consequences of the proposed conclusions, projects and decisions, and also guarantees the participants creative scientific freedom.

Perhaps the main concern of the supervisor is the launch of reflection search =research. I myself, accustomed to reading scientific literature and even written statistics, got used to reflecting on what I was looking for, so the notes go in two columns: on the left - the content of what was read, on the right - thoughts and reflections about what was read. The supervisor ensures fair and timely payment of labour and expenses of his colleagues.

Ad hoc - random effect

Scientific production differs from any other production and entrepreneurship in that, in addition to the standard set of producer functions (financial, organizational, PR functions, etc.), it must provide conditions for the emergence of ad hoc [5]. Ad hoc (on occasion) as a phenomenon of scientific life is most fully described by P. Feyerabend [6]. The ad hoc of Archimedes was that, while taking a bath alone, he understood how to measure the volume of a complex piece of pure gold jewellery using the law he discovered "a body immersed in water [or any other liquid or gas] loses weight as much as the weight of the water it displaces." Of course, Archimedes was not focused on this law, but on how to determine if the goldsmith mixed foreign metal with gold when forging the crown of King Hiero II. Ad hoc Galileo - the task he received from the Duke of Tuscany Cosimo II Medici, who wished to be both in the thick of the battle and be safe. Galileo, like Leonardo da Vinci, and the Dutchman Leeuwenhoek, and Kepler, and later Galilee Newton, made a telescope with successive lenses. He preferred to do this in solitude, at night. Another night owl, a cat, always spun under his feet. Driving away the purr, Galileo accidentally touched his pipe with his elbow and suddenly saw through the telescope the sky and the moon, mountains and craters similar to those on the earth. In those days, the rotation of the Earth around its axis was refuted by the simple consideration that in this case, stones from the mountains should fall only in the evenings, and they roll down at any time of the day. The heliocentric version and the sphericity were then considered eccentric, contrary to the authority of Aristotle and Ptolemy. Galileo, observing the movement and rotation of the planets through his telescope, came to the impossibility of a geocentric world, but we remember that he made a device that allowed the duke to be in the thick of the battle, being safe. Dmitri Mendeleev dreamed of his periodic table of chemical elements, according to legend, in a dream, like a card solitaire, which the chemist was fond of: on the other hand, its atomic weight and the formulas of the main compounds. For hours in his office, he shifted this chemical "solitaire", lining up the elements according to their properties in logical rows. In the end, like a chess player, he imagined in his mind the entire field, consisting of sixty-

three cells [as many elements were then known], in which the elements were to be placed. But none of the options satisfied him. And then one day in a dream he saw the only order that he could not imagine in reality. The picture was so clear and distinct that he woke up and wrote it down on a piece of paper. And in the morning the periodic table was read" [7]. The story of solitude tells of Isaac Newton and an apple that fell on him on his parent's farm, about the ship's doctor Robert Mayer, who discovered the law of conservation of energy by comparing blood tests of sailors taken in temperate and equatorial latitudes, about Steve Hawking, who turned the physical ontology of the universe upside down, sitting in a suburban train compartment. There are many examples of this kind, and one can also refer to personal experience: on expeditions, situations arise from time to time in which all actions become impossible. I call these situations an action crisis, and I value these states very much. Once in an action crisis, a person that is, myself should calm down, stop fussing and looking for a way out of the current situation, delve into reflection and reflection, for example, listening to good music or watching an inspiring landscape, just forget and fall asleep. It is in the state of action crisis that the most remarkable and beautiful, unusual solutions come - not for this situation, but for something more general and abstract. And a specific situation. Usually resolves itself and pretty soon, as soon as new thoughts and ideas present themselves and exhaust themselves. They say that God helps only those who are focused on a particular problem, and in time slip ad hoc seekers and solutions. Every research has two limits.

- one is expressed in a complete formula, formulation, law, principle: this is the ontological limit of research,
- The second - in the technical, engineering solution, technical theory for example, the theory of the internal combustion engine. This is the organizational and activity limit of the study.

And after it comes the second ad hoc situation: we abruptly begin to understand what needs to be done: having discovered a homogeneous solution of alcohol, the golden ratio of the ratio of water and alcohol (62% water and 38% alcohol), Mendeleev realized that vodka can be not only a distillate (moonshine), but also rectified a strictly dosed mixture of alcohol and water, Watt understood how the translational movement of the piston can be brought into the rotational movement of the wheel - due to the eccentric and crank. And when this second ad hoc and the principle of action associated with it is accomplished, only then does the design space begin, we enter the technosphere and the practical fruits and results of scientific activity.

Organization of the Event or Seclusion

In the conditions of collective scientific activity, the scientific producer is obliged to organize the scientist's space in such a way that it is not just solitary - it must be methodologically oriented and coordinated. The scheme of methodological work was proposed by R. Descartes. Scientific activity is not only not standardized in time, it can be carried out at any time of the day, in moments, flashes, short intervals, continuously - by any impulsiveness, most often in solitude, but can also be dialogical, in a laboratory, in a pub, at night in a dream or in insomnia. This flexibility of conditions and environment, unpredictability and dependence on chance requires patience and composure of the scientists themselves, and of the scientific management, and of the scientific producer. But at the same time, subject knowledge, an arsenal of tools, and the organization of work should always be at hand and be in a mobilized state. The organization of the scientific research space is the prerogative of the scientific producer and manager, but it must take into account the individual characteristics of the performers: someone cannot work without music, someone needs absolute silence, someone needs the presence of pretty and young girls, someone is inspired landscape outside the window, but all this should contribute to concentration and depth, detachment.

The concept and state of detachment

Perhaps the concept of detachment is the key here. Detachment is the state of the scientist himself: the scientific producer and scientific manager does not and cannot interfere here. Detachment is a kind of sterilization of the communication channel and communication between the scientist and the Navigator, freeing him from interference and noise. Detachment is a necessary state close to an action crisis, a voluntary refusal to search for solutions, all but one, cutting off all sociocultural ties and contacts that act as external interference and noise, showing trust in the Navigator, the description of which is difficult and therefore most often it is perceived intuitively it can be a teacher, an opponent, God, the Cosmic Mind, a student, a pet and any other external subject. With it, an induction \ creative. It is important to note that the role of the "induction coil" (L) and "capacitor" (C) is performed by the Explorer and the Navigator alternately and quite arbitrarily. The scientist, as the subject of research, most often finds it difficult to indicate who, he or the Navigator, made the necessary push, and therefore usually refers to a fallen apple, a cat underfoot, a dream, a junction of train cars, a blow of billiard balls. Sometimes studies gather huge teams of hundreds and thousands of people. At the same time, truly scientific problems are always multidisciplinary and interdisciplinary. They require either polyprofessionals, who, frankly, are very few, or a special co-organization of different professionals. For example, regional and urban studies conducted by our Laboratory for Regional Studies and Municipal Programs are 30-50 people: historians, geographers, economists, architects, philosophers, designers, psychologists, etc.: the recruitment of professionals is always dictated by the specifics of the object, and not the circle of acquaintances of the work manager. For archaic

Soviet science, where not ideologically, but in practice, sympathy for lone scientists dominated, it was typical for small topics and the implementation of research for years and even decades - in the same garden.

Research as a Technological Process

If we imagine the study as a technological process, it can be divided into the following stages and procedures.

SEARCH (search, research)

- literary and bibliographic search no matter how narrow or avant-garde a topic you take up, it quickly becomes clear that there is a bottomless literature on this issue in which you need to find,
- valuable information,
- unexpected aspects of consideration,
- theories and models, preferably several,
- gaps and voids that need to be filled,
- the completeness of the bibliographic search is an extraordinary value in itself; when working on the Crimean program, the best librarians and bibliographers of Moscow were involved, who collected several thousand bibliographies in Moscow, Kyiv and Crimea,
- information retrieval: oddly enough, the Internet in this sense is almost as empty as our domestic statistics; most often, you have to create information and statistics yourself through observations, opinion polls, in-depth interviews, etc.,
- search for coverage in the media and mass media (mass media, for example, the Internet),
- search for performers (a team of performers is never formed in advance or immediately),
- Search for real consumers (in addition to and above the customer) and sales channels.

RESEARCH (research, reflection search)

In reality, research can go on in parallel, in the fields of search: the thought cannot be stopped. However, the design of the study still takes place sequentially after the research. The research has two independent and parallel directions. Mastering is the second level of reflection, possible only if there is a first level of reflection on research, development. The end of the R&D itself means the beginning of the next, implementation stage, which is also quite technologized.

- practical testing,
- Implementation of research results through education.

Sometimes these two types of implementation merge. So, for example, social and environmental monitoring (SEM) in the Altai Mountains was built, and the construction of the Katunskaya HPP, for which the SEM was started, was postponed indefinitely - this is how the idea of the Gornoaltai Ecological University appeared. Another example of such a merger is the Moscow Silver University.

The place of production in science

The producer is a key figure in the preliminary stage, but not central; the central figure, image and authority is the scientific director of research. It is he, the supervisor, who is the key to success and the guarantor of quality for the customer. The producer plays a secondary, dash-dotted role in the actual R&D he is responsible for finding performers and real consumers, media coverage and QMS. The producer becomes the decisive figure when the R&D is completed. His main sadness and concern is not to let the work lie on the archival shelf in order to die, to give it life. Its fronts are PR and advertising, interviews and discussions, holding seminars and conferences, but most importantly, educational courses and programs to attract fresh and energetic forces to the research carried out and its results. All this is more than meaningful, if the scope and use of research has not yet been found. If this task is solved at the pre-research or research stages, in order to ensure competitive advantages, it is necessary to give the work the status of confidentiality and closedness. And this establishment of the degree of secrecy is also the prerogative of the scientific producer.

Functions, Purpose and Use of Scientific Producing

In our opinion, a scientific producer should perform the following functions

- management of research works in the conditions of uncertainty of results and their practical suitability,
- marketing, primarily understood as the sociology of implementation,
- budgeting (time, finance, human, intellectual and material and technical resources),
- goal-setting and understanding in terms of goal-goals (goals with an indefinite description of the image of the result and ways to achieve it),
- PR and advertising if the scope and method of application before or during the study is not found.

It is clear that in a planned and centralized economy, which remains predominantly Russian, the possibilities and need for scientific production are very limited, but that is why significant efforts are needed to form and develop it. Scientific knowledge is a very perishable commodity and cannot be stored for a long time. In addition, this product has an amazing property - to grow with use, but - under certain conditions. At present, it is no longer scientific developments and prototypes that are traded, but well-established and fairly promoted businesses that have massive and stable

demand, self-developing and highly competitive. Modern scientific production should offer ready-made and well-knit teams, clips, teams capable of not only running this or that business based on research, but also reproducing and multiplying themselves.

Producer of scientific projects

Scientific production is characterized by

- packaged results,
- Shift not only in the field of technology and engineering, but also in the socio-cultural sphere, as well as in the field of education.

Apparently, according to this pattern or close to it we should not forget about the elasticity and flexibility of humanitarian technologies, it is possible to build any developments, especially educational, regional, urban and municipal ones, which by their nature are “package-suitable” and socio-cultural.

International experience

Science abroad is an expensive institution. Generally accepted forms of appropriations for science, not counting budgetary ones, have developed: grants, contracts, venture capital. Corporations interested in innovation enter into contracts with universities. In the mid-1990s, the Book University in Ruins by Bill Ridings was published, which describes the shift in the function of the university from the Kantian concept of reason and Humboldt's idea of culture to the modern technocratic idea of superiority [8]. This work stated the fact that the model of the classical university is a thing of the past, and an entrepreneurial university has taken its place. Educational-scientific-industrial complexes are being formed around research universities. In forward-looking science, new ideas are especially important. A young talented team develops an innovative idea, but does not have the means to bring it to the finished product. The Technological Incubator program is being implemented. Over the past 25 years, in regions with a high density of inventive activity, one can encounter a phenomenon that did not exist before - serial technological entrepreneurship. The concepts of science producer/producing are absent in the English-language literature. The terms science producer/scientific producer are pseudo-anglicisms. Assumptions that the scientific producer is translated as entrepreneur, impresario, or, moreover, science-maker, also turned out to be very controversial. It turned out that in large highly developed countries there has long been a science-oriented business (part of the venture business is start-ups). At the same time, for at least the last half century, there has been both a monetized and a logical connection between invent (invent), commercialiaze (commercialize) and invest (invest money). All Western culture was originally built on geniuses, who combined the first two most important types of activity from the point of view of the development of society and man. Consider the book The 100: A Ranking of the Most Influential Persons in Histor. The most active promotion of scientific production began in the 19th century, during the period of the first socio-political and scientific-technical revolutions taking place simultaneously. At the end of the 19th century, instead of single producers, labour collectives began to appear, in which, instead of one-man management, two bosses appeared: a director and a producer. In the highly developed countries of the world, a scientific producer is the same profession as a film producer or an entrepreneur in a theatre or circus. The most striking type of entrepreneur-producers are business angels. Business angels, most often, launch start-ups. The largest organization uniting them is the World Association of Business Angels. Angel Investor Review has been created for the information channel of interaction, which is aimed at raising awareness and meeting the multiple needs of key players in the early and subsequent stages of the equity markets.

Producing in Russian

Producing is a phenomenon of market economy and entrepreneurship. In the USSR, entrepreneurial activity turned out to be criminally punishable (since the end of the 20s), severely persecuted, up to execution (the case of Rokotov and Faibishenko) and condemned by society. What today is called perestroika (the end of the 80s) was accompanied by mass terror against enterprising business executives: about 400,000 were imprisoned for entrepreneurial activity, economic, economic and commercial initiatives. The so-called planned economy with its over-centralization, lack of competition, state monopoly on production, pricing, and distribution also left no chance for entrepreneurship and one of the forms of entrepreneurship - producing. Initially, the "market economy" in post-Soviet Russia acquired pseudomorphs that only remotely resembled market mechanisms and institutions: stock exchanges, banks, insurance and pension companies, corporations, holding companies, etc. The fact that the corporate university of Sberbank translates and publishes books by Western economists and financiers does not make Sberbank a bank, since the main function of this institution is to deceive and rob the population on an especially large scale and in small ways. In fact, there is not a single person in the country who has not been deceived at least once by Sberbank. All this is reminiscent of a “Fiji plane” made of banana leaves with shamans chanting in anticipation of how beads, cigarettes, chewing gum, condoms, lighters and cans of Coca-Cola will fall from this plane. At present, and for an indefinitely distant future, a very peculiar production has been formed in Russia for the capture and appropriation of certain resources: monetary, financial, natural, power - any: not by chance and not in the rampage of the elements, the resource of supreme power has concentrated in the hands of one person - he produced it. Actually, the scheme of Russian production, or rather, anti-producing, is extremely simple: a resource is extracted from any source material - but not for the production of something

productive, but for the appropriation of this resource. The most important link in this technology is the inexhaustibility of useless work (changing curbs, annual planting of trees that cannot withstand Moscow winters, “improving” streets and courtyards, laying paving slabs, widening sidewalks, etc.), which gives rise to the inexhaustibility of the resource extracted for oneself. So Kant's "thing in itself" like a Brazil tree planted in a tub of polished granite turns into a "thing for itself" in offshore accounts and tropical islands. And this resource technology is certainly built on the meaninglessness of what it parasitizes: the meaningful is prone to self-will and even rebellion, the meaningless is weak-willed. And this humility leads to the formation of immovable platforms with zero tectonics. And only in geosynclinal, and better - in anticlinal folds, platforms rubbing against each other, in mountain caves and gorges, under glaciers, is it possible to have a quiet and inconspicuous beating of the jets of entrepreneurship and production, not in Russian, but according to the concept.

Science Producing Technology

Let's make a conceptual description of what is an intellectual technology, including the technology of scientific production

- this is the logic (algorithm) of sequential procedures and operations (for example, advertising is possible only for an already finished product and result, based on legal requirements and advertising ethics, PR can, and marketing must precede R&D),
- this is the irreversibility of processes, their one-way movement, which makes technology similar to a road map,
- it is the softness of technology, allowing spontaneous creative interventions, insights, zigzags and deviations from the intended plan and path, what can be called "natural" (that is, uncontrolled, unmanaged, unpredictable and unexpected) transformations,
- This is a mandatory reflexive support of all procedures and operations.

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