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HISTORIAN'S OPEN LETTER

**To physicists' scientific community,
Heads of states, governments,
diplomatic missions,
and scientific organizations**

ON THE PHYSICAL BASIS OF HUMAN DEVELOPMENT

CERN and EURATOM

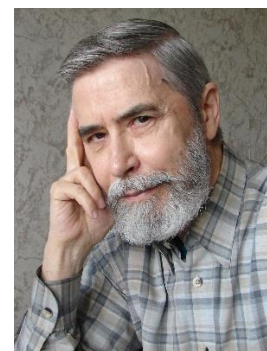
have led *Homo sapiens'* civilization
to the necessity of making the fundamental historic choice
of *physical strategy to survive and develop*

Tentative Translation
from Russian
and
Translator's Note
by Yuliya A. Bobrova

Moscow, April 30, 2015

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ON THE PHYSICAL BASIS OF HUMAN DEVELOPMENT

CERN and EURATOM
have led *Homo sapiens'* civilization
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of *physical strategy to survive and develop*

1. DESPITE THE ALLEGED «DISCOVERY» OF “*VECTORIAL HIGGS BOSON*”¹, THE VECTOR OF EUROPE'S HISTORIC DECAY STILL REMAINS IMMUTABLE

I appreciate keenly the scientific labor of physicists.

What is more, I consider that the *physical lot of civilization* totally depends on the moral an intellectual state of that army of scientists.

For a100 years physicists have **already** been trying to link together their theoretical conceptions of the four types of fundamental interactions², which include: ***gravitation, electromagnetic, weak and strong*** ones.

However, I have to recognize with bitterness that humanity does not guide* physical interactions of nature. However, not only we, “mere mortals”, but physicists as well, remain dependent on the blind forces of nature. We do not guide* physical interactions of nature, therefore, they dominate us.

It does not at all detract the enormous physicists' contribution into engineering and technological progress of civilization. Thanks to physicists' discoveries we have invented several ways to produce ***electric power*** and ***communication facilities***. For more than half a century, at the cost of great sacrifices, we have been mastering the source of ***atomic energy*** and we do not lose hope to master the ***energy of nuclear synthesis***. Unfortunately, all our engineering and technological achievements are the product of **struggling** with nature and **exploiting** natural processes. We have not yet mastered the way to guide the physical interactions underlying the natural processes.

In this respect, only everyone's infant experience in the period, when we pass from creeping on all fours to upright walking, is the first and the only, more important and more

¹Храмов Ю.А. **Физики**. Биографический справочник. **Хронология физики**. – 2-е издание под редакцией А.И. Ахиезера. – М., Наука, 1983, с. 387.

²The idea of the joined description for *gravitational* and electromagnetic interactions, as a unified field theory, was put forward in **1918** by German mathematician Herman Weyl. His idea was based on understanding the physical importance of symmetry, while the theorem, expressing the link between symmetry and physical laws of conservation, was formulated in 1915 by Emmy Noether.

*See Translator's NOTE at the end of the document.

progressive, physical achievement of humanity, than overcoming the Earth's gravity with the help of reactive devices.

The basis for a child's getting up and his first step is the process of *physical self-organization*. This step is the *first postnatal progressive rearrangement* in the system of *self-regulation* of an *organism*. This kind of rearrangement insures an organism's passing to the form of *its interaction with gravitation*, in which the child's central nervous system is becoming the *subject of guiding* and the *guiding force* of *individual interaction of a human organism with gravitation*.

Our infant *experience* of the rearrangement in the *system of self-guidance* is the *first and, so far, the only step of humanity* in its path to guiding the *fundamental physical interactions*.

The second step of humanity can become the analogical in the essence, but universal in its scale and importance, as well as in its physical fullness and capacity. It is the *rearrangement of physical organization of the social system for our SELF-GUIDANCE*.

This kind of rearrangement is able to change qualitatively the *status of human reason* in the physical system of fundamental interactions underlying the Universe's being. Therefore, estimating the state of the newest fundamental physical studies, I act on the *premise* that the criterion of adequacy and eligibility of *physical theories*, describing the *nature of fundamental interactions*, is our capacity to pass, with the help of a scientific theory, to solving the *practical tasks of guiding all natural interactions*.

However, Physicists themselves, obeying the *historical inertia* of the societal division of labor, strictly differentiate the scientific disciplines according to the *subject of their research*. They do not recognize the *scientific problems of guiding* as a subject of Physics and do not include the process of *guiding* into the rank of *fundamental interactions*.

As a result, our physical relations with fundamental forces of nature still remain at the shamefully low, for *Homo sapiens*, stage of development. I hope that physicists are creating the universal theory of fundamental interactions, in order that to raise humanity into the rank of force, which is capable to guide nature. Therefore, right now it is crucial that physicists would manage to provide civilization with the capacity to become the kind of guiding force of nature, which could apply this capacity in the interests of free development for reason.

I would like to think that just for that purpose in the *cradle of experimental science there has been* constructed the **Large Hadron Collider (LHC)**, which swallowed shocking amounts of human labor, financial and tangible assets.

According to the official announcement³ the supposed "discovery" has been made with the help of the new "**mega-device**". However, this "discovery" has not enabled physicists' community to gain confidence that they discovered right that "*boson*", which, in 1964, was "*predicted*", according to **Peter Higgs**' theoretical conceptions on the "*mechanism*" able to provide elementary particles with mass.

If the *discovery* actually took place, for the two past years, the physicists could "*find*" not only the *physical fulcrum*, but also the necessary *means to guide space-time structure of matter and gravitation* alongside with all the rest fundamental *physical interactions*.

Already since this year, nations could start creating new, in essence, technical equipment and technologies, but we are still confined in our physical knowledge of the 19-th and 20-th century.

The "discovery", which was supposed to serve as a ground to build a consistent theory of fundamental interactions, has raised new doubts not only in the midst of experiment performers. No less grave doubts were expressed and certain questions were asked, as to "*Higgs boson*", by **Steven Weinberg**⁴ who also places his hopes that the experiments would be continued.

³Press release of CERN of June 4, 2012

⁴**Steven Weinberg** – American physicist-theorist, author of 1967 theory uniting *weak* and *electromagnetic interactions* in the general physicists' way to build a unified theory of physical interactions. See his Preface of July 6, 2012 in the book: *Jim Baggott. HIGGS. The Invention and Discovery of the "God Particle"*. 2012. / *Джим Бэгготт. Бозон Хиггса. От научной идеи до открытия «частицы Бога»*. – М., ЗАО «Издательство

Therefore, in defiance of the extreme aggravation of the socio-economic and political situation in the Europe itself, since **March 2015** the European Organization for Nuclear Research (**CERN**) has recommenced the costly experiments.

Under the conditions of the humanitarian (systemic for *Homo sapiens*) crisis and the avalanche-like increasing the mass of regressive tendencies in the civilization's development, CERN's commitment to the guild organization of scientific labor and medieval method of cognition is turning into an anachronism, which is endangering both to society's welfare and to human *reason* with scientific-physical degeneration into its *opposite*.

The age-old marathon of physical thought, crowned with the most large-scale experiment in history of high-energy physics, reiterates the Old Testament story, where *God* did not allow people to complete the *Tower of Babel* made of *clay bricks* mortared with "*earthy pitch*"⁵. The *Anachronism*, just as *God*, is depriving physicists of the chance to complete "*theory of everything*" made of elementary "*bricks*" mortared with physicists' *vague guesses* on the real nature *binding* the four types of fundamental *interactions*.

The Anachronism of the medieval organization of scientific forces not only *blended* and *mixed*, in the scientific consciousness of physicists, the notions and the physical sense, but it also deprived physicists' capacity to take into account and understand *historic* importance of this notions.

It is not enough that the impulse of intellectual ambiguity caused by the "discovery" of the next particle was received by *extremely cost-based* way. The same ambiguity of *physicists' intellectual state* has been again underlain the immutable experimental practice.

Apart from natural desire to continue the experiments, in order to "*understand the mass*" of the particle, which "*reminds Higgs boson*", it is strange to me to hear the physicists claims that it is necessary to receive the arguments of the objective existence of "*dark matter*" and "*dark energy*". It is especially strange, because the essence of physical phenomena, which induced these conceptions in the physicists' heads, is known long ago, and it is a part of objective data validated by other scientific disciplines. However, instead of interacting with the available knowledge of their contemporaries, the physicists are preparing society to the situation, when, to search for the "*dark substance*", they will need new expenditures and in much higher amounts, on the ground that the "*dark substance*" "*summarily*" exceeds the amount of the "*light substance*" studied earlier.

CERN is impudently increasing unproductive expenditures of society, whereas not only Greece and Ukraine, but the global economy is also suffocating in the noose of the *debt economy*.

The physicists generally do not show scientific interest to the actual results of their **socio-economic interaction** with society, even though this very interaction is being the foundation of their own physical existence as subjects of cognition responsible for physical well-being and physical security of civilization.

Even the events of 1993, having left after feral hunting for "*Higgs boson*" the giant "*hole in Texas*", 23-kilometer tunnel beneath the prairie and the "*black hole*" in the US national budget, surpassing \$ 2 billion⁶, did not make the physicists to estimate critically the state of their method and the way of arranging their intellectual forces. It turned out that 100 years was not enough for them to order the accumulated knowledge and to master it completely from the position of general-scientific knowledge, embracing the entire front of scientific studying.

Instead of concern about mega-synthesis of available knowledge to generate the optimal strategy of fundamental research and rationally setting the *mega-scientific* experiments, physicists urge nations to *cooperate* not so much the efforts of minds, as the efforts of "money bags" to increase investments into the obsolete mode of their labor organization.

The expenditures for experimental research in nuclear physics and in high-energy physics

Центрполиграф», 2014, с. 11—18.

⁵The Old Testament. The first Book of Moses. **Genesis.**,11: 3-9

⁶Джим Бэгготт. Ibid, p.172 – 173.

became estimated at *dozens of billions* of dollars, but the army of physicists considerably growing in its number does not display any inclination to self-criticism.

The physicists are not at all confused that the goal of the grandiose experiment once again has been moved below the horizon of historical events, while for real physicists this only physical effect is enough to assume moral and intellectual responsibility for the regressive consequences of the general-historical practice.

Such a strange physicists' attitude to the physics of historical process is an alarming symptom of *moral* and *intellectual* breakdown, which nowadays is being experienced by the squad of scientists, who, not so long ago, was the vanguard of the world scientific thought.

The impression arises that the modern physicists see the fulcrum of their life not in the force of scientific knowledge, but in the force of their faith in wonderful governments' capacity to finance expensive experiments *ad infinitum*.

Ad interim, both the "ruled" and the "rulers" of society started perceiving a sharp deterioration of the general state of global economy. National governments has long been burning with fever attacks breaking their normal activity that is caused by extreme growing external and internal national debt, while the obvious pathology in world financial system development deprives governments of making the adequate decisions.

The deficit of national budgets is as much undermining the socio-political stability, that both in the cradle of experimental science and overall there are appearing extremely dangerous *types of frustration* of social consciousness, which, like penetrating radiation, are affecting all the layers of social hierarchy.

Under these conditions, it is high time for the *scientific community of physicists* and *serious politicians* to pay attention to the fact that humanity is writing the *newest "History of madness..."*⁷ not only with the participation, but also with the physicists' **decisive** role.

It is the very squad of world science that urgently needs to remember that, just half a century ago, the vector of *moral* and *intellectual* physicists' state was notable for the high extent of social responsibility.

2. REMINDING OF PHYSICISTS' HISTORIC ROLE

The 20th-century physicists clearly realized the direct dependence of economy on its power supply. They also understood the inevitability of energy crisis of civilization, which exists due to barbaric burning *the storage of **chemical energy***⁸, accumulated in the Earth's interior for millions of years of *biological evolution*.

The 20th-century physicists did not just foresaw the *socio-economic* tragedy of our days, but they also recognized that the escape for civilization from the energy and ecological catastrophe is entirely dependent on the scientific forces capacity to master, in full amount, the *source of nuclear energy* discovered on the eve of World War II.

Contrary to their forerunners, **the 21st-century physicists** are just assisting in exploiting the **nuclear energy source**, which became the product of society's inadequate attitude to nature, in general, and to the nature of nuclear *interactions*, in particular.

Exploiting, in *Atomic Power Engineering*, the one-sided nature's manifest of intranuclear interactions, namely – atomic nuclei division, the modern physics satisfies the vital needs of economy in the extremely primitive form. *Atomic Power Engineering* does not utilize in full *radioactive emission* in *energy production*. Such an unthrifty approach foists the by-function on atomic power plants that, in its turn, inflicts the direct damage to economy, people's health and

⁷Michel Foucault. Histoire de la folie a l'age classique., Gallimard, 1972. / Мишель Фуко. История безумия в классическую эпоху. – СПб., 1997.

⁸Капица П.Л. Доклад 1975 года «Энергия и Физика». В Сб.: «Эксперимент, Теория, Практика». Статьи и выступления. Издание третье. – М., «Наука», 1981, с. 97 – 109.

environment.

Since the middle of the 1950-s in the last century physicists unanimously recognized that the “best way out” of the *energy* and *ecological* crisis is receiving energy due to “*synthesis of helium nuclei from deuterium and tritium nuclei*”⁹.

NB. *The process of synthesis* of light nuclei was carried out in hydrogen bomb and “*well studied*”. Therefore, physicists had but to solve the scientific-technological task of its “*deceleration*” “*up to stationary state*”¹⁰.

However, Nuclear Physics, having assumed the task to produce the solution and promised to exempt humanity from its concern for the source of energy, for more than half a century has not been coping with its scientific and technological task.

As a result of the sluggish *intellectual impotence* of Nuclear Physics, the energy dependence of **European economy** on **Russian natural gas** complicated with *ecologically well-founded Europeans’ desire to refuse from atomic power engineering*, has already led to the bloody Ukrainian conflict with Russia.

The physicists’ generation, recognizing unacceptability of the bloody outcome of the *global energy-economic crisis*, had the courage to consider the task of preventing the contemporary tragedy to be the “*problem № 1*” for “*engineering and science*”¹¹.

Therefore, the claim of the Twentieth-Century physicists – not to spare funds for *interconnected* research guidelines in *nuclear physics* and *high-energy physics* for a long time remained morally irreproachable.

In expectation of the *qualitative* breakthrough in *nuclear power engineering*, nations have, for a long time, condoned the colossal costs in the sphere of fundamental physical studies. However, instead of useful source of *energy* of *nuclear synthesis* nations have received from **CERN** and **EURATOM** just their doubled financial demands to implement experimental research.

To the expenses for creating and exploiting the *Large Hadron Collider* there were added absolutely senseless costs for building the *International Thermonuclear Experimental Reactor* according to **ITER** project. It is not a secret that the present socio-economic situation is notably undermining the *moral* and *intellectual* authority of science, in general. Yet, first of all, the *physicists* busy with the problem of *controlled nuclear fusion* are losing the credibility of society.

The founders of **ITER** project took care that the acronym of the project was associated with the Latin word – *iter* that means – *path*. This physical project has already been turning the fifty-year mental retardation of *Homo sapiens* civilization into the **blind alley** of the physical development.

3. ON PHYSICAL BASIS OF HUMAN PATH

“**Just look at what they’ve come up with – to die!**”

From *Diana Bobrova’s* utterances
in her fifth year of age

Going on with the infantile practice of *experimental cognition* in its immutable shape, Physics has reached such an extent of misunderstanding of socio-historical nature of its intellectual state that it threatens to turn the very life of humanity into the tragic experiment.

Our **civilization** can miss unnoticed the crucial point of historically irreversible

⁹*Kanuyā II.II.Ibid*, p. 106.

¹⁰*Ibid*.

¹¹*Kanuyā II.II.Ibid*, p.98.

degradation in its physical development the same way, as everyone of us has to leave this point “unnoticed” in our *ontogenesis*.

The same way as animals, which do not waste their efforts for scientific studying the *fundamental interactions*, we move along the closed-circuit *trajectory of being*: from the birth – to heyday of our physical forces, reaching the *maximum*, which is determined by civilization’s facilities. Then from this maximum we move to the *decline* of our physical forces, their *fading* up and our turning into lifeless state of *inert*¹² *natural matter*.

From one generation to another, we miss in our *ontogenic development* the very moment, when it is necessary to **engage the social scientific-physical consciousness** in order to disjoin the mortally closed circle of life by our unified conation.

The immutable practice of experimental cognition puts us at risk that in the *phylogenesis* we may miss this crucial moment of History.

We leave the physical development of civilization closed in the same mortal circle that every one of us **has to** repeat in our *ontogenetic* development **because of the systemic immutability** of our relations with the entire complex of fundamental physical *interactions*.

Paleontology data have shaped our conception of *boundless “ocean of depth”*, which is permanently replenished by perishing types of vegetative and animal life. Yet, along with, **we have not had any physical grounds to consider death of a human being and civilization to be a physical law of Universe**. Nevertheless, we continue *living* with the awareness of people sentenced to death, while we awarded this sentence to ourselves by our own organization of social relations, which are being in conflict contradiction with historic nature of reason.

Scientific data directly show that Universe and the laws of its existence are not restrained with closed *cyclic* forms of transforming matter and energy.

Since 1943, due to **Ervin Schrödinger**¹³, *life* for the first time became the subject of physical scientific thought. It gave the promise that the **physical mechanism of life-origin** would be comprehended as a result **of interaction of all natural forces**. Our consciousness has a chance to obtain the firm fulcrum in understanding the physical essence of life, so that we could **jointly master our practice of life** instead of cultivating *death* and *murder of our own species’ beings*. After we realize this new **practice of life** and its *physical essence* we may actually achieve such a degree of clearing up in our consciousness, which will awake the same joyful feelings and natural optimism as each of us experiences only in our infancy. As any infant child, watching his *upright parents*, gets up from the floor staggers to his feet, and learns to *walk* instead of lying in the cradle or just crawling, each of us masters the **physical interaction with gravitation**.

The physical phenomenon of **life emergence**, as a specific mode of *self-organization of motion and developing matter of nature*, is not an “*unprecedented phenomenon*”.

The fact of **recent** (according to geological scales) **reason emergence** directly shows that **in the new forms of motion of matter and energy** the *qualitative changes* are happening **in the very principles of organization of motion**. At present, it is extremely important that humanity would not miss the opportunity, while it is not late, to **insert** the **adequately organized** form of scientific-physical consciousness in the already existing form of physical existence of reason.

The Universe existence is not closed in the vicious circle.

¹² “**Inert**”, the term used by V.I. Vernadsky opposite to another notion he introduced as “*living matter*” of nature.

¹³ Эрвин Шрёдингер. Что такое жизнь с точки зрения физика. – М., Иностранная литература, 1947.

The Universe openness is the mode for physically organizing not only motion, but also the qualitative development of the very forms of motion of nature. Therefore, the disastrous finale of life for *Homo sapiens global civilization*, as well as for an individual personality, is not at all the law of nature. It is a product of infantility of our mental development, which determines the inadequacy of our comprehension and our attitude to the processes of nature.

The *mechanism of emergence* of the two qualitatively different forms of motion (*inert* and *living matter*) has not yet been discovered and properly comprehended, while the fact of emergence of the third – historical form of motion of matter represented by existence of humanity and human reason leaves no doubts. We not only have material evidence of the recent emergence of our reasonableness, but we also are the witnesses of the physical process of reason emergence, which is reiterated in every case of normal development of our children in the direct communication with us.

The historical form of motion of living matter determines not only the sequent change of modes of organizing social relations (*the forms of intercourse*), but it also shapes (creates) the historical form of work of neural tissue in our Brain that differs us from animals. It is just the *physical basis* of our *reason's being*. This *form of motion* vary from all other forms of motion of living matter due to the extra degree of physical freedom – freedom of will in the choice of a deed and a path of development.

Therefore, the existence of Physics, as a scientific discipline of human *reason*, presents us a historical chance and obligates us to make a conscious choice of physical strategy of life.

The possibility for a choice is in the following: to remain on the zoological stage of physical development of civilization with the determinate return from the *living state of matter to the non-living matter* of nature or to rise, consciously and firmly, onto the physical basis of historic movement by virtue of the adequate connection between our scientific-physical reason and the body of civilization. It means to become the historic matter of nature having guiding force, which itself will determine both the shape, and the mode of physical organization of natural processes.

The conscious choice of the strategy for physical development of reason, which is crucial for civilization, should be made right away.

The dangerously prolonged *intellectual crisis*, which symmetrically has been affecting the two scientific disciplines – Nuclear Physics and Political Economics, testifies that **tomorrow** may be late!

Nuclear Physics, having sound knowledge that controlled nuclear fusion may be turned into the new source of energy, is not coping with solving the tasks to guide this process. At the same time, **Political Economics** is certain that the source of peoples' wealth is *human labor* and is aware that the global development needs “*to pass to the new pattern of economic development*” with a *new*, more efficient, organization of labor. However, it has not managed to model the social organization of labor, so that it could become the source of growth of global economy.

The inadequate understanding of the PHYSICAL PROBLEMS OF GUIDING is the Achilles heel of both scientific disciplines.

It has been already revealed by the two grandiose experiences of the 20-th century. The first one was the *Soviet socio-economic experiment* stretched for more than seventy

years, but finished with the historical bankruptcy in the “*international communist movement*”. The second experience is the mirror reflection of the first one in the practice of *thermonuclear experiments* being stretched for already *sixty-year path*. It is the path, which has been leading to the no less pitiful final in the *international* project.

Therefore, I appeal to physicists and the political administration of nations to reconsider the conceptual basics of **ITER** project and rationally realize the ruinous consequences for civilization of *inadequate comprehending the physical problems of GUIDING*.

4. THE CONCEPTUAL ESSENCE OF **ITER** PROJECT

ITER is far from being the first modification of installations designed not to “*retard*” the “*well-studied*” process of nuclear fusion, but to “confine” and provide “*thermion-insulation*” of hot plasma”.

In this connection, I will give two theses, which present the scientific-physical justification of the project.

NB. 1. According to leading ideologists of ITER project, President of Russian Scientific Center (RSC) – “Kurchatov Institute”, Academician E. P. Velikhov and Department Head in Troitsky Institute of innovative and thermonuclear research, Doctor of physics and mathematics, professor C.V. Mirnov, «*the task of (ITER) is to “stretch out” the thermo-nuclear explosion, so that it would last not for just a few microseconds, as in the bomb, but for hours and days*»¹⁴.

2. Such a formulation of the physical task is connected with the acknowledgement of the same authors that “*For the last 50 years, the problem of hot plasma thermo-isolation is the main “intrigue” for the research in the field of magnetic confinement of plasma*”¹⁵.

The difficulties of Nuclear Physics in solving the problem of “controlled nuclear fusion” need to *expose* and *eliminate* the causes of unprecedented intellectual impotence.

For this purpose, in the first place, it is necessary to admit that the *virulent “intrigue”* was the direct result of *50-year efforts* to solve the physical task as formulated in item 1.

5. ON THE NECESSITY TO ADMIT THAT THE PHYSICAL TASK OF **ITER** PROJECT AND ITS **ANTI-HISTORIC** FUNCTION HAS BEEN PERFORMED

First, it is necessary to accept already the accomplished fact that *the physicists engaged in controlled nuclear fusion for “peaceful purposes” have successfully been stretching* the process of solving the task not only for “*hours and days*”, but also for *decades*.

As a result of the physicists’ success, the nations, implementing *direct financing of thermonuclear research*, are able to go further and *stretch* the scientists’ amusement for *centuries*.

The only trouble is that such scientific policy, in total with the present amounts of military expenditures and society’s unproductive wastage in all the fields of human activity, is fraught with the *collapse* for the world financial system.

¹⁴ Великов Е.П., Мирнов С.В. Управляемый термоядерный синтез выходит на финишную прямую. (<http://phns.mpei.ac.ru/articles/iter.pdf>).

¹⁵ Великов Е.П., Мирнов С.В., Ibid, с. 2.

That is why, it is time for the world community to acknowledge that the *physical task* of ITER project to “stretch” the vicious practice of thermo-nuclear research has been successfully solved.

Second, the main “*intrigue*” has, for a long period, diverted the intellectual forces of society from earlier realized “*problem № 1*” and distracted them from the only possible, for human mind, progressive path to the scientific and technological solution.

The society has irreversibly lost the huge financial resources. The giant amounts of electric energy, which is not already possible to calculate, has been removed from the economic circulation, *burnt out* and irretrievably lost for society along with financial funds. However, the nuclear physicists have not yet managed to present to the economy of nations a single kilowatt-hour of useful energy received from the *controlled nuclear fusion*.

Therefore, it is also necessary to admit that the main “intrigue” underlying the ITER project has successfully fulfilled its anti-historic function.

Due to the effect of the *half the century “stretching” the process of inability to solve the “problem № 1”*, the world powers controlling the great fund flows have achieved the capacity, arbitrarily and artificially, by analogy and by means of direct financial injections into the “*color revolutions*”, to set fire of a civil war in any place of the planet and receive the sustainable burning of armed conflicts.

The phenomenal result of the physicists’ and politicians’ semi-centennial following the lead of the *main “intrigue” of nuclear fusion conception* is, per se, the scientific and technological achievement.

It is necessary to cross the t’s in civilization’s harmfully resting upon physical essence of the main “intrigue” of “*nuclear fusion*” due to the world acknowledgement of this achievement.

The nations’ community needs the progressive outcome of the continuous intellectual deadlock in solving the fundamentally correlated problems of *global ECONOMY* and *POWER ENGINEERING*.

In order that civilization, instead of the traditional way – from *flourishing* to its *decay* and *downfall*, could follow the way of social, scientific-technological and economic progress, with the speed adequate to *natural-historical acceleration* in the *global system* of economic relations at that, science and policy needs more reliable *intellectual bearing*, than the state of *uncertainty* reigning in the experimental research of nuclear physics and physics of high energy.

Before we delve into the *methodological causes* of intellectual crisis in Nuclear Physics, let us examine an elementary example of substitution of a physical notion with another one.

6. ABOUT THE SUBSTITUTION OF PHYSICAL NOTIONS

The modern physicists and politicians are carrying out their mental labor to make decisions on the basis of ***logic-experimental method***, which is general for *Homo sapiens*.

We will examine historical degradation of the method in section 7, but first let us note its main virtue.

The difference of the “trial and error” technique, which has been already acquired by highly organized animals, is as follows: the logic-experimental method implies that *logic work* of a human mind **precedes** an *experiment* and sets a socially useful goal and a *plan of action*. It allows achieving the goal with no missing it, while solving interim tasks, and with no switching to newly emerging secondary (*derived*) effects.

However, the very formulation of the task underlying the project ITER (see Section 4) shows that, instead of the target to “retard” the *process of nuclear synthesis*, derived in

hydrogen bomb, the nations, founding the project, were offered the task of “stretching” the **explosion** that diverted the scientific work from the initial goal, which had been promised to taxpayers.

Once again I will cite the literal utterance of nuclear fusion ideologists as to the essence of the task assigned for project ITER:

NB. “Figuratively speaking, the target is to “stretch” the thermonuclear explosion from the level of microseconds in bomb up to hours and days”¹⁶.

The same setting of an engineering problem has allowed subjecting ITER project not to the goal of creating a new source of nuclear energy to support our life, but to providing the “infinity” of experiments, which exploit the vital forces of nations and deprive civilization of its vital time.

I am far from claiming that the *substitution of notions* was intentionally done to deceive society. Yet, I can definitely state that the substitution of notions, carrying different physical sense, produces distinct attitude to the goal of the research study and distinct understanding of the engineering problem essence.

What is more, I must state that in the intellectual reaction¹⁷ flowing in the minds of successively changing generations of physicists there was committed the grossest physical error, which was underlying the project ITER and, thereafter, the engineering design of the reactor, according to which the capital construction being implemented in French Kadarash.

The physicists’ scientific consciousness, as well as the consciousness of “*mere mortals*”, is not just constrained by the conditions of social being, but it is determined by the form of our social relations. Academician **Peter Kapitsa**, whose formulation of the task I cited in the Section 2, and physicists of his generation, who lived in social conditions of their time, attributed “retardation” to speed, with which a thermonuclear reaction was proceeding. The notion of “stretching” was introduced as a result of interaction of the second and third generations of physicists, who lived in the considerably changed conditions of social relations.

The change in social conditions has led to the situation when in the very flow of intellectual reactions the accent has been shifted from speed to time of passing the physical reaction.

Such a shift of the accent happened, because of the change in social relations had advanced, in the forefront, quite another task. As a result, the new generations of nuclear physicists, instead of guiding the very rate of nuclear reaction, have to steer the duration of financing the thermonuclear research, which has already become the source to support life of the great army of scientists engaged in these research studies according to their speciality.

I can foresee that physicists will deny the fact of substitution of notions and their physical sense. They may claim that “to retard” the process means “to drag” it out. One can reprove me, as a historian, that the same idea is expressed both in the first and in the second case. In both cases one and the same physical task is implied with the only difference that, in the first case, the task is presented by the attitude to the speed of thermonuclear reaction flow, while in the second one – by the attitude to its duration. One can surely note that *physicists* are specialists mastering the common mathematical language, which allows the explicit understanding of the essence of the task. Therefore, the marked shift of the accent does not have any fundamental meaning for the task they are solving.

However, in the present case, the world community is dealing with the real substitution of physically meaningful notions, which underlie the “bewilderment”¹⁸ expressed by **Peter Kapitsa** in his Nobel lecture in 1978 concerning the futility of long-term physicists’ attempts to carry out

¹⁶ Велихов Е.П., Мирнов С.В. Там же.

¹⁷ Бобров В.А., Боброва Ю.А. К физике интеллектуальных реакций. – СПб, «Лира», 2012, с.84.

¹⁸ Капица П.Л. Плазма и управляемая термоядерная реакция. Нобелевская лекция, 1978. В Сб.: П.Л. Капица «Эксперимент, Теория, Практика», Издание третье. – М., «Наука», 1981, с.110.

the process of nuclear synthesis with the useful energy output.

In its essence, the physical process of *explosion* and the physical process of *synthesis* are not at all the same things. *Stretching* an explosion and *retarding* a process of synthesis are different physical tasks. Therefore, it was just the *substitution of notions* and the *shift of accent* that has caused not only the grossest physical error, but also the substitution of the very goal in the scientific-technological project, the cost of which even before starting the construction was appraised at **11 billion euro**.

The scientific project, aimed at solving the practical task of creating the new source of nuclear energy has been turned into the next *research project*, and, as every CERN project, for *heuristic reasons*, ITER also rules out the achieving of the final goal.

In 1991, when evaluating our “*ability to guide*” **Alexander King** and **Bertrand Schneider** in their final report to the Club of Rome stated straightly: “**There is no guarantee that any further research studies will lead to greater certainty**”. It seems that the *general-scientific aim* at *infinity of cognition* serves as a good excuse for *uncertainty* about receiving practical results for society. Therefore, instead of *certainty*, which, off its own bat, our human reason must introduce into the course of physical events, *King* and *Schneider*, following the physicists, decided to adapt our reason to the *senseless “uncertainty”*¹⁹.

Personally for me, the physicists’ readiness to turn *uncertainty* of their intellectual state into a law of nature began causing doubts and concerns as early as in 1970-s of the last century. Yet, it is my hope that someday I will have a favorable opportunity to return to examining the *historical causes* of our general “*uncertainty*” and “*uncertainty principle*” introduced by Werner Heisenberg in 1927. Meantime, I call your attention **to the consequences** of the elementary *substitution* of physical notions.

NB. The substitution of notion “*to retard*” for notion “*to stretch*” has *diametrically* changed the direction *in the flow* of the very *intellectual reactions* aimed at solving scientific and technological tasks.

Instead of searching the mode to “*retard*” the certain reaction with the purpose of its reducing to *stationary state*, the physicists’ thought was concentrated on solving the task to “*speed up*” (!!!) the particles of reagents (*deuterium* and *tritium*) up to ionized state of hot plasma. In its turn, it caused the necessity to solve a multitude of *derived targets connected* with “*heating*”, “*confinement*” and “*thermo-insulation*” of plasma “*filament*” in the toroidal chamber²⁰.

The gross physical error is that instead of solving the task to receive useful energy due to including a *specific physical process* able **to guide the synthesis of nuclei**, the nuclear physicists has decided to do at all without *guiding function*, when solving the tasks of quasi “*guided*” “*thermonuclear synthesis*”. They began investing energy of their thought and national power grids into “*speeding up*” the “*light nuclei up to high energy*”.

Deputy Head of the Department at Nuclear Physics Institute of the Russian Academy of Sciences in Petersburg, Doctor of Physics and Mathematics **Dmitry Dyakonov** explained this *about-turn* of physical thought to himself and the anxious public as follows: «...*in order that two light nuclei, for example, deuterium and tritium could fuse, they have to overcome the great*

¹⁹ According to *King* and *Schneider*: “**We must learn to act in the conditions of uncertainty**”. – *Alexander King and Bertrand Schneider. The First Global Revolution. A report by the Council of the Club of Rome.* – Pantheon Books, 1991. Part II, Chapter 8.

²⁰ The idea of hot plasma *confinement* and its thermo-insulation belongs to Academician A.D. Sakharov and his supervisor I.E. Tamm of the first generation of physicists, who were tightly bound with the tasks and ideas of creating nuclear arms.

potential barrier”. “The most straight-line way to achieve this effect is to speed up two light nuclei up to high energy, so that they themselves (i.e. without the process of guiding, underlined by V.B.) would surmount the barrier. It implies that the mixture of deuterium and tritium must be heated up to very high temperature of about 100 millions of degrees! »²¹.

Thus, the *substitution of notions* and the *grossest physical error* provoked by this substitution have become the cause of the *regressive turn* in the scientific consciousness of physicists and, as a consequence, the cause of the *intellectual impotence*, which made Nuclear Physics unable to give nations the *new source of energy* necessary for the stable growth of the *global economy*.

NB. The political support of this turn in the scientific consciousness of physicists’ professional army turns politicians into the involuntary accessory to deceiving the taxpayers.

7. ON DEGRADATION OF LOGIC-EXPERIMENTAL METHOD

Along with the substitution and the mess of notions in the practice of experimental research, degradation of the scientific method has also remained *unnoticed*.

In order to notice it, let us return to *Peter Kapitsa*’s Nobel lecture devoted to *controlled nuclear reaction*²².

Peter Kapitsa acted on the premise that the *process of nuclear fusion* is “well-studied” and “understood profoundly enough”²³.

Like most scientists, he supposed that the task to exploit *nuclear fusion for peaceful purposes* could have been solved the same way, as the physicists had already solved the task of exploiting the chain reaction of atomic nuclear *fission* for uranium in reactors designed for nuclear power plants.

Therefore, in his lecture of 1978, *Kapitsa* expressed not only the general “*bewilderment*” concerning the difficulties in solving the task, but he also tried to initiate the general work *to detect* the “*main causes, impeding to carry out the controlled nuclear reaction*”²⁴. **However, this intellectual work was not properly arranged.**

As it was already said before, the physicists do not include the *physical process of guiding* into the range of fundamental *physical interactions*. Therefore, it could not occur to them that the very *intellectual process* of discovering the causes, which *impede carrying out the guided nuclear synthesis* (GNS), should be *arranged adequately* to this physical task.

The intellectual process to solve the task of guided synthesis of atomic nuclei should present the process of *synthesis of intellectual forces*. Instead, the *market of intellectual capital* forces the scientists to focus on *sharing* the intellectual property.

It is not only the obsolete model of economic relations that prevents from carrying out synthesis of intellectual forces. The main barrier is that the mediaeval principles of guild organization in academic science did not allow physicists *inside*, in their scientific consciousness,

²¹Дмитрий Дьяконов. «Чистой» термоядерной энергии не будет. – Повторная публикация – «Троицкий Вариант – наука» № 19 (38) от 29 сентября 2009.

²²Капица П.Л. Плазма и управляемая термоядерная реакция. Нобелевская лекция 1978.

²³Капица П.Л. Ibid, с. 110 – 111.

²⁴Ibid.

to overstep the bounds of self-isolation within the framework of a *particular discipline*. Even recognizing that several interfacial scientific disciplines may produce “*new ideas*” and “*new approaches*”, physicists’ scientific consciousness remains at the mercy of the guild order. **The physical process of guiding** has not been acknowledged as fundamental interaction either in solving the general task of guiding physical interactions, or in solving the particular tasks of guiding nuclear interactions.

NB. Since the academic organization of scientific forces has not been transformed into the historic process of scientific knowledge synthesis, the thermonuclear research broke up into several dead-end trends, while “*identifying*” the causes of the intellectual deadlock has not yet been lifted to realizing its *fundamental cause*.

The intellectual work outlined in Nobel lecture by *Kapitsa* was not implemented till the beginning of engineering-design and construction *works* on ITER project. Yet, it does not mean that the fault lies entirely and only with the ideologists of the project.

The entire scientific-physical thought of the second half of the 20-th century got lost in the ***ternary algorithm*** of physical cognition.

The fact of the *new algorithm* emergence in the history of Physics was fixed in the report by outstanding experimenter-physicist ***Peter Leonodovich Kapitsa*** at the General Meeting of the USSR Academy of Sciences in **1962**.

This report, under the title “EXPERIMENT, THEORY, PRACTICE”²⁵ was included into *collections* of his articles and reports published three times under the same title.

Those three publications of collected articles by ***P.Kapitsa*** marked the turning point in Physics of the 20-th century, which, instead of **LOGIC** (*logically-disciplined REASON*), placed **EXPERIMENT** in the vanguard of scientific cognition.

Physicists have not even noticed that the new algorithm expressed the **regressive turn** in **logic-experimental method**.

The sequence of the new cognitive algorithm has gained the shape of “**CIRCUS VITIOSUS**”: EXPERIMENT – THEORY – PRACTICE of *planning* and *carrying out* the next EXPERIMENT and further the same circling.

The advantage of the logic-experimental method over the “trial and error” method (inherited from animal kingdom) is that the logic work of human reason precedes experimental research and, thus, determines a socially necessary purpose and an optimal way of its achieving in the interests of humanity, but not of a separate group of authors or a corporation of physicists. Unfortunately, this principal advantage of the logic-experimental method has been lost in the new algorithm of cognition.

There is no doubt that physicists-theoreticians have been proceeding to set *logically grounded* goals and to think over the plans of new experiments. However, the logic of the newest research and setting the new experiments have not yet been determined by the socio-conditioned goal defined in the interests of society. Those new experiments are, actually, being shaped according to the results of the late ones performed by certain authors’ groups.

The practice of experimental research has been **completely separated** from the social PRACTICE and has attained self-sufficiency. THEORY and, following it, the socio-historic PRACTICE, has turned to be the hostages of the infinity of the very scientific experiments.

It is a great pity, but Academician ***Kapitsa***, who himself pointed out “*The rupture between theory and experiment, between theory and life, between theory and practice*”, who himself

²⁵ *Капица П.Л. Эксперимент, Теория, Практика. – М., «Наука», Издание третье, 1981, с.189 – 196.*

perceived in that rupture “the symptom of serious disturbance of normal development of science”, reduced the problem of *degradation of logic-experimental method* to “inconsistency in the development of theoretical and experimental works”²⁶. **Peter Kapitsa** did not notice that **EXPERIMENT** closed the **algorithm of cognition** into the infinite reiterating *experiments*, gradually loosing the contact with the historic reality.

The physicists’ scientific-theoretical thought has got into viciously closed circle of their research practice secluded from the historic practice of society. The *socio-historic expedience of scientific cognition* has turned to be lost.

At present, just occasionally received *by-products*, so called “*innovations*”, which, in their turn, prove, by accident, to be useful for public consumption, sometimes have a chance to get into social practice from the experimental practice of fundamental research. In their majority the “*innovations*” do not serve to either human or society, but just to the momentary extraction of profit due to exploiting the vital forces of both a human and society. As a rule, those “*innovations*” does not serve to either an individual or society. Rather, they just promote the momentary extraction of profit due to exploiting the vital forces both of a human and society.

What is worth, the “*CIRCUS VITIOSUS*” being formed in the scientific consciousness of physicists became objectified in the structure of scientific devices as well: in engineering designs of *TOKAMAKs*, the Large Hadron Collider and in the design of the experimental reactor, which is being constructed according to ITER project.

Driving elementary particles in a closed circle of the newest mega-devices, the army of physicists can solve just some particular scientific and technological tasks. Yet, such a practice of fundamental research dooms civilization to scantiness of zoological stage of physical development, which is fraught with degeneration up to dead matter.

Obviously, we may date the beginning of the regressive turn in the scientific method to **1950**, when **Igor E. Tamm** and **Andrey D. Sakharov**, for the first time, advanced the idea of the closed magnetic trap in the shape of torus to confine hot plasma. Historians of science are to investigate all the circumstances of the regressive turn in detail, in order to get aware, why this turn has not been noticed and why the new algorithm of cognition has been accepted both by the Soviet Academy of Sciences and the world scientific community.

In my view, it happened “*naturally*”, the same way, as in our personal life, the break both to aging and physical degradation of an organism happens “*unnoticed*”.

When, in practice of COGNITION and SELF-GUIDING, scientific reason of humanity loses LOGIC of development for an integral scientific thought, it is impossible to compensate this loss either due to the power of mega-devices or the power of super-computers.

General-physical and general-technical tasks of civilization’s transition from *exploiting* natural processes to the practice of guiding natural processes (GNP) could not be solved on the basis of the degrading scientific method once acquired in the past.

A scientific method is a socio-historical instrument of reason and only mastering the new *scientific method* may guarantee historical progress for society.

In order to stop the historical decay and to prevent the downfall of civilization, it is necessary to break, consciously and timely, the closed vicious circle of experimental cognition by means of engaging the **new form** to arrange scientific labor into the common work. The new form of arranging the labor will be able to rectify the state of affairs, relying on the physical

²⁶ Кануца И.И. Ibid, c. 190.

characteristics of historic scientific method. This method has been shaping since the second part of the 19-th century and can afford to synthesize the entire volume of human knowledge in the expediently organized form of the universal scientific-social labor of cognizing and governing the socio-historic development.

Dealing with the emergence of the historic scientific method in the depths of social consciousness, one should comprehend that the new method does not rule out and does not at all refute the logic-experimental method. The same, as using a *computer* does not mean that one should deny oneself making use of an *axe*, any time, when scientists and politicians, for having a pleasure, decide to make up a “picnic on the wayside”²⁷.

8. THE MAIN LANDMARKS ON THE PATH TO GUIDING PROCESSES OF NATURE (GPN)

8.1. THE ORIGINS

The 19-th century. October 1857 – May 1858

Karl Marx (1818 – 1883) – founder of the *historical materialism* and author of the fundamental work under the title “**CAPITAL**”. At the turn of 1857-1858, almost ten years after publication of the “*Communist Manifesto*” he for the first time in history realized the possibility of turning forced human labor, conditioned by external necessity, into free labor satisfying internal needs of an individual. **Marx** foresaw this perspective in the historic development of human labor and in the potentiality to provide labor with the character of scientific-social “activity, regulating all the forces of nature”²⁸. It would allow immeasurably widen the capacity of transforming nature in the interests of *free development of a human*.

The 20-th century

1914

World War I “*changed radically*” **Vladimir Ivanovich Vernadsky**’s scientific consciousness. For the first time in the “geological world-view”²⁹ of *geochemist* there emerged the form of the global natural-scientific thinking³⁰.

1917

Alexander Alexandrovich Bogdanov (Malinovsky) (1873-1928) – physician, by education, author of textbook “*The short course on economic science*” (1897). In 1917 he published his

²⁷ I included this remark, because my comrades in “Argus” research group (See Section 8) and myself had to come across the desperate and aggressive reaction of the official science, which interpreted our experience of applying the historic scientific method to solve natural-scientific and technological tasks literally as infringing on experimental science and refuting its method.

²⁸ *Карл Маркс. Критика политической экономии. – Экономические рукописи 1857 – 1961 гг., Часть II. – М., 1980, с. 111 – 112.*

²⁹ *Вернадский В.И. Несколько слов о ноосфере. – «Успехи современной биологии», том XVIII, Вып. 2, 1944.*

³⁰ *Бобров В.А., Боброва Ю.А. О существовании глобальной революции. В кн. «К физике интеллектуальных реакций». – СПб., 2012, с. 113.*

work “*Tectology: Universal Organization Science*”. The subject of this work relates to organizing principles, the means and ways for practice of guiding.

1947

William Ross Eshby (1903 – 1972) – one of the pioneers in Cybernetics. He introduced the conception of *self-organization* into scientific circulation.

1948

Norbert Wiener (1894 – 1964) – published his work “*Cybernetics: Or the Control and Communication in the Animal and the Machine*” (1948) that initially did not include a human being in its subject and, therefore, for a long period, turned *Cybernetics* into the applied science of control. Technological elaborations in Cybernetics are still being in the conflict with the historic nature of *reason*.

The first half of the 1950-th

The physicists, who worked in the *US* and *Russian* atomic projects, having acquired the mode to receive artificially the *chain reaction of atomic nuclei division* and to *confine it under control*, started thinking over the analogical mode to receive the useful energy due to exploiting the “*controlled reaction of nuclear fusion*”.

However, the organizing-methodological split of scientific knowledge into two types of sciences – *natural* and, allegedly, “*un-natural*” has made their own conceptions inadequate to the physical essence of the new task³¹. It is not a secret that physicists treated those “*un-natural*” *social sciences* with a kind of specially emphasized neglect.

NB. Neither a scientific solution, nor an engineering implementation of a *particular task to guide a certain process of nature* is impossible, in principle, in the absence of prior solution to the general-physical task of society’s transition to the form of “activity”, which will display the general-technical capacity to guide all forces of nature”.

This condition was, in full, grounded in scientific work by Karl Marx.

Guiding a particular process of nature is possible only *by way* of the qualitative change of *physical attitude* of society to the entire complex of natural processes *in the form of consciously organized activity*, which implements our guiding attitude to nature as an integral physical system.

Having no such a solution of general-physical task, *physicists* should have, *as a minimum*, either disproved the scientific grounds, given by **Marx**, or should agree with him, having for themselves clear scientific-physical reasons for that. Yet, *as a maximum*, they should have paid

³¹**Erwin Schrödinger** took the trouble to look at the *process* of life through physicist’s eyes, while his guild-colleagues did not burden themselves with necessity to look through the same eyes of *natural scientists* at the historical process of human existence and development.

due attention to the *physical process*, which determines the principles of intellectual activity of their own Brains and the mode of *information links* in minds' cooperation.

Physicists have not burdened themselves with such scientific work. Therefore, in Physics there prevailed the infantile demand to compensate for the *physical* deficiency of arranging intellectual labor by increasing the nations' costs to construct and exploit mega-devices.

June 1961

The Symposium on "*principles of self-organization*" was held by the group of leading cyberneticians on **W. Eshbi**'s initiative and bankrolled by US Department of the Navy in Allerton-Park at Illinois State University.

The nature of *self-organization* was not understood. Therefore, the Collection of materials of this Symposium very rapidly turned to be in scientific circulation and was published in the USSR. (See "THE PRINCIPLES OF SELF-ORGANIZATION" – M., "Мир", 1966.)

8.2. THE STAGE OF MY PARTICIPATION IN THE SCIENTIFIC WORK

September 17, 1970

In the USSR, at Mordovian imprisonment zone ЖХ-385/3 for political prisoners, **Alexander Uchitel**, discovered that the *objective criterion* of dividing historical process into periods is the *type of communication inside of a productive unit*. He made his discovery studying **Karl Marx**'s heritage on the issue of social History's periodization.

This discovery was assumed as a basis not only for his manuscript of 1974 – "*Structural periodization of social history*", but it also became a key to our common work on revealing the *spiral structure* of historical process.

January-February 1971

In the infirmary of ЖХ-385/3 imprisonment-zone, having no notebook, I discovered the ***mechanism of the first social revolution*** and ***emerging the dual-tribal organization of Homo sapiens***. After my coming back from infirmary, I made a report on my discovery for the group of prisoners: "Marxists" and Leningrad-residents. The latter ones were convicted of "airplane-seizure case". Only in 1977 I managed to send the manuscript of my article "***The Rise of social organization***" to editorial board of "Sovetskaya Etnographiya" journal. However, this article has never been published in the Soviet Union the same way, as the book by **Alexander Uchitel** has not been published in Israel.

From 1975 to 1978 I made several other discoveries:

1975 – the phenomenon of ***organizational mutations*** and their role in the ***diphasic mechanism of natural selection*** and in forming new biological species;

1976 – the ***socio-historical mechanism*** of ***emerging*** the highest psychic functions of human Brain – ***thinking*** and ***consciousness***;

1978 – the phenomenon of “*reflected evolution*” in the principles of information processing by human Brain.

In **1978** I sent a letter to Academician **Peter Kapitsa** with the offer to make a report on *Evolutionary physics* in his Institute of physical problems. Academician’s assistant **Pavel Rubinin** received the letter by proxy. I have never known whether **Rubinin** conveyed my address to Academician, whether he wrote his answer and whether it was sent to me and let pass to my home.

1979

1. I was invited to Coordination Council on the issue of Human at the Institute of Philosophy of the USSR Academy of Sciences. At the Council I presented a report on the *mechanism* of the first social revolution and *diphasic mechanism* of natural selection in the evolution of biological species³².

2. I took part in Philosophical Conference at Moscow State University. I reported on the *phenomenon of reflected evolution* in the *mechanism of emerging* the highest psychic functions of human Brain and on the *mechanism* of information processing³³.

About my intellectual state in 1970-s and incentives of my scientific activity

In 1970-s, I was proceeding with my studies of social sciences. Gradually, I began penetrating into the *theoretical* state of *biology, genetics, biophysics, physics* and *cybernetics*. To the best of my ability, I was trying to keep abreast with the state of affairs in the mainstream trends of fundamentally important research studies. As a result, I found out the *socio-historic conditionality of intellectual difficulties in history comprehension*, which Physics was facing in the 20th century. Step-by-step, my understanding was growing that those difficulties did not depend on either the capacity of accelerators, which physicists use to speed up “*particle beams*” up to super-high energies, nor on the degree of the “*beam emittance*”. The more I realized the actual causes for those difficulties in Physics, the more my desire for scientific work with *physicists* was growing.

I was especially concerned about the circumstance that in the 1950-s of the last century, when physicists already started solving the problem of “*controlled nuclear fusion*”, the academic organization of scientific forces was not capable to join all scientists for the general work to

³²Бобров В.А. Социальная природа человека и соотношение антропо- и социогенеза. – Препринты докладов «Единство социального и природного в человеке». – М., 1980, с. 35 – 38.

Салов Ю.И. Логика культурной эволюции. Монография, Часть I. – Сочи, НОЦ РАО, 1997, с. 134 – 135.

In his Monograph on pages 158-159, Yuri I. Salov adduced, with no reference to the author, “the *criterion of societies’ classification and historical process periodization*”, discovered by Alexander Uchitel. It is “the **bond type** for individuals in social communities”. Y. Salov learned of this *discovery* from my report on A. Uchitel’s work “*The Structural periodization of social history*”, which I delivered in 1978 at the workshop of Valtraut F. Shelike – associate professor at the sub-department of “New and Current History” in Kyrgyz State University.

³³Бобров В.А. Ленинская теория отражения и эволюция организации. К гносеологическим вопросам эволюционной теории, исторического материализма и кибернетики. – The account on the Conference in the “Philosophical Sciences” journal № 3 of 1980 distorted the information on the content of the report, while the theses to the report were not at all published.

solve the “*systemic tasks of great complexity*” and could not ensure synthesis of the entire scientific knowledge and scientific thought. Therefore, outstanding *anthropologist* **Pierre Teilhard de Chardin**, who in 1950 was elected the member of Paris Academy of Sciences, considered it necessary to “*think over*” the “physical reality” of “**Megasynthesis**” of *noosphere*. Humanity vitally needs this kind of synthesis to get out of the crisis of its *biospheric* existence³⁴ relying on social reasonableness.

By the time of my acquaintance with the book “*The Phenomenon of Human*” by **Teilhard de Chardin**, I had already thoroughly studied the entire scientific heritage of **Karl Marx**. I knew that Marx totally relied on the possibility to generalize scientific knowledge across the whole front of cognition and did not at all doubt the *physical reality* for humanity to obtain the *highest degree of physical freedom*.

Therefore, the physical ambiguity of the outcome into noosphere implied that, in the first half of the 20-th century, the *anthropologist's* thought reflected the ambiguity, which was presented by the very state of academic Physics of that time-period. It was just the state of Physics itself that determined **Teilhard de Chardin's** *uncertainty* about *moral, spiritual* and *intellectual* forces of scientific community.

It made me get concentrated on the history of developing the humanity's *intellectual forces* and on *socio-historical conditions*, which determine and, at the same time, confine resolving capacity of our Brain. I was searching for the possibilities to broaden and increase the intellectual power both of individual Brains and of their mental cooperation.

August 24, 1980

On my initiative at Frunze Polytechnic Institute in Kyrgyz SSR there was created “**Argus**” *Research group*. I elaborated **The Program of Evolutionary Research Studies** and offered it for the group. In 1982 our Research group opened *The School of Collective Scientific-Technological Creativity (CSTC)*³⁵.

It was the first experience, in the world history, to unite people on economically free basis, when the group-members tackled the scientific and technological *problems of global development*. Those problems pertained to the global challenges, which The Club of Rome was describing for twenty years. “**Argus**” forestalled the work of the Club of Rome and was unlawfully and violently liquidated in 1983-1984.

“**Argus**” *group* was developing *by way* of uniting young scientists and specialists from all scientific disciplines in a *complex research body* to cover the whole front of scientific cognition.

The first three members of “**Argus**” voluntarily collectivized their intellectual property. We were striving to synthesize the entire scientific knowledge due to the common for all scientific disciplines historic scientific method, which I proposed as an instrument to solve the social, natural-scientific and technological tasks specified in the *Program of Evolutionary Research Studies*.

³⁴Тейяр де Шарден П. Феномен человека. – М., «Устойчивый мир», 2001, с. 164 – 166.

³⁵ The **Program of Evolutionary Research Studies** for “**Argus**” group was not financed. The very process of uniting researchers into a scientific body and the extent of participation in scientific work were the expression of free will and internal need of every member. The lectures and classes in the School STC were free of charge.

Such joining was just the *first phase* of the research body development. It was the phase of *morphological development* on the way to *qualitative turn* in interpersonal intellectual relations of “Argus” members.

The physical content of the *diphasic scientific-historic turn* is the *progressive change in organizing intellectual work of a personality’s Brain*. This change is going on during the research body’s transition into the second– *functional phase* of its development.

This kind of turn in the intellectual organization of interpersonal relations produces the *form* of *socially arranged scientific labor*, which is able to turn the *social essence of a human* into *scientific capital* – a *guiding force of nature*. This *form of labor* is becoming the *productive force* of society that is capable to provide civilization’s transition from exploiting the forces of nature to *guiding all processes of nature* both in the general communication with external environment and in a contact of every individual with the entire complex of natural processes taking place *inside* the society and *inside* our organisms.

However, in 1983 the political reaction of the “leading social scientists” and Communist Party leaders of the Soviet Kirghizia had launched vigorous campaign of illegal political repression to liquidate “Argus”. For that purpose, they took advantage of my being convicted on the false charge of anti-Soviet activity that was cancelled by the Supreme Court of RSFSR only in 1990.

The liquidation of “Argus” was performed right in the moment, when in the intellectual development of the research group members there just emerged the first timid sprouts of qualitative changes belonging to the *second phase* of development of the scientific body. It was a single, in the world practice, scientific body, whose work was founded on *free joining of free scientific thought*.

Transition to the *second phase* of development of social relations inside “Argus” was marked by the *correlated* rearrangement in the Brain work of the two “Argus” members – *biophysicist Eugenie Dmitriyevich Prischepov’s* Brain and the Brain of mine.

The intensive *productive intellectual work* to revise our initial attitude to *Evolutionary Physics* and its subject was going on with *Eugenie Prischepov* even under the conditions of repressions.

For both of us it was a turning point of the qualitative change in our interpersonal relations and understanding that the main part of our work on the *Program of Evolutionary Research Studies* was fulfilled.

1984

The first achievement in our joint work with *E. Prishchepov* was the discovery of the *Historical Malfunction of the Central Governance* (HMCG - 1984).

HMCG applies to the phenomena of “*spontaneous symmetry breakdown*”.

NB. The *Historical Malfunction of CG* has a fundamental importance in the nature of the *historical process* and, accordingly, in solving the problem of *guiding the fundamental natural interactions*.

This discovery gives an opportunity to pass from *describing* the phenomena of *symmetry* to the historic practice of conscious *guiding the symmetry* in socio-

economic development of public relations and in the *physical relations* of society with natural processes.

The second achievement of 1984 is also conjugated with **HMCG**. I understood, in the first approximation, the *specificity of physical process of historic matter emergence* that attaches the shape of double structure to the helix of the historical process. It elucidates the general mechanism of emerging the new forms of motion and developing of the matter of nature.

The **discovery of HMCG gave clear understanding of the possibility** to create fundamentally new organization of scientific forces. Therefore, **in 1984** I initiated “Argus” group’s addressing to the Central Committee of CPSU with the proposal to elaborate the *State Plan of ecologic development of the country* (SPEDC), in order that the Soviet Union could implement the technological transition from *exploiting* to guiding natural processes beginning with solving the task of guiding nuclear synthesis³⁶.

1994

In **1994**, I made a motion to organize and hold the *International Scientific Council on nuclear physics and nuclear security*, in order to put the task of overcoming the intellectual crisis in Nuclear Physics on the world agenda and to solve it using the principle of least curvature.

The same as now, at that moment, Iran’s efforts to acquire atomic energy caused the concern of Israel and other states of nuclear club. Therefore, I proposed to call the First Congress of that Council in Teheran.

I did not wish that, because of congenital malformation of atomic technologies, the economy of Iran would follow the same painful way, which fell to the lot of Russia and Ukraine.

Therefore, I asked Ambassador of Iran *Morteza Tovassoli* to publish in Teheran the first Part of my article “**75 years of NUCLEAR PHYSICS. To the problem of intellectual and economic growth of human civilization**”.

The first Part of the article was devoted to constructing “*The Graph of qualitative intellectual state of nuclear physics*”.

The beginning of intellectual decay of Nuclear Physics was marked on the Graph by the **explosion of the 4-th energetic block of Chernobyl Atomic Power Plant (APP) in 1986**, when the *intellectual impotence* and the absolute *perplexity* not only of the creators of the atomic reactors, but also of the entire Nuclear Physics became obvious for the first time.

My hopes for the capacities of the Islamic Republic of Iran were not justified. The article was not published³⁷. The political administration of Iran and Russia considered my proposals in

³⁶ Now I understand the objective causes and the sequence of the 1983 events in Kirghiz Soviet Republic. First, there was issued the Order “*On liquidation of “Argus” Complex Creative Youth Body (№ 2/67 of September 30, 1983) signed by Rector of Frunze Polytechnic Institute on “October 1, 1983”*”. Then, less than in two months, Eugeni Prischepov’s assassination followed on November 9, 1983.

It was the general *inertia* of the “cold war” of minds. This war was producing, in the Soviet society, such forces that were, by all means, striving to prevent the possibility of one-sided superiority of the Soviet state over the world private-capitalistic system of socio-economic relations in their scientific and technological confrontation.

³⁷ My article of **1994 “75 years of Nuclear Physics”** was, for the first time, published in Internet only in **2014**. The submission in Russian was done by Liliya Moldobayeva – physicist, resident of Kant-town in Kyrgyzstan: <http://nuclear-physici.ucoz.ru/>

secrecy order, while the physicists' community was satisfied with the decision of Russian Government on increasing the expenditures to safeguard of knowingly dangerous reactors and with the consent of member-countries of CERN on allotting **\$15 billion** to convert the Large Electron-Positron Collider (**LEP**) into the Large Hadron Collider (**LHC**).

1998

In Bishkek, young physicist ***Sergey Vasiliyevich Doronin*** and novice businessman ***Talant Turkmenovich Soronoyev***, who was younger, than Doronin and just started his path of *grasping political economics*, initiated setting up the *international* membership of **Organizing Bureau** of "Noosphere" Open Scientific Association. The Organizing Bureau vested me with the function of Chairman of that public organization³⁸.

We investigated *the whole complex* of political, legal, socio-economic and physical problems of **Central Administration**. The complex of these problems needed direct interactions with the political administrations of states to implement the sovereignty of nations as to making the *historic decisions* for *noospheric* development of the *central structures* of state governance.

The Kyrgyz administration's refusal to interact with *Organizing Bureau* (*Orgbureau*) prevented *our* work to solve the *systemic problem* of *getting out* of the crises of *biospheric* existence into noosphere.

The scientific ambitions of ***Askar Akayev***, President of Kyrgyz Republic, ruled out the open cooperation with the citizens. Besides, the Republic, during the period of Akayev's rule, had not enough sovereignty. As a result of such a condition of the nation state and the estranged attitude of the political administration to its citizens, the *regime of personal power of scientist-physicist A. Akayev* lost control over his country already in March, 2005.

21-st century

April 8, 2007

I had to terminate my powers of Chairman in Bishkek Orgbureau of "Noosphere" Open Scientific Association, since none *of the seven states*, whose citizens had taken part in the work, was ready to examine and make *sovereign historic decisions* on the agenda proposed by Orgbureau³⁹.

2008-2014

The research study of physics of the historical process for that period enabled the co-workers of NOOSPHERE Open Scientific Association to comprehend much deeper the noospheric "dimension of the problem of guiding".

See also the article and the comments on Sergey Doronin's personal blog, Post of February 27, 2014: www.sdoronin.ru/index.php?option=com_content&view=article&id=1311:2014-02-27-12-52-00&catid=109:posti&itemid=68

³⁸ The Organizing Bureau membership of "Noosphere" Open Scientific Association on June 8, 1998. See "The Central Asian Post" № 22 (80), June 8, 1998, p.1.

³⁹ The Historic Agenda. – «The Central Asian Post» № 22 (80), June 8 1998, p. 1.

We specified the scientific-historic understanding the physical basics to solve the general tasks of noospheric outcome and formulated the concept of the two types of intellectual reactions as a new subject of guiding.

The capacities of new scientific disciplines – Historic Physics and Physics of intellectual reactions – are to some extent covered in our publications⁴⁰.

However, as all contemporaries, I understand that it has been written and said more than enough on the problem of *noospheric outcome*. Yet, there is not enough practical affairs, and, first, there is lack of “*synergic unity*”⁴¹ in the scientific-public interaction of **citizens** and *national states*.

NB. Now, it is necessary, at least for a small group of nations, to conduct the political conation, initiating the new form of joining citizens and states.

This kind of initiative may unite the interests of every personality, public organizations and every nation, as a whole, in the Common Cause of GUIDING GLOBAL DEVELOPMENT.

The *historic vector* of uniting people must stop the intellectual war of people and nations. It implies that, in order to solve the general problems of global development, the *intellectual forces of nations* need to be consolidated on a functional basis.

For this purpose, the nations need the *Universal Mechanism of GUIDING LINKAGE*, which will become common for all kinds and levels of the new practice.

It is inadmissible for nations to remain on the level of those conceptions on the global situation, which were formed by the Club of Rome at the end of the last century. It was just the first experience of the *twenty-year* scientific interpretation of global problematique.

This experience left the *scientific reason* of humanity in the condition of the historically blind experimental cognition. In its turn, it has determined the state of “*fin de siècle*” and “uncertainty” of unguided global development confined in the vicious circle of chronic inability to solve the general problems of physical development for civilization.

In order that nations could acquire the watchman historic vision it is necessary to re-examine the global agenda all over again and on the new science-organizing basis.

⁴⁰ Бобров В.А., Боброва Ю.А. **К физике интеллектуальных реакций**. – СПб., Лира, 2012. (<http://sdoronin.ru/images/stories/pdf/k%20fizike.pdf>);

Бобров В.А., Боброва Ю.А., Доронин С.В. **Парадокс «правового барьера» в России**. Комментарий сотрудников Открытой Научной Ассоциации НООСФЕРА в поддержку исследований и инициативы В.Д. Зорькина с позиций исторической физики и физики интеллектуальных реакций. – «Представительная власть – XXI век», № 4(123), 2013, с. 7.

See the address: http://sdoronin.ru/index.php?option=com_content&view=article&id=1307:-q-q&catid=109:post&Itemid=68

The history of forming **Physics of intellectual reactions** is tied to participation of my younger sister **Yuliya Alexandrovna Bobrova** in the fate of my first scientific work begun in 1970 in Mordovian zone for political prisoners. During the period of Y. Bobrova's work, as philologist, in “Argus” research body, she repeatedly raised this subject. However, we managed to delve deeply to elaborate this scientific discipline only after we returned to Russia.

⁴¹ Зорькин В.Д. Выступление на III Международном юридическом форуме. – Санкт-Петербург, 15 мая 2013. (<http://www.ksrf.ru/ru/News/Speech/Pages/ViewItem.aspx?ParamId=60>) .

9. ONCE MORE ABOUT “GOVERNANCE AND CAPACITY TO GOVERN”

The first doubt about our *capacity to govern* the socio-economic development, interacting with nature and by the mode, which is not baneful for civilization, was expressed in the resulting Report of the Club of Rome. The report was published in 1991 under the impressive title “THE FIRST GLOBAL REVOLUTION”⁴².

The authors of the Report – **Alexander King** and **Bertrand Schneider**, in Chapter 3 directly pointed to “*The International Mismanagement of the World Economy*”, and, in Chapter 8 – “Governance and Capacity to Govern” – connected “*The inadequacy of the responses to current problems*” with “***The new dimensions of the problem of governance***”.

However, they failed to define the *historical* “newness” of these “dimensions” and understand its nature. Their failure to understand the physical essence of the “*new dimensions of the problem of governance*” became the sticking point in scientific work of the Club of Rome.

It should be noted that humanity began to sense the *historical* “newness” of the “dimensions of the problem of governance” in 1960-s of the last century. It caused the very initiative of **Aurelio Peccei**, founder of the Club of Rome, who mobilized the scientists to comprehend the essence of the *global changes*. Yet, the club form of the scientists’ work could not help them to overcome *mosaicity* of their scientific consciousness.

Trying to comprehend the problems of global development, the participants of this international organization did not adopt the fundamental work of their forerunners:

V.I. Vernadsky, Edward Le Roy, and Pierre Teilhard de Chardin. Therefore, the Club of Rome did not realize the *geophysic nature* of the *global changes* in the historical development of *human reason*.

The sense of “newness” in the “dimensions of the problem of governance” was not apprehended as the result of the *historical* transformation of *human reason*. Humanity has remained being a slave of spontaneous and involuntary turning into the “powerful *geological force*”⁴³, since the scientists of the Club of Rome did not manage either to understand the *geological nature* of their *human force* or to acquire it as their *historic function*.

It is not the only gap in the work of the Club of Rome. However, this gap became the obstacle in comprehending that the “newness” of the “dimensions of the problem of governance” is determined by the *physical novelty of the historic function*, which *human reason* has just beginning to obtain. Having not based on the *physically firm* foothold in awareness of its own *historic* essence the Club of Rome did not enable humanity to feel oneself the *subject of conscious transforming biosphere of the Earth into noosphere*.

The Club of Rome has left, in scientific community, extremely *superficial* understanding of the phenomenon of the “*First global revolution*”, since **King** and **Schneider** were deprived of the chance to present the “*first global revolution*” as a result of the *physical exploring the Earth* by human population. This gap in the scientific work of the Club arose, because the necessary research study had been done by the two Soviet political prisoners. That research was not

⁴² Alexander King and Bertrand Schneider. **The First Global Revolution**. A report by the Council of the Club of Rome. – Pantheon Books, 1991, Part II, Chapter 8. Governance and Capacity to Govern.

⁴³ Вернадский В.И. Философские мысли натуралиста. – М., Наука, 1988.

available to the Club of Rome, because Academician **D.M. Gvishiani** presented, in that international organization, only the official scientific thought of the Soviet Russia.

The Club of Rome did not receive the summary report with the results of the scientific-historic study, which was performed in 1970-1979. I mean the joint study, initiated by the Mordovian prisoners, and the further work that historian **Alexander Y. Uchitel**, now Israeli resident, and I have been conducting independently. It was just the lack of our joint results that has caused one more gap in the work of the Club of Rome.

Yet, the fault for this gap lies not only on the Soviet intellectual regime.

The general regime of the “cold war” of minds is no less guilty of the mentioned circumstances. It is just the “cold war” that tore to pieces the world tissue of scientific thought and, thus, determined the mosaicity of the consciousness of scientists.

Having no fundamental historic base to assess adequately the phenomenon of the “*first global revolution*”, **King** and **Schneider** had to form the conception of the “*Great Transition*”⁴⁴ of humanity into the new state, describing the *current* “***Problematic***”⁴⁵, which pointed out just the external signs of the *global revolution*.

The authors’ attempt to define “*The tracks to the solution*”⁴⁶ of the **problems** outlined in the first part of the resulting Report was not crowned with success. The authors had not opportunity to grasp the historic nature of the “*new dimensions of the problem of governance*” either in the light of **V. Vernadsky’s** *geological* and *geophysical* concepts on transforming *biosphere* into *noosphere*; nor in the light of the world historical process, which has led humanity to the “*First global revolution*”.

Any revolution is a qualitative overturn, but the Report by **King** and **Schneider** did not expose the qualitative essence of the *first global overturn*.

Having no opportunity to lean on the fundamental research of the historical process that caused the “*global revolution*”, the authors of the resulting Report could not identify either the *political* and *economic*, or the *social* and *physical* content of this revolution. They could not shed light on the physically feasible peaceful path for nations to come out of the *systemic crisis of guiding*⁴⁷. As I have mentioned above, the Club of Rome did not have, in its disposal, the results of the research on **PREHISTORY of the “First global revolution”**, which we had jointly performed with **Alexander Uchitel**. Therefore, the systemic approach by **King** and **Schneider** turned to be historically flawed and practically untenable.

In the course of our research work with A. Uchitel we made the fundamentally important discoveries. Those discoveries supposed the necessity to continue the work within the framework

⁴⁴ «Великий Переход» – тема одного из заседаний Римского клуба.

“*The Great Transition*” – one of the subjects of the Club of Rome meetings

⁴⁵ A.King, B. Schneider. Ibid, Part I.

⁴⁶ A.King, B. Schneider. Ibid, Part II.

⁴⁷ Remembering the Club of Rome’s heritage it is necessary to take into account that the scientific Reports of the second half of the 20-th century were written from the position of social *infantility* of society’s scientific forces. The authors of the Reports did not consider the scientists to be responsible for the negative consequences of scientific errors. They did not see their fault in the technogenic pressure on “*environment*”. They did not admit scientists’ guilt for the direct damage to society’s health, which is caused because of the mercenary character of scientific labor. In their Reports the scientists remained being far from awareness of their *personal historic role* and their *personal responsibility* for the ruinous course of the historical events.

The *scientists’ “concern”* appealed not to their own good sense, but to the common sense and responsibility of politicians. For any author, the publication in the Reports to the Club of Rome was a way to get a kind of indulgence. None of the publications of the Reports has become a *historic deed*, symbolizing the spiritual and intellectual growth of a scientist’s personality. Each publication took a character of “*washing one’s hands*” in public, which allowed a personality to conceal the psychic complex of Pontius Pilate even from oneself.

of the global scientific project. However, neither *Alexander Uchitel*, nor I, even on the national level, had any opportunity to solve the scientific-political issue to arrange the follow-on of our joint research work.

We were under the sway of the conflict between the **USSR** and **Israel**, which had broken their diplomatic relations. Not only the fate of our joint research study, but also the very “State crime”, for which we were accused, the conditions of our life during our imprisonment and the prospects of our further life were totally determined by the conflict of those states. Therefore, in **1974**, on the eve of *A. Uchitel*’s emigration to Israel, we independently divided the first results of the joint research into the author’s parts. Up to now, either those parts, or the total results of our work done apart, were never published in any of the countries⁴⁸.

The two fundamental gaps in the scientific generalizations of the Club of Rome made the Resulting Report of the Club untenable to produce reasonable solutions to the tasks of guiding the physical development of civilization. Meanwhile, the *first global revolution*, before our eyes and with our participation, *has been turning* into the spontaneous, unguided process, which is fraught with the inevitable *historic decay of civilization*.

The direct causes for the unguided character of the “global revolution” **are** the following:

- misunderstanding the *physical essence of the historical process*;
- misunderstanding the *historic nature* of the “*new dimensions of the problem of governance*”;
- degradation of *logic-experimental method*;
- the gross physical error that has become the “main intrigue” of *nuclear fusion ideology*.

The number of errors made by the Club of Rome itself added to the erroneous approach of Nuclear Physics to solve the problem of “controlled nuclear fusion”. These errors need a particular examination.

The objective of this letter is to pay special attention to the three errors only.

The first error of the Club of Rome

The first error was committed in the first Report “*The Limits to Growth*”⁴⁹ prepared by the group of young American scientists having no the idea even of basic Physics of the historical process.

⁴⁸ The typescripts of our two manuscripts we managed to shape in the following way:

1. *Uchitel A.Y. The Structural Periodization of Social History*. – Ryazan, **1974**, 112 pages;
2. *Bobrov V.A. The Rise of Social Organization*. (The experience of structural-functional analysis). Krivoy Rog, 1977, 28 pages.

Those versions of our manuscripts turned to be available to uncertain circle of people. Therefore, some aspects of our works have, long ago, become the subject of plagiarism. However, after *A. Uchitel*’s emigration to Israel, we did not have opportunity to reduce to the common physical denominator the results of scientific work, which we had done apart from each other. Neither did the plagiarists. This part of the work has not yet been done and presented to the scientific community. Therefore, the mentioned circumstances have produced the “*Vacuum*”, the affect of which *King* and *Schneider* pointed out in Chapter 5 of their Report.

⁴⁹ *Meadows D.H., Meadows D.L., Randers J., Behrens III W.* The Limits to Growth. A Report for the Club of Rome’s Project on the Predicament of Mankind. N.Y., 1972.

Dennis Meadows gathered *researchers* and joined them with the general *emotional reaction* – *alarming feeling* that was caused by the “**explosive growth** of population”.

This group of *analysts* processed and generalized statistical data on those factors, which, according to their opinion, not only “*determine*”, but also “*limit*” the growth of human population in the “*world system*” of *capitalist economy*. After that, basing on their own partial criteria to assess the reality, they admeasure “*the limits*” to “***physical growth***” for *humanity* living in the unlimited Universe.

At the same time, the considering of the “*outlines of the feedback of population growth and capital growth*” did not at all suppose carrying out the research on the *intellectual growth of population and qualitative growth of capital*⁵⁰.

The estimations received were extrapolated to the futurity, which is remote from domestic practice – up to 2100. Besides, they gave a number of “*scripts*” of “*possible ways for the world community development*” **under the immutable nature of the capital and the physical basis** for civilization existence.

Intentionally or not, but the *defense reaction* to the “***explosive growth***” of human population made *Meadows’ group* adopt the working conception of nuclear physicists concerned by the target to *reduce* the **explosive** reaction of nuclear fusion “*up to a stationary state*”. The physicists’ idea was transferred onto the *global system* of socio-economic development of human population. *Meadows’ group* named this idea – the «*conception* of “**zero growth**”» and, as a “*global model*” of the “**stationary state** of economic and ecological balance”, it was offered to the world community.

Thus, those young scientists put on the map the ***chronic incapability*** of Nuclear Physics **to solve** the *central problem of nuclear fusion* and turned it into the *physical strategy* of **unguided development** in the “*global system*” of our relations *with natural environment*.

No doubt, *Meadows’ group* was aware that they applied themselves to estimate the state of “*physical growth*” for the “*complex system*”. Yet, they did not know and did not take into account the specificity of *physics of historical process*. Therefore, the authors of the first Report failed to realize that they, actually, had to deal with the *physical system of the infinite complexity*.

They did not take into consideration that the physical organization, for which they determined the “limits to growth”, contains the *specificity of interaction* of the *three qualitatively different systems* of motion and development:

- the *system of inert matter* of nature;
- the *system of living matter* of nature;
- the **system of historical matter of nature** determining the *physical existence* of human reason.

The scantiness of scientific knowledge presented by *Meadows’ group* turned the first Report of the Club of Rome into the attempt to **legitimate the limits to physical growth of humanity**, which exists **in the open** and, therefore, *infinite* Universe.

The Second Error of the Club of Rome

The authors of “The Limits to Growth” did not take into account the fundamental historical event of 1968, which was extremely important for Physics’ development.

⁵⁰ Capital is not a thing, not money. It is a productive form of social relations.

1968 was marked with the appearance of the *progressive vector of socio-historic activity of a physicist*, who with his personal behavior broke the norms of physicists' guild seclusion and the norms of existence of closed socio-political systems. In my article of 1994, I called this event "*Sakharov's axis*"⁵¹.

By 1968 Soviet physicist **Andrey Sakharov**, advanced in his personal intellectual development, so that moved forward fundamentally new basis for coming out of the crisis of guiding⁵². However, *Meadows' group*, forming the conception of "zero growth", relied on his rough idea, which had underlain the notorious "intrigue" of "controlled nuclear fusion".

The same year, by the time, when **Aurelio Peccei** initiated establishing the Club of Rome as a nongovernmental international organization, **Sakharov** had already clearly **realized the physical importance of "intellectual freedom"**.

In his "*Reflections...*" of 1968, he directly stated that the "*key to a progressive reconstruction*" of the *governmental system* is *individual freedom of human personality*.

1968 was the year notable for the number of turbulent and very important historical events. However, **only two of them** were *physically significant* – the individual **Sakharov's** burst of activity and **Peccei's** organizing initiative.

In my article of 1994, I, for the first time, presented the *Graph of qualitative intellectual state of Nuclear Physics*. On the Graph, the event of 1968 marks the starting point of the **human vector for civilization's progressive outcome of the crisis**. This point coincides with the intellectual growth of *Nuclear Physics* in the person of nuclear physicist **A.Sakharov**. Therefore, it was not occasional that I called this vector "Sakharov's axis", but not **Peccei's** one.

The matter is that, in the *physics of historical process*, **Aurelio Peccei's** initiative was not an expression of *personal need of an individual to obtain a higher degree of freedom*. It was an expression of the *capitalist system's reaction* to the global challenges threatening the future of this system. The **defensive** character of this reaction turned the historic role of the Club of Rome to be *conservative, physically insolvent, and regressive*.

The Club of Rome was not the organization for free motion of free scientific thought. This organization did not liberate the productive forces of scientific labor and did not produce the new scientific knowledge to solve practical tasks of global development. The Club of Rome was just the additional tribune to express existing "*points of view*" on the crisis state of society.

In contrast to the shape of messaging to society and the conceptions by the Club of Rome, the **individual position of physicist A.Sakharov** is **historically progressive**. Even though the society disposed it for the *regressive* purposes, it has not lost its historic importance.

Sakharov's scientific consciousness underwent a qualitative turn. The flow of his thought came into conflict with the system of the Soviet GULAG. The scientist's thought obtained the *internal freedom* and *independence* on the system that had begot him.

⁵¹ Бобров В.А. 75 лет ЯДЕРНОЙ ФИЗИКЕ. К проблеме интеллектуального и экономического роста человеческой цивилизации. Часть I. The manuscript in Russian and English, Bishkek, 1994, 11 pages.

The manuscript was sent to Embassies: of Iran, Turkey, India, Pakistan, Germany, France, the United States, Israel and to Director of Japanese Center in Kyrgyz Republic. However, neither Iran, nor the states of nuclear club have published the article. At present, in Russian it is available at: <http://nuclear-physici.ucoz.ru/>

See its English submission: http://nuclear-physici.ucoz.ru/index/75_years_of_nuclear_physics/0-27

⁵² Сахаров А.Д. Размышления о прогрессе, мирном сосуществовании и интеллектуальной свободе. – М., Самиздат, 1968.

Unfortunately, in Europe and in the world community, no scientific organization based on the *free motion of free scientific thought* has appeared for **46 years** after the publication of revolutionary “Reflections...” by **Sakharov**.

As for *providing the freedom of personality*, the world situation has not been improving. On the contrary, it has been considerably worsening.

The violent liquidation of “Argus” Research Body enabled ***the systemic reconstruction*** (perestroika) ***of the USSR, according to*** Gorbachev, to use Sakharov’s *historical activity at the “Moscow direction”* to *deconstruct* the Soviet political system, instead of developing it.

Despite this regressive craze, those members of “Argus”, who managed to survive, were trying to hold a *scientific meeting* with A.Sakharov. We were aware that the meeting with the author of the progressive scientific-physical thought of **1968**, who turned to be in the focus of the world policy, could initiate the constructive rejuvenation of his first, rather naïve, conceptions of the way to solve the *fundamental physical tasks of guiding natural processes*.

This kind of rejuvenation is still necessary, in order that it could be underlain the general work of nations on leading Nuclear Physics out of its intellectual crisis.

However, our scientific meeting with physicist A.D. Sakharov was not held because of the arbitrariness of the political regime.

As a result of this arbitrariness in the very flow of the world scientific thought, the intellectual “*vacuum*”, which A. King and B. Schneider attributed to the “**Communism Collapse**”⁵³ did not just “*arise*”, and began “*expanding*” on the jump, but has also become “**one of the major factors**” to increase the uncertainty of the world situation.

In modern fundamental research studies, the scientific *thought* is fastened to the projects and mega-devices with *multilink chain* of financial contacts and obligations. Therefore, justifying multibillion investments into the projects of “**MEGA-SCIENCE**”, the physicists have to drive elementary particles around the closed circle, *curtailed with the only degree of freedom: clockwise and counterclockwise*.

Such a degree of “*freedom*”, like “*generally-reconciling*” “*run on the spot*” of Vladimir Vysotsky’s epoch, leaves for scientists no more freedom than in Alexander Pushkin’s fairy-tale, where the “*learned cat is still walking and walking around the chain*” – “*When going right the cat starts sinning. Left-turning – telling a fairy-tale*”⁵⁴.

The *trifling degree of physical freedom* in modern arrangement of scientific forces deprives the professional science and civilization of their chance to become the *force* capable to *guide the fundamental interactions of nature*.

The financial basis of modern scientific policy fetters the ideas of scientists, so that not only the *physicists’* and *economists’* scientific-theoretical thought, but the entire socio-political thought of Europe, as well, has turned out to be *physically confined* into the *vicious circle*.

For the first time, our civilization has faced the situation, when the world economy was denied permission to grow. It was done by the scientists joined on the initiative of the Club of Rome. It happened right at the moment, when we entered the threshold of exploring the infinite resources of outer Space. The reason for that paradox is that the *freedom of thought* of professional scientists is *determined* by a chain-length of *financial investments* in the interactions between science and society, but not by a *free will of the very scientists*.

⁵³A.King, B. Schneider. Ibid, Part I., Chapter 5.

⁵⁴Пушкин А.С. Поэма «Руслан и Людмила», 1820.

The infantility of the economically dependent scientific thought come to conceive the reckless projects of Martian expeditions supposing that *volunteers-suiciders* could be sent to one-way journey. Such projects impose upon civilization the experimental way of exploring Cosmos. These projects are supporting *a fortiori* disastrous expeditions. On the one hand, they rely on the recessionary state of global economy. On the other hand, they are being equipped with the primitive *technologies*, which are essentially inapplicable to actual Space exploration.

A personality's intellectual unfreedom is not just the reason for the *intellectual impotence* of Nuclear Physics in its attempts to solve the problem of *controlled nuclear fusion*. It is also the fundamental cause for *symmetric impotence* of civilization facing the elements of *unguided socio-economic* and *geophysical processes*.

The third error of the Club of Rome

Judging by the final Report of *King* and *Schneider*, the Club of Rome did not pay due attention to the 9-th report presented by Italian economist *Oratsio Giarini*⁵⁵, which, following *Karl Marks*, pointed at the direct *dependence of the limits of economic growth upon the very mode of our thinking*. In accord with this position, *Giarini* put on the agenda the issue on the “*new conception of economy*”. However, either *Giarini* himself or the Club of Rome yielded no *economic conception* to come out of the crisis of the global economy the same way, as Nuclear Physics did not produce the new *physical conception* to solve the key problem of nuclear power engineering.

The resulting report of *King* and *Schneider* did not take into account *Giarini's* idea. Therefore, the Club of Rome did not comprehend the *direct physical dependence of all human problems on the low resolving capacity of our intellectual forces*.

As physicists-theorists had no instrument to *unify* all their conceptions about fundamental physical interactions of nature into the reliable working *theory to guide* those *interactions*, the same way the theorists of the Club of Rome did not have anything in their disposal to *combine* their senses caused by the “*new dimensions of the problem of governance*” with the practice of physical development for civilization.

We may definitely state that none of *mega-devices* enable physicists to create non-contradictory theory of fundamental interactions, since the very common cause of constructing physical theory neglects the physical interaction, which determines the dependence of the course of History upon the mode of working the principal physicists' instrument – their Brain.

The scientists of the Club of Rome, addressing the problem of revealing correlations among the physical growth of humanity, capital and nature, the same way as nuclear physicists' guild, did not take into consideration the physical basis for their own mental activity.

On the practical consequences of the scientific and political errors

⁵⁵*Giarini O.* Dialogue on Wealth and Welfare: An Alternative View of World Capital Formation. A Report to the Club of Rome. Oxford etc., 1980.

In 1993, the US Embassy in Bishkek, the US Department of State and White-House Administration did not leave unnoticed our criticism of “zero-growth”⁵⁶ conception.

However, on the eve of Tokyo summit of G7, President W.J. Clinton’s Administration, making no acquaintance with the scientific grounds of our criticism, claimed its intention *to stick to the “strategy of the global economic growth”*.

In addition, the experts, the same way as heads of the delegations gathered in Tokyo, did not understand that under the immutable practice of experimental research studies, the “innovations” would just remain to be the *by-products* of the fundamental science. Therefore, they could not become the *source of growth of the global economy*⁵⁷.

The fruitless discussion in Tokyo got bogged down in the hidden struggle of advanced nations for their leadership in scientific and technological development process. Therefore, the crucial issue for civilization, ***which way the strategy of global economic growth should be ensured***, was not put on the agenda of the world science. Meanwhile, Tokyo Economic Declaration affirmed the G7’s commitment to the global strategy **of economic growth** and, thus, turned the policy of the advanced nations into the global financial and economic adventure, which ***no one and nothing has assured***.

After Tokyo summit of G7, the systemic crisis of civilization comprehended by the Club of Rome only in the first approximation started, by leaps and bounds, turning into the global revolution, which *no one is guiding*.

The interests of physicists-theorists coincided with the interests of market forecasters. The former ones started have learned with no special necessity to invent the existence of new entities and “predict” new kinds of elementary particles. Meanwhile, the latter ones are busy with telling fortunes by currency rates and oil prices.

The vicious *intellectual locking* of physicists’ and economists’ scientific thought did not disturb the *investors*, since the strategy of produced-by-nothing growth of the global economy for a certain period released their hands for most unprincipled financial speculations, which yielded quick and incredible returns.

The financial speculators just carried out the “rundown” of their capitals on the world financial markets, the same as, in 1986, atomic scientists did it in the experiment to test the energy facilities of “rotor’s free rundown” at the forth power unit of Chernobyl Atomic Power Plant.

Physicists-experimenters unexpectedly for themselves turned to be the creators of ***nuclear catastrophe***, while the financial gamblers became turning into involuntary creators of the ***socio-economic catastrophe***, which has already begun in the world community. However, neither physicists nor financiers are ready, like Sakharov, to recognize themselves to be the creators of History and accept the personal responsibility for everything happening during their lifetime.

It is obvious, no one of *involuntary creators of History* wishes that the vector of Europe-oriented Ukraine turned Europe into the epicenter of global catastrophe. However, regardless, what will be the end of Ukrainian crisis in Europe, the scientific policy of CERN and

⁵⁶В. Бобров, М. Кабылбеков. Какими могут быть кыргызские интересы в российской Сибири? – Бишкек, «Res Publica», май 1993, №№ 17, 18, 20, 21.

В. Бобров, М. Кабылбеков. МЕМОРАНДУМ. – Бишкек, «Res Publica», № 33(94), 17 сентября 1993.

⁵⁷See the details in my *Interview to the Parliament correspondent Y.I. Ignatov – To the seventh “anti-thesis” by Eugeni Primakov*. – “Representative Power – 21st century”, 2011, № 4 (123), p. 7-9.

Интервью парламентскому корреспонденту Ю.И.Игнатову – К седьмому «антитезису» Евгения Примакова. – «Представительная власть – XXI век», 2011, № 4 (123), с. 7 – 9.

EURATOM is leading the common cause to the further divergence between the *practice of experimental research* and *socio-historic practice*. Such a policy is expanding the intellectual “vacuum” and is threatening to make the general motion of civilization to historic catastrophe inevitable.

Whether we wish it or not, but the critical state of affairs in the global *economy* and *power engineering* returns us compulsory to the unsolved problem of overcoming the intellectual decay in Nuclear Physics.

Therefore, it is extremely important for contemporaries to get aware that the **egregious physical blunder** underlying ITER project, with its influence on *Meadows’ group* and also upon the further global policy, is leading civilization and physicists’ scientific consciousness away from the highway of turning human reason into the guiding force of nature.

Neither nuclear physicists, nor the figures of the Club of Rome have gone deeply into the historical nature of intellectual reactions. The same as physicists have not found the way out of the crisis of nuclear power engineering, the scientists of the Club of Rome, who just ratiocinated over the “new dimensions of the problem of governance”, have not discovered the progressive outcome of the intellectual crisis to solve the fundamental tasks of the global economy. They have not raised the process of solving the tasks of global development onto the level of guiding the intellectual reactions, which should become the instrument to make decisions on leading civilization out of the systemic crisis.

The organization of scientific forces accepting as a norm such a state of affairs in the modern Physics, in general, and in Nuclear Physics, in particular, is incapable to give civilization either the source of energy of guided nuclear synthesis, or the source of the global economic growth. Neither can it give the world community the transport technology necessary to explore outer Space in practice.

The state of Physics, which does not include Physics of historical process into its subject, leaves Physics, physicists, humanity and human civilization staying on the prehistoric stage of physical development.

10. TO THE HISTORIC CHOICE OF THE PHYSICAL STRATEGY OF LIFE

The prehistoric level of development of Physics contradicts not only to the historic nature of human reason, but also to the nature of fundamental physical interactions, which CERN is trying to understand, applying the *mode* of infinite “*trials and errors*”. (As it was said above, it is *zoological* mode that we adopted from the domain of animals).

Staying in relations with nature, which are limited by the experimental method of cognition, physicists do not go beyond the framework of *aporia* by Zeno of Elea (490-430 BC) *Achilles* and *tortoise*. Such a level of developing the scientific method and social relations with society and the political power rules essentially out the possibility of creating noncontradictory theory of *fundamental interactions* applicable to *guide all natural processes*.

I consider that it is inadmissible for physicists of the 20-th century to leave the organization of intellectual work of their Brain and their relations with nature in such a state, which **Albert Einstein** described with the following words: “The most incomprehensible in this world, though, is that the world is comprehensible.”

Such a level of Physics' development hampers intellectual, and, consequently, physical development of civilization and endangers its existence.

The apparent display of the *prehistoric state of Physics, threatening* with its functional degenerating into the **rudiment of the scientific reason**, is the **culture of counteraction**.

We are, literally, **diseased with meanness of the physical culture of counteraction**, which is dominating in the entire human practice.

The culture of counteraction is limiting the capacities of qualitative physical development not only of a human being, a society and a state, but also of the very nature.

This culture visually demonstrates itself in the general state of our medical practice.

Our medicine is supposed to assist a person in *guiding* the progressive development of the complex of natural processes, which ensures our physical existence and development. Yet, instead, the **experimental practice of counteraction against diseases** is prevailing over the inherent mission of medical system to save lives, and, as a rule, is leading a person to the lethal outcome.

The **culture of counteraction** turns to be *unguided* both the *historical process* and the *process of evolving cell populations* in the organism of a human. Instead of *guiding the evolution of the forms and levels of organization of life*, the **practice of counteraction** dooms the life of cell tissue to malignant degeneration. As for a human, one remains condemned to inevitable death, allegedly "*natural*" or *accelerated* with the "*fight*" of medical workers for one's physical health.

The culture of counteraction is overwhelmingly dominating in the policy.

The malignant degeneration is going on not only in the development of separate organs of state power and state governance, but also in the development of a *state* as integral system of national governance.

The malignant changes are also happening in the development of political and religious public movements.

Instead of *guiding* the socio-economic development, the policy has to **counteract** a growing number of negative reactions in society. They are: *terrorism* and domestic *criminality*, *corruption* and *peculation* in the system of state governance. Besides, the political system counteracts every *dissent* that produces the readiness to murder, because of mutually hurt feelings, instead of the pursuit to understand each other.

The **culture of counteraction** restrains *physical developing* the engineering designs and technologies in industry. At the same time, retardation, in the qualitative development of social relations and the physical basis to develop the *communication facilities*, induces the plentiful growth of *parasitic perversions* in of the information technologies.

However, the **peak of meanness** of this culture is our *cosmonautics* based on the **counteracting gravitation**. It leaves us closed in the *inertial system*, *common with animals*, which is thoughtless confrontation between *zoological organization of life* and *inert matter* of nature.

It should be noted that *nature* and its "*mysteries*" remain **closed** for us right to the extent of our *counteracting* it.

Nature is based on the fundamental physical *interactions* and is **open** for our *interaction* with it. Yet, CERN has been implementing the experimental research studies on physical nature of fundamental *interactions* applying the techniques and culture of **counteraction**.

In addition to that, I should say that ITER project determines the *path* to further subjecting civilization to the *physical principles of counteracting* nature. This project turns the culture of

counteraction into the “run on the spot” having nothing in common with solving the tasks of **guiding** natural processes.

Such counteraction is the path of zoological development, the basis of which is the *prehistoric* form of relations between the *animal part* of “living matter”⁵⁸ and the “inert” (non-living) one. Animal domain, unlike humankind, has no chances (without Human’s help) to go beyond the limits of the mortal confrontation with nature.

Only Human, having the *freedom of will* in his choice of a deed and a course of life, is capable to achieve the **historic breakthrough** in the physical basis for his further existence and development.

The subject of the **historic choice of physical strategy of life** is the *physical basis* of developing *reasonable life*.

To make the choice, we face the two ways of development.

The same as animals, we can follow *zoological way*, which is determined by European (according to its origin) ITER project. We can continue the *practice of counteracting natural processes* up to the downfall of *semianimal-semihuman* civilization, i.e. remain *Centaur*s in our intellectual state.

Thereagainst, we can go our own – **human path of historic development for Homo sapiens species**. For this purpose, it is necessary to rise onto the higher stage of physical development. It means that we need to stand on the *historic basis of physical existence of reason*, and, relying on our own – **historic mode of arranging human motion and development**, to go out into outer Space as a force capable to guide all the fundamental physical interactions.

As I have already mentioned, the physicists’ scientific labor is becoming the *rudiment of scientific reason*. However, there is still a chance to turn it into the **nucleus of the progressive development of human civilization**. At first glance, it may sound ridiculous. Yet, this *possibility* is hidden in the very *regressive* historic role, which ITER and the immutable practice of experimental research studies focused on “*Higgs boson*” is playing at the present moment.

No doubt, it is not pleasant for physicists, involved into **ITER** project, to accept that “stretching” for *decades* searching for the solution to the task to “fire” “*thermonuclear burning*” of deuterium and tritium, they promote fomenting the civil war in coal-mining Donbass.

Imagine what physicists of CERN may think! They might seem to think that it is absurd idea to attribute this socio-historical achievement to their team. My proposal to search for the *scientific fulcrum* in this result of general-historic efforts may seem even more farcical.

It is much easier to follow the traditional way – to shift the *historic responsibility* onto politicians, keeping the long-standing undercover treaty, according to which physicists do not interfere with making *historical decisions*, while politicians do not interfere with the flowing physical thought and provide physicists with well-to-do existence as a privileged squad of intellectual service-staff.

Unfortunately, physicists have been restraining the *resolving capacity* of their labor by the *guild order of scientific relations* and the *medieval scientific method*. Therefore, I beg to point them out that physicists themselves unconsciously and unwillingly **provide** their cooperation in the mega-scientific projects with so great “**inertial mass**” that it **overturns** (!!!) Europe into its *historical past*.

⁵⁸Вернадский В.И. Живое вещество. – М., 1978.

It is quite obvious, that it is time to glance at the correlation between the sizes of the Large Hadron Collider and “something puzzling” in the mass of Higgs particle through the lenses of physicists’ role in History, which still remains *misunderstood*.

NOTA BENE

The most important and actually *revolutionary* achievement of the 21st-century science is not the “*discovery*” of “Higgs boson”, but the very physicists’ capability to overthrow Europe and the world civilization into their historic past.

Such a historically negative result of the immutable practice of experimental research is the evidence that modern Physics has come close to the edge, when physicists need to comprehend, in terms of science, and discover the true source of *physical might* of humanity’s reason.

Physicists need just to take but the only step. The only thing that keeps them from doing this step is *irrational fear*⁵⁹. It is right this fear that does not let them assume the *moral-intellectual* civil responsibility for the *negative* result of their personal and corporate contribution in the course of historical events. Therefore, they cannot take into account and appreciate, at true value, the fact that, in their practice of socio-historical interaction with the political power, they have already received the **physical effect of such a force**, which allows them to plunge humanity into the *historical catastrophe*.

One just needs to overcome the *irrational fear* and *rationally* (using all scientific resources) realize the regressive character of the historic might in the existing form of *socio-historical interaction* with the political power. Only after that, there may emerge the awareness that modern Physics has already come to the historical frontier of the practical transition to *guide consciously* the space-time structure of matter and, respectively, all fundamental interactions of nature.

The only thing remains to implement the **progressive mode** to arrange the scientific-social labor. The new mode should provide the army of professional scientists-physicists with such a form of socio-historic *interaction* in relations with power and society, which simultaneously will become the means for the “***Great Transition*” of humanity to guiding all processes of nature** on the basis of *steering* the entire complex of fundamental interactions.

11. THE WAY OF TRANSITION TO GUIDE

ALL PROCESSES OF NATURE

To pass from *exploiting* to *guiding* all processes of nature means:

- to stop the historical decay of Europe and civilization;
- to make the *progressive change* in the course of the world events by ensuring the *guided* flow of the “*First global revolution*”;
- to give humanity the *physical fulcrum for life* adequate to the *historic nature of reason*;
- to give the *global source of growth* to the global economy and provide the socio-economic growth of civilization with the *source* of energy from *guided nuclear synthesis*;

⁵⁹Чарльз Райкрофт. Критический словарь психоанализа. – Восточно-Европейский Институт психоанализа, СПб., 1995, с. 189.

- to arm civilization with the technologies of *guiding geophysical processes* and with the *mode for free relocation* in the space of the Universe that is necessary to master natural resources of Cosmos.

Here are the constituents of the conscious commitment to the historical basis of physical development for human civilization.

In order to implement peacefully the “*Great Transition*” of nations into the civilization’s *state*, which may allow people to *guide all the internal and external processes of nature*, it is necessary to synthesize competence, i.e. the *competent* and *efficient group* to examine the **mechanism of the Central Guidance for Processes of Nature** that all nations have not yet had in their disposal.

The work of this level, undoubtedly, is the Common Cause for United Nations Organization. However, to introduce the specific proposals, the UN Security Council and the UN General Assembly need the initiative of several states – **the Group of the Common Cause of Nations** (the CCN Group), capable to create the *Special Scientific Laboratory* (SSL) for the **Common Cause of Nations**.

This research body of SSL should be small, but complex, able to examine comprehensively the *principal Report* of the NOOSPHERE Open Scientific Association and, at the same time, to represent the states, which may decide to support the **global scientific-physical initiative in the interests of socio-economic development of their nations**.

The research body is to *focus* the **Common Cause of Nations** on solving, in practice, the **general-physical task** to synthesize the intellectual efforts of humanity into the productive force of **scientific capital**⁶⁰ and provide the motion of this capital with the **general-technical system of mechanisms to guide the processes of nature**. It is the system, which will join the qualitative development of national systems of guiding with the progressive developing the systems of the international interaction within the framework of UN.

The “*Group of the eight*” (G8), which includes the permanent members of the UN Security Council, could accomplish the selection of co-workers to arrange the **Common Cause of Nations**. However, after Russia was ousted from this format of international interaction, to solve the issue of G8’s rejuvenation, turning it into CCN Group or to assign a new format of international interaction is the task of foreign-policy departments and diplomatic missions of interested nations.

The main thing is to **gather the necessary degree of competence** in **SSL**, in order that every nation, taking the charge of examining the principal Report of NOOSPHERE Open Scientific Association, could extract for their states the key *information on the physical solution to scientific-historic problem of the Central Guidance*.

It is quite accomplishable for the *scientific community of physicists*, interacting with the administrations of nation states and governments, to select competent specialists for the work of the Special Scientific Laboratory of CCN.

In addition to that, it is relevant to bring up an issue of temporarily freezing the construction works for ITER project and the experiments suspension at the Large Hadron Collider. These steps are necessary, in order that the selected staff could have the opportunity and time, in terms of **Historic Physics**, to make the *scientific-physical* and *scientific-organizing* adjustments in the

⁶⁰Бобров В.А. Интервью парламентскому корреспонденту Ю.И.Игнатову – «К седьмому “Антитезису” Евгения Примакова» – «Представительная власть – XXI век», № 1(104), 2011, с. 8.

further research work of nations. The research work will be carried out on the basis of fundamental solution of *general-physical* and *general-technical* task of nation states' transition to the practice of *guiding the processes of nature*. It is relevant to send a share of savings to secure the work of the **Special Scientific Laboratory for Common Cause of Nations**.

In order that the **Common Cause of Nations** initially was a **synergy of scientific-social interaction of citizens and states**, it is expedient to combine the administrative principle of selecting the *qualified minds* with the selection, on the competitive basis, from all the people *willing* to become members of the new complex research body.

The main tasks for the **Special Scientific Laboratory** suppose the two stages of its work.

The task for the first stage is the following: it is necessary, *within a month*, to examine *comprehensively* the principal Report of NOOSPHERE Open Scientific Association “***On the physical basis to guide the processes of nature and the modes to arrange the mechanisms for Central Guidance***” for the purpose of informing the national governments and carrying out the works on developing the national guiding systems.

The task for the second stage is: to formulate the complex of fundamental scientific-historic decisions for the UN Security Council and the UN General Assembly, in order to bring the UN institutions in compliance with the tasks of the nations' peaceful outcome of the *global socio-economic crisis* and civilization's transition to *guiding the processes of nature*.

The G8's Governments or the Governments of the new format, which would not exceed the same number of nations, should determine the membership of SSL.

Each, of the eight, National Government can delegate *five scientists* for SSL-membership to satisfy the national interest in the peaceful coming out of the socio-economic crisis due to the progressive developing the central structures of power and governance for the nation states.

The competence of these scientists should cover the historical *development* experience of their nations in the *legal, socio-economic, managerial* and *foreign-policy* activity. Every Government may ensure the monthly work of these five members according to the expenditure items of their countries.

Besides, the Governments of the eight nations, which are ready to assume this initiative, should cover monthly expenses for the technical support of SSL activity and jointly provide the monthly work of the five co-workers of NOOSPHERE Open Scientific Association.

Each, of the eight, Government should also ensure the participation of ***three physicists*** and ***three biologists*** to work in SSL from among the *volunteers* selected for SSL membership. Their competence should present the range of special knowledge, which corresponds to the competence of the scientists nominated by scientific organizations according to administrative procedure.

Scientific organizations may on their account delegate:

- ***three physicists***, whose competence covers *theoretical physics, geophysics* and *astrophysics*;
- ***three biologists***, whose competence covers *biophysics, genetics, paleontology* and *systematics*;
- ***four experts*** on *organizing* and *engineering* problems of guiding in *medicine, industry, aviation* and space exploration.

Thus, to provide the optimal level of work in the first stage, 173 participants is enough.

The novelty of the **scientific-historic approach** allows solving the fundamental tasks of guided nations' transition to the *symmetric* practice of *steering* socio-economic and technological development of civilization. This new approach, which is implemented on the basis of national systems for *Central Governance* supposes that the first stage of work should be held in the form of **Scientific-historic Council**.

The work of the SSL Council should be open for scientific journalists and be reported at the website of **SSL Organizing Committee of the Council**.

The detailed proposals on the monthly Program of the Council I will submit for consideration of the Organizing Committee.

Physicist **Sergey Vasiliyevich Doronin** can represent NOOSPHERE Open Scientific Association in the Organizing Committee of the Council and function as a co-Chairman.

– Tel.: + 7 (985) 133563. The address of his personal blog “The Weekdays of History” is:

www.sdoronin.ru

The **second-stage Program** of the SSL work and the list of recommended participants will be presented to the Governments in the resulting documents of the *Scientific-historic Council*.

Taking the opportunity, I express my gratitude to my sister, *philologist Yuliya A. Bobrova* for her invaluable assistance in the work on this document and for translation it into English; my nephew **Sergey Vasiliyevich Doronin** and my daughter **Diana Viktorovna Bobrova** for their all-round aid and creating the conditions, giving me the opportunity to fulfill this work.

Besides, I am especially grateful to **Sergey V. Doronin** and **Liliya Shakirovna Moldobayeva** as *physicists*.

In their persons, the scientific community of *physicists* is already trying to overcome people's dissociation and the mosaicity of *individual* consciousness. Having quite scanty means, they, nonetheless, are *awakening* and *engaging* the **social form** of *scientific-physical consciousness* into common work.

Respectfully yours –

Victor A. Bobrov

Co-worker of NOOSPHERE Open Scientific Association

To receive my consultations on arranging the Scientific-Historic Council
please call: + 7(965) 3072370

Moscow, April 30, 2015

P.S.

We all face difficulties in understanding each other, even when we speak the same language, since none of national languages is adequate to the historic nature of human reason.

The present war of minds, which broke out in international relations, concerning Ukrainian conflict, has extremely sharpened the **global, in its nature, problem of mutual understanding** of

people and nations.

Any translation from a national language into another national language does not simplify and, not at all, helps in solving the problem of mutual understanding. Besides, the lack of **human language** adequate to the nature of *human reason* is, to the most abysmal depths, complicating attempts to express the *noospheric* ideas.

Our work to form NOOSPHERE Open Scientific Association was initially based on bilingual, Russian-English, labor of intercourse («*The Central Asian Post*» # 11(69) of March 23, 1998). Therefore, I think that it makes sense for both English- and Russian-speaking readers to go into the problems, which my sister has come across while translating my works from Russian into English.

Philologist **Yuliya A. Bobrova** has been standing for creating Special Scientific Laboratory, which is to join *linguists*, *philologists* and *translators* in the general **scientific-historic labor to conciliate languages**.

Translator's Note

In the English version of this work by historian **Victor A. Bobrov**, I use the verb "*to guide*" instead of the verb "*to control*", which is conventionally applied in the physical term "*controlled nuclear fusion*".

Using the traditional verb in this case is impossible, because the author puts forward the concept quite the opposite to that of "*to control*".

Even though I'm not quite sure that the English verb "guide" may better express the **new notion**, which the author introduces in his works, I have to use the verb with another connotation.

In the present case, there are, at least, **two problems** connected with translating the Russian notion used by the author.

The first one has general physical origin. Alongside with presenting new notions, the author, here and in his other works, insistently criticizes the very state of **old practice**, which is based on *controlled exploitation* of natural processes. Therefore, the author proposes the way to overcome the **vices** of the *old practice* and substantiates the **necessity of physical development for civilization**.

Another one's roots are deep in linguistic peculiarities of any language. One on the peculiarities of English is that every verb belonging to the mentioned *category* has a narrow meaning. The linguistic problem is that the meanings of these verbs are closely attached to the object under action and do not express the universal essence of the Russian verb "*upravlyat*" and the noun "*upravleniye*", which the author uses stating his concept. To reveal the essence of the problem, in a few words, is especially complicated, because, in contrast to the "*verbs of motion*", there has not been given a special general name for the *category of verbs* at issue.

It is high time to arrange a broad discussion and give the author an opportunity to report his ideas openly, in a live dialogue with society. It is an urgent and burning need both for Physics and Linguistics to find the optimal linguistic means to express the novelty and the potential of *noospheric scientific knowledge* in the very practice of *scientific interactions*.

I mean the novelty, which emerges in the practice of **noospheric** social relations and just partially reflected in the author's written works. This kind of discussion is, especially, necessary, because the present document is not just an ordinary **Appeal**.

The matter is that, **Victor A. Bobrov** brings up the issue on turning civilization into the **guiding force of nature**. Actually, this document presents the **Introduction** into the new

scientific discipline. In my view, the author gives us an opportunity to touch the basics of the new kind of **Cybernetics**, namely: **Historic Cybernetics**. It is one more branch of **Historic Physics**, which, along with **Physics of Intellectual Reactions**, is, essentially, connected with the *natural-historical* process of developing the *Earthlings'* **Human Language**.

Yuliya A. Bobrova

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