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THE 21ST CENTURY – RADICAL TRANSFORMATION OF THE TYPE OF CIVILIZATION DEVELOPMENT

Today, it's nearly evident that modern civilization has entered the stage of inconsistency, crisis states and instability. These processes are always a kind of indicator of fundamental, qualitative, systemic changes.

Comprehension of these processes presumes application of two interrelated types of knowledge: 1) content-rich concept of civilization development, 2) systemic vision of this development, application of methodological principles, taking into account complex historically developing systems in the course of its analysis.

When analyzing the today's changes in civilization development, it's not enough to single out only certain aspects and factors of this process. It's important to see global civilization changes as a complex systemic wholeness. Application of standard civilization approach does not solve the problem. Generalization and transformation of this approach are required. Such a transformation is conveyed by the concept of the types of civilization development.

I've already presented the fundamentals of this concept in my papers, including my previous reports at the Likhachev Scientific Conferences. Because of that I'll only briefly outline its main ideas in order to present the position I think productive for analysis of the modern civilization's prospects.

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It’s possible to single out two types of civilization development in human history – traditional and technology-related. Each of them included respective kinds of civilizations, differing from each other by species specificity but at the same time united by common typological features.

The standard civilization concept emphasizes the specific character of different kinds of civilization. Their difference is determined via special features of the cultural-genetic code in accordance with which they are reproduced.

The idea of types of civilization development presumes revealing of some invariant in these codes, some common system-forming nucleus, which unites civilizations of one type and separates them from civilizations of another type. One can single out a number of key worldview universals (concepts, categories) of culture, interlinked and functioning as basic reasons for being and values of each type of civilization development, as such a uniting and separating nucleus. This nucleus is presented by universals “man”, “nature”, “activities”, “traditions and innovations”, “individual”, “rationality”, “power”. The essences of other categories of culture – freedom, justice, faith, good and evil, etc. – are correlated with the essences of these basic universals, their understanding and feeling.

Understanding the typological value and essence nucleus, represented by basic universals, radically differs for the traditional and technology-related types of development. This value and essence nucleus in the culture of each certain kind of civilizations, referring to this or that type, gets additional concretizing interpretations, in the result of which it appears in the form of unique cultural-genetic code that distinguishes kinds of civilizations, expressing the specific features of their lifeworlds.

Certainly, each type of civilization development should be viewed in its historical evolution. The traditional type of development was the first historically. The technology-related one appeared later, in the European region of the planet. The Renaissance, Reformation and Enlightenment eras were its original stage, they formed the spiritual matrix, the system of new values and reasons for being, forming a kind of genome of technology-related societies.

It included understanding the man as an active creature transforming the surrounding world; understanding activities as creative action generating qualitatively new objects, states and processes; the ideal of innovations as the priority over traditions (the ideal of progress); seeing nature as a kind of field being transformed by the man, a resource tank for activities; the cult of rationality with dominating scientific rationality; the ideal of sovereign autonomous individual, not joined from birth to a certain social community (caste, clan, class, estate), able to enter various social communities; the idea of power not only as supremacy or domination of man over man but predominantly as domination over objects (natural and social).

This genetic nucleus of technology-related societies determined their reproduction and historical development. One can single out pre-industrial, industrial and today's post-industrial stages as the main stages of this development. Qualitatively different stages may be fixed in each of them in their turn. From this point of view, it's possible to point at differences and special features of the industrial stage before World War I and after World War I, named the first and the second modernism in the Western literature.

Modernizations spread here without any radical change of the value matrix, which was the typological nucleus of the cultural-genetic code of the technology-related type. The technology-related civilization had been coexisting with traditional societies for a long time, exerting all the time increasing pressure on them. It colonized many of them, the others had engaged in catching up the updating, based on adoption of technologies and educational systems of developed Western states. Such kind of borrowing was always connected with transfer of Western culture layers to traditional soil. Values, providing the technology-related type of development, collided with traditional values in the course of this process, modifying and transforming them.

Finally, in the course of modernization, traditional societies turned into a special version of technology-related societies, preserving and adapting some aspects and fragments of traditional values to the axiological nucleus of the technology-related type.

The concept of the types of civilization development does not eliminate positive contents of the standard civilization approach (A. Toynbee, N. Danilevsky, etc.), but includes it. At the same time it can also be coordinated with a number of the key provisions of the Marxist formation concept, which is an alternative to the standard civilization approach. It's not difficult to find out that the basic values of the technology-related type of development are at the root of the Marxist understanding of the society. The formation concept described the pre-history and history of the technology-related civilization, but had well-known difficulties if applied to traditional societies in the East. The two alternative and incompatible approaches (civilization and formation) appear within the framework of the concept of the types of civilization development as additional descriptions of one and the same complex systemic reality, emphasizing various aspects of this reality.

The technology-related type of civilization development gave numerous achievements to the mankind, and it was perceived as the main way of social progress for a long time. But already in the second half of the 20th century numerous global crises as variations of the two main ones – the ecological crisis and the anthropological crisis – originated and started turning for the worse.

The history of the last half a century certifies that great technological breakthroughs, globalization, formation of the consumer society and arrangement of the world economy according to the principle of stimulation of the outrunning consumption's growth, spreading market relations to all new areas of human life-sustaining activities – all these essential characteristics of the today's civilization development led to the ecological and anthropological crises' turning for the worse more and more.

As a result, there is a problem of new strategies' development, which could provide overcoming of cardinal global crises, threatening with civilizations' destructions and even self-annihilation of the mankind.

These strategies presume reinterpretation of the typological nucleus of the socio-cultural genome of the modern civilization. And such a reinterpretation in its

turn is the first step on the way to a new type of civilization development, the third one in relation to the traditional and the technology-related types.

Such kind of transition, leading to the change of the system's quality, is often named a phase. Generally, it is described in the terms of the complex systems science. In case, when we are speaking about a historically developing system, it may lead to increase of its complexity level, appearance of new system's organization levels, which, affecting the previously formed levels, change them, restricting them in certain ways. As a result, the previous self-regulation (homeostasis) changes into a new kind of self-regulation.

Synergetics integrally characterizes the phase transition process in the terms of dynamic chaos and self-organization. But it's possible to describe this transition differentially, singling out its three stages.

The initial stage is origination of dynamic chaos when the previously formed programs for the system's self-regulation mutate and the order indicators that originated before, stop working. Any of the possible scenarios for the system's development, originating in bifurcation points, may be realized, even the most improbable from the range of them. The number of such scenarios may be fairly big but not unlimited. Their range includes only the scenarios not in contradiction with the formed objective laws.

Realization of any of the possible scenarios depends on numerous accidental factors. It is characterized as the action of probable causality that generates attractors in the nonlinear medium. Several attractors may be formed at this stage of phase transitions, according to various, including alternative, system's development scenarios.

Competition of scenarios at the second stage of phase transition may lead to gradual domination of one of them. In this case, original probabilities of each of the scenarios change. When one of them starts defining the course of the system's changes, the probability of the others' realization decreases.

Finally, we should single out special states of dynamic chaos, characterized in synergetics as the escalation mode, as the third stage. S.P. Kurdyumov paid attention

to the special importance of this mode and not once. At this stage, the dominating scenario, determining the course of the system's change, hikes the probability of its realization, becomes irreversible. There is a kind of purposeful movement to the new level of the system's arrangement, formation of the new self-regulation program and respective order indicators. The target-oriented causality plays the main role in this movement.

S.P. Kurdyumov integrally characterized these processes as the impact of the future on the present and even the past. It looks irrational from the outside but only from the outside. The kind of the future's impact on the present and the past has a fairly rational grounding if one takes into account the new level of the complex system's arrangement that originates at the final stage of the phase transition, the level with retroactive effect on the previously formed levels, imposing certain restrictions on the interaction of their elements and thus providing formation of the new type of the system's wholeness. Because of that forecasting a complex system's behaviour always presumes that the possible future becoming the present is capable to change the past.

Phase transitions may take a long time in case of such radical changes to which formation of the new type of civilization development should be referred. Formation of the technology-related type of development was historically stretched for more than two centuries. Certainly, the development rates in the today's society are different, and here the phase transition may take several decades. Many futurologists think that the middle of the century should become critical in civilization development. The sudden growth of today's instabilities and crises may be interpreted as the first stage of phase transition when dynamic chaos originates, bifurcation points and alternative development scenarios are outlined.

Today's argument about globalization strategies may be examined from this point of view. The unipolar world scenario presuming the unconditioned dominance of contemporary Western values is targeted at continuation of the already accepted technology-related development strategy, while the multipolar world, where there are technology-related values as well as preserved and adapted to them fragments of

traditional mentalities, creates more opportunities for transfer to the new type of development, stimulating the dialogue of cultures and search for new value orientations.

Today, it's especially important to single out the ideal of preservation of the humankind as a special biospheric subsystem and the biosphere itself as an axiological, complex, developing system and fix it as the initial line for the search. This ideal is far from trivial if we take into account the forthcoming breakthrough to the new technological wave, presuming mastering of convergent NBIC technologies. Usually attention is drawn to positive opportunities provided by new technologies. Negative risks connected with them are mentioned generally. But the transhumanistic program has already been defined – genetic and cybernetic transformation of humans, which, as its followers announce, should lead to a principally new type of thinking creatures, standing at the higher evolution level in comparison with humans. But the history of the 20th century knows a lot of examples when virtuous slogans of human improvement, creation of a new future human turned out to be quite the opposite, led to deaths of millions in the course of their realization. There is no doubt that NBIC technologies present great opportunities for treatment of various diseases, prolongation of human life span, all proper vital activities in the old age. But if we are speaking about fundamental changes of the human nature, here are such risks and such possible scenarios that will only bring us nearer to annihilation of humans and destruction of culture.

On the whole, when NBIC technologies are worked out and implemented, they will require accompanying socio-humanitarian expert examination, analysis and assessment of brought about social, ecological and cultural consequences. In this case, the ideal of the biosphere's and humankind's preservation should each time perform the function of the triggering mechanism and regulator for such activities.

It's not once that I had to mention that new values will not come from any place outside, they should start forming in the depths of the technology-related culture, and it's important to find their growth points.

Careful analysis is already capable to find the commenced modernization and transformation of the axiological nucleus of the technology-related type of civilization development that determined this development starting from the Renaissance. In our times, the ideal of progress accelerating innovative changes is modified into the ideal of sustainable development when priority is given to such innovative scenarios that just neither break, nor eliminate the tradition, but, adapting to some of its aspects, transform the tradition selectively and gradually.

The ecological crisis makes one comprehend the concept of "nature" in a new way. In contrast to the era of the technology-related civilization's formation and industrial development, when the natural environment, surrounding humans, was looked upon as an inorganic field for transformations and a bottomless resource tank, science already in the 20th century formed an alternative idea: the surrounding us nature is a live organism, biosphere, global ecosystem, in which the human society is included as a special subsystem. The natural environment of human habitation is not an inexhaustible resource tank for activities, many types of such resources are limited. The ideal of human supremacy over nature is opposed by the ideal of co-evolution of the society and nature.

These new images of nature and human activities are somehow related to traditional ideas of nature as a live organism, though they are not their simple repetition. They are the result of scientific achievements included in the scientific worldview. Rational interpretation and comprehension of these ideas as a part of the current educational system are the required prerequisite for formation of ecological conscience. But realization of these prerequisites requires special public efforts. Theoretically we understand the necessity of environmental protection, but in practice we often proceed from old ideas. This refers both to individuals and states. The developed economically states, outsourcing production of their corporations to developing countries of Asia and Africa with cheap labour do not spread their nature protection laws to them with rare exceptions (Germany). As a result pollution of the environment on global scales only increases. But the main barrier for blocking the world economic crises that is turning for the worse, is hidden in the fundamental

principles of arrangement of today's market economy. It is orientated to the constant consumption growth as a condition for GDP growth. However, in order to provide consumers' demand, it is arranged artificially, via advertisements offering to accelerate replacement of fairly suitable items with more fashionable ones (though often not of a better quality), via simplifying technologies, orientated to production of quickly wearing out products. The principle of "the more we consume, the better we live" is the deep-laid basis of the contemporary market economy as the well-known futurologist Ervin László emphasizes. László assesses this principle as the way to ecological catastrophe.

Collision of alternative ideals in the issue of human attitude to nature may be viewed as the state of the society in a transitional period, when various scenarios and respective development programs run across each other at the stage of dynamic chaos. Understanding the necessity of nature protection measures and environmental security by the society sets in motion respective social forces, which are opposed by other forces. But without such collisions new values and fundamental worldview meanings are not established as understanding and feeling the world by humans.

And now some words about another growth area for the new values that transforms axiological foundations of the technology-related type of civilization development. I'm speaking about establishment of a new type of scientific rationality in science in the end of the 20th century and the beginning of the 21st century. This type of rationality, which I offered to name post-neoclassical, is orientated to mastering complex, developing, man-sized systems (systems including humans as a special component). This type of systems is becoming a dominating object under study on the forefront of modern science. One of the special features of post-neoclassics is finding insufficiency of traditional for science forms of methodological and ethic regulation of academic research. In order to provide mastering of complex, developing man-sized systems, it's required to compare intra-academic ethical regulations with wider, going beyond the scope of science proper humanistic principles. Comparison of such kind is achieved in the course of socio-ethical expert examination of scientific and technological programs and projects. The former

understanding of scientific rationality, intrinsic to technology-related culture, is modified. If it was thought in the past that autonomy of science provides generation of the objectively true knowledge in it and automatically realizes humanistic ideals, now it is found out that achievement of these targets in science of the 21st century requires additional socio-ethical control, which could provide the choice of the most favourable scenarios, not threatening with biosphere's and human sociality's destruction, out of numerous possible scenarios of scientific and technological development.

Finally, I'll speak about the problematization of the meanings of the "power" concept, characteristic of the technology-related culture. These meanings, defining the socio-political climate of technology-related societies, emphasize the understanding of power as control over an object.

In the second half of the 20th century, the power functions of society's governance were centered on the control over social institutions, their modernization and operation. Democracy's and human rights' development provided feedback for the "society – authorities" system to a certain extent, including control over authorities on the part of society. But in the end of the 20th century and the beginning of the 21st century this system started breaking. New technologies affecting conscience of masses of people provided ample opportunities for information violence, manipulations with public conscience by anonymous groups of the elite in power, connected with the interests of financial oligarchy and its role in the arrangement of the contemporary world market.

There are still no growth areas for new values, sketching scenarios for overcoming today's power crises, found. But the very problematization of the fundamental meanings of the "power" concept, defining the technology-related type of civilization development may also be assessed as a kind of indicator of the commenced transformation of the technology-related culture's values.

Today, solution of the problem of the new value matrix's formation is a condition for transition to new strategies of civilization development. The idea of

sustainable civilization development and overcoming global crises cannot be realized without fulfilling this task.