

What is mankind's space mission from evolutionary cybernetics point of view?

Abstract

The evolutionary mechanisms of anthropogenesis as well as the development of social organisms are analyzed. The concept of Geo-Solaris, treating the Earth, encompassed by evolving living matter, as an intuitive thinking brain, is outlined. The problems of modern civilization arising from the aggressive nature of man, exploited by authoritarian leaders, are examined. The role of space technology in planetary megasynthesis is noted. The hypotheses of cosmic expansion of E-creatures and cyborgs are critically examined. The conclusion is substantiated that any evolutionary process will reproduce a human entity adapted to the parent planet.

Keywords: space mission, evolutionary cybernetics, Noogenesis, E-creatures, cyborgs, dolphins

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Introduction: Cybernetic view of evolution and man

The purpose of this study is to consider the development regularity of nature and society from the standpoint of evolutionary cybernetics in order to harmonize with them the mission of humans in space. The creative nature of biological evolution is demonstrated not only by the fact that it creates a surprising variety of organisms that can impress us with their phenotypic originality,¹ but the fact of homological creativity of nature and the individual.^{2,3} Biological evolution in the mathematical sense is the result of a phenotypes optimization period that took more than 4 billion years in space on our planet through mutation genotypes. A fundamental feature of the process of evolution is compatible co-evolutionary organisms in ecosystems because each of the other representatives of the biosphere plays the role of the so-called "Cost function", which itself is subject to change due to mutation genome plasticity.^{4,5} Consideration of organisms as effective "solvers" for problems of survival⁶ led to the formation of a new direction in artificial intelligence the so-called "computational intelligence" which is based on the model of some aspects of evolutionary mechanisms.⁷ The Noogenesis of living substances on our planet is realized through anthropogenesis, including the aquatic environment, in which the higher cetaceans, perceived as Aqua Hominem,⁸⁻¹⁰ have an even more neurobiologically developed brain than Homo sapiens.¹¹⁻¹⁴ From the standpoint of neo-Darwinism, the material prerequisite for Noogenesis is the development of the intellect of the higher forms of life, which turns out to be the most effective way of survival in the struggle for existence.^{9,10} Already the first machine experiments showed that the Darwinian principles of evolution, included in the modern synthetic theory containing genetics, are quite sufficient for the creative processes of nature to produce an active predator with a developed brain from the virtual lancelet (lanceolatum), in which a creature close to its biological analog is guessed – Australopithecus.¹⁵ The construction of virtual evolutionary models allows a better understanding of the creative mechanisms of biological evolution when the assumptions made in the model are sufficient to reproduce the key tendencies of homologous development. Modeling the evolution of virtual biocenoses confirms the hypothesis that Darwinian principles are sufficient to complicate the neural network controlling the behavior of bots.¹⁶ The complication process itself corresponds to Turchin's theory of metasystemic transitions, with the formation of a new level of control over the expanding lower levels of the neural network.¹⁷ The biological synthesis of a highly developed

brain completes the progress in natural neural network complexity and starts socialization.

Planet Earth as an intuitive brain- GeoSolaris

Homology of the creative processes of nature and intellect has made it possible to form a concept of the essence of Planet Earth as an intuitive brain: Geo-Solaris.^{3,18} The basis of the concept, in addition to the observed homology, is the treatment of life as a replication of information structures genes in the biological, mimes in the mental, and self-reproducing computer codes in the virtual. Both biological organisms and ideas:

- a) are created by the same laws of rotational synthesis and selection.^{3,18}
- b) go through the same stages at birth, as discovered by Selye.¹⁹
- c) reproduced by the same replication process, according to Dawkins.²⁰
- d) evolve according to the same laws formulated by Popper.⁶

Therefore, we have reason to believe that our planet is an intuitively thinking brain, where each biological organism is essentially a materialization of Geo-Solaris thought on a biological informational medium. The human creative process is secondary to the creation of living matter and is essentially its temporal model in psychic reality.

Social organisms

This is a perfect parallel of the basic functions between the individual organism and the organized society.²¹ The political forms of the latter also evolve depending on the degree of development of the productive forces.²² The productive forces themselves are, in essence, technologies for utilizing nature in the interests of society.²³ Here science acts as an intellectual basis of the matrix of transformation of the surrounding world into a world of things useful for man. Note that the political struggle can be seen as a «social search» for a form of state organization that ensures maximum economic progress. Otherwise, the processes of changing the system of governance are triggered either by elections in democratic countries, or revolutions in authoritarian ones. State organisms on a planetary scale, as a result of the exchange of goods, form a similar biocenosis in nature. On a historical scale, we see constant competition, with periodic wars that lead, if not to the destruction and enslavement, then to the suppression of competitors.

The ethics of biological and social evolution

When examining in detail the mechanism of the evolutionary process, we should pay attention to the fact that all biological organisms are capable of producing more offspring than is necessary to reproduce their parents.^{24,25} However, not all of the offspring survive, and not all of the survivors have a mate to continue the lineage. Mathematically speaking, the greater the number of offspring, the greater the genome diversity. In a greater variety of genomes, there is a higher probability of a mutation allowing, if not progression, at least adaptation to the changed environmental conditions. Progressive competitors and predators should also be referred to as the latter. Predators eliminate defective genes and contribute to the progress of the species they feed on. Even parasites are a stabilizing factors in coevolution.²⁶ These mechanisms, together with the inheritance of favorable genes, lead to the harmonious development of species and the stabilization of biocenoses. The evolutionary progress of organisms' development in the central line itself is aimed at cephalization providing growth of consciousness. As virtual models show, the strategy of intelligence development creates an advantage in the struggle for survival, over the strategy of physical perfection.¹⁶

Thus, the progressive coevolutionary development of biocenoses is ensured by excess offspring, some of which are sacrificed to this process. The author has proposed the use of stabilizing gene ethics as the scientific basis for noosphere ethics represented by the spiritualized human being.^{27,28} A similar mechanisms is described in the evolution of society, where historical oppression of classes contributes to the development of production. In this sense, the emergence of slave-owning society progressed, since it ensured economic growth and the beginning of art and science. In today's high-tech countries, progress reaches the point where economic and social freedoms become a condition for development instead of oppression. The phenomenon of economic growth in communist China does not refute the pattern, since it is based on the assimilation of the technologies of democratic countries. In the future, one can expect either a democratic evolution of China's political system or a crisis caused by the breaking of the economy by communist principles of governance. Whether the principle of transferring the technological achievements of democratic countries to authoritarian ones is justified is subject to separate consideration. It is at least obvious that it creates a civilizational challenge to their security.

The challenges of man as a bio-social being

Human productive forces and the possibility of a nuclear catastrophe have created a real threat to the existence of life in its present highly evolved forms. Most likely, the main reason for the genetically determined aggressiveness of man is that the main driving force in his creation was Malthusian natural selection "due to overpopulation"²⁹: numerous closest human relatives were killed and, in many cases, even eaten.^{30–32} While the highest achievement of selection due to "ever-increasing adaptation" to the environment are whales and dolphins. Anyone who possesses an elementary aesthetic sense of beauty cannot but admire their perfection with respect to their habitat; this latter constitutes 2/3 of the surface of our planet, which should therefore be called the Ocean, where life originated. Indeed, an exceptional morphological feature of cetaceans is the "general reduction of limbic structures," which "probably determines the pronounced peaceful character of dolphins"³³ Taking into consideration the evident evolutionary orientation towards the cephalization of species and the regular character of the latter, we may consider man and dolphin as different forms of the higher evolutionary essence split biologically due to the separation of the planet's surface into land and

water.^{8,10} The intrinsically aggressive nature of man needs educational correction through humanization of the educational system and, on the contrary, can be artificially fueled by amoral power, especially in militarized fascist states.^{34–36} According to Maurice Walsh was only happen when leaders with a psychologically abnormal attitude toward human life come to power.³⁷ As such, in modern history, we should include Stalin, Hitler, Pol Pot, Mao, and, of course, Putin with his ideas of the "Russian world" for which a "company in distress makes trouble less." The current war of the Russian Maroon Reich against Euro-Atlantic civilization has brought the world to the brink of thermonuclear catastrophe.³⁴

Military satellite

The persistence of authoritarian regimes, especially those of Russia and China, poses a potential threat to democracies. Therefore, the arms race continued even after the collapse of the USSR. This could not but affect the military-space technology as well. This topic, as well as the following one, require a separate study and is not the subject of this article. Therefore, we will confine ourselves to publicly available background information. Military satellite weapons are traditionally used for reconnaissance, navigation, communication, and early warning.³⁸ The development of satellite weapons is limited to the Outer Space Treaty.³⁹ However, according to experts, China is increasing anti-satellite technology, which, in addition to missiles, contains microwave and laser weapons.⁴⁰

Military ones should also include Reconnaissance satellites.⁴¹ They are designed to solve essential defense tasks: to detect enemy missile launchings and nuclear explosions, conduct photo-surveillance of enemy military activities, and electronically record their radio and radar transmissions. Due to the threat of Russia to use of tactical nuclear weapons against Ukraine, the role of reconnaissance satellites has increased. The Russian Reich conducted a massive attack on satellite networks right before launching its full-scale military offensive.⁴² Its purpose was to disrupt the transmission of navigation data to Ukrainian drones. However, SpaceX has successfully protected its satellite broadband Internet service Starlink and sent 5,000 Internet terminals to the people of Ukraine.⁴³ At the same time, the KA-SAT satellite Internet network of the American company Viasat, which guarantees services to many Ukrainian government agencies, was breached. Satellites with optical equipment made it possible to record the crimes of Russian Nazis in Irpin and Bucha. In addition, the cameras with night vision could track the launches and trajectories of the "Iskander" and "Caliber" missiles. Obviously, the accumulation of military vehicles is well-tracked by the thermal traces of running engines.

Non- Military satellite and Spacecraft

These satellites can be classified by function into those focused on Earth observation and space research: Communications, Navigation, Experimental, and the latter Space telescope.⁴⁴ Spacecraft,⁴⁵ both manned and automated, are of various types, and it is with these that mankind has associated hopes for the spread of terrestrial life in outer space since Tsiolkovsky's time.⁴⁶ Comparing military and non-military satellites, it can be concluded that they can have a dual purpose (with the exception of space observatories).

The logic of the modern phase of megasynthesis

The observed tendency for an increase in the density of information channels is objective and will continue to intensify in the future as far as it ensures synchronization and optimization of industrial and technological processes in the development of societies. The societies

themselves possess obvious features of a super-organisms in which each active individual using his/her PC strives to integrate into Internet and telecommunications networks like in a «nervous web» of developing «global mind».^{21,23} From the concept of Geo-Solaris, i.e. a view of the Earth embraced with the evolving living matter as an intuitively thinking brain bringing about the bio-technological mind of Noosphere.^{3,18} A characteristic feature of this Noogenesis⁴⁷ is in the reproduction of personal intellectual potential on the level of mankind: the world population is approaching the number of nerve cells in an individual brain while the World-Wide Web is acquiring the structure of a neural network.⁴⁸ This rapid development of information and communication technologies, first, the Internet, also resulted in a revolutionary development of mass media. Actually, we observe the rapid growth of wireless networks based on dozens of different standards regulating frequency resources ranging from hundreds of megahertz to hundreds of gigahertz. Communications satellites are widely used for voice, video, and data transactions: television, telephone, radio, internet, and military applications. The Internet also resulted in the revolutionary development of mass media. An individual PC user is now involved in the process of information exchange that comes across any state border. As a result, international virtual reality can now be used as a new sphere of military confrontation conditions of increased geopolitical competition for limited natural resources.⁴⁹ Modern civilization has faced new threats of psycho-viral contamination of public consciousness, which in its disastrous social and political consequences can be considered as a weapon of mass destruction, requiring the development of protection methods based on the ethical compromise between the democratic values and the needs of mental defense.⁵⁰

Critique of concepts of space expansion of E-beings and cyborgs

A full-scale invasion of the Russian Reich in Ukraine with the mission of genocide of Ukrainian people has aggravated the civilizational conflict between democracy and autocracy, bringing it to the brink of thermonuclear catastrophe.⁵¹ Scientific and technological progress has presented mankind with the need to unite efforts to overcome catastrophic climate change, prevent pandemics and “endo-environmental poisoning of all eukaryotes by-products of techno-chemical activity”,⁵² solve energy and food problems, enslavement by AI, etc. Unions of democratic forces led by the USA and within the EU and NATO, as well as the heroic resistance of the Ukrainian people, give rise to hope that this atavism of Russian barbarism will be overcome, and the world will return to peaceful harmonious coexistence. Among the various scientific theories of the possible transformation of man,⁵³ we must point out Bolonkin's concept of humanity's transition to an electronic civilization allowing for expansion into outer space “These creatures, whose intellectual and mechanical abilities will far exceed those of man, will require neither food nor oxygen to sustain their existence”.⁵⁴ This concept denies the human soul as a substance and assumes that E-creatures can have emotions.

However, the problem of emotions in an electronic intelligent device, even logically superior to man, seems to have no solution. Feeling and imitating feelings are quite different things. Imitation does not generate motivation. It is emotion that gives motivation to human existence and unity with nature. It is difficult to predict what type of behavior and what type of intellectual activity a self-developing logical device would move toward. It is not difficult to generate new ideas in its electronic brain, only there will be no clear criteria for their selection without a moral basis.⁵⁵

A more promising way of human technological transformation is cyborgization.⁵⁶ Preserving a biological basis that has emotions and the addition of AI as well as additional sensory organs does not undermine the motivation to exist. Prolonged exposure of humans or cyborgs to a restricted environment will lead to frustration and loss of motivation.

Human cosmic mission from a religious point of view

Religious worldview is looking for ways to harmonize the relationship of humans with the Creator and connects the solution to the problem of immortality with the perfection of the soul, which provides the transmigration of the spirit into divine reality.^{9,10,57} Projects aimed at finding electronic human immortality or cyborg expansion into other worlds are developed by atheistic scientists.

Conclusions

Evolutionary cybernetics makes it possible to discover the basic principle of living matter as the increasing complexity of the organization. First, biological, and then socio-technological evolution. This main living matter law should correspond to the space mission of man, leading to new knowledge and technologies. Obviously, the very possibility of space exploration can be materialized if humanity unites. As shown in the article, modern humanity is not ready for a large-scale space mission, due to Cain's syndrome. The unfortunate accident of Lisa Marie Nowak fractally reflects the problem of humans, similar to the current full-scale war in Europe.⁵⁸ Therefore, even if we have to encounter an alien form of life that uses technical devices, it will inevitably be humane.

Geo-Solaris's thought form is a human organism organically adapted to the physical and chemical conditions of the Earth. Therefore, it is the only place to find that mental state called happiness. According to Dobbs, this is how whales and dolphins feel, as their organisms are more adapted to their environment than ours.⁵⁹ It is rational to explore space using AI-controlled vehicles, not human beings. Long space missions and alien settlements, in addition to biophysical problems, are even more vulnerable to emotional-psychological problems. Attempts to cyborgize human beings to suit the conditions of a planet too different from ours seem untenable and pointless. Life on our planet arose as a result of the evolution of the universe. Wherever life arises, whether it is based on carbon or silicon or whatever medium that is unknown to us, it will evolve. And this creative, intuitive thought process will reproduce our essences in a different form, in harmony with the physical and chemical parameters of the parent planet. From the cybernetics point of view, the evolutionary process can be interpreted as the unpacking of the information archive, culminating in the synthesis of intelligence embodied in higher biological forms.

Thus, if we wanted to organize a cosmic expansion, we would have to move replicators into the primordial soup we discovered, instead of cyborgs. However, we can be sure that in the infinite universe this problem is solved.

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Conflicts of interest

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