

## Homo Sapience or Homo Cosmicus?

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**Abstract:** This study explores the views of the founder of modern theoretical astronautics and missile building, K.E. Tsiolkovsky, on the problem of human evolution and the possible role of extraterrestrial civilizations in it. The scientist finds that inevitable transition of human evolution to cosmic evolution. Representatives of Russian cosmism consider the anthropological evolution of mankind as their ascent on the way to the moral, spiritual, intellectual and physical perfection. Addresses the aspect of adequacy of this views of K.E. Tsiolkovsky for the views of contemporary scientists and philosophers. There is the conclusion of the progressive nature of the “Cosmic philosophy” of K.E. Tsiolkovsky and its predictive focus.

**Key words:** Evolution of humanity, cosmic evolution, Konstantin Tsiolkovsky, space philosophy, Russian cosmism, SETI

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### INTRODUCTION

Man has always sought as accurately as possible to determine their place in the Universe to know the relationship of culture and nature, society and space. History of Russian cosmism, incorporating elements of science, philosophy, religion and art gives the opportunity to find answers to such challenges as the problems of global integration, search the moral guidelines, awareness of ways of achieving the unity of the human community to exit the global ecological crisis, overcoming the crisis of culture, development prospects of humankind. All this largely explains the sustained interest in the history, theory and methodological problems of Russian cosmism which since the 70-ies of 20th century is always in the center of attention of philosophers, sociologists and anthropologists, not only in Russia but also abroad (Hagemeister, 1989; Finney, 1992; Siddiqi, 2010; Young, 2012).

The question about space future in the heritage of K.E. Tsiolkovsky, its place in the “Cosmic philosophy” of the scientist and his worldview seems to be one of the most significant, pioneering and important both from the point of view of the K.E. Tsiolkovsky and from the point of view of the development of space anthropology. Actually, this part of his “Cosmic philosophy” provides an opportunity to talk about the anthropological position of the scholar, to determine the K.E. Tsiolkovsky as the creator, the founder of a fundamentally new directions in the anthropology of space anthropology. Largely, all the “Cosmic philosophy” of K.E. Tsiolkovsky was looking to the future, facing him. Motivation of present and past

moments in the life of the universe was only the necessary, the inevitable basis, without which it was impossible to build a philosophy of the future. That's why Tsiolkovsky was mostly vivid in his descriptions, the most eloquent and tries to be the most convincing when it comes to the future. Future life, future happiness, close and more distant-the most interesting for a scientist, give maximum play to his imagination, opening unprecedented optimistic horizons.

### MATERIALS AND METHODS

The attempts and ideas of Tsiolkovsky were considered as a classical in the framework of Russian cosmism. The very same scientist was an outstanding representative of natural history, the creator of the theoretical rocketry and astronautics. Substantially all of the “cosmic philosophy” of Tsiolkovsky was looking to the future (Lytkin, 1998). He proved, the motivation of the present and past moments in the life of the universe was only the necessary, the inevitable basis, without which it was impossible to build a philosophy of the future. That is why Tsiolkovsky most eloquent and tries to be the most convincing precisely when it comes to the future. Future life, future happiness, close and more distant, the most interesting for a scientist, it give maximum play to his imagination, opening up unprecedented optimistic horizons. That is why, his dreams about the evolution of the earth, humanity, life in general and thinking about the evolution of the earth, humanity, life and mind are occupy a significant place in the works of Tsiolkovsky. (Lytkin, 2000). Reflections on the evolution of the earth of

humanity of life and mind occupy a significant place in the research of K.E. Tsiolkovsky. Predictive research associated with figuring out the future of humanity and of man, its development in different parts of developing a monistic universe is a fundamentally new branch of scientific knowledge, one of the founders of which can rightly be regarded as K.E. Tsiolkovsky. Perhaps, one of the main problem for a scientist, there was a question of ascertaining the place of humankind in the universe, the role of the mind in its evolution and to be more precise, a scientist trying to figure out the purpose of humanity and reason in the universe. In addressing this question, it is highly difficult, complex and contradictory, he appears before us a true pioneer in solving the problem. It was here that he is the most modern of our time and sometimes, far ahead of him offering the response options to the question, it would seem, absolutely fantastic and yet, he remains deeply scientific, a true explorer of problems.

Prognostic research-related clarification of the future of humanity and of the person based on the exploration of space, this is fundamentally a new branch of scientific knowledge, one of the founders of which can rightly be regarded Tsiolkovsky (Finney *et al.*, 2000). Perhaps one of the main tasks for the scientist was the question of clarifying the place of humanity in the universe, the role of the mind in its evolution and destiny of humanity and intelligence in the universe. Realizing this, we will be able to understand and famous statement K.E. Tsiolkovsky: "Mankind will not remain forever on Earth but in the pursuit of light and space will at first timidly penetrate beyond the atmosphere and then will win all the solar space" (Tsiolkovsky, 1954). Tsiolkovsky came to the inevitable conclusion that it is more than likely that on other planets distributed intelligent life. He wrote that "the universe is a single matter, the planet occur by the same laws of planet amazon, "uniform conditions, the common structure of solar systems"-all this leads to the appearance of organic life on the surface with some difference in conditions "does not exclude the laws of life". On the planets is a single substance, uniform conditions of development. Life evolves on a universal law of evolution, proceeding to more complex forms and species, gradually reaching its highest level of intelligent life. All this gave Tsiolkovsky the opportunity to speak about the universal' prevalence of life and mind in the cosmos.

An important place in the formation of the anthropo-cosmic approach scientists play his views on the question of the possible existence of extraterrestrial civilizations in the universe (Lytkin *et al.*, 1995). Tsiolkovsky was deeply convinced that the life of the

mind on the Earth a phenomenon not unique but natural in the framework of the cosmos. This conclusion had failed him, on the one hand, bright panpsychism and gilotina views are not the universe as a system potentially alive, capable of producing life, reaching a reasonable level in any part of it. On the other hand, the principle of materialistic monism also led the scientist to the rationale for the idea of the plurality of extraterrestrial civilizations, the population of the cosmos. Tsiolkovsky believed that the main law that is in force in the universe, the law of materialistic monism, also leads to mind everywhere in the universe (Finney *et al.*, 2000). After the time necessary for the civilizations of the cosmos to achieve cosmic level of development, they unite, forming alliances of civilizations, leading to joint development and study of the universe (Tsiolkovsky, 1925). Mind, upon reaching a certain stage of development, will inevitably exits into space, in order to understand the laws of the universe, the resolution of global problems, mastering new space. Civilization inevitably enters into the cosmic stage of its development (Shklovsky, 1987). These views coincide in general with the views of modern science on the problem of the existence of extraterrestrial civilizations (Sagan, 2000; Goldsmith, Owen, 1983).

## RESULTS

Tsiolkovsky believed that the main task of the mind within the universe as in any part of it is the destruction of all imperfect bearing space (and hence the mind) grief and suffering, all negative from the point of view of the mind. In this case, the lower animals and plants that can only bring suffering (disease causing germs and bacteria, poisonous plants and animals, etc.,) are destroyed. (Tsiolkovsky, 1925). Within the universe of highly developed civilization artificially accelerate the pace of development behind civilizations, elevating them promptly to your own level (Tsiolkovsky, 1932). Each planet, civilization which reached the highest cosmic level of development, according to Tsiolkovsky, will have a unified government, headed by a democratically elected President from among outstanding scientists and thinkers (Tsiolkovsky, 1928). By this time part of civilization will forever move in space settlements, leaving the land and choosing life in an environment without gravity. Gradually, under the influence of changing environment of existence and again awakened the process of biological evolution, there will be a new species of people. (Tsiolkovsky, 1925). First, they will adapt to living in an environment without gravity and gradually and in open space, freely moving in it, traveling from one galaxy to another. Their Tsiolkovsky called "animal space"

(you can call them Homo Cosmicus). They will become true masters and the masters of the Universe: destroying evil, know the laws of the cosmos who has learned to control them, immortal and perfect in all respects. Tsiolkovsky believed that human evolution will not stop but will follow next. The current level of development civilization which to us appears to be supreme and perfect in fact is just one of the initial stages in the progressive development of intelligence. This is his initial stage of development. In order to be consistent and logical in his reasoning, the scientist had to decide a difficult and important question: the mind occurs in nature but how can you receive life itself? The question is not idle. It is important methodologically. Because of his right decisions, solving the question of how life originated on Earth depended on the decision of questions of how life originated (and is there life at all?) on other similar planets in the universe monistic.

The question b of the possibility (and probability) of existence of other civilizations was very important to K.E. Tsiolkovsky and resolve them positively. Yes, differently also could not be! In his monist universe was plenty of room for the life and activity of many civilizations that have arisen at different times or at the same time (they arise on the basis of common laws, like the appearance of the earth civilization). K.E. Tsiolkovsky was deeply convinced that intelligent life on Earth is not unique. In formulating the problem of existence of incivility for a scientist played a major role familiarity with the works of Bruno. In views of Bruno and K.E. Tsiolkovsky, the universe is unlimited, without limits and therefore in this infinite, boundless world is theoretically possible to implement any probability, including the probability of occurrence of one or some number of civilizations. So, like his great predecessor, Tsiolkovsky made a conclusion about the population of planets other solar systems in the universe. In the general formulation of the problem of extraterrestrial civilizations, apparently, the most important, fundamental and original becomes a dilemma is as follows: logical probability of the existence of intelligent civilizations in the universe are very high but currently, we do not observe any obvious manifestations of their space activities (a so-called "Fermi Paradox"). By this contradiction did not pass in his time and Tsiolkovsky. The lack of direct contacts between cosmic civilizations with our own, the earth's civilization, he explained a number of possible reasons. Chief among them he considered the insufficient level of development of our civilization.

Can be tentatively assumed that the level of development of the earth civilization a kind of middle (conventionally assuming that the pace of development

of civilizations can be different and the planets have different times within an infinite universe). In this case, it is logical to assume that some civilizations in the universe is behind in its development from the earth and the part ahead of her. If so, many civilizations in its development ahead of land and some of them significantly, so their level is the traces of their activities, the visible manifestation of their activity, are hardly accessible to our perception, thus our consciousness. We can hardly realize that any phenomenon that we observe, actually is the visible action of incivility, far ahead in its development of the earth. More! It is hardly possible contact with these civilizations.

The ultimate, intelligent civilization, according to Tsiolkovsky, already dominate in the universe. They colonized (but not captured!) the majority of habitable planets. There is no suffering, no evil. All imperfect forms of life, i.e., bearing the suffering, the evil, gave way to the perfect, highest forms. It happened artificially, under the immediate influence of the higher civilizations. Evil on such planets is resolved, there is no suffering for them, leaving only those forms of plant and animal life that are useful to the local civilization. Moreover, civilization has undergone some exposure so that individual members of civilizations, bearing grief and suffering to their fellow man (people, moral defective, spiritually or physically), lost the ability to reproduce his kind.

Summarizing all the above, we conclude that the existence of extraterrestrial civilizations was Tsiolkovsky self-evident idea which bore the character of "absolute truth". This conclusion scientist coincides largely with the views of modern science on this issue. You can lead the statements of many modern scholars, dealing with the problem of extraterrestrial civilizations. In General, they can be reduced to one of the most characteristic findings: "Our final conclusion differs little from the point of view K.E. Tsiolkovsky. We continue to believe that extra terrestrials may have but we don't have evidence that extraterrestrial life exists (Goldsmith and Owen, 1983). The beginning of the era of practical space exploration in the mid-twentieth century, K.E. Tsiolkovsky, there are many followers and supporters among scientists, including in the West, in the United States. One of them is American scientist Friman Dyson. Dyson concludes that every civilization in the cosmos, reaching the cosmic level of development (beginning exploration of outer space of the solar system), strives to acquire wealth, the main energy source - rays of your Sun. For these purposes civilization undertake enormous efforts in the field of Astro engineering. This was expressed in the fact that the civilization of this type creates a solid sphere around its Sun ("Dyson Sphere") in order to fully utilize solar

radiation. For the first time this idea Dyson has described in a brief article in the journal "Science" in 1960 (Dyson, 1960).

Another went further in his research, Gerard O'Neill, Professor of physics at Princeton University (USA). In 1971 he organized and conducted by the students of the university summer session, devoted to the problem of possible colonization of outer space. In the initial studies, not aware of the relevant works K.E. Tsiolkovsky, the group Gerard O'Neill came to the same as Tsiolkovsky conclusions. Believing that the main task of civilization is the solution to the energy problem. O'Neill explained the possibility of designing and creating the huge space colonies around the sun. According to the results of subsequent studies Gerard O'Neill in 1976 published his famous book "The High Frontier" which later was reissued several times and was a landmark event in modern theoretical space. In it he wrote: "Technological revolution is a powerful force for social change and in choosing among several technical possibilities I have been biased by strong toward those which seem to offer the greatest possibilities for enlarging human options and for breaking through repressing which might otherwise be unbreakable. ... I offer no Utopia..." (O'Neill, 1989). In fact, reproducing the ideas of Tsiolkovsky, Gerard O'Neill draws Parallels between the colonization of space and the colonization of the new world and comes to the conclusion that the colonization of the New world led to the creation of the democratic state and space colonization will be able to create an entirely new type of free human.

## **DISCUSSION**

So, gradually and painlessly, according to K.E. Tsiolkovsky, without suffering, "rejuvenated" civilization begins its March towards progress. She's armed with new knowledge about the nature, becomes morally and physically perfect, she is not able to produce evil, sorrow, imperfection. Incredibly developing their technical capabilities, civilization itself becoming a space-faring civilization, beginning to assist his brothers on reason on other, less developed planets, delivering them from evil and suffering. As progressive development, entering the stage of astrorivelatore, all new and new civilizations join the great brotherhood of the universal mind. And it's more and more increases the powers of the mind in the universe.

According to K.E. Tsiolkovsky, the mind in the universe can be represented in different forms. A single on the substantial level, it varies (varies) structurally, especially in their species. Due to the different conditions

of development, intelligent beings in the universe are formed differently. However, the most likely and most common form anthropomorphic (humanoid). The proof of the correctness of this, the law of monism.

But at higher stages of the development of reason are not terminated and his biological evolution. Moreover, the higher civilizations of the cosmos is capable of directing it in the necessary new direction. A significant impact here could have something that civilization, having become cosmic, will try to maximally adapt its biology to life in space. May be, scientists believe, over time, living beings can live in outer space, acquiring a hard outer shell that is permeable only for rays of light which becomes the sole source of energy supply for the body. Due to this, it supports all the internal processes in the body, the circulation of substances in it is closed. As a result, a rational being becomes independent of their habitat, it can live in any conditions, freely moving in interplanetary and interstellar space. The time of his life as biological units, increases indefinitely, people finally get the long-awaited immortality. Bold scientific ideas of K.E. Tsiolkovsky goes even further. Times like the solar system and the atom, then, perhaps, there is life at the atomic level. In parallel with our own, may exist other universes, the microcosm, for example. It is theoretically possible and some interaction between these universes and therefore of minds living in them.

With the beginning of the era of space exploration, the idea of changing surfaces and atmospheres of planets, first of all planets in the Solar system is beginning to find more and more supporters among scientists and specialists, including abroad. Nicos Prantzios in his work, "Our Cosmic Future. Humanity's Fate in the Universe" notes that mankind has sought to change the environment since time immemorial. Most likely, whatever works K.E. Tsiolkovsky relevant period (for they were not published abroad and in Soviet Russia were published in limited editions in the form of samizdat) as Nicos Prantzios: "Humanity has sought to modify its environment from time immemorial. ... The idea that humans might globally modify a planet's climate appears for the first time in fiction writing in 1930. In his major work Last and First Men, English writer Olaf Stapledon describes a vast project undertaken by our distant descendants to make the surface of Venus inhabitable. ... Twelve years later, American writer Jack Williamson invented a new word "terraforming" in his short story Collision Orbit. ... The first scientific article on terraforming was published in the journal Science in 1961 by American astronomer Carl Sagan".

Only by achieving a certain high level of social and individual perfection, humanity begins to explore and

develop space, moving further and further into its depths. Here, in the inhabited space humanity, the mind generally reaches heights in its development, it is here achieved personal perfection. It is in the depths of space, humanity will meet with their brethren in the mind will come into contact with them, unite which ultimately will contribute to the transformation of humanity, they reach the limit of reasonable power. The mind will begin to dispose of the processes of evolution of the cosmos. The humanity of the 20th and 21st centuries has found for itself a new frontier, finding, seeing them in the study and exploration of space. Konstantin Tsiolkovsky has created a new scientific direction "cosmic sociology" of man and mankind with the perspective in the modern scientific and philosophical context. In addition, he creates original "cosmic anthropology" which is based on the idea of the emergence of a new human species Homo Cosmicus, cosmic man, formed as a result of cosmic expansion of humanity, moving in space (Lytkin, 2003, 2012).

### CONCLUSION

It is the pursuit of happiness has spawned a distinctive and original theory of K.E. Tsiolkovsky about the role of incivility in the universe and the place of Earth in space. Bold, sometimes unexpected anthropocosmic ideas of the scientist of the cosmic mind, its origin, evolution, role and place in the universe is one of the most important and valuable parts of his philosophical heritage. In our opinion, K.E. Tsiolkovsky is the founder of cosmic anthropology, the object of which is to study the likely forms of life in the universe, the cosmic future of humanity. The result of this transformation process, according to the scientist, becomes as a result of the space expansion of humanity, moving in space, the emergence of a new human species, Homo Cosmicus, cosmic man, the anthropological ideal of the distant future, the anthropological imperative. In the center of interest, subject to space anthropology is man and intelligent life-forms at all. Cosmic anthropology K.E. Tsiolkovsky is the original section of his philosophy towards the study of future stages of human development, the study of space and cosmic civilizations. Like the caravels of Columbus was sent into space in the first space ships with the same purpose-to expand the sphere of existence of human civilization, to push the boundaries of his knowledge, making it more wise and powerful. Tsiolkovsky was one of the first who not only dreamed about it but scientifically substantiated the pattern and the objective inevitability of this variant of the cosmic evolution of mankind.

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