

ON TRANSHUMANISM

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Transhumanism is a philosophy that raises and welcomes the possibility of the fundamental improvement of man with the help of innovative technologies; to overcome human’s physical and mental limitations, put an end to sufferings, aging and death.

“We see humanity as a transitory stage in the evolutionary development of intelligence. We advocate using science to accelerate our move from human to a transhuman or posthuman condition” (More, 1990).

Humans

Discussions abound over the threats that humanity is facing today, including environmental problems and cataclysms that can be triggered by exacerbating military conflicts. It might happen that the lengthy evolution of living organisms on this planet is fated to end in a huge paroxysm. Over a historically brief period of time, the human race has won irrevocable dominance, reproduced in many billions wiping out numerous plant and animal species. Incidentally, it is not quite clear at this point what catalyzed the evolutionary leap of our pre-ancestors, hominids, helping them to leave all other species

far behind. The regular evolutionary changes were complemented by radical mutations that resulted in both sizable growth and sophistication (qualitative changes) of the human brain. It was precisely these changes that led to the development of human consciousness, and, subsequently, speech, written language, science and technology. Our ancestors were becoming increasingly clever and inventive while they designed more and more sophisticated tools for filling their stomachs and keeping their enemies at bay. Once formed, new bents and traits of character were imprinted and further improved and developed in subsequent generations. Today, humanity is approaching its upper population limit and simultaneously we are about to surpass the maximum allowable limits of atmospheric, water, and soil pollution.

Now let us briefly analyze certain peculiarities of human consciousness and behavioral patterns that have led the human race to success and domination, but now threaten to play a fatal role in the future of our civilization. First of all, I am speaking about activism, aggressiveness and cruelty. Unlike most predator animals, humans had, until not very long ago, practiced cannibalism. It was only some 8,000 to 10,000 thousand years ago, when it had been understood that a captive made into a slave could produce more than needed to support his own existence, that cannibalism ceased to be a widely used practice. According to Arthur Koestler, 'humans do not have a genetically imbedded program to preclude killing of their own species (which most animals have). Otherwise, history could have been very different, i.e., without human sacrifices, mass tortures, executions, and massacre'. A graphic example of cruelty are the Roman Coliseum shows of 100-500 A.D., such as gladiator fights and executions, where thousands of people, including women and children, were brutally murdered for the sake

of public entertainment. Mass murder, including of civilians, has become almost habitual during wartime. Public executions, so popular in the past, have been replaced by modern-day televised atrocities. Terrorist acts killing hundreds and thousands of people and outrageous crime and home violence have become regularly occurring events. Apart from aggressiveness and brutality, the motives behind the regularly unleashed wars include the ambitions of rulers, their desire to seize new territories, plunder riches and make themselves famous. In so doing, they have no scruples about the colossal death toll.

Unfortunately, the mindsets of people, including rulers and ordinary citizens, are undergoing almost no changes with time, despite the growing scale of wars and the destruction they bring. Paradoxical as it may seem, while the power of weapons at humanity's disposal has grown thousands, even millions of times over the last centuries, the behavior patterns, causes of wars and brutal attitudes remain almost unchanged. So, there is a probability that the rapidly progressing science will create, possibly over the next several decades, such means of destruction that continued adherence to the existing attitudes and practices would lead to a complete destruction of our civilization.

Homo sapiens, which has become the dominant species on Earth, has several more peculiar features that, in the context of this essay, will be attributed to weaknesses. First of all, it takes approximately 20 years for a human being to grow up to become a full-fledged member of society. This is roughly the time required for a person to become capable of doing useful work, and create and support a family. Secondly, humans have to spend around 8-12 hours a day sleeping, resting and having meals. In comparison, the maintenance time for modern equipment/machinery is normally less than 0.1-1% of its operation time. The primary source of food for humans is solar energy converted by

green plants or further converted by herbivorous animals. Humans need certain environmental conditions to support life, i.e., temperature, atmospheric pressure and composition, gravity and radiation intensity. To add to the above, humans are susceptible to infectious diseases, organ malfunctions and disorders, and congenital diseases. We have to be surprised and elated, that despite all of these limitations and weaknesses, *Homo sapiens* has managed to win competition with all of the other species, and to stand at the apex of evolution. One of the problems associated with *Homo sapiens*, specifically our behavior patterns, i.e., aggressiveness, proclivity to conflict and other related features, is threatening to cause destruction of the human race. Other dangerous factors include excessive population growth and consumerism; however, these problems can be resolved through regulatory measures or, possibly, through large-scale space development/settlement.

Human Improvement

Modern science and technology offer opportunities for overcoming the natural limitations of human beings. First of all, it would be desirable to boost speed of movement, power of hearing and eyesight (to enable communication range), provide cardiac function control and create functional artificial limbs, blood vessels, etc. In effect, the artificial heart is expected to appear soon. Further, it would be desirable to improve the human brain by increasing its computational and logical abilities. After all, the capacities of modern-day computers exceed those of the human brain in a manifold manner.^[1] Some experts believe it possible to extend the human lifespan by providing artificial organs and tissues, i.e., by converting people into cyborgs or *Homo Technicus*.

The recently announced project, Russia 2045, calls for building a whole human body of artificial parts and components. According to Professor Alexander Bolonkin: ‘the artificial body will possess colossal strength and will be capable of withstanding extreme environmental conditions, such as high temperature, pressure, radiation and vacuum’.

Given the intensive work by physicians and designers, there are reasons to hope that in the next several decades we will witness how, ‘robots will achieve perfection of form and will resemble a human body capable of accommodating a human brain’. The following is a quote from the Russia 2045 popular movement’s manifesto: “The world needs a different ideological paradigm. The use of breakthrough technologies for the improvement of the human organism should be set among priority goals”. It is worth recalling here that the idea of present-day humans being only an intermediary phase to be replaced by something more sophisticated was expressed by many thinkers in the past. For example, Nietzsche described his *Übermensch* as a ‘special race that would be superior over modern-day humans to the extent the latter are superior over apes’.^[2] Advocates of this idea believe that now, in the 21st century, humanity has come to the point where such has become both necessary and feasible.^[3]

Of course, the idea’s implementation arouses purely technical and technological as well as ethical and philosophical questions. For example, how much time and effort will it take to implement the idea, and how would such ‘improved’ humans interact (coexist) with ordinary people? Will they be robots or will they still be people, though with an extended lifespan and replacement parts? To what extent will their mindset and behavioral patterns be altered? Because work has just been begun in this direction, it is difficult to answer these questions at the moment.

Nanorobots

Speaking of the rapidly developing innovative branches of modern science, nanotechnology appears to be among the most promising ones. With microminiaturization coming down to nanometer sizes, we have come close to assembling devices directly of atoms, i.e., the ‘technology’ nature is using to create DNA and other life-essential molecules. As we know, stable atomic combinations form the basis of the living nature that surrounds us. The question is how did such molecules first appear, i.e., how was life formed, (but this is beyond the limits of this essay). DNA, which stores information essential for living organisms, is responsible for their reproduction, modification and evolution.

The possibility of manipulating atoms and molecules of inorganic substances appeared in late 20th century with the invention of electronic microscopes and other sophisticated devices. At the same time, active work was launched to study the properties of such artificially created inorganic molecules, finding stable combinations (constructions) and even the possibility of their self-replication or reproduction. It was discovered that several combinations of various chemical elements could behave in a way similar to that of the molecules that are found in plants and animals. This means that it is possible to ‘design’ new living organisms or objects capable of performing various programmable functions, including self-replication. In other words, this means the possibility of creating nanorobots – microdevices programmed to perform certain activities through the provision of a ‘micro-brain’ – a microcomputer.

The most interesting of nanorobots' potential applications are in medicine and space exploration. For example, nanorobots could be used for internal diagnostics and precision delivery of medicines. In regards to space exploration, hosts of nanorobots, provided with artificial intelligence and power sources (solar cells or isotopes), could be sent to various locations in the solar system and beyond. In the solar system, nanorobots could land on the planets and asteroids, do building or prepare for human settlement. Given the very rapid development in the field of robotics, it will not take long before nanorobots will be able to reach space objects located at colossal distances. Such expeditions will obviously cost much less than manned ones. While planning expeditions to remote planets, it would be required to take into account the future interests of humanity (in addition to gathering more information about the universe) and the limitations imposed by large distances. At any rate, it appears most logical to find an optimal combination of manned and robotic projects.

Cryonics

Now let us take a look at one more approach to extending human life – the deep freeze of the dead and their preservation for 100 years until ways are found to cure their illnesses. There are companies in operation in the United States and in Russia specializing in such a 'business'. They are staffed with 'specialists' in the field and possess appropriate equipment. The founder of cryonics is Robert Ettinger, an American scientist who died in July 2011 at the age of 92 and who was subsequently deep-frozen. The status today is that there are over 100 frozen dead bodies in the United States and around 15 in Russia. The following is a quote from the preface to a book by Professor

Robert Ettinger, *The Prospects of Immortality*. “This will be a light of hope for those who have already confronted pain, loss and the insane ‘absurdity’ of human death, be it at a battlefield or in a dreary hospital ward”. And this is a quote from the text of the book itself: “If we die sick, we have to be made well, and if we die old, we have to be made young... The revitalized will be rejuvenated and overhauled, rearranged and improved both physically and spiritually”.

Review of the possibilities that are opened to humanity with the development of transhumanism leads to conclude that regardless of the option that will be chosen it will be required to fundamentally transform human mindset and behavioral pattern in order to eliminate the threat of self-destruction. New discoveries and new technologies should be in the hands of those who are free from aggressiveness (to each other and to the newly created, for example, cyber objects), and moreover to anyone who has a proclivity to unleash wars. Analysis indicates that we will not be able to do without radical transformation of consciousness, bringing up new generations in the spirit of tolerance and taking appropriate measures to maintain peace on the planet. The principles of cooperation and business communication among people will also need to be imbued in the future cyber devices.

Notes:

^[1] Neurons are unable to respond faster than about a hundred times per second, while electronic devices can respond faster than a billion times per second. Neural impulse propagation speed is under 300 meters per second, while that of electric signals is equal to the speed of light, i.e., approximately a million times higher.

^[2] Friedrich Nietzsche named Alexander of Macedon, Julius Caesar, Cesare Borgia and Napoleon as prototypes of the Superhuman.

^[3] In the 1960s, futurologist Fereidoun M. Esfandiary called ‘transhumanists’ the people with special world-view and lifestyle who advocated and practiced self-perfection. Transhumanists are people who employ modern science and technology achievements to promote transition to the ‘posthuman’ – a creature with fundamentally improved capacities.