

## Trans-humanism

«Transhumanism is a philosophy that raises and welcomes the possibility of 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».

(Wikipedia)

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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.

Max More

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### Humans

Discussions have been active recently over the threats humanity is facing today, first of all 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 explosion.

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 had 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 were 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 getting their stomachs full and keeping their enemies at bay. Once formed, new flairs and traits of character got 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's 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'm speaking about activism, aggressiveness and cruelty. Unlike most predator animals, humans had, until not very long ago, practiced cannibalism. It was only some 8-10 (15?) 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 had ceased to be a widely used practice. '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,' Arthur Koestler wrote.

A graphic example of cruelty are 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 the modern-day televised atrocities. Terrorist acts killing hundreds and thousands of people, outrageous crime and home violence have become regularly occurring events. Apart from aggressiveness and brutality, the motives behind the regularly unleashed wars include ruler ambitions, 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, people's mindsets, 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 will lead to a complete destruction of our civilization.

Homo sapiens, which have become the dominant species on Earth, have several more peculiar features which, in the context of this essay, will be attributed to weaknesses. First of all, it takes around 20 years for a human being to grow up to become a full-fledged member of society. This is approximately the time required for a person to become capable of doing useful work, create and support a family. Secondly, humans have to spend around 8-12 hours a day sleeping, resting and having meals. (For comparison: for modern equipment, maintenance time is normally less than 0.1-1% of its operation time). Primary source of food is solar energy converted by green plants or further converted by herbivorous animals. Humans need certain ambient 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 only have to be surprised and happy that despite all these limitations and weaknesses, homo sapiens have managed to win competition with all other species 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. Another dangerous factors include excessive population growth and consumerism, however, these problems can be resolved through regulatory measures or through large-scale space development and space settlement.

### **Human improvement**

Modern science and technology offer good opportunities for overcoming natural limitations of human beings. First of all, it would be desirable to boost speed of movement, power of hearing and eyesight (to enable almost unlimited communication range), provide cardiac function control and create functional artificial limbs, blood vessels, etc. In effect, artificial heart is expected to appear soon. Further, it would be desirable to improve human brain by increasing its computational and logical abilities. After all, the capacities of modern-day computers exceed those of human brain manifold [1]. Some experts believe it possible to extend 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. "Artificial body will possess colossal strength and will be capable of withstanding extreme ambient conditions, such as high temperature, pressure, radiation and vacuum," Professor Alexander Bolonkin wrote. Given the intensive work by physicians and designers, there are reasons to hope that in the next several decades we will witness how, as Alexander Kaplan wrote, "robots will achieve perfection of form and will be looking like a fairly decent 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 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, Friedrich 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], [3] 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.

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 such improved humans would interact (coexist) with ordinary people? Will they be robots or will they still be people, though with extended lifespan and replacement parts? To what extent will their mindset and behavioral patterns be altered?

So long as work has just been started 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 first such molecules had appeared, i.e. how the life had formed, but this is beyond the limits of this essay). DNA 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 quite a few combinations of various chemical elements can 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 and provided with a 'microbrain' – a microcomputer.

Most interesting of nanorobot potential applications are in medicine and space exploration. For example, nanorobots could be used for internal diagnostics and precision delivery of medicines. As regards 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 turf 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 is required to take into account the future interests of humanity (in addition to just getting more information about the Universe) and the limitations imposed by large distances. Anyway, it appears most logical to find an optimal combination of manned and robotic projects.

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