

ARTIFICIAL EVOLUTION IN TRANSHUMANISM

Ruslan Klymenko

Kharkiv National University named after V.N. Karazin,
Freedom square 4, 61022, Kharkiv, Ukraine
e-mail: unnamzajazy@gmail.com

Abstract:

Transhumanism is a contemporary philosophy based on the belief that human nature is evolving over time not only because of Darwin's natural evolution¹, but also because of the impact of social movements and technical innovations. The philosophy has been shaped by many historical forerunners, for example, Nietzsche's famous idea that the human being is a mere rope tied between animal and posthuman (i.e. Übermensch), or Fedorov's reflections on the possibility of immortality.

In this article, the author will show that – from a current technological perspective – in the not-so-distant future humans will be able to choose their own personal way to evolve, “upgrading” themselves with electronic or organic devices that will modify, improve, or simply introduce new forms of sensation and experience to their being. Included in the analysis of this potential are the historical preconditions of such revolutionary social and technological change.

Key words: Transhumanism, homo sapiens, artificial evolution, cyborgization, bodyhackers, bioethics.

The invention of language, the wheel, the printing press, and many other historical examples assure us that humans are a unique species—one that is capable of accelerating its own evolution. Some representatives of the transhumanist movement recognize their social and philosophical mission in the contemporary global commitment to technological progress that has transformed culture and facilitated or “sped up” the evolution of humanity. Among the adherents of this school is Ray Kurzweil, who has in fact stated that “the meaning of life – is evolution”.

Over billions of years, life on the planet evolved according to natural laws—and specifically, Darwin's law of natural selection—which applies to all species

of varying complexity in the natural world. However, for the human species, much has changed in the last ten thousand years, and given our increasingly complex and targeted ability to intervene (bio)technologically in natural systems, it appears that human beings have achieved a certain independence from natural law.

Beginning with the discovery of fire through to the neolithic, urban, and industrial revolutions, knowledge and innovation have transformed human life and civilization, drawing human beings out of the wild and leading to the establishment and flourishing of community and culture, including the proliferation of artistic, scientific, social, political, and technological achievements that we identify as distinctly “human”. These cultural changes are unprecedented, and therefore give reason to believe that species evolution according to the law of natural selection cannot keep pace with the modern needs of man. Given the unique needs, preferences, abilities, obligations, opportunities, and threats that define the contemporary human experience, one may argue individual human beings have the right to choose how they specifically will transform to meet the demands of postmodern existence—that is, how they, as individuals, will “evolve” within the social, rather than natural world.

From a historical perspective the idea of artificial evolution is not new; indeed, it is rooted in the earliest human cultures.

For a brief overview of humanity's evolutionary history, consider the following:

1) The Quaternary Period – extends from about 2.6 million years ago to the present day; several species that belong to the genus *Homo* appeared and disappeared.

2) The emergence of the species *Homo sapiens* – about two hundred thousand years ago.

3) The appearance of the Cro-Magnon – about one hundred and fifty thousand years ago.

4) The termination of biological evolution of the only extant human species, *Homo sapiens sapiens* – thirty to fifty thousand years ago.

This rough timeline provides a couple of important facts. First, like other species, human beings have a long evolutionary history over which adaptations that promote survival in the fiercely competitive natural world have gradually become characteristic features of the species and changed the way we (on the whole, as a species) interact with our environment—as is consistent with Darwin's theory. Second, this pattern appears to have been interrupted—that is, members of the species *Homo sapiens sapiens* are biologically indistinguishable from those who lived thirty to fifty thousand years ago. Biologically we are the same; but does this mean the evolution of humanity has ceased altogether? Such a query raises a related question, one that is important among transhumanists:

Does the intellect have any bearing on the evolution of a man ?

In other words, has the development of the human faculty of reason allowed human beings to direct or influence the trajectory of the evolution of the species? It is unclear how we ought to answer this question. N.N. Moiseyev, for example, responds negatively to it. However, in the milieu of transhumanists, it is commonly believed that man does influence his evolution (through the application of his faculties, but especially of his rationality), and this situation is so important that it is even called “The first axiom of transhumanism”. As proof of this claim, transhumanists cite the fact that there is a recorded difference in the frequency of violations of color vision between hunter-gatherer populations and subsequent agricultural societies. Hunter-gatherers, whose life expectancy was still largely tied to the vagaries of nature on a day-to-day basis, may have relied on enhanced color vision (e.g. to locate edible plants and distinguish them from non-edible plants, etc.) in order to survive to a higher degree than was necessary for early farmers, whose access to food was more predictable and planned for—in other words, facilitated by human reason and organization (i.e. intellect) rather than sensation (e.g. vision). Since farming permitted more reliable access to food for entire communities (and since this access was less dependent on superior vision), all of the members of these early agricultural communities could enjoy higher life expectancy (including those with anomalies in their visual sensation, e.g. color perception). This form of social organization—the beginnings of culture—thus ensured a greater

chance of survival for community members that were perhaps “less fit” for survival in nature, allowing individuals carrying genes for traits that may have jeopardized survival—both individual survival, and the survival of populations with whom the individual shared a symbiotic relationship—to survive and pass these genes on. In this sense, the achievements of the human intellect – the inauguration of culture—managed to subvert the law of natural selection. This Neolithic-era triumph of intellect and culture over the bare facts of nature signals, according to transhumanists, the deeper human capacity to escape the fatalities of natural law and influence both the composition of human populations (i.e. the evolution of the human species) and the character and progress of human civilization. How does rational intelligence affect the evolution of people? The most powerful factor stemming from human reason that shapes human evolution is the capacity for innovative activity, which includes creativity, invention, and planning related to technologies of food production, political, economic, cultural and humanitarian technologies, health care, transportation, etc. All of these have influenced demography and, consequently, natural selection (in the sense described above, which conceives of sociocultural circumstances as aspects of an entire context to which individuals may be more or less well-adapted for survival). Indeed, the relationship between reason, culture, and biology is clear: the rational, innovative activities listed above (as well as other activities not listed) that comprise culture have contributed to an increase in the average human life expectancy of twenty-two years during antiquity to seventy-five today. Reason and culture, therefore, have measurable impacts on the biological (and psychosocial) “fitness” of the species.

These and other observations allow transhumanists to assert that man continues to evolve – not by virtue of natural laws, but rather thanks to the fruits of our rationality, and in particular, the intellectual boon they prize above all others: scientific knowledge. Man, they declare, is the first species capable of independently influencing its evolution.

To bolster this claim, transhumanism provides a rich arsenal of technological innovations (both actual and theoretical) that support the goal not only of achieving artificial evolution—that is, evolution of the human species which is facilitated one-hundred percent by the intervention of human reason, rather than shaped by the external exigencies of natural law—but of allowing individual human beings to control the particular trajectory of their biotechnological enhancement, development, transformation: evolution. These technologies include:

genetic manipulation
nanotechnology
cybernetics
cyborgism
pharmacological enhancements

To illustrate the potential of these scientific developments to transform the human subject (and species), let's consider the effects and capabilities of a couple specific examples of technologies that may be integrated with the organic body. Available today are prosthetic hands that may be controlled by a person's thoughts.¹⁰ Also in the works are dentures equipped with thought-controlled technologies and prototypes of artificial eyes.¹¹ These devices are generally created with the intention of compensating for lost or missing sensory functions and abilities in people with disabilities, but transhumanists offer a more controversial view: they claim that at some point artificial devices will become more efficient, durable, and reliable (i.e. more functional) than human organs, and consequently, many individuals will choose elective surgeries and procedures to technologically modify and improve their existing natural bodies. In the long run, biotechnology will become so efficient (and presumably so widely available) that it will eliminate human beings' dependence on the organic body altogether. When this occurs, human consciousness may be supported under artificial conditions (divorced from any recognizable human body); i.e. consciousness may be stored as data (in computers). If this occurs on a totalizing scale, then entire persons (understood as the totality of factual content about a unique individual) will come to exist within digital networks; this digital self, then, will continue to exist as long as the network exists, an idea referred to as "Digital Immortality".

Today the so-called "bodyhackers" movement – people who are ready to experiment with their own body for the purpose of its technical improvement – is gaining in popularity.

The movement's representative, Lept Anonym, has inserted the following devices under his skin in the name of personal enhancement: neodymium metal disks that enable physical control of electromagnetic fields, internal compasses providing a physical understanding of the northern and southern magnetic poles, a Bluetooth device that controls various home appliances.

Another famous bodyhacker is Neil Harbisson, an artist from Barcelona who suffers from Achromatopsia, an extreme form of color blindness. In 2004, doctors implanted a Cyborg Antenna in his head that functions as a sensory system for perceiving color. This implanted and osseointegrated device

detects colors and decodes them as audible vibrations. As a result, Harbisson experiences color much as other people might experience a series of musical notes. Harbisson's operation has thus allowed him to have the synesthetic sensory experience of "hearing color" for which human beings are not naturally biopsychologically equipped. Given the controversial political questions surrounding issues of identity, choice, and technology, it is noteworthy that the Committee on Medical Ethics in Europe refused Harbisson the operation, and he was forced to find a doctor who, on terms of anonymity, agreed to perform the operation.

Harbisson has noted many times that he has been repeatedly exposed to social pressure and prejudice following his surgery. This indicates that society is not ready to accept such innovations. In fact, cyborgism poses a major social dilemma. If transhumanists are right that human beings will increasingly be able to modify their bodies and sensory experience through the integration of various electronic devices, then the current social order will also undergo radical change as it is forced to adapt to the needs, rights, and concerns of "trans-species", or cyborg individuals. This scenario presents a kind of futuristic "Tower of Babel", and may lead us to question the ways in which human beings and trans-species individuals will interact.

For now, to protect his own rights and rights of other cyborgs, Harbisson has founded the nonprofit Cyborg Foundation. He believes that in the future, many people will want to improve or enhance their sensory faculties, or introduce new ones as he has done; moreover, he believes these body modifications will be readily available on demand. Humans will then be patched as a computational device in both ways: hardware and software.

Although surgical procedures that transform human beings into posthuman cyborgs remain controversial, technology is still an important tool of disability intervention, and many body-enhancing technologies are currently under development. One class of devices gaining in popularity is ultrasonic sonar, which is especially relevant to blind people. This type of device helps the user to hear the distance between the device (often, a walking cane) and the obstacle (for example, the closer the interference is, the more often the sound signal occurs). This technology thus allows blind people to move about safely and independently, provided they have sufficient auditory capability.

Another example of technology that may improve the quality of life for some people is an implant located along the spine that receives pain signals and

blocks their spread to the brain. This results in pain insensitivity, and could prove especially beneficial to those who, due to chronic pain, cannot live

fully. One might also imagine other practical applications of this device—by the military, for example, although this (or a similar) application naturally raises other, potentially ethical, concerns.

Currently, neurotechnology is an important category of biotechnology research and innovation. Researchers are experimenting with the design of implants that stimulate the brain, and may significantly accelerate mental activity and increase concentration. DARPA (Defense Advanced Research Projects Agency) is also working on a “mind-control” implant (and considering its relationship to other theoretical projects, such as thought-controlled weapons). A detailed study on this controversial technology was published in the journal, *Nature* in 2017.

In 2015, at the epicenter's office, the largest technological hub for Stockholm, several hundred employees implanted a rice grain chip into their hands. With its help, they were given the opportunity to open the door to the office, gain access to corporate equipment, and make calculations. Hans Slobjæd, one of the company's representatives, explained his reasoning for agreeing to the use of this technology:

“We use technology every day, and we need to constantly use pin codes and passwords. Is it easier to immediately implant a device that verifies permission on your own?”

We can conclude that there are many people nowadays who have already “improved” themselves—some of them transhumanists, some of them not. But the fact that the human species—and, therefore, human nature—is not a stable form is obvious; in this respect, the transhumanist movement is both accurate and prescient.

Unfortunately, medical research that confirms the long-term safety of most of these devices is not yet available. But transhumanists believe it is only a matter of time before their views are vindicated, and regard artificial body modification as an overwhelmingly positive trend with a thrilling future ahead.

In conclusion, we note that in the long run as technology continues to develop, an ever greater variety of choice of body modifying devices and procedures will become available to us. The choices that we make in funding, researching, innovating, and consuming biotechnologies will shape us as individuals, as a society, and as a species. Hence, biotechnology and the transformation of the human mind and body (via reason, rather than the untempered law of natural selection) reveal a crucial insight: humanity

has reached a stage of development in which it may independently plan and implement its evolution.

References

Bowler P J (2003) *Evolution: The history of an idea*. University of California. p. 16.

Nietzsche F (1892) Thus spake Zarathustra. <http://www.literaturepage.com/read/thusspakezarathustra-18.html>

Semenova S (2006) Philosophy of immortality and revival of N. Fedorov, <http://transhumanism-russia.ru/content/view/216/116/>

Kurzweil R (2001) The law of accelerating returns, <http://www.kurzweilai.net/the-law-of-accelerating-returns>

Remler P (2010) Egyptian mythology. Infobase, p. 4.

de La Mettrie J O (1995) *Man a machine*,. <http://bactra.org/LaMettrie/Machine/>

Hamowy R (2008) *The Encyclopedia of Libertarianism*, https://books.google.com.ua/books?id=yxNgXs3TkJYC&redir_esc=y

Adhikari S (2019) 7 homo species close to present human that existed on the Earth, <https://www.ancienthistorylists.com/people/7-homo-species-close-present-human-existed-earth/>

Pride V (2005) The first axiom of transhumanism, <http://transhumanism-russia.ru/content/view/267/129/>

Jones B (2017) New Mind-Controlled Prosthetics Are Poised To Transform Humanity, <https://futurism.com/new-mind-controlled-prosthetics-poised-transform-humanity>

Roman F (1994) The history of artificial eyes, <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC504741/?page=1>

Rothblatt M (2014) Virtually human, https://books.google.com.ua/books?id=Y7JzAwAAQBAJ&redir_esc=y

Harbisson N (2012) I listen to color, https://www.ted.com/talks/neil_harbisson_i_listen_to_color

Cyborg association (2020) <http://www.cyborgfoundation.com>

Ultrasonic sonars (2013) <https://geektimes.com/post/257862/>

The brain stimulation (2018) <https://rossaprimavera.ru/news/3809f8ff>

Reardon S (2017) AI-controlled brain implants, <https://www.nature.com/news/ai-controlled-brain-implants-for-mood-disorders-tested-in-people-1.23031>