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Future Life Forms Among Posthumans

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The world is moving fast towards a fourth wave (following the terminology of US futurist Alvin Toffler) in which humans will become transhumans, and then posthumans, thanks to the multiple and simultaneous advances of technology. This change has been described by some experts as so transcendental as when apes evolved into humans.

TRANSHUMANISM

Transhumanism represents a radical new approach to future-oriented thinking that is based on the premise that the human species does not represent the end of our evolution but, rather, its beginning. Transhumanism is an interdisciplinary approach to understanding and evaluating the possibilities for overcoming biological limitations through scientific progress. Transhumanism seeks to expand technological opportunities for people to live longer and healthier lives and to enhance their intellectual, physical, and emotional capacities.

Transhumanism emphasizes that we have the potential not just to be but to become. Not only can we use rational means to improve the human condition and the external world; we can also use them to improve ourselves, the human organism. And we are not limited only to the methods, such as education, which humanism normally espouses. We can use technological means that will eventually enable us to move beyond what most would describe as human. Transhumanism defends that, through the accelerating pace of technological development and scientific understanding, we are entering a whole new stage in the history of the sapient species. Advances in artificial intelligence, robotics, bioengineering, cloning, cryonics, nanotechnology, new energies, mind uploading, dietary restriction, “designer babies,” cyborgs, molecular chemistry, telecommunications, space exploration, immortality, virtual reality, extropy ideas, etc., will lead to substantial physical and mental augmentation at a “singularity” point.

The historical human desire to transcend bodily and mental limitations is deeply intertwined with a human fascination with new knowledge, which might be both inspiring and frightening. How these technologies are used could fundamentally change the ways in which our society functions, and raises crucial questions about our identities and moral status as human beings.

ENVIRONMENTAL TECHNOLOGY, MAGIC, AND THE “SINGULARITY”

New developments in science and technology are occurring so fast that some might begin to overwhelm our capacities to adapt to change. Personal computers did not exist 30 years ago, cell phones did not exist 20 years ago, and the Internet (actually, the World Wide Web, www) did not exist 10 years ago. In the biological sciences, similar achievements have been made since the discovery of the DNA structure in 1953, including new medicines, bioengineering and cloning technologies. In 2002 a living creature – polio virus – was assembled piece by piece with several bio-chemicals by US scientists J. Cello, A. Pauli and E. Wimmer in the New York State University. Cryonics and nanotechnology, for example, were also totally unknown just a few decades ago. Indeed, many years ago, British scientist and writer Arthur C. Clarke said that “any sufficiently advanced technology is indistinguishable from magic.”

The pace of change is not only very fast but it is also accelerating. Some experts like US engineer Ray Kurzweil even talk about a coming “singularity” where artificial intelligence and artificial life forms will overtake human intelligence and human life in the coming decades. Slow biological evolution seems to be approaching fast a dead end: our species will continue changing but not through the old and slow biological evolution but through the new and fast technological evolution.

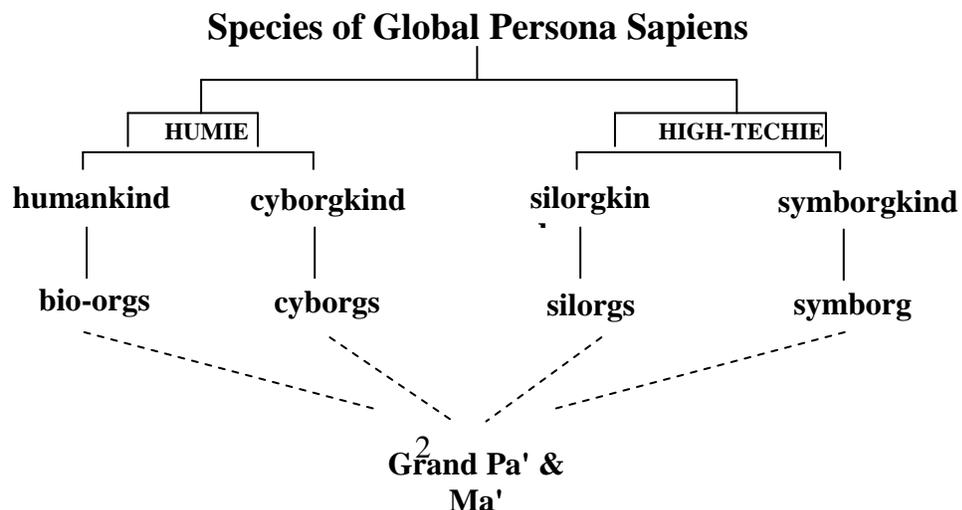
DEEP QUESTIONS

Today many boundaries are blurring. Boundaries between birth and death, between virtual and real, between morality and immorality, between truth and falsity, between inner and outer worlds, between me and “non” me, between life and “non” life, even between natural and “non” natural. What is life? What is death? What is “non” life? What is natural life? What is “non” natural life? What is artificial life?

These are all deep questions for a new deep world of transhumanism and subsequent posthumanism. The answers are complicated and they might be so difficult for us to comprehend as many of our current problems might seem to monkeys, or even to ants. British writer H.G. Wells said it very well about a hundred years ago: “all that the human mind has ever accomplished is but the dream before the awakening.”

ORGS, BORGS, AND “WHAT IS LIFE?”

If we believe that biological evolution has reached a limit, what will come next? Finnish engineer Pentti Malaska tried to answer this question in 1997 during a speech in Brisbane, Australia, while he was president of the World Futures Studies Federation (WFSF). He talked about human-made non-human generations in the pipeline of evolution. Malaska described two major kinds of species (carbon-based humies and silicon/information-based high techies, as a rough simplification) and four minor kinds of global persona sapiens, as can be seen below:



In such a posthuman world beings of other kinds, different from us (bio-orgs of Homo sapiens), may well be within the bounds of human invention. Malaska defined the other intelligent and conscious beings as:

- Bio-orgs or Homo sapiens – a protein-coded bio-organism in the earthly infrastructure as their “natural” surrounding.
- Cyborgs – a cybernetic organism – a combination of techniques and human biology mainly for the earthly infrastructure and the near space.
- Silorgs – a silicon organism – a humanlike non-human, fashioned by coding artificial DNA onto silicon compounds with ammonium as a solvent and aimed basically for outer space infrastructure.
- Symborgs – a symbolic organism – self-reflective, self-reproducing, self-conscious, “living programs” within the Internet as their “natural” infrastructure with advanced interface functions with the other species.

According to Malaska, Cyborgs of Cyborgkind, Silorgs of Silorgkind, and Symborgs of Symborgkind are “gestating, waiting to be brought to life.” Finally, there is the Grand Pa’ & Ma’ Internet – a global mind with superior intelligence and wisdom. This Grand Pa’ & Ma’ Internet could be a Quantum Global Brain.

Australian economist Paul Wildman, also an active member of the WFSF and of the Millennium Project (of the American Council for the United Nations University), further talks about terrestrial and non terrestrial Forms Of Life (FOL). Wildman uses the concept “borg” in its historical and generic sense to identify a “Bionic” (i.e. human made) “ORGanism”, and defines five such terrestrial FOL borgs:

- Orgoborgs – organic FOL, including “traditional” Humborgs (like Homo sapiens) and new and hybrid bioengineered Bioborgs.
- GEborgs – Genetically Engineered FOL.
- Cyborgs – human/machine composite FOL.
- Symborgs – symbolical and symbological FOL, including Conscious/External (such as cultures and corporations) and Unconscious/Internal (such as myths and archetypes) FOL.
- Technoborgs – technological FOL, including Exoskeletalborgs (with an external insect like skeleton) and Siliborgs (silicon-based FOL).

According to Wildman, some of these new FOL already exist in a technical sense, since 12% of the current USA population could be considered incipient “cyborgs” that use electronic pacemakers, artificial joints, drug implant systems, implanted corneal lenses, artificial skin, etc. All the previous FOL are our creations and will be populating our world and remaking us genetically and mechanically and thereby changing our consciousness forever.

Wildman also briefly described other four non terrestrial FOL. They are Macrorgs (macrocosmic FOL), MVorgs (Micro Vita – microscopic FOL), ETorgs (Extra-Terrestrial FOL), and Psyorgs (psychic FOL). Obviously, these exotic FOL depend very much on what definition of life is being used; but several unknown or not yet created intelligent and conscious entities will definitely pass the test of being “alive,” and will satisfy most criteria under several concepts of “life.”

BORGS AND ROBOTS – OUR DESCENDANTS

Other authors have written about even more life forms in a possible posthuman future, from the very physical to the very ethereal, but a simple classification with carbon-based and silicon-based organisms is a good place to start. Such concise system allows to incorporate not just humans but also several types of robots, cyborgs and symborgs (including different logical entities, both physical and non physical).

The word “robot” was created in 1921 by the Czech playwright Karel Capek in his book ***RUR: Rossum’s Universal Robots***. It was immortalized in 1950 by Russian-American scientist and writer Isaac Asimov in his book ***I, Robot*** where he created the Three Laws of Robotics:

- A robot may not injure a human being, or, through inaction, allow a human being to come to harm.
- A robot must obey orders given it by human beings except where such orders would conflict with the First Law.
- A robot must protect its own existence as long as such protection does not conflict with the First or Second Law.

Asimov eventually improved his system and extrapolated the Zeroth Law (A robot may not injure humanity or, through inaction, allow humanity to come to harm.) and modified the other Three Laws accordingly. On a separate front, US futurist Phil McNally and Pakistani futurist Sohail Inayatullah wrote “The Rights of Robots” in 1987, and US feminist Donna Haraway published “A Cyborg Manifesto” in 1991. Both are important documents that defend robots and cyborgs on their own right.

US robotics expert Hans Moravec wrote two books about robots and our/their future: ***Mind Children*** in 1988 and ***Robot*** in 1999. Moravec argues that robots will be our rightful descendants and he explains several ways to “upload” a mind into a robot. Similarly, US professor Marvin Minsky, one of the fathers of artificial intelligence at MIT, wrote his very famous 1994 article “Will robots inherit the Earth?” in ***Scientific American***, where he concludes: “Yes, but they will be our children.” In the meantime, UK cybernetics professor Kevin Warwick has been implanting his own body with several microchip devices and published in 2002 a book titled ***I, Cyborg*** explaining his experiments. Warwick is a cybernetics pioneer who claims that “I was born human. But this was an accident of fate – a condition merely of time and place. I believe it’s something we have the power to change... The future is out there; I am eager to see what it holds. I want to do something with my life: I want to be a cyborg.”

BIOLOGY – TENDENCY OR DESTINY?

The human body is a good beginning, but we can certainly improve it, upgrade it, and transcend it. Biological evolution might be ending, but technological evolution is only accelerating now. Technology, which started showing some dominance over biological processes for the first time some 100.000 years ago, is finally overtaking biology as the science of life. In fact, US fuzzy logic theorist Bart Kosko has said: “biology is not destiny. It was never more than tendency. It was just nature’s first quick and dirty way to compute with meat. Chips are destiny.” And photo-qubits might come soon after standard silicon-based chips, but even they are only an intermediate means for eternal intelligent life in the universe.

In the way to becoming permanent rational “demiurgi” of space and time, it is vital to be aware that even more important than to create is not to destroy. As US author David Zindell has written:

“What is a human being, then?”

“A seed.”

“A seed?”

“An acorn that is unafraid to destroy itself in growing into a tree.”

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