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## CYBORG: TRANSHUMANISM, BETWEEN MYTHOLOGY AND NECESSITY

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### Abstract

Bioethical (neuroethical) perspectives seem to be the main reason for the development of cyborg technology today. While the technology is here and has proven useful in treating serious illnesses or has simply broadened the capabilities of some people, allowing reality to be perceived in other ways, not much attention is paid to this area. The fear of dire consequences, inherent to any era of technological revolution, oscillates between a conservative spirit, rejecting changes, and a feeling of deep responsibility not to destructively alter the humanism of our species.

*Keywords: Cyborg; Transhumanism; Bioethics; Neuroethics; Philosophy of technology; Anthropotechnics; Humanism*

### 1. INTRODUCTION

#### 1.1. Definitions

The figure of the cyborg in popular culture, art and science fiction usually refers to a dystopian future in which humans are enslaved by machines. Because of medical necessity, there are currently millions of people around the world equipped with prosthetic devices to restore lost functions. Simple dental implants, retinal prostheses, cochlear implants, mechanical orthopedic prostheses, pacemakers and defibrillators, exoskeletons, implants that create brain-computer interfaces, as well as other technologies to enhance the performance of the human body beyond its natural level, transform many of us from us in a first generation of cyborgs, whether we are aware of it or not. We are talking about a definition that includes in this category people who have an artificial enhancement, in the form of an implant or device that improves the function of their body.

The anthropological approach to the cyborg concept combines research based on the realities of human-technology interactions with openness to speculation and imagination. According to anthropologist Amber Case, „a cyborg is, quite simply, someone who interacts with technology. The technology can be a physical or mental extension and does not have to be implanted in the body. The origin of the word is found in a 1960 paper on space travel, where it was used to describe the placement of external devices and suits on a human to prepare him for space travel.” (Case, A. 2012) Basically, it is about studying the evolution of homo sapiens towards homo technologicus. The term cyborg (cybernetic organism) is generally used to describe the real human body enhanced with smart prostheses, electronic implants or temporary devices. The end result is a symbiotic hybrid between man and machine. The term was coined by Manfred E. Clynes and Nathan S. Kline in 1960, wanting to represent the closest relationship between man and technology.

In 1985, Donna Haraway took up the concept. Given that a cyborg is at a liminal point, between being neither human nor machine, neither man nor woman, it becomes the inspiration for the text: *A Cyborg Manifesto: Science, Technology and Feminism-Socialism in the Late 20th Century*.

#### 1.2. Transhumanism and ethics

We are at the beginning of the golden age of biotechnology. A few decades ago, two bastions of hybrid reflection between science and philosophy emerged: transhumanism and neuroethics. They are fairly new academic disciplines, halfway between the humanities and neuroscience.

Transhumanism was defined by evolutionary theorist Julian Huxley as the belief that the human species can and must transcend itself by „realizing new possibilities” of human nature (Huxley, 1957). Transhumanism promotes the use of biotechnology to alter and enhance our nature, to transform us into a higher type of being. In this context, athletes competing in the Paralympic Games are not considered to be deficient, quite the opposite. They are not less human because of the prostheses, but gifted. The real power lies in the spirit of these athletes.

Transhumanists argue that we should seek to develop and provide options for enhancing the human body for the same reasons we feel compelled to provide therapeutic medical treatments: to protect and extend life, health, knowledge, and emotional health.

In opposition, the detractors of the process of improving the human race are the so-called bioconservatives. They do not emphasize the technical impossibility of the project, but its effects and consequences. According to them, by playing god, humans could disrupt the delicate balances that support economic relations between nations, distort the way we see and understand members of the human race, and sustain life on the planet. Bioethics seems to share the concern stemming from many science fiction dystopias, from literature and art, that advances in biotechnology can cause a powerful cataclysm for humanity.

„Behind the idea of equal rights is the belief that we all possess a human essence, beyond differences in skin color, height, beauty, and even intelligence. This essence, as well as the view that individuals therefore have inherent worth, is at the heart of political liberalism. But the modification of this essence is the essence of the transhumanist project. If we begin to transform into something higher, what rights will these enhanced creatures claim and what rights will they have compared to those left behind? If some go on, can one ask not to be followed? (Fukuyama, 2009).”

So the problem would be the choice between the two categories: „enhanced people” and „non-enhanced people”, to decide whether we will use the possibilities of access to certain technologies or procedures. If the answer is that we want to avoid the differences that would appear, a restriction of the possibilities offered by the beneficial uses of technological interventions would be imposed.

The American bioethicist Leon R. Kass is well known for his active struggle against what he calls: „the dehumanization of man.” (Kass, 1998). „Because we recognize that these capacities made possible by biomedical science can be used for non-therapeutic or ignoble purposes, serving purposes that range from the frivolous and disturbing to the offensive and pernicious. These powers are available as tools of bioterrorism (eg, genetically engineered drug-resistant bacteria or memory-destroying drugs); as agents of social control (e.g., riot-taming drugs or fertility blockers for welfare recipients); and also as means of trying to improve or perfect our bodies and minds and those of our children (eg genetically engineered super muscles or memory enhancing drugs). Anticipating potential threats to security, freedom, and even humanity, many people are increasingly concerned about where biotechnology may take us. We are concerned with what others can do to us, but also with what we could do ourselves. We worry that society may be affected, and that we ourselves may be affected, in ways that might undermine the highest and richest possibilities of human life.” (Kass, 2003)

Neuroethics is a branch of bioethics and is understood exclusively as an ethics of neuroscience. Transhumanism and neuroethics meet in the interest of similar themes, namely:

1. Both fields of knowledge are nourished by a certain «neuro-essentialist» current, which places the brain, the cognitive and the mental at the center of the debate.
2. Philosophy and bioethics. The discussion around the philosophy of mind and the cognitive sciences led to the bioethical implications of technological applications, now and in the future, in the coexistence of people, in culture, work, law or economics.

According to psychologist and author Steven Pinker, biotechnology could do amazing things if we stopped obstructing research by raising ethical concerns, which is no help at all. Scientific and technological progress is already slow enough, and given the „enormous advances in quality of life, health, and prosperity that biomedical research promises, every day we lose enormously to worry about ethical issues.” For Pinker and many others, „ethics is a luxury we cannot afford” (Pinker, 2015).

Pinker's position seems somewhat simplistic. Ethics is not a creator of free obstacles. The goal of bioethics is to enable potentially beneficial research while ensuring that the risk of harm to participants in experiments and tests, as well as to those around them, is proportionately reduced to the lowest possible level, within acceptable limits from the point of view of moral view. But it really does not respond to the present scientific imperative which insists that we live in an age in which the acceleration of research is of the utmost urgency, that the human losses

of delaying results are far greater than what bioethics suggests as possible dangers. The counterargument is that what is powerful enough to save us is also powerful enough to harm us.

### 1.3. Improving human capabilities

Interventions to improve the capabilities of the human body can be classified into aesthetics, physical performance, cognitive and designed to extend life span.

Physically, man wants to increase endurance, strength, dexterity, flexibility, coordination, agility. We can exercise, eat healthy and take dietary supplements, avoid pollution, and consult physical therapists, therapists, and personal trainers. The improvement of the human body turns out to be in this case the extension of the ancient Olympic dream. The need to take a step further on this path is evident by the existence of a phenomenon such as doping in sports. Today, athletes are regularly tested for banned substances. Professor and philosopher Julian Savulescu (Oxford) says the ancients used the Olympics to find „the strongest, the fastest or the most gifted”. Nowadays, however, the competition is not only a „test of biological potential”, as in the case of animal races.

„People are not horses or dogs. We make decisions and exercise our own judgment. We choose what type of training to use and how to run our race. We can show courage, determination and wisdom. We are not whipped by a rider on our back, but we drive ourselves. This judgment is exercised by competitors when choosing their diet, training and deciding whether to take drugs. We can choose what kind of competitor we are, not just through training, but through biological manipulation... Far from being against the spirit of sport, biological manipulation embodies the human spirit: the ability to improve ourselves based on reason and judgment.” (Savulescu, 2009)

So the conclusion of the Australian philosopher is that we humans are interested in seeing how fast, strong or skilled we can be, using any means available, and should actively promote performance-enhancing drugs and wait for competitors who strive to be the first to discover the latest upgrades to beat your rivals. There is a category that believes that steroids, amphetamines, cannot be eradicated anyway. Then it would be better to legalize their consumption to control it. Julian Savulescu goes a step further and discovers the category of those who consider the consumption of controlled substances beneficial, talking about both physical and cognitive performance.

Julian Savulescu points out that people have always tried to improve their performance by means at hand, usually chemical, such as doping, or the consumption of methylphenidate, common during exams among students in the United States (for example), to improve concentration. From his point of view, a step forward on the path of implanting the technology in the human body would present fewer dangers than current practices. He contradicts current bioethics with arguments such as the following: „I think the issue of cloning is an ethical banality, a curiosity. There is no real problem with being genetically identical to someone, you are still a different person. Identical twins are basically natural clones. Genes are important, but they don't determine who we are.” (Savulescu, 2019)

This text aims to identify the main reason holding back the acceptance of such promising technologies. According to Leon R. Kass, it would be as follows:

„The last and most compelling of these haunting perspectives, the use of biotechnological powers to achieve 'perfection' of both body and mind, is perhaps the least important topic in public and professional bioethics. However, I think it is the deepest source of public anxiety about biotechnology, represented in the concern about man playing God, or The Brave New World, or a post-human future.” (Kass, 1998)

Kass detects „the intrinsic threat of dehumanization” in the very „promise of superhumanization”. This danger of losing our essential and defining nature is seen by transhumanism as an evolution, an important and obligatory step, the only one capable of leading to the acquisition of the capabilities necessary to solve all the serious problems facing humanity today.

### 1.4. Cyborg – a present reality

Kevin Warwick, one of the biggest experts in cybernetics, a professor at the University of Reading, UK, believes that in the near future we will all be able to implant a microchip in our brain. And not to be able to recover capacities lost as a result of an accident or to remove a physical handicap. Professor Warwick refers to organisms that achieve near-perfect communication, connect to the Internet and download an impressive amount of data, or assimilate a foreign language in a few hours. He studies to reach a future where it is normal to connect the human mind with machines, to communicate directly from brain to brain or to extend our sensory, physical and intellectual capacities through technological implants. (Warwick, 2019)

On August 24, 1988, Warwick had a chip inserted under his skin to be able to control doors, lights, computers. The experiment was called Cyborg 1.0. In 2004, Kevin Warwick was the first person able to communicate with external devices thanks to a chip implanted in his brain. Warwick's wife agrees to insert the same chip, to experience a type of telepathy. This time, the project was called Cyborg 2.0.

Through an internet connection, the Columbia University professor was able to move a robotic arm located at the University of Reading in the United Kingdom.

Neil Harbison is the first Cyborg officially recognized by a government. In 2004, when Harbison had to renew his passport, the British government had to accept that the antenna appearing above his head could not be removed, that it was part of his body. So finally the government recognized his right and Neil appears in his passport with his antenna, called the Eyeborg.

Neil Harbisson, cyborg, artist, co-founder of the Cyborg Foundation and Cyborg Nest, was born with achromatopsia, a rare type of color blindness that causes you to see the world in a gray scale. Over a decade ago, an antenna was implanted in his skull that allows him to hear colors. She always accompanies him, even in the shower. Harbisson, is the son of a Catalan mother and an Irish father and lives in Barcelona. For him, a visit to the supermarket means unleashing a symphony of sound. The antenna allows him to „hear“ the shelves full of brightly colored packages.

Jordi Roca (World's Best Pastry Chef Award) works alongside Neil in El Celler de Can Roca, Gerona, (the number one restaurant in the world). Cyborg „powers“ seem more like a science fiction device than a culinary revolution. It exhibits synaesthetic ingenuity, which can interpret the color frequencies of food and transform them into sound frequencies with which the food can be heard. Sound dishes and edible songs, made with the help of Neil, are Jordi Roca's latest recipes. „Hymn of joy“ can be presented on a plate. A Lady Gaga song becomes a salad.

„Bridging the Island of the Colourblind“ is the project through which the Eyeborg sensor implanted in Harbisson's skull won the first European prize in Content Tools and Interface Design.

Neil's brain is connected to the Internet, through which he can receive colors, images or videos from anywhere in the world, but also from space. It can also receive phone calls that go directly to the brain.

Neil turned a deficiency into a „superpower“ thanks to technology. But do we have to have a disability to use these types of devices?

Human beings perceive the world in different ways through their „conventional“ methods of perception: hearing, sight, touch, smell and taste. When Harbisson added his new implanted „organ“, he taught us that senses can be more than five. It showed us new perspectives of reality, where colors are defined by a frequency correlation of wavelengths. This shows that our understanding of the world depends on how we feel about it. How would the world appear to us when we perceive it in a new, broad and different way? Exploring new ways of communicating beyond our senses and languages based on sounds and signs would allow us to understand everything from new points of view, far beyond three-dimensional perception.

Catalan avant-garde artist and cyborg activist Moon Ribas has implants in her legs connected to online seismographs. Every time there is an earthquake, somewhere on the planet, the vibrations go through her body and the information is recorded online. Later, Ribas turns that information into dance or music. Moon started by wearing a sensor that vibrates before any magnitude 1 earthquake as a bracelet in 2013. He then implanted it in an elbow and eventually decided to embed a sensor in each ankle through -a little surgery, to feel the tremors in the legs.

In 2010, Neil Harbisson and Moon Ribas created the Cyborg Foundation, an international organization designed to support all people who choose to acquire this new identity, and to defend their rights. Neil and Moon consider being a cyborg an identity. It's not about having one device or another implanted, it's about feeling like one. There are people who have technology implanted in their bodies for medical reasons, such as a pacemaker or a cochlear implant, and do not feel like a cyborg because of this.

Neuroscientist Phil Kennedy set out to build the ultimate brain-computer interface. He is called the Father of Cyborgs. The neurologist found himself at the center of considerable media attention. The Washington Post compared his pioneering research to that of the inventor of the telephone, Alexander Graham Bell. (Burke D., 2014, documentary)

„If you want to get in touch with someone or need information, you can use the Internet in a special way by using a chip implanted in your brain through a simple operation. I think that would be a very useful skill. But people can't stand anything that involves interventions on the brain. I see patients all the time and the prospect of brain

surgery completely freaks most of them out. Should not be. People operate on other parts of their bodies all the time, and the risk is no different". (Kennedy, P., 2020)

The implant Dr. Kennedy gave himself could not be done in the US due to opposition from bioethics committees. As he himself explained, the operation is part of the trials and experiments developed to try to restore the speech of a hopeless patient, Erik Ramsay, who has been locked in himself (paralyzed and mute) since the age of 16. Thanks to the studies done on himself, the neurologist was able to implant electrodes in the brain of his patient, initiating a revolutionary investigation in the recovery of speech. It has led to the successful development of a new speech prosthetic technology that allows mute people with claustrophobia to speak.

Claustrophobia (pseudocoma) describes patients who are awake and conscious, but with selective differentiation, that is, they do not have the means to speak, to produce movements of the limbs or face. It was only identified as a medical condition in the 1960s. (Laureys, S., et al. 2005) It can develop in two ways: gradually, as a result of a degenerative disease such as ALS, or suddenly, as a result of a stroke or trauma. There is no empirical work on quality of life or other non-clinical aspects that has compared these two groups. No American organization keeps statistics on how many people are incarcerated, but there are probably no more than a few thousand patients each year in the United States who survive the type of stroke that left Erik paralyzed.

Many invisible people quietly suffer a „blockage“ similar to Erik's. In France, the journalist Jean-Dominique Bauby „dictated“ and even published a book from the depths of his private ocean: „The diver and the butterfly“. His story now travels the world in Julian Schnabel's filmed version. To dictate his history, Bauby used a system of blinking with one eye, (the only one he could move) similar to Morse code. His book is given pride of place in Erik Ramsey's home.

People with this syndrome cannot move, but they can feel. I can't talk, but listen. They are stuck between the limits of their mind and the only way to communicate is by looking up or down. At this point, Dr. Kennedy's experiments are the only hope for these patients: becoming cyborgs would mean they would eventually communicate with those around them.

Peter Scott-Morgan is an optimistic man despite being diagnosed with MND (motor neurone disease) five years ago. When he was diagnosed in 2016, doctors predicted he would live for three years. Although he can only move his eyes and some facial muscles, he continues to express his ideas through a speech synthesizer that he operates with his eyes.

Based on a scientific observation, Scott-Morgan realizes that his organs are slowly losing all ability to serve him. In a series of complex operations, combining technology from the fields of medicine and computer science, he gradually replaced his dying organs with artificial ones. The world's most famous ALS victim, astrophysicist Stephen Hawking, managed to survive for 50 years with ALS. Scott-Morgan has already lived 50% longer than doctors predicted. A special sound laboratory in Scotland worked with him to ensure he could continue to use his own voice even after he lost the ability to speak. Its powered chair has some unique exoskeleton features, designed by Scott-Morgan.

He is a scientist who defies death by transforming into the most advanced cyborg in history. His pioneering path can be known from his recently published book, dictated with the help of a speech synthesizer: „Peter 2.0; The Human Cyborg“. In early 2019, Scott-Morgan convinced Microsoft and Dell that he would be the perfect guinea pig to be turned into a cyborg. The technology needed to develop the project to become a cyborg did not exist just a few years ago. „I was lucky to get sick now and not before. I am in the right place at the right time. There are two simultaneous emotions in my brain that couldn't be more opposite. I keep thinking about what it would be like to live completely locked inside myself, a terrifying prospect. When I think about it, I redouble my efforts to find solutions to help me move forward.“ (Scott-Morgan, P. 2020)

### **1.5. The inevitable future of the technological singularity**

Ray Kurzweil is considered the „ultimate thinking machine“ by Forbes and the „rightful heir to Thomas Edison“ by Inc. magazine. He has 19 doctorates, is considered one of the great futurists of our time, able to predict how technology will affect us in the years to come. Kurzweil invented the first computer scanner and the first text-to-speech synthesizer, made 147 predictions with an 86% accuracy rate since 1990. For example, he announced that the Internet would be a massive phenomenon at a time when very few knew the concept, in 1999 he predicted that there would be self-driving cars in the next decade and that mobile phones would serve to answer all our questions.

The concept of technological singularity is inevitably linked to the world of science fiction. The term was coined by one of the most important mathematicians in modern history, John Von Neuman (recognized as one of the fathers of cybernetics), but became popular thanks to the science fiction author Vernor Vinge. The possibility that machines, thanks to artificial intelligence, will one day be able to improve themselves, thus giving rise to a generation of computers far superior to human intelligence, is already a feasible horizon thanks to the development of exponential technologies. Kurzweil is convinced that by 2045 computers will be a billion times more powerful and powerful than all the brains of human beings on Earth. (Kurzweil R. 2012)

Currently, the futurist hopes that everything can be printed by means of 3D printers and that the engineering enables the cure of neurological diseases such as Parkinson's, Alzheimer's and cerebral infarctions. According to him, the necessary technology is already here. Kurzweil offers a computational theory based on the idea of the computer as a product of human engineering and a theory of living beings, their neural systems and, in particular, the human neocortex, as well as a theory that tends to show the functional identity between computers and the human mind. Kurzweil strives to maintain a „humanistic“ idea of man. For him it is clear that man has consciousness, personal identity, is free and responsible for his actions, building his life through a series of decisions that involve the use of an emotional and rational psyche. This means that for Kurzweil, the psychic world is not epiphenomenal (or reductionist). The human mind has a real downward causality that controls physico-chemistry. (Kurzweil, R. 2013) He assures that after 2030, we could choose to become part human, part computer and could upload and store all the information in our brain on the Internet. But it will be around 2099 when technological progress will lead to the full integration of machines into our lives, to the point where they will have a legal status similar to that of humans.

Robots will pilot all vehicles, perform industrial or household tasks. Nanotechnology will make it possible for a multitude of biological nanorobots to monitor our body from the inside, connected to an external medical system directed by a robot or android doctor. We will do DNA samples and a thorough medical analysis with some saliva in any pharmacy.

In response, psychologist Robert Breezing wrote in *Psychology Today*: „It's about magical thinking and false beliefs. This will not happen. This is an anti-biological fantasy.“

As seen in the examples provided, the technology to allow the existence of cyborgs, even to cure serious pathologies, is currently working. It is just that it is not widely known and its implementation is not accepted due to the opposition of the bioethics commissions. However, these commissions do not control research in the field in Asia.

### **1.6 Transhumanist mythology**

According to Northrop Frye „myth operates at the highest level of human desire“ (Frye, 1957) Mythology brings together a collection of stories that provide us with a psychological framework with which we relate to the world. A lot of data is put into a narrative framework, with a structure that gives it deep meaning. Transhumanist mythology perpetuates the myth of the inevitable progress and „omnicompetence“ of science. The present is deficient compared to the progress expected from the future. Human imagination, which is expressed through science fiction, has a background of truth.

Frankenstein, or the modern Prometheus, is the literary work of the English writer Mary Shelley. Published in 1818, it discusses topics such as scientific morality, the creation and destruction of life, and the daring of humanity in its relationship with God. Gothic literature survives and thrives because of how it addresses cultural anxieties. The Gothic myth of the creation of an artificial person has passed into the fantasy narrative and science fiction.

Frankenstein is considered the first work of science fiction and also the mainstay of popular transhumanist mythology. When we talk about cyborgs or the improvement of the human body thanks to new technologies, people first think of movies like *Gattaca*, *Blade Runner*, *Robocop*, *Terminator*, *The Matrix*. As fascinating as they are, they all contain a human instinct to reject the prospect of a world full of cyborgs. The idea is automatically perceived as dystopian, associated with a universe where technology is out of control.

Researcher Mabel Moraña identifies „Gothic Marxism“ in the popular culture of cyborgs and other fantastical creations such as Edward Scissorhands. The human-technology hybrid identifies with the „other“, the stranger, the strange, and receives singular treatment, as a minority individual rejected by society. (Moraña, M. 2017)

Academiciana Moraña draws on abundant literary references and a metaphorical repertoire that appeals to the monstrous, of Karl Marx, introducing an atmosphere of alienation and defamiliarization in her theoretical approach to the study of social relations in industrial capitalism.

Ignacio Morgado, professor of psychobiology at the Institute of Neurosciences at the Faculty of Psychology of the Autonomous University of Barcelona, states that our brain is still from the Stone Age in the sense of emotional development. We are ready to choose between two options, not between millions. That's why no matter what we decide, whether to buy a dress or marry someone, at some point we will think we were wrong. This is a mental trap because there are always so many other options. If we had chosen something else, we would think the same. Morgado, I. (2012)

This is one of the reasons why even enlightened minds such as those on the US and European bioethics commissions have difficulty choosing the technological path that should be allowed to researchers who are willing to enhance the human body with cyborg technology in the immediate future

But it is, at the same time, also a reason for increasing cognitive skills. Some people may acquire the ability to choose unequivocally between multiple options.

All this research goes beyond the idea of ameliorating the consequences of his disease. The results will be applicable to many other people with similar diagnoses.

## 2. CONCLUSIONS

The fear of monstrosity rooted in human instinct, the identification of cyborgs with a Frankensteinian creation, as well as the fear of choice, are the greatest current obstacles blocking a new technological revolution. Pop culture is the mirror of our attraction to, but also our rejection of, the monstrous side we sense in cyborgs. And our instincts are a stronger brake than bioethics.

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