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The Acceleration of Transhumanism: An Approach to the Fourth Industrial Revolution from the Perspective of Media Ecology

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This presentation is based on a previous work that I did with my colleagues Octavio Islas and Amaia Arribas.

This talk is divided into two parts. In the first I will describe the concept Media Ecology and its relevance, then how humanity has transited to the so-called Fourth Industrial Revolution (4IR); what threats and challenges have derived from this new transformation; who benefits and who affects; what nuances begin to appear in various places, what is behind this new global proposal; and where its development is emerging. In the second part, I will focus on the general analysis of transhumanism and the effects observed by the appearance and evolution of the various technologies that underlie this new industrial revolution, from the Media Ecology perspective.

What is Media Ecology?

Media ecology looks into the matter of how media of communication affect human perception, understanding, feeling, and value; and how our interaction with media facilitates or impedes our chances of survival. (Postman, 1970)

Media Ecology is the study of media environments, the idea that technology and techniques, modes of information and codes of communication play a leading role in human affairs. (Strate, 1999)

Media Ecology is a perspective, a field, or metadiscipline, (Nystrom, 1973). According to Maturana and Varela (1980), and Morin (2012) approaches, it is possible to consider Media Ecology as a complex metadiscipline.

Media Ecology needs biology, history, linguistics, cybernetics, literature, communication; in addition to other emerging disciplines, such as general semantics (Korzybsky, 1933) and network science. (Shadbolt and Berners Lee, 2008).

Why Media Ecology is important?

Media Ecologists always ask questions that have to do with our chances of survival and intellectual and emotional preparation for the media. As Neil Postman pointed out, the aim is to question the type of environment one enters when talking on the phone, watching television or reading a book, what aspects of reality do you isolate and amplify? What spatial biases are there? What temporal biases? **Media Ecology is necessary because it has to do with the future and the unknown** (Postman, 1968)

It is an invaluable instrument to help young **people understand the uncertainty of an environment and prepare them for change**.

As Neil Postman suggested, the teacher of the future would have to orient himself towards the problems of the future, develop his listening skills, rather than speaking; focus on questions, rather than answers; focus more on the reward, rather than the test; and keep an open mind. **The new teacher's job would consist of designing environments in which students can learn to ask the appropriate (relevant) questions** so that they can later invent robust methods to find answers to those questions. The teacher and the new student would have to be proficient in the use of various communication technologies. (Postman, 1968)

Media Ecology is important to explore the possible effects of the Fourth Industrial Revolution (4IR) and the acceleration of transhumanism

The Fourth Industrial Revolution

The COVID-19 marked a long and disconcerting parenthesis in the transition to the fourth industrial revolution (4IR), **in which the role of intelligent technologies is decisive**. The technological imaginary of 4IR includes notable advances in biotechnology, blockchains, quantum computing, 3-D printers, artificial intelligence, the internet of things, nanotechnologies, robotics, nano-robots, autonomous vehicles; and **such extensions will create complex environments.**

The development of a highly productive economy will have dramatic repercussions, highlighting the reduction in human labor, including the highly specialized one. (Harari, 2014, 2016, 2018; Serrano, 2018; Rouhiainen, 2018). **In an advanced stage of 4IR, we could be surrounded by intelligent robots and machines capable of doing everything better than us.** The "law of exponential capacities" establishes that each exponential decrease in effort creates an exponential and opposite increase in capacities. **Our survival can depend on the generation of capacity-centered environments. Such a possibility precisely underlies the imaginary of the transhumanist revolution.** (Ferry, 2017).

AI will take us beyond the limits of the 4RI, outlining the path that leads to the fifth industrial revolution (Martínez, 2019)

Threats of the Fourth Industrial Revolution

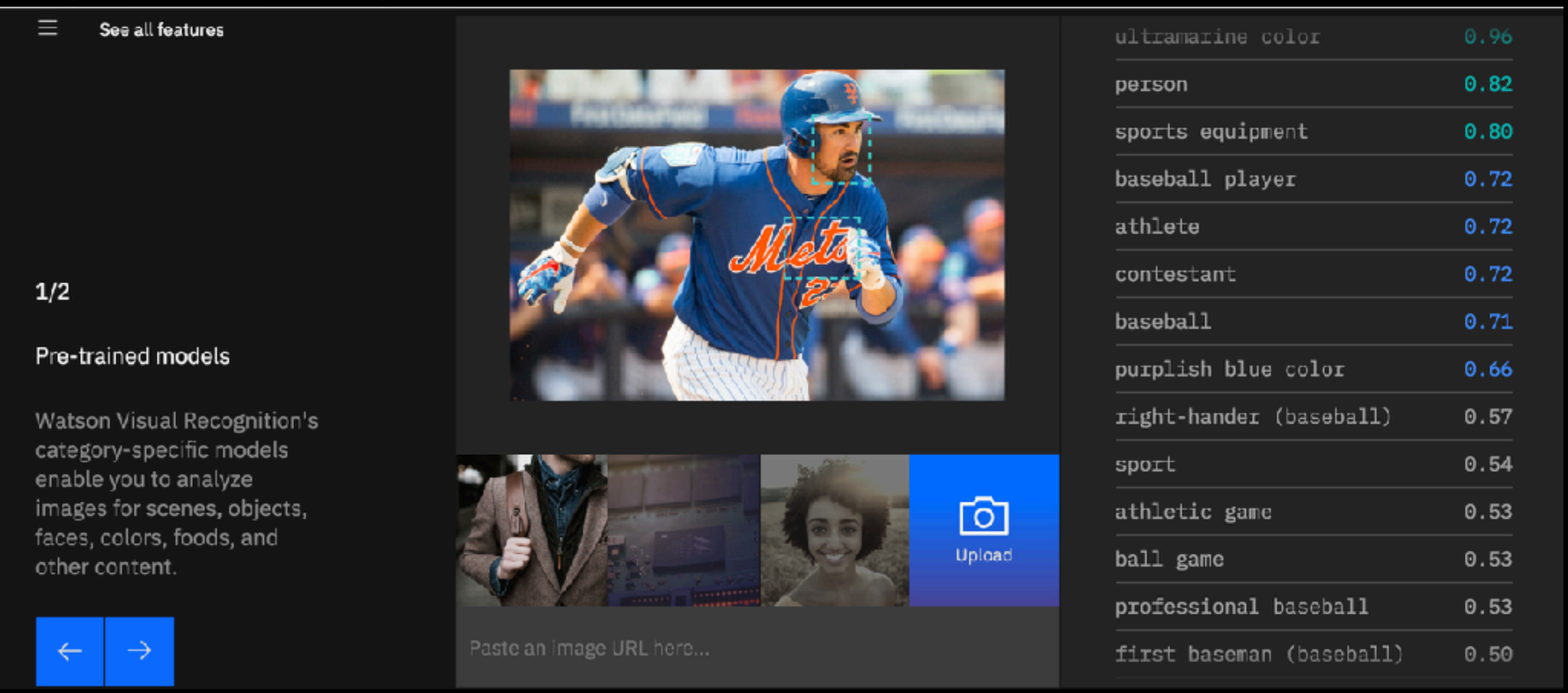
In machine learning (Rouhianen, 2018), **computers and their algorithms can learn from their experiences, even without being programmed for it**. Machine learning enables users to offer increasingly personalized experiences. However, algorithms not only serve to improve processes. **They are also capable of changing behaviors**. (Yogeshwar, 2018). Machine learning established a watershed in the history of persuasion.

One of the most troubling effects of this experience is the digital dissolution of privacy. People have lost control over their data. The omnipresence of Google allows them to know practically everything about us, when we are connected to the internet, and when we are not. On Facebook, the user is not the customer, it is the "product". Brittany Kaiser (2019) revealed how Cambridge Analytica (CA) used deep psychographic analysis to deploy effective propaganda campaigns, decisive in the victories of the Brexit and Donald Trump.

A big part of our social media conversations could be powered by AI. T**he problem is that users cannot easily identify AI because autonomous programs (bots) are constantly evolving**. Instead of simply sending automatic messages that a platform could eliminate, bots are reprogrammed to amplify and spread messages written by humans in the digital ecosystem. (Nonnecke et al, 2019)

Artificial intelligence and Big Data

AI and BD benefits business analysts



Visual Recognition understands the content of images. Analyze images for scenes, objects, faces, colors, food, text, explicit content and other subjects that can give you insights into your visual content.

Marshall McLuhan on AI

Marshall McLuhan was a formidable visionary. In 1964 he warned us about the transcendence that artificial intelligence could admit, also outlining the fourth and fifth industrial revolutions.

> After three thousand years of explosion, by means of fragmentary and mechanical technologies, the Western world is imploding. During the mechanical ages, we had extended our bodies in space. **Today, after more than a century of electric technology, we have extended our central nervous system itself in a global embrace**, abolishing both space and time as far as our planet is concerned. Rapidly, we approach the final phase of the extensions of man – **the technological simulation of consciousness**, when the creative process of knowing will be collectively and corporately extended to the whole of human society, much as we have already extended our senses and our nerves by the various media. (McLuhan, 1964: 25).

The term "technological extension of consciousness" refers us to the imaginary of artificial intelligence. A technological simulation of consciousness, McLuhan said, "would obviate speech through a kind of massive extrasensory perception." (McLuhan, 1964: 145).

Butler, Kurzweil , Harari , *et al.*

In the 19th century, **Samuel Butler slipped the possibility of thinking of intelligent machines as a new species**. **Intelligent machines would be an exaptation of the human species**. A century later, **Kurzweil** (1998) **affirmed the viability of spiritual machines**. **Harari** (2014, 2016, 2018) points out that **the fusion between info technology and biotechnology opens up the possibility of humanizing machines**. Human desires and emotions could be interpreted by intelligent machines through complex biochemical algorithms. **Computer algorithms might even advise us better than human feelings**. The key to this will be the development of the biometric sensor.

Kurzweil claims that the singularity will happen by 2045. Life expectancy and quality of life could be significantly extended, due to notable advances in nanomedicine. Nanorobots will be capable of directly intervening in our cells.

In the 21st century, man could redesign life and defeat death. Until now, evolution has been an organic process. However, science and technology can exponentially accelerate the process of natural selection. **The new possible evolution would be inorganic and technological**. **The exaptation of the human species could take place through three paths**: biological engineering, cyborg engineering, and engineering of non-organic beings.

Stephen Jay Gould
Paleontologist
(1941-2002)

Exaptation

Exaptation is a feature, **now useful to an organism**, that did not arise as an adaptation for its present role, **but** was subsequently **co-opted for its current function**.
Gould, S. J. (1991). Exaptation: A crucial tool for evolutionary psychology. *Journal of Social Issues, 47*, 43-65.)

Examples of **exaptation** involve a trait being **used for a purpose different from** that which it **original**ly was selected by evolution:

- Birds' feathers evolved for thermal regulation – now used in flight.

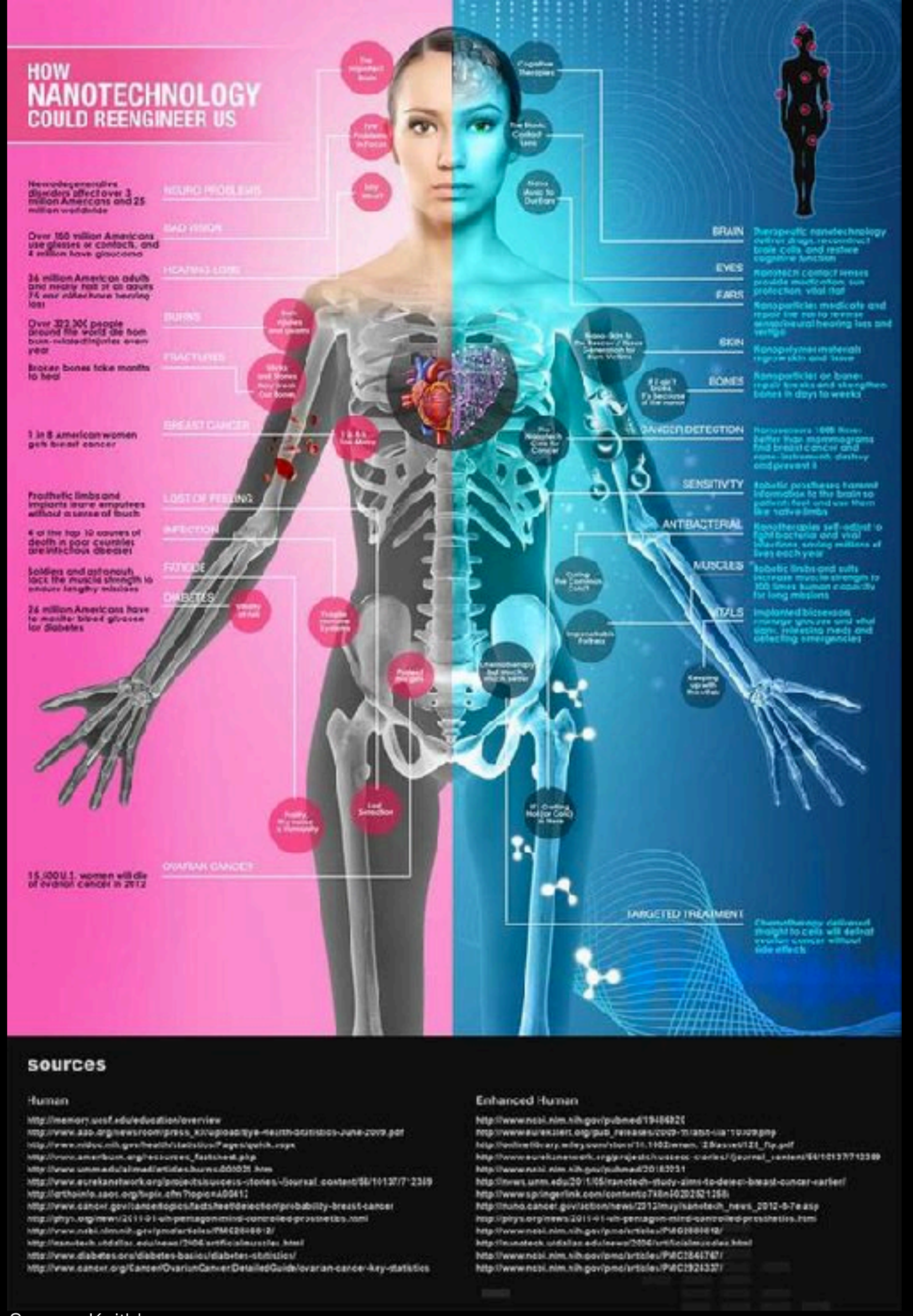
...It is **taking something that already exists** and **using it for another purpose**.
(H. Rheingold, Mind Amplifier)

What is Transhumanism?

Transhumanism can be viewed as an extension of humanism, from which it is partially derived. Humanists believe that humans matter, that individuals matter. **We might not be perfect, but we can make things better by promoting rational thinking, freedom, tolerance, democracy, and concern for our fellow human beings**. **Transhumanists** agree with this but also **emphasize what we have the potential to become** **(**whatistranshumanism.org**,** 2020**)**

Transhuman refers to **an intermediary form between the human and the posthuman**. Future beings whose basic capacities so radically exceed those of present humans as to be no longer unambiguously human by our current standards **(**whatistranshumanism.org**,** 2020**)**

Humanism - Transhumanism- Posthumanism



Source: Keithley.com

About Transhumanism

Kurzweil, Ferry, and Harari talk about transhumanism. They consider that cybernetic implants could effectively improve human capacities, granting us new physical and cognitive abilities. Also, these implants will allow us to interact directly with machines.

Neuralink, which was founded in 2016, **is Elon Musk's neural technology company that's developing an implant designed to interface directly with the human brain. In the long term, Musk hopes to develop a device that could enable "Symbiosis" between humans and AI.**

The barrier between humans and machines could disappear as a result of technological evolution.

The symbiosis between the human brain and AI, anticipated by science fiction, was always seen as something very remote. However, at the end of July 2019, Elon Musk presented a prototype that demonstrates its viability. The human species will necessarily have to evolve to face the complexity of artificial superintelligence. Probably, the human being -as Friedrich Nietzsche had already anticipated- should not be considered as the perfect culmination in the complex process of evolution.


BBC

Some Conclusions (Part I)

Technological giants such as Google or Facebook have created their own ethical codes and principles, to ensure that AI systems are responsive and provide answers to the complex social domains in which they are applied. As a statement of intent, the concept of a code sounds good, **but are such principles and plans ever realized?** Putting into practice these kind of ethical guides is often tricky, especially for those who have no intention of doing so. Jonathan Penn, a technologist and writer, quoted the analysis of 1,000 Android applications undertaken by the non-profit organization Privacy International, which found that **61% of them share information with Facebook immediately when a user opens the app**, without asking for permission and regardless of whether or not the user is registered with the aforementioned social media. (Paniaugua, 2019)

Marshall McLuhan affirmed that all media are extensions of physical organs and faculties of humans. **From the Media Ecology perspective, to understand any social or cultural change, it is essential to recognize how technologies work in us as environments.** The fourth industrial revolution will display a formidable technological development, based on notable advances that will derive from the fusion of biotechnology, information technology, robotics, and artificial intelligence (AI).

Some Conclusions (Part II)

To survive in such a complex future environment, we will need to undergo a profound and decisive biotechnological reconfiguration as a species. If we fail to increase our capabilities, the future could be more complicated than we imagine.

We will face a big dilemma accepting the presence of technology in our biology, transforming us into a kind of a sophisticated cyborg. The transhumanist vision responds to the possibility that humans could be replaced by higher entities, which works better in complex environments, due to the technological manipulation of their structure.

Is it time to begin to consider transhumanism as a possible route in the final prolongation of man?

Beyond possible ideological convictions that interfere with the understanding of the role that technologies observe in social changes and possible transformations in our biological structure, the evidence allows us to affirm that **technological development will continue its formidable evolution, extending and amplifying new functions and human capabilities**. The incredible technological development will not install us in a *Happy World*, but in a complex world, with a considerable number of challenges and greater uncertainty

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