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Design Seminar

December 22, 2022

**Conscious evolution towards transhumanism**

We as humans were always fascinated by the unusual predictions about our future. We watch movies and play video games that are far from our current realities. Stories that completely reconfigure the way we think. Who doesn’t love watching a cyborg superhero disintegrate an alien form that can shape shift and become any person or realizing that you are in a simulation created by artificial intelligence that traps humans in a Matrix. We have all these bizarre ideas that are generally used as means for entertainment. But is all this crazy thinking limited to just books, films and games? I don’t believe so. We have witnessed several technologies that were once just a figment of our imagination, then a visualization in a movie and now a reality. Star Trek talking computer assistant was a new sci-fi idea until we actually turned it into a reality. Everyone has their own talking assistant now. The fiction of touch screens, hoverboards and Robocop is a reality now. Thankfully, Robocops of today are not as lethal as the movie because they have cameras and not guns and they patrol malls of Dubai and America. We are an interesting species. We visualize technologies that seem impossible to exist and then turn those fictions into a reality. Design Fiction has been a vital starting point for new technologies. It is not a prediction machine, instead It is a tool that can be used to illustrate the future.

As a nerdy little boy, I enjoyed science fiction too. Video games and movies were a great reference for my artistic practice. My undergraduate thesis was a sci-fi graphic novel based on a speculation of the future where humans were able to re-fabricate their bodies using biopolymers and modern 3d printing techniques. While designing this work of fiction I stumbled upon a word that piqued my interest. **Transhumanism**, which is an intellectual scientific movement that withholds far wider ideas and concepts about the future in a single nucleus. Hence, instead of having a universal definition it has so many. Most definitions of transhumanism seem inconsistent.

The fundamental general definition of transhumanism could be:

1. *A philosophical and intellectual movement that advocates the development of widely available sophisticated technologies to enhance human condition through applied reason;*
2. *The study of the promises and potential dangers of technologies associated with it, and the related study of the ethical matters involved in developing and using such technologies.*

You may think of transhumanism as extending humanism, which is where it gets some of its roots. Humanists hold the view that people and their individuality are important. Even if we may not be perfect, we may improve the world by encouraging logical reasoning, freedom, tolerance, democracy, and care for our fellow humans. While acknowledging this, transhumanists also emphasize what we could become. We can employ rational methods in the same way that we use them to better the state of the planet and the situation of humanity. By doing this, we are not constrained to conventional humanistic practices like education and cultural advancement. Additionally, we can use technology tools that will someday allow us to go beyond what some people might consider possible.

The core idea of transhumanism as described by **Julian Huxley** is *“a man who remains a man but transcends himself by deploying new possibilities to and for his human nature” (Huxley).*

Impacts of transhumanism on our consciousness would trump any other kind. The human brain was able to transform our society into what it is today. In order to understand the future of human consciousness, we shall visit the past.

*To look into the future, we must look into the past. That’s where the seeds of the future are planted. I never think of the future. It comes soon enough* - **Albert Einstein**

According to **Charles Darwin**, evolution is the change in a species' features over a number of generations, which could occur over eons. **Natural selection** plays an important role in this process of development. The premise of Charles' theory of evolution is that all species undergo gradual change throughout time. Genetic variety in a population that influences an organism's physical features is necessary for the intricate process of evolution. Some of these traits could provide the person a competitive edge over other individuals of the same species, which they could then pass on to their progeny. "Natural selection" refers to the process by which succeeding generations repeatedly adopt favorable traits. The process of natural selection drives the more capable genes to thrive and the weaker ones to fail and die. He called it “Survival of the fittest”

Around 850 million years ago, we witnessed the existence of Choanoflagellates. A single-celled organism that started transmitting, releasing and detecting information in the form of electric signals. This was the origin of neural networks. This system of information evolved with time and formed neurons which carry messages. Jellyfish are the prime example of these diffused neural networks present today. These neural networks went through a slow evolution and gave us brainy mammals around 200 million years ago. Morganucodon was one of those mammals to have developed a neo-cortex. Bigger brains that fill the entire skull cavity which is responsible for mammalian behavior such as living in groups and tactile sensations. These things require more computational power and more intelligence. **Robin Dunbar** at the University of Oxford thinks this might explain the enormous expansion of the frontal regions of the primate neocortex, particularly in the apes. *“You need more computing power to handle those relationships,”* he says.

Around 300,000 years ago, with access to tools and daily usage of fire, humans were able to eat cooked food. Tools helped in butchering animals and eating meat which is a high source of protein. Cooked food is safer and it must have allowed our organs to shrink as low effort would be required to digest the food. The shrinkage of organs would have allowed further brain growth(Adler). The big picture is that our diet, culture, technology, social interactions, and genes all work together in a positive cycle. It resulted in the development of the modern human brain in Africa around 200,000 years ago. (“DK History: First Modern Humans”)

We cannot disregard **Yuval Noah Harari’s** contribution to the history of humans with his book Sapiens in which he mentioned the first cognitive revolution 70,000 years ago. Homo sapiens achieved technological improvements that allowed them to conquer the globe and exterminate all other human species. **Cognitive revolution** was the catalyst that made homo sapiens superior from all other beings. No one is quite sure what caused this revolution. It is assumed that it was a random mutation in the gene.

Homo sapiens evolved a novel and extraordinary sort of language during this revolution. We looked at how this language differed from earlier human languages and languages spoken by other animals, as well as what benefits Homo sapiens derived from this particular language. This **fictive language** had some unique characteristics like flexibility, gossip (in a positive way) and fictions.

Language itself is not very unique; apes, monkeys, elephants, whales, and parrots all audibly communicate. The Sapiens language was unique in part because it was **flexible** and hence more complicated. The language of Sapiens might warn someone about a lion, explain its position, and make plans for how to cope with it as opposed to simply conveying simple thoughts like green monkeys do ("Careful! A lion!" or "Careful! An eagle!"). This enabled them to organize and carry out difficult acts like evading predators and cooperating to catch prey.

The power of the fictive language to **gossip** was another feature that set it apart during the Cognitive Revolution. We tend to view gossip as a bad thing whereas using language to convey information about others is a positive approach to establish trust. Social cooperation is essential for fostering trust, and cooperation offers you a competitive advantage as you fight to survive and pass on your genes. Google reviews are a great modern example of gossip where we decide to use a service based on the gossip of the previous users. The inability to gossip kept Neanderthal societies small because an animal can only know so many other creatures intimately. While Sapiens could establish groups of up to 150 individuals. To trust them, they didn't have to personally know each member of the group. A few Neanderthals couldn't stand a fight against 150 modern humans.

According to Harari's Sapiens, a third advantage of the Sapiens' language during the Cognitive Revolution was how it was applied to produce **fictions**, also referred to as "social constructs" or "imagined realities." It doesn't seem like a benefit to be able to share information about entities that don't exist. But Sapiens appear to be the only animals with this capacity to talk about concepts like money, human rights, corporations, and God that aren't physically present in the world.

Fictive language was also responsible for **collective fictions**. The capacity to produce communal, universally accepted fictions is what is crucial in terms of creativity. People who have never met and who would otherwise have nothing in common can work together toward common objectives thanks to collective myths.

So homo sapiens were able to create larger groups than the chimps thanks to gossip and collective fictions. Gossip allowed us to form bigger groups of around 150 people and collective fictions then accelerated that to make enormously bigger groups that resulted in the formation of religions. Churches may exert power over millions of individuals worldwide because of the shared beliefs that unite their followers, even when they are strangers and have nothing in common. The shared narratives that people tell the world about themselves and the shared ideals that the nation's founders constructed bind its residents together.

We couldn't build the strong social and cooperative networks developed by "imaginary" groups like churches and nations if we could only discuss things that actually existed, like rivers, mountains, and lions. The world would be chaotic. Money is also a story that binds us and unites us that makes us the rulers of the planet. To give authority to a metal chip and call it money, such an absurd but revolutionary idea.

Cognitive revolution is nothing less than a miracle but conscious evolution does not stop here, it gives birth to science. **Scientific revolution** begins in the 1500's when humanity acknowledges its ignorance and starts acquiring power never seen before. America and the oceans are being conquered by Europeans. The entire world is transformed into a single historical scene. The development of capitalism. We go through the industrial revolutions and improve our lives by a million folds. It is a rather quick and radical change in comparison to the millions of years of biological evolution. Human brain does not witness a change in its biological structure or fundamental functioning. However, we did something that was quite revolutionary in itself. We create **extensions** of our minds. As intellectual technologies like maps, clocks and books have changed how we perceive space, time and information we also invent technologies like photography that allow us to store information in the form of still moments in time. We could freeze time in a moment. Photographs became the external hard drives for our brains as we could access, experience and relive those memories again. A photograph acts as a reference point for memory.

The invention of telephone and then internet allowed for fast and wide-spread communication. Humans are connected to this mesh of information through computers. Computers that have their own system composed of bits that act as a switch. And millions of these switches are combined together to form computers of today that can perform millions of calculations per second. In the present times, we have smartphones, renewable energy and mp3 players that act as mere extensions of our minds.

With the advancements in the digital realm of computation we were also devising some evolutionary concepts like **Cybernetics(1940)** that is concerned with the comparative study of human control systems (brain and nervous system) and electro-mechanical communication systems (digital computers). This idea led us to think about human computer interactions on a fundamental level. A very recent breakthrough, **Neuralink** was announced by Elon musk in 2022. It is a modern human machine interaction device that will be implanted on humans. And humans will not need any other interface controller or device such as a keyboard or a mouse. Our thoughts will drive the machine. Currently, animal testing at neuralink shows a monkey playing a pong game without using a joystick.

*"Our first goal is to give people with paralysis their digital freedom back, to communicate more easily via text, follow their curiosity on the web, to express their creativity through photography and art, and, yes, to play video games."* - **Neuralink** (Wakefield)

Similarly, the **Human Genome project** was completed in 2004 that gave us the ability to read nature’s complete genetic blueprint for a human. (“The Human Genome Project”) This project allowed us to think about genetic engineering. **CRISPR (Clustered Regularly Interspaced Short Palindromic Repeats)** as a tool was used to make precise cuts in the DNA structures and used RNA structures to then replace it. This is a revolutionary technology that alters the fundamental building blocks of nature. Gene editing can allow us to treat cancer, modify and enhance our mental and physical capabilities as humans. The possibilities are endless. (“CRISPR”)

In the scientific age, we witnessed several technologies that were mere extensions but we also witnessed some bizarre ideas like Cybernetics and the Human Genome Project that have a fundamental impact on our brains. These technologies are truly transhuman in nature.

One could argue that medicine could also be called a transhuman technology. Well, you can say that but there is a very thin distinction between true transhuman technologies and efficiency based technologies. As medicine and current widely available surgical procedures aim to fix what is already there whereas the transhuman technologies try to modify the fundamental building blocks of our organic matter. For instance, if a car has a faulty engine, we can either try to fix that part or just design a better part that lives longer or maybe eliminates the probability of being faulty. This subtle difference separates transhumanism from efficiency based drugs and procedures.

We are at that point in time where transhumanism has started to show its true form. We have designed quantum computing which in itself is a revolutionary technology. It uses qubits and it is fundamentally different from a digital computer. It thinks in a similar way to how humans do, using probabilities and not digital ON and OFF switches.

*“In a hundred years, we have gone from a complete lack of understanding of the universe to Newton's Equations where you could make fantastically accurate predictions about solar eclipses and motions of the planets and so on. And another few hundred years later we migrate from that understanding (the patterns of nature that we see with the naked eye) and we develop a whole new body of law called quantum mechanics which describes the world in terms of qualities that we don’t ever see with the naked eye.”* ***- Brian Greene***

We also have a new field of bio-computation involving a **biological supercomputer** that also thinks fundamentally differently. It uses protein instead of electrons to transmit data which is very similar to our biological brain.

*The supercomputer, which is the size of a book, uses much less energy, so it runs cooler and more efficiently, according to scientists at* [*McGill University*](http://www.mcgill.ca/)*, where the lead researchers on the project work.* (Gaudin)

**Molecular nanotechnology** allows bio computers to perform parallel computations just like the human mind. MNT could also potentially replace our immune systems as these tiny robots can self replicate and form new structures. True transhumanism.

Transhumanism could be addressed as the next big evolution for humanity. It is empowered by technology and forward thinking. While thinking about all these new radical technologies and the changes that they bring to humanity, it freaks us out. **Technophobia** is a term that describes the fear of new technologies. We as humans are scared of new things. From forks to the printing press, humans have always feared various technologies throughout history. In the 19th century, a group of English mill workers known as the Luddites started breaking textile machines as a method of protest. Many scientists opposed the idea of women riding bicycles as they deemed it dangerous for women. In actuality, that fear is a typical reaction that is firmly ingrained in people. We like to be in control of the situation. That is why we love driving cars because it gives us that sense of control. Statistically, we are much more likely to die in a car accident than a plane or a train crash but that doesn't stop us from driving cars. (Walter)

*“We're hardwired to fear the unusual rather than the normal,”* says **Ed Day**, a sociologist at Chapman University in Orange, California. *“That's kind of an evolutionary thing.”*

On the other hand, we also come across the idea of technology determinism. As these technologies severely impact our lives. The Internet and social media has dangerous impacts on our mental health and the higher powers can sell data to rich companies to make us buy their products that are mostly things that we don’t need. There are some ethical boundaries that are being exploited every day with modern technologies. Who sets these boundaries and how do we make technology useful and safe for us?

Transhumanism in its core definition mentions the study of ethics and core humanist values before employing these technologies into the world. To make these technologies safe and robust keeping the ethical and moral boundaries in check. As these technologies are inevitably a part of our future and we cannot deny it. Instead we can try to plan the future through this approach as transhumanism is not just about supporting new technologies to transcend humanity to its new form but also about planning the future in a safe and a humanist way.

The implications of transhumanism have given us a set of assumptions and some hypothetical technologies that will greatly transform our consciousness. We are looking at possible intelligence amplifiers and telepathic communication. Our personal extensions of the mind (smartphones) might not be needed anymore in the near future as we will have a direct connection with the giant web of information through our brain computer interfaces. Artificial General Intelligence will be born that will be superior to the human brain. It could make rational yet important decisions for us. Our consciousness could be downloaded into quantum computers and sent to other planets to expand and travel through time. The idea of immortality seems possible. Matter will take new forms. Robotic bodies will not be mechanical anymore. They will be more organic, flexible and powerful than our current bodies. As haunting and scary as it seems, it will not matter to the upcoming generations of humans. It will be their reality and they will live it that way with their limitless minds. Powering a gigantic quantum computer using a dyson sphere over a star and generating simulations of humanity. Far-fetched ideas like these do turn into a reality and who knows if this has already been done before and we are in fact, a simulation.

**Nick Bostrom** brought the **Simulation argument** that argues that at least one of three propositions is true.

1. *The human species is likely to go extinct before reaching a “post-human” stage.*

*2. Any post-human civilization is unlikely to run simulations of their evolutionary history.*

*3. We are likely living in a computer simulation.*

As far as our technology is concerned, we will be able to achieve singularity earlier than we think. Futurist **Ray Kurzweil** predicted 15 years ago that the **singularity**—the time when the abilities of a computer overtake the abilities of the human brain—will occur in about 2045. Gale and his co-authors believe this event may be much more imminent, especially with the advent of quantum computing. (Schulze) That means that we will be able to reach post-humanity where it is possible to run simulations of human societies.

But what if we are the first original reality and we have yet to become post-human in order to create those simulations? The answer is within the question. If we are assuming that we will reach post-humanism, we have to agree that there will be simulations. And according to probability theory, if there are simulations, there is a high probability of us being a simulation out of the millions rather than being the original creator. Which one will we end up in? The original one or the other millions? Probably the other ones. These arguments tend to make sense in some way and make us believe that we are in a simulation.

*We have evolution itself to thank for this magnificent illusion, as it maximizes evolutionary fitness by driving truth to extinction.* - **Donald Hoffman**

We love simulations because they allow us to recreate real-life scenarios. Be whoever we want and do things that we cannot do in real life. Simulations are means of escape and entertainment. They offer a sense of control without suffering the consequences.

But will we have enough computing power to support such big simulations? In case we don’t, we will find a way to overcome these barriers as well. As **Neil deGrasse Tyson** questions the logistics of creating a simulation based on Minecraft world building mechanism. The world creates itself in real-time rather than loading all of it at once saving loads of space, resources and energy.

*You don’t know whether you are calculating the world or wether you by calculating, are projecting the world* - **Vilém Flusser**

So, it is highly unlikely that we will not try to run simulations of our evolutionary history. Again, the question of ethics and humanism comes up in the discussion.

Uptil now, major video games that speculate the future are dystopian in nature just because the audience loves that. Is dystopia causing technophobia? Maybe yes, maybe no. Because dystopian storytelling gives us an image of the dark future that we could avoid. It helps us in avoiding severe circumstances that we could have not imagined before. While utopia is an image of perfection and sometimes setting certain ideal boundaries is harmful. For instance, Nazism was based on a utopian idea to create a utopia on earth.

Another interesting concept is "Protopia," which is described as the antithesis of a "Dystopia" and was invented by futurist Kevin Kelly. People in dystopia are trapped in a cycle of pain similar to **George Orwell's 1984 quote**, *"foot trampling a human face – forever."* Thus, a prototypical society is one where people are liberated from such bottlenecks and may actively contribute to bettering their life circumstances. A dream of societal change in more precise form is as follows: It doesn't promise that "everything will be wonderful for everyone," but focusing on the potential — the common ability — to move in mutually advantageous paths.

In conclusion, **Transhumanism** is a protopian approach towards the evolution of human consciousness. Technology, which is a double edged sword that needs a system to moderate its use and to make it mutually beneficial for both humanity and science. Humanity will undergo this great radical and magical transformation. We might be able to uncover some existential questions on the way.

*Shouldn’t we be content to be cosmic sloths enjoying the universe from the comfort of earth?*

*The answer is NO!* - **Stephen Hawking**

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*Shozab Raza - work from series: transhumanism*

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