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Cutting the Puppet Strings: Confronting The Singularity

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"I would warn you that I do not attribute to nature either beauty or deformity, order or confusion. Only in relation to our imagination can things be called beautiful or ugly, well-ordered or confused."

– Baruch Spinoza

"Oh! Science! Everything has been reconsidered. For the body and for the soul–the viaticum."

– Arthur Rimbaud

"Whoever fights monsters should see to it that in the process he does not become a monster. If you gaze long enough into an abyss, the abyss will gaze back at you."

– Friedrich Nietzsche

Dedicated to Ray Kurzweil and Kush of the Cloud House

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Introduction

Over recent years, there has been a strong divide between techno-skeptics and optimists, both of whom still, to this day, struggle to foresee the consequences of a technologically co-dependent future, a world that will differ from the one we live in today. The uncertainty of where our technological future is heading has incited excitement, fear, confusion, and curiosity among scientists, philosophers, and social critics who are either heavily invested in the question of technology's ubiquity or ignore it entirely because of this issue's complexity. However, techno-futurists like Elon Musk, Sam Altman, and Ray Kurzweil have taken it upon themselves to predict our future. And the future they posit is one where our survival will depend on artificial intelligence and neurotechnology (e.g., genetic engineering and neurolink) to increase longevity, enhance intelligence, and enable us to communicate with machine intelligence. This is supposed to enhance our health and performance and manipulate our genetics to co-exist in a society dependent on the guidance of machines over people. These far-fetched premonitions for our technological future, regardless of their credibility, have changed the discussion of technology, and continues to raise concerns for the public and even for experts in the technological field.

Ray Kurzweil, the most certain of them all, is generally known to the public as an inventor who is one of the leading figures of the Singularity movement. This movement was championed by Kurzweil himself as early as the 1980s, since he was able to build a memory capacity for computers. Due to the exponential growth of technological advancement, he was able to posit a hypothetical future where we will be able to merge our bodies with technological

advancements to transcend biological limitations, increase our lifespan and manipulate our genetics through technical means.

Kurzweil has dreamed of being an inventor and changing the world since he was five. Before seeing the development of technological advancements during childhood, he became fascinated with the development of the computer and its ability to recreate a world he envisioned for the near-distant future. Because Kurzweil had already intended to change the world at such a young age, events such as these must have shaped Kurzweil's prophetic attitude toward the future of humanity.

Due to Kurzweil's parents being survivors of the Holocaust, he had grown up in a non-religious household. Still, he was educated spiritually by the Unitarian church, where he would study various religions, each one within six months, before moving on to the next. In sympathy with his parents' historical background, Kurzweil was determined to invent technologies that would rise beyond our death, mortality, and tragedy to create a more homogenous, peaceful, and transparent world, beyond the conceptions of what we think is possible.

Reflecting on his spiritual views, Kurzweil recalls a memory from childhood where his grandfather visited him after his return from Europe and told him stories ranging from the 'gracious treatment he received from the Austrians and Germans, the same people who forced him to flee in 1938,' to the 'rare opportunity he had been given to touch with his own hands some original manuscripts of Leonardo da Vinci… He described this experience with reverence as if he had touched the work of God himself' (Kurzweil, 2). Memories such as these helped Kurzweil solidify religious views of his own, which he claims are the harbingers of human creativity and the power of ideas.

Inspired by the Tom Swift Jr. series as a little boy, he understood that ‘the right idea had the power to overcome a seemingly overwhelming challenge’ and believed, following Arthur C. Clarke's third law, that advanced technology is ‘indistinguishable from magic’ (Kurzweil, 2-4). These altruistic principles gave Kurzweil the tenacity to believe he could contribute to the world of ideas through technological advancements. By the time Kurzweil was in his mid-twenties, he had realized that his technological inventions needed to be marketable and culturally plausible to the present-day world in order for them to be introduced. This realization made him a keen observer of the ever-changing technological and scientific trends that had emerged since the breakthrough of the 1960s. In other words, he had to *anticipate* the right time to implement his inventions. Since Kurzweil's intuition regarding the speed of technological development had proven itself, his predictions of a technologically co-dependent future seem to reflect the direction in which our humanity was headed. And now, Kurzweil goes as far as to say that we can utilize technology to overcome our biological limitations by surgically implanting our bodies with machinery and downloading our consciousness into the Internet to communicate with biological and nonbiological beings worldwide.

According to Kurzweil, this will enable us to transcend the body (to the point where our body is obsolete) so that we can live out our ideal lives through the realm of virtual reality that could very well replace the reality we live in today. James Canton, futurist and former adviser for White House administrations, years later affirms some of Kurzweil's fears and visions of the future. In his book, *Future Smart (2016),* Canton (like Kurzweil) urges us to imagine a kind of society or virtual plane where people can ‘self-direct their destiny, take control of their health, life, and death. They want to not settle for their intelligence but instead boost their smarts, do more, achieve, invent, solve, love, and last longer’ (336). Sentiments like these that come from

people we deem credible not only urge us to foresee the political consequences of the redistributions of these self-enhancing technologies, but also that it reminds us of the fear we share of our own morality and our ability to supersede death.

Furthermore, Kurzweil's fascination with achieving immortality through technological enhancements and pushing us to think beyond our biological limitations is as personal as it is altruistic. Ray's first encounter with death was losing his father, Fredric Kurzweil, due to heart failure, when he was only in his twenties. When Ray first heard of his father's death, he was not surprised, as there had always been health complications that interfered with his father's quality of life. For Ray, at such a young age, the sudden death of his father was a devastating first encounter with mortality. One would be right to believe that Ray's predictions come from a place of great yearning and fear that all of us share.

Later in his life, Kurzweil was diagnosed with type 2 diabetes and was admitted to the hospital in 2008 for a congenital heart defect, which is a symptom of diabetes. Since his operation, he now takes up to 200 pills daily to reprogram his biological body, which he sees as undesirable. Despite his extreme stance against the nature of human morality, his proposition to use technology to transcend our biology urges us to reflect on the history of evolutionary or technological development. We will have to weigh the benefits and consequences of Singularity either way.

The question Kurzweil leaves us with is ultimately an existential one, as his predictions and hopes – for a future where we can overcome death – lead us to ask ourselves, is the course of technological evolution analogous to biological evolution? Kurzweil takes the authority to answer this question through the controversial prediction that the future of human evolution depends on technological growth, so we are to merge with machines to transcend biology. His prediction of

humans merging with machines was only an abstract hypothetical when he introduced it in 1993. Though, due to his careful observation of the exponential growth of technological development, he finally coined the term *Singularity*. For Kurzweil, there was never one determinate moment when he became aware of the Singularity. Rather, it was a 'progressive awakening' over years spent trying to 'understand the meaning and purpose of the continual upheaval' of computer-related technologies.

In his book, *The Singularity is Near (2008),* Kurzweil took the meaning of this word from the field of physics, which defines it as an anticipated event that could happen beyond the horizon of a black hole with an imagined interior where all matter is supposedly compressed to a single point. Thus, behind the imagined interior of a black hole, time and space are no longer recognizable. This is a definition that he believes is a metaphor for what the future holds, as he not only foresees the emergence of a technological civilization, but of an age in which people can utilize technology in a way where it can put our fate into our own hands. He asserts his optimism for a technological future by making the unjustified claim that the epoch of the singularity will be neither 'utopian or dystopian' and that it will inevitably 'transform the concepts that we rely on to give meaning to our lives, from our business models to the cycle of human life, including death itself' (Kurzweil, 7). Kurzweil's assertive tone here is daring but questionable, considering that he has no grounds to prove that the future of Singularity will not end in dystopia.

However, if Kurzweil's belief in the emergence of Singularity becomes a reality that will transform our understanding of the world, then we will also have to examine what aspects of our old way of living will have to be compromised if we are to live in something other than a dystopia. The question then becomes, what is Singularity? Singularity is more based on a prediction than a philosophical argument or motive-based altruistic principles. There are

revolutionary implications in Kurzweil's bold predictions of the age of Singularity. It is bold in that his prediction for humans merging with machines is not so much based on scientific evidence but on what he believes to be the exponential growth of technological innovation over recent years. Scientists and social critics have dismissed the idea of Singularity due to the lack of scientific evidence; it is rarely written about or known in the public sphere. What concerns cognitive scientists about this proposition is that if human intelligence is embodied (i.e., between the mind and body), then how can a robot have the same meaningful experience that a human being can have?

AI researcher Alessandro Colarossi similarly admits that understanding our bodies through artificial intelligence poses a huge risk, since ‘a simulation cannot have the same type of meaningful interaction with the world that an embodied conscious being can have, and the absence of such interactions amounts to a fundamental absence of intelligence’ (Colarossi, 3). Part of what shapes our personalities, passions, fears, and inhibitions is how the body sends signals to the brain through our bodies' embodied engagement with its environment. That said, I feel it is crucial to weigh the existential consequences of redesigning the human species to shape Kurzweil's vision of our future.

Kurzweil nonetheless believes that the mathematical models that computers and transistors use can already replicate a model of the human brain’s neural network through neuromorphic technologies which he believes will bridge the gap between the function of the brain and its biological components (Kurzweil, 443). However, that still does not eliminate the consensus among scientists who believe that Kurzweil's attempt to artificially simulate a model of the brain is dangerously instrumental. We are still at the early stages of learning how cognitive science helps us understand the brain's relationship to the body. Furthermore, the idea of the

singularity is only an abstract premonition on Kurzweil's part. His prediction is based merely on the rapid speed of technological innovations over the past 30 or so years, which range from brain scanning, genetic engineering, neuromorphic technologies, and artificial intelligence. He believes the singularity will be a defining moment in human history, when the pace of technological change reaches a point our concept of ourselves and human history will change for better or worse.

Some examples pertaining to Kurzweil's vision of the singularity are supported by the claim that the development of computers and artificial intelligence will reach the point where they will supersede human intelligence, become self-aware, and perhaps operate on their own without human control. However, not everyone agrees this is possible. The American philosopher Hubert Dreyfus, in his well-known work *What Computers Still Can't Do (1979)*, believed that 'our risk is not the advent of superintelligent computers, but of sub intelligent human beings' (Dreyfus, 208). Dreyfus here urges us to reflect on the nature of human understanding before we let artificial intelligence be the judge of human nature and measure what we're capable of. It is easy for us to fantasize a future where machines and humans can work together, but we have to remind ourselves that this kind of conception of such a future presupposes that AI will become smarter than humans. However, because AI technologies (as of now) are a necessity to our daily life and control most of our infrastructure, we therefore confuse its efficiency with superior intelligence.

Furthermore, there are bound to be political consequences for our reliance on the judgments of AI. The ubiquity of AI in our socioeconomic sphere will likely regulate our behaviour, and perhaps create class division between people who have access to neurotechnological enhancements and those who do not. Outcomes such as these will be our own doing. These concerns challenge Kurzweil's optimism for a future without competition and

concern for morality. Unlike Kurzweil's alleviated vision of the future, Canton suggests that an AI-driven world will in fact be a more competitive world. Canton reminds us that we may need to merge with neurotechnology if we're

> to get certain jobs, to be capable, smart, or skilled enough, perhaps. Merging will shape jobs, relationships, business, and power. Merging will be a scalable enhancement capacity in which constant upgrades to one's cognitive skills will be rated, measured, and on demand; it will be enriched, leading to a radically New Future (Canton, 339).

The implementation of these advanced technologies presumes a future where people around the world comply with an AI-driven world where our current version of capitalism still applies. Through these cautionary hypotheticals, we can see how this will lead to a tighter hegemonic rule that is designed for people to adapt to the expectations and demands of AI-driven society.

Taking all this into account, I personally believe that the level in which we measure the capacity of AI depends on how far we continue its development and integrate it into our societal infrastructures. That is to say, as the conditions of our technological climate become more complex, I believe we will be left with no choice but to rely further on the decisions of machines. On the other hand, if AI creates autonomous cities and generates wealth without human labour and consumption (unlike Canton's premonitions), then we may either have to re-define human purpose or convince technology's advocates to put a halt on these advancements in AI if we're to maintain human agency and control. I suggest this, because I feel it is unlikely that people will be willing to give their power over to machines. In a way, this solution may even be in the interests of people who want to remain in power because what will apply to us in an AI driven world will also apply to them.

In regard to the plausibility of virtual reality, I do not believe that it will be easy to merge into a virtual plane because most of our sensory experience depends on our embodied engagement with the physical world. As I explore in the second chapter, the reason why we are able to have a conception of ourselves in the first place is because we are embodied, not only in the flesh but also in what we call the objective (physical) world. Thus, our lived experience in the world is not only what makes intelligence possible, but that it defines our sense of self. Because of this, I am in doubt as to whether or not machines will reach the same level of human intelligence independent from us merging with it.

Along with this, I also do not believe Kurzweil's vision of the singularity is possible in the sense that we will remain in control of these technologies. The continued path of technological development will likely lead our society into stricter totalitarian control. What I do believe, however, is that this defining moment in human history mirrors our never-ending attempt to ease the burden of human limitations through technology. It is through concerns like these that urge us to not only think critically about our future but to also be reminded of what it means to be human.

The question of nature or necessity?

While the futurists try to assure us that virtual reality is more efficient or desirable than the physical world, the question of whether or not we will be compliant with this remains unanswered. There are two possible outcomes as to what this kind of compliance will look like. Kurzweil, on the one hand, claims that augmenting our reality can be done by downloading our consciousness into the Internet, which is intended to make our private thoughts public in the sense that it can create a simulated world we can engage with at any time. Canton, on the other hand,

believes that those who are technologically enhanced will be able to use advanced neuro technologies that will

> augment more than their intelligence but also their connectivity potential to interact with the IoT [internet of things] – the connected planet of things, ecosystems, networks, humans, and nonhuman AI's. Enhancers will be able to collaborate with other enhancers and merge and morph minds into collaborative networks of group clouds that come together for business, entertainment or pleasure (Canton, 337).

This kind of compliance with virtual reality is much different than the one that Kurzweil suggests since these nanotechnologies (inserted into our brains), used to increase productivity or extend communications, will prove more efficient than what we have today. The way Canton lays out this version of virtual reality (or something like it) presumes that our AI driven world will still be determined by our conception of the competitive economic system we adhere to today.

While this alternative might seem alluring to those of us who feel inefficient, bored, or dissatisfied with everyday life, we are still left with the question many scientists share, which is whether we can replicate the human form without understanding how the body influences our thoughts. Naturally, this concern ties us back to the existential and political concerns of privacy and what it means to be human. It leads us to question to what degree we are willing to jeopardize our humanity due to these open-ended hypotheticals. Furthermore, the questions and concerns that Singularity raises ultimately circle us back to the central question of what it means to be human.

There have been many skeptics of Kurzweil's view of Singularity. And not just philosophers and luddites; scientists and technologists associated with Kurzweil also have doubts. A well-

known critique of Kurzweil's Singularity comes from the engineer Bill Joy, who wrote the cautionary article, *Why the Future Doesn't Need Us (2000).* The article was inspired by an encounter he had between Kurzweil and the philosopher John Searle after George Gilder's Telecosm conference, debating whether computers can be conscious. According to Joy, Kurzweil had astonished him with his 'ability to imagine and create the future' and said we are 'going to become robots or fuse with robots' (Joy, 2). Like any scientist, he was skeptical of this at first, but soon realized this could very well be a possibility in the near future. However, with exercising moral integrity, Joy even admits, 'having struggled my entire career to build reliable software systems, it seems more likely that this future will not work out as well as some people may imagine.' (Joy, 12) Despite his position as a computer programmer, Joy's courage in addressing his fears of technology getting out of hand holds an ethical standard that technologists and scientists are yet to live up to.

As a technologist, Joy senses that Kurzweil's vision of a technologically co-dependent future will abuse the power that comes with such advanced technologies that Kurzweil says will increase our life span (as if we are, again, facing the dangerous prospect of eugenics). Joy's concern for the abuse of power also leads one to consider whether or not humans are willing to give up their power and autonomy and become co-dependent with machines to the point where their lives depend upon it.

Another pressing issue that Joy brings to our attention is whether or not we will 'be ourselves or even human' after we download our consciousness on the Internet or implement computer devices into the human body (Joy, 13). Nonetheless, Joy's concern for our technological future also responds to the tendency that human beings have always continued to strive beyond their limits. He even admits this fault of people in his field of work and says that 'discovery and

innovation seem to be a common fault of scientists and technologists; we have been long driven by the overarching desire to know that is the nature of science's quest, not stopping to notice that… powerful technologies can take a life of its own' (Joy, 11). This concern ties into the power of human control and whether or not human beings are willing to give up their control to Artificial Intelligence. The concern here is an ethical one since it weighs out the possibilities as to whether or not these technologies can be seen as tools of neutrality, used modestly by people in power, or strip us from the agency of control.

Anthony Wong's article, *Ethics and the regulation of Artificial Intelligence*, presented at an *International Joint Conference* in Yokohoma, Japan, on January 7, 2021 confronts this issue. Like Kurzweil's proposition for downloading consciousness into a database, Wong asks the broader political question of whether nation-states can translate their values to AI so they can act as an adequate bystander. The concern around transparency mirrors the crucial question Wong poses in his article: 'If ethical parameters are programmed into AI, whose ethical and social values are these?' (Wong, 4). Regulating artificial intelligence would therefore demand us to move beyond the conception that these intelligent technologies are part of our toolkit since AI has the potential to make us subservient to it instead of the other way around. Ethical dilemmas such as these put pressure on the regulators of AI as it questions their motives for forcing other nation-states to adopt a worldview that is synchronous to the different ethics, values, and principles that countries around the world would be required to share.

These far-fetched possibilities present the difficulty of implementing AI into our infrastructure since it would require us to globally attain the political homogeneity that we do not have yet. Thus, we bring these broader concerns for the implementation of AI because if people in power refused to give up their control for the implementation of AI, then these biological engineering

technologies Kurzweil talks about could be weaponized and used for the homogenous world. That would be the undesirable result for AI's takeover. These issues, however, have evoked philosophical discourses but on a very small scale. Modern-day critics of technology go so far to say that there are metaphysical or ontological concerns tied with technology's phenomenon. They posit that the rise of Singularity results from what they call *technological determinism*, which presumes technology is an autonomous force that develops on its own accord and questions whether we are controlled by technology or if we control it. I find this view problematic, as I will clarify and make my case for this in the first chapter.

For historian George Dyson, the question of whether or not humans still have agency over technology is rooted in the problem of *nature*. In the preface to his book *Darwin Among the Machines (1997),* Dyson warns us that 'in the game of life and evolution, there are three players at the table: human beings, nature, and machines. I am firmly on the side of nature. But nature, I suspect is on the side of machines' (Dyson, 9). The *nature* that Dyson is referring to here can be equated with *human nature*. Because we have integrated and shaped the infrastructures of our society around advanced technology, we therefore are left with no choice but to depend on a system we've created for ourselves. It is on this note that Dyson believes our use of technology has become something that is a part of human nature. So long as technology remains a human necessity, it will continue to disguise itself as something intrinsic to nature itself. In other words, we are a part of its unfolding. In his more recent book, *Analogia (2020),* Dyson says that the four phases of technological development have gradually changed our conception of nature in the sense that we exploit its resources to achieve our own ends in industrial society. While the preindustrial age was the first epoch of technology, he claims that in the second and third epochs, decades after the industrial revolution, machines could replicate themselves and eventually rob

nature of its authority. The way that machines made practical life more efficient for more developed societies proves that

> Machines began taking the side of nature, and nature began taking the side of machines. Humans were still in the loop but no longer in control… people began to blame "the algorithm," or those who controlled "the algorithm," failing to realize there no longer was any identifiable algorithm at the helm. A belief that artificial intelligence can be programmed to do our bidding may turn out to be as unfounded as a belief that certain people could speak to god or that certain people were born as slaves (Dyson, 7).

When Dyson talks about machines taking *the side of nature,* he is talking about how humans' dependence on machine technologies before the digital age led us to the point where we believe machines have surpassed humanity. As long as we give ourselves over to the power and variety of the technological system in the same way we once were to the natural world's conditions, it will remain true. This in no way is meant to give the impression that technology evolves through a causal chain of events in history. But because we've had to adapt to the conditions of the industrial age (and now the digital age), we now rely on AI technologies in the way we used to depend on nature.

In his book, *The Metaphysics of Technology (2014),* the philosopher David Skrbina objects to a technologically co-dependent future since it would impel 'us to embrace and promote technical advance, regardless of our interests or the welfare of the planet' (Skrbina, 209). What worries Skrbina about Singularity is that the level of our autonomy or freewill in navigating the world on our own accord will be taken away if intelligent machines mediate our interaction with others or

the outside world.

The problem of transhumanism raises a similar concern. Biologically engineering our bodies and elongating our lives would cost us our mortality and we would become even more dependent on technology than we are now. A reader, however, may see Skrbina being a technological determinist like Kurzweil, since he believes technological growth is analogous to evolution. The crucial difference between them is that the former embraces the prospect of singularity while the latter radically opposes it. Skrbina raises very real concerns that pertain to the future of a technologically co-dependent society. However, I reject the view that there are invisible or natural forces that compel us to embrace the singularity other than the conditions we have created in modern society.

Furthermore, a distinction between singularity and transhumanism should now be made. As we've clarified, singularity is the point where machine intelligence will transcend human intelligence, which could potentially erase the boundary between humans and machines. Transhumanism, on the other hand, is a scientific and philosophical movement that advocates for the use of current technologies such as genetic engineering and artificial intelligence to augment human capabilities. Because transhumanism advocates for the use of these sophisticated technologies, futurists inevitably embrace such proposals. Kurzweil advocates for this because he claims the only way humans will remain in control is if humans begin to merge with machines. Other than this, Kurzweil gives little to no empirical evidence that this will ensure human agency in the future. In a recent personal correspondence, Skrbina opposes Kurzweil's view and says that he

> does not equate the Singularity with transhumanism, even if they overlap. The Singularity is technically the point at which computing power becomes

> functionally limitless and is estimated by Kurzweil at 2045. Transhumanism can occur before or after that event… In my view, this is dangerous for humanity because we are likely to be bypassed by machines and super AI and enslaved or destroyed by them. Kurzweil claims, with no evidence, that humans will remain in control of super AI, and that such AI will be accommodating to human wants and needs. This is highly unlikely. (Skrbina, personal communication, Oct. 18th, 2022).

While Kurzweil sees human-merging with machines as a way to resolve our biological limitations, Skrbina's fear of humans merging with machines indicates that it will constrict us indefinitely. One is left to wonder how this will pan out. Though, if we were to manipulate our genetics through machines, we would not know how our bodies would adapt to such extreme physiological change. Also, if we are to use these technologies to increase our lifespan or augment our physical capabilities, we would be dependent on the corporations that manufacture them.

While Kurzweil's conception of Singularity is unlikely to happen due to the concerns we have raised, I will argue that our yearning for such a future is motivated by our will to supersede the disadvantages of technological enslavement and remain in control of the technologies that could jeopardize what it means to be human. However compelling it is to make ourselves immortal, capable, or more efficient through more technologies, the point is that regulating the conditions of our society and ourselves for the utility of autonomous technologies could lead to an undesirable form of instrumental rule. In the first chapter, I will clarify some of the issues with technological determinism and prove that its growth is neither inevitable nor predetermined. I will

also apply this reasoning to how it is relevant to us in an age where the prospect of autonomous technologies may convince us otherwise, even though we're still trying to gain the upper hand.

In the second chapter, I will draw from the scientific theories of embodied cognition (championed by Hubert Dreyfus) to prove that a simulation cannot have the same meaningful experience a conscious being can have if we are to rely on the mind without the body. For these reasons, embodied cognition prevents us from enhancing our biological and mental capacities through neuromorphic technologies only if we're willing to compromise our embodied understanding of the world for the permanency of a disembodied mind.

In the third chapter, I will argue that if we remain indifferent to the prospect of a technological utopia and how it sedates the human spirit, acquiring agency or an authentic sense of self will become challenging. But if we realize this for ourselves, we will not only be able to move beyond it, but be able to restore communities and be spiritually and mentally prepared for what the future may or may not hold.

Chapter I: The Dilemma of Human Agency and Technological Determinism

The way we generally understand technical practices comes from the term technique that French sociologist Jacques Ellul coined in the preface to his book, *The Technological Society (1954)*, as 'the totality of methods rationally arrived at and having absolute efficiency (for a given stage of development) in every field of human activity' (Ellul, xxv). Ellul, in the later preface to the English translation of his book in 1964, restates that the only way for technology's determinism to keep going is if 'each one of us – abdicates his responsibilities with regard to values; if each one of us – limits himself to leading a trivial existence in a technological civilization, with greater adaptation and increasing success as his sole objectives' then the deterministic conception of the future that both futurists and doomsayers have will become a reality (Ellul, xxiv). This quote tells us that technological determinism cannot be predetermined as a natural a priori phenomenon without human innovation, reminding us of our role in accelerating and adhering to the industrial technologies we have created in today's post-industrial context.

The philosopher Martin Heidegger was also concerned about humanity's relationship to technology in his work, T*he Question Concerning Technology (1954)*. While his attitudes toward technology differ from Ellul, they also show strong similarities. First, they agree that the industrial age has conditioned humans with a new mode of determinism. However, what is most evident in Heidegger's thinking is that it is a mode of revealing that 'brings man into the right relation to technology. Everything depends on our manipulating technology in the proper manner as a means. We will, as we say, "get" technology "spiritually in hand."' (Heidegger, 5). This perspective underlies all forms of technical thinking, whether it applies to primitive, religious, analogue, or digital epochs. And while each epoch demands different means of compliance,

technology exists because it has been implemented as a necessity for human survival; which constitutes technology as a whole since it cannot exist without human activity.

However, in his other complementary essay, *The Turning (1954)*, Heidegger reminds us that it is presumptuous on our part to see the evolution of technology as something caused by a historical chain of events. He goes on to say that we are

> too easily inclined, out of habit, to conceive that which has the character of destining in terms of happening, and to represent the latter as an expiration, a passing away, of events that have been established hisoriographically. We locate history in the realm of happening, instead of thinking history in accordance with its essential origin from out of destining (Heidegger, 38).

What Heidegger is saying here is that the essential origin of *technique* is actualized by our relationship with the natural conditions that were prevalent only to that epoch. For this reason, Heidegger wants us to reject our romantic conception of technology as a natural law that was preordained before the industrial revolution. The epoch of our digital age, however, conditions us in ways that force us to act in accordance with the coming prospect of 'the singularity.' Like Ellul, Heidegger tells us that 'the coming to presence of technology cannot be led into the change of its destining without the cooperation of the coming to presence of man' (Heidegger, 39). Thus, Heidegger's answer to technological determinists is that humans are responsible for accelerating technological development and not the other way around. He furthers this by stating that 'each time comes to pass out of the arrival of another destining… in each instance that which, belonging to a destining of Being, as the character of destining' (Heidegger, ibid). Here, Heidegger's use of destining pertains to the way that our sense of being is challenged by our relationship to the given environment which requires new modes of technical thinking and innovation. The only thing that

has remained historically consistent, however, is our never-ending attempt to assert dominance and control over nature and ourselves.

Ellul's assessment of technique in primitive societies, for instance, furthers the idea that the extension of our technical thinking is the driving force that underlies a priori motives for human survival. He claims that

> Technical activity is the most primitive activity of man. There is the technique of hunting, fishing, food gathering, and later of weapons, clothing, and building. And here we face a mystery. What is the origin of this activity? It is a phenomenon that admits no complete explanation. Through patient research, one finds areas of imitation, transitions from one technical form to another, and examples of penetration. But at the core, there is a closed area — the phenomenon of invention (Ellul, 23).

What is significant about this passage is that it affirms that humans, as technical beings, have always found innovative strategies to consent to the given conditions of their environment. Thus, the phenomenon of invention can only be conceived with the human subject who had an a priori conception of the tools that were yet to be invented. This connection for Ellul confirms that technique's psychological manifestation comes from people’s instinctive reaction to the adversarial circumstances in which they lived. The phenomenon of invention reiterates Ellul's presumption that the necessary technologies (e.g., spears, clothing, fire, etc.) had to be invented if early humans were to meet the preconditions for survival in wild nature, in the same way we believe that the conditions in modern society require us to utilize its means. Thus, technique originates from humans' persistence for structure and order, regardless of the climate one is born in. Ellul's ambitious attempt to trace the origins of technical activity, played out by humans,

proves that we have always relied on our mental and technical capacities for the innovative thinking that will help us adapt to the conditions of the given environment as they pertain specifically to different epochs. In modern society, however, Ellul posits that external necessities no longer determine technique the way they did in early human history.

Ellul's purpose for drawing out this contrast between pre- to post-industrial technique is to show how modern society has objectified and reduced us to the subject that exists for the machines that could potentially replace us in the near future. Given that the conditions of society require us to regulate the nature of our technical activity, it hampers the will for innovation without machines. Instead, technique in our post-industrial society has reduced humanity to 'the level of a catalyst… better still, he resembles a slug inserted into a slot machine: he starts the operation without participating in it' (Ellul, 135). What is revealed in Ellul's assessment of technique is that its deterministic component can only be determined by the way people use technology and adhere to the challenges and conditions of their environment. The post-industrial age, for instance, tells us that 'we are at a new end for human society in the technical age.' And even now, at the interim period we find ourselves in (i.e., between industrial and digital epochs) we have forgotten that

> the aims of technology which were clear enough a century and a half ago, [but] have gradually disappeared from view. Humanity seems to have forgotten the wherefore of all its travail as though its goals had been translated into an abstraction or had become implicit; or as though its ends rested in an unforeseeable future of undetermined date, as in the case of Communist society (Ellul, 430).

Even over half a century ago, Ellul's foresight on the way that the shift from pre- to post-industrial contexts has made us forget the previous aims of technology and our means for using it is

astounding. The prospect of Kurzweil's singularity (analogous to the unfulfilled promises of a communist utopia) exemplifies how the triumph of our technological breakthroughs has left us under the impression that we have not only exerted mastery, but that we can now predict the fate of the human species without knowing how this vision will pan out.

Thus, the prospect for the future of our post-human society compels us to conquer space and utilize neuromorphic technologies as it gives us the false impression that we can reach beyond ourselves and the planet. In her book, *The Human Condition (1968),* Hannah Arendt, had eerily similar premonitions as Ellul did concerning technology and our own hubris. As early as 1967, Arendt observed that the launch of Sputnik by the Soviet Union was a defining moment for humanity because it made palpable a dream where humanity could finally exert mastery over the earth and leave it behind. She clarifies this insight by stating that it is

> not pride or awe at the tremendousness of human power and mastery which filled the hearts of men, who now, when they looked up from the earth toward the skies, could behold there a thing of their own making. The immediate reaction, expressed on the spur of the moment, was relief about the first step toward escape from men's imprisonment to the earth. (Arendt, 1).

Before this step forward, humanity was stuck in the unending struggle between its animalistic drives and 'god-like' potential. But then the launch of Sputnik became the harbinger for the characteristic of future man who is defined by his 'rebellion against the human existence as it has been given, a free gift from nowhere (secularly speaking), which he wishes to exchange, as it were for something he has made himself' (Arendt, 2-3). The indirect impact of Arendt's message to humanity is a powerful one, as it urges us not to exchange our sense of human agency without knowing what will result in return.

Professor and political scientist Roger Berkowitz warns us of the existential threat that the prospect of the singularity poses. In his article, *The Singularity and the Human Condition (2018),* he reminds us that if we think

> we can escape the earth… [or] manufacture designer human beings freed from the chanciness of fate, then we are… able to slough off the mortal coil that connects us to our earthly quintessence; we can reject the gift of life as it was given to us and remake it neither in god's image nor as accidents of fate, but in accord with our own human will. We can… play god. And in doing so, we risk losing one part of our human condition, our earthliness, our being subject to chance, fate, and fortune (342).

What Berkowitz is trying to warn us about is that if we use technology to rid ourselves of the limitations of morality, then we will lose the most valuable parts of human experience, exchanging them for a rigid and transactional future. And while scientists and learned skeptics believe the Singularity isn't possible, it has nonetheless become the collective (or cultural) fact of our species due to the way our culture and societies infrastructures are dominated by autonomous technological forces – leaving us with no choice but to accept our society's consensus toward a post-human future. The strides in the development of artificial intelligence, genetic engineering, and virtual reality convince us that such a future is possible.

Because some of these autonomous technologies (at their early developmental stages, of course) are already integrated into our daily lives as well as society's infrastructures, sociologists believe that the main thing we should consider when thinking about technological determinism is that it has now become a reductionist theory that centers itself on the way technology mediates our personal, private, and public affairs in modern society. In the recently published *International*

Encyclopedia of Organization Studies (2006), James R. Bailey admits that its critics cannot reach a true consensus since some believe technology has its own 'internal logic' or those who even go as far as to say that technological determinism was predetermined before man. Skrbina, for instance, tries to 'universalize Techne and Logos, viewing them as universal qualities that account for the creation of structure and order, and that operate according to natural law – something like evolution' (Skrbina, personal communication, Oct. 18th, 2022). After dedicating the time to think long and hard about this concept (his case for technological determinism, i.e., *pantechnikon*) and where I stand on it, I've come to feel that this metaphysical conception of technological determinism is outdated as it fails to account for human agency and our compulsion to generate technology in the first place. However, the present advancements in artificial intelligence conflate our relationship with technology, leading us to believe that its presence is inevitable. But that does not mean I believe the prospect of singularity or the rise of a digitally surveilled society was historically predetermined or caused by natural law simply because we have created and chosen to live by the conditions of an AI-infiltrated society. There is still a necessary level of accountability that is demanded of each of us. It is presumptuous on our part to assume that technology is an autonomous force since it presumes, we are already past the singularity or that we have lost all agency. This is not so. We still have our roles to play.

Aside from these philosophical peculiarities, Bailey posits that technology now depends 'mainly on how it is implemented, which is in turn socially determined' (Bailey, 2006). What is immediately apparent here of this up-to-date conception of technology is that we let it mediate our daily and interpersonal affairs in modern life. The ubiquity of technology's presence, according to the journalist Neil Postman, has to do with the fact that 'once the machine is built… we discover, always to our surprise – that it has ideas of its own; that it is quite capable not only of changing

our habits but… of changing our habits of mind' (Postman, 24). This point is crucial because the technological infrastructures we have today change how we regard others or the natural world as exploitative resources, even though we may not fully be aware of it. The point here is that the drastic shift from pre- to post-industrial technique has conditioned us to be more technically determined now than we were then, so we should resist seeing these two epochs (pre- and post-industrial) as causally linked. For instance, one could recall how disembodied work now strains the human psyche or that the sedentary nature of the best-paying jobs is something we are forced to commit to. While we might revel in the idea of AI and robotics taking over our labour-intensive jobs (e.g., construction, factory work, and coal mining, to name a few), there is still a trade-off for the more sedentary work that the digital age presents us with.

In the introduction to his book, *Bullshit Jobs (2018)*, anthropologist David Graeber shares the same concern for sedentary work replacing real jobs. For example, in the preface of his book he writes:

> Rather than allowing a massive reduction of working hours to free the world's population to pursue their own projects, pleasures, visions, and ideas, we have seen the ballooning not even so much of the "service" sector as of the administrative sector, up to and including the creation of whole new industries like financial services or telemarketing, or the unprecedented expansion of sectors like corporate law, academic and health administration, human resources, and public relations (3-4).

If people are right in claiming that we can live a life of 'luxurious leisure' where machine-produced wealth is equally shared – then why are we still unable to be relieved from the work that is to be supposedly replaced by machines? Graeber believes that it isn't economical but instead

that it is ‘moral and political.’ Despite the downsizing, speed-ups, and layoffs in the corporate world, the invention of sedentary jobs is supposedly designed to keep the ‘happy and productive population’ from having free time on their hands as it would threaten the ruling class (4). Indeed, the prowess of the technological system we have now has also been produced at the mercy of ecological habitats and developing nations. We must, however, remember that technology, as a governing system, is becoming a holistic and self-perpetuating machine that includes the dynamics of organized societies, which implies that even people in power or at the heads of corporations could even lose control. And this is something Graeber is also well aware of. In an earlier debate with Mark Goyder, Graeber mentions how most of the ‘technological creativity’ has actually been funded by governments, not the private sector. He goes on to say that

> the corporatization and capitalization of research has actually led to a massive decline of technological innovation and growth…we’re seeing that capitalism has really come to… its limits in terms of its very ability to provide… [for] rapid and spectacular technological innovation leading to greater possibilities and prosperity which allows wealth to be redistributed to a degree where the normal tendency for wealth to accumulate… [which] Piketty has observed could be, to some degree, undercut (Occupy the London Stock Exchange, 2014).

Insights like these prove that the accelerating rate of our autonomous technology has outpaced the democracies that are supposed to reign in its excesses. A point that not only actualizes capitalism beyond the negative conception that socialists conceived it as, but proves that throughout history, it has always remained the impossible ideal. As early as 1967, Ellul had foreseen the way that the automatism of technique, as it now applies to our digital epoch, could ‘endanger capitalism and herald its final disappearance… The choice between methods is no longer made according to

human measure but occurs as a mechanical process' (Ellul, 82). Thus, the Marxist notion of how capitalism utilizes technology to improve productivity for self-interest takes on a whole new meaning in an age where our technologies today are even outsmarting those who wish they could use them sustainably. Even coal miners, no matter their degree of good conscience, can't help but see nature as an exploitative resource since our modern livelihood still depends on the electricity generated from burning fossil fuels. Graeber mentions a letter that was written in 2007 during the Bush Administration by the heads of major energy companies who were asking their government for regulation or government control on energy production in order to contain global warming before they incidentally do more damage to the planet (Graeber, Occupy the London Stock exchange, 2014). In their letter to President Bush addressing their concerns regarding climate change and its impact on developing countries, they expressed fear of the 'United States… blocking all meaningful agreement on climate change at the G8 Summit' (Otero et al. 2007). That is to say, if the U.S. does not come to the same consensus or commitment as other industrialized countries to prevent global warming, then other energy companies in the U.S. will feel compelled to continue emitting dangerous carbons into the earth's atmosphere, given the nature of their working position.

Examples like these show that while it's easy to demonize corporations or government agencies, the problem still lies with how capable these agencies are of assuring the public a sustainable future, given that the conditions of our climate depend on the unstainable methods to keep the technology functioning properly. Thus, Graeber's realistic approach to the ethical and moral dilemmas underlying human motivation calls for collective and practical thinking concerning our future and the welfare of people and the planet. As modern citizens, it is hard to maintain a consistent awareness of how much greenhouse gasses we emit into the earth's

atmosphere since our society's infrastructures are still reliant on computer networks and gasoline, for instance, that require an entire complex set of other technologies. Whether we are buying gas, utilizing mass transportation, and relying on digital infrastructures, we are contributing to a globally interconnected network of mining, processing, shipping, and other algorithmic technologies. Laying out these examples is not so much to demonize technology as it is to prove that it is now a complex system embedded in our society's infrastructures, since one finds it hard to notice how it has changed our aims and goals. The point I want to convey is that we all play an instrumental role in the advancement of technology, regardless of our economic status, power, or what have you. And because of this, we are in need of a more holistic awareness that holds each of us as equally as accountable.

In his book, *What Technology Wants (2010)*, futurist Kevin Kelly makes the fraught attempt to debunk what he calls the 'hip college-campus' theory that claims corporations are supposedly behind the peddling of technology, claiming that even his colleagues 'aren't capable of such a conspiracy' (214). While the author's degree of honesty is questionable, what he says about the ubiquity of digital technology as a human necessity is correct. He reminds us that

> the complexity of our built world increases, we will need to rely on mechanical (computerized) means to manage this complexity. We already do. Autopilots fly our very complex flying machines. Algorithms control our very complex communications and electrical grids. And for better or worse, computers control our very complex economy. Certainly, as we construct yet more complex infrastructure (location-based mobile communications, genetic engineering, fusion generators, autopiloted cars) we will rely further on machines to run it and make decisions… if we wanted to turn off the internet right now, it would not be

> easy to do, particularly if others wanted to keep it on. In many ways the internet is designed to never turn off (205).

Since our dependency on technology has to do with the way our world's economy and balance for the supply and demand of energy are controlled by algorithms, we realize that our livelihoods have now become dependent on AI as the mediator of day-to-day life. While we shudder to think what we would do without the technology we have today. One realizes that a sudden shutdown of the internet would be dangerous and unsustainable, since it would not only cause instability to the livelihoods of others, but we would be forced to struggle to compensate for the world's complexity and increasing population.

This undoubtedly raises concerns. The technology we have today may reach the point where we are left to wonder whether AI or other autonomous technologies will consume the planet's resources and strip us of human agency. Even Skrbina mentions that while we are still dependent on technology, we are losing the control we once had. He rightfully asserts that we are at a moment now where our technological infrastructures are

> dependent on humanity for its existence and operation. Were we all to die tomorrow, the technological system would disintegrate soon thereafter. Our products, residues, and wastes would persist for thousands of years, but for all practical purposes, if we die, our technology dies with us… it is autonomous but functionally dependent… This condition will not last long… we will enter a second phase of determinism. Here, technology will become self-making and self-evolving. It will not need us, and in all likelihood, it will not want us. It will achieve a radical autonomy at both the operational and existential levels (Skrbina, 276).

This point mirrors humanities' contrivance of technology as it warns us that the way we rely on it today reveals how technology in turn cannot function without our dependency on the system's resources, such as mass transportation, worldwide telecommunications, or online banking to name a few. Or take the way that power and electricity is still generated by the environmentally dangerous practice of coal mining or the way that it generates the agrotechnology required to compensate and feed the world's ever-increasing population. However, Skrbina shows us that we're at a point where these autonomous technologies that are convenient for us now will take a nasty turn when AI technologies, for instance, replicate themselves and run cities without human labor or consumption. I also don't believe that human beings are willing to surrender the little power or agency they have left for AI driven technologies that may replace their jobs or positions of power. If self-replicating technologies, hypothetically speaking, replace us or if we continue to depend on them as something that is more efficient than we are, then humanity may lose its sense of purpose or moral dignity. This is what we should ask ourselves moving forward.

Another point worth mentioning is that there are people today who are right to believe that the singularity is too far-fetched. However, the problems in our society today arise from our inability to control these technologies and the way that they are accelerating the narratives that pertain to a post-human future. It is for this reason alone that it would be risky to outright dismiss ideas about the future of technological developments, especially since the development of artificial intelligence, as we speak, is changing daily, not to mention in unpredictable ways. What is important, however, is not to come to any definite conclusions about what the future might hold, but rather to observe our present technological conditions with a clear mind if we're to understand what technology reveals and how it changes us throughout the process.

The drastic shift from pre- to post-industrial technique shows how the prospect of the singularity could jeopardize the agency we once had. While it's easy to think we've reached a dead end, it should be noted that digital AI still depends on how we still use it in order for AI to be functionally relevant. On this note, I claim that the phenomenon of the autonomous technology we have today conflates our understanding of its historical roots as it leads us to believe that the evolution of technology was historically predetermined. This is not so, as beliefs like these affirm both the misguided claims of futurists and doomsayers in saying that its growth is inevitable. I make this point because it should keep us ethically accountable for furthering the implementation of AI technologies that could one day function autonomously. There are dangerous and morally controversial technologies that are still used as a means for oppressive political control. Because I maintain the view that we still have some form of agency left, we can mitigate some of technology's dangerous aspects more carefully and conscientiously than we have been. Thus, my purpose for unpacking the problems of technological determinism is to debunk the self-fulfilling prophecy of technological growth being inevitable as it puts the responsibility back in our own hands.

Concerns such as these raise the stakes for people like Kurzweil, who continues to insist that we will be able to control these autonomous technologies by merging our minds in a virtual plane. But is this a safe route for humans to go? We are stuck in the never-ending struggle to gain agency, except in this case, it is with the technologies we have created. And since Kurzweil adamantly believes that AI will supersede human intelligence, we are left to wonder about the whereabouts of analysis or whether or not evidence for this claim exists. So, in the next chapter, I will be confronting Kurzweil's belief that disembodied intelligence can find a way to create 'its means for embodiment and physical manipulation' (Kurzweil, 260). A claim such as this not only

makes us wonder if the human body is conscious but urges us to weigh the risks of adopting Kurzweil's conception of intelligence and the stakes that it raises for humanity if we adopt it blindly.

Chapter II: Embodied Cognition and The Limits of Machine learning

The recent breakthroughs in cognitive science and Artificial Intelligence have convinced us that its intelligence supersedes our own since we tend to mistake its level of speed, performance, and efficiency for sentience and superhuman intelligence. Of course, it can do menial tasks and process vast amounts of data from internet sources faster than we can. But is this a reason to believe AI supersedes human sensibility? The ubiquity of AI and its role in our society today undoubtedly has intervened between work relations and human affairs – and because of this, we inevitably utilize and take advantage of its benefits without considering how it is modifying our behaviour and changing our conceptions of ourselves in the process. While we think we are exploiting AI for our means, AI, in reverse, exploits us by the way our society depends on its resources. And due to AI's pervasiveness in everyday affairs, it is all too easy to model ourselves after computational AI, leading us to believe it is only an extension of ourselves. The excitement this has aroused in public discourse leads us to believe that we have made great strides in mastering human intelligence. But then again, is this so?

The research in artificial intelligence still depends on the computational model of the mind, which has been relevant for philosophers from the 17th century to the current day. At one point, philosophy was considered the science of its day, presuming that we are disembodied subjects in an external world. The cognitivists have pointed out that the failures in Artificial Intelligence are due to the way their computational model of the mind that they've based their research on has got us nowhere near understanding consciousness or intelligent behaviour. Thinkers like Aristotle and Rene Descartes believed that man is a rational animal who is able to solve problems and act on the basis of theoretical propositions that could account for the

underlying phenomena of perceptual experience. It was not until the 20th century that Heidegger in his book, *Being and Time (1927),* confronted the Cartesian rationalist tradition and said

> With the "*cogito sum"* Descartes had claimed that he was putting philosophy on a new and firm footing. But what he left undetermined when he began in this 'radical' way of being which belongs to the *res cogitans* – or more precisely – the sense of being the *sum* (Heidegger, 46).

Heidegger's objection to Descartes' claim that thought is the only factor that constitutes our existence isn't something we should take for granted. Researchers today in the AI lab are dependent on the Cartesian model of the mind, analogous to a 'thinking machine' that operates the body as if it were an appendage to the mind. Unlike Descartes, Heidegger demands that it's the task of the modern philosopher to account for the 'intention' of the thinking subject instead of retreating to traditional concepts of human intelligence. Philosophers have since objected to Cartesian dualism by claiming that the body is conscious, and that our pursuit of non-situated knowledge only gives us a superficial conception of human behaviour.

And regardless of a machine's incapacity to be sentient, the problem that now arises is in the way that 'Black Box' generators such as ChatGPT reinforce the computational models of the mind because we are deceived by the idea that the brain works as computers do. Thus, machine learning can fool us into believing it's sentient due to AI technologies' crucial role in our daily lives. Large enterprise companies, for instance, can use AI systems to read resumes and hire applicants based on the algorithm's assessment of a person's qualification based on their digital record. But because these AI technologies are a vital necessity for daily life in modern society, there's also a slim possibility that we concern ourselves less with the question that pertains to human intelligence since our attention lies more in replicating it through machines. However, we

must investigate the problem with engineering consciousness if AI technologies are supposed to take over our infrastructures and surpass human intelligence through the illusion of efficiency and competence.

It was the 21st century philosopher Hubert Dreyfus who was able to effectively apply Heidegger's methodology to critique AI researchers who believe they can replicate human intelligence in robotics through the subject/object epistemology that presupposes the human body is the mind's appendage. Dreyfus suggests that our approach to mind/body dualism also presupposes the idea that we can understand consciousness through an attempt to 'find context-free elements, cues, attributes, features, factors, primitives, etc., and relate them through covering laws, as in natural science and behaviourism, or through rules and programs, as in structuralism and cognitivism' (Dreyfus, 2). The problem with these formal models is that it does not account for our involvement in our ongoing activity in the world, since they fail to account for contextual situations that we find ourselves in in day-to-day experience.

Linguist professors George Lakoff and Mark Johnson, in their book *Philosophy in The Flesh (1999),* address similar concerns as the cognitivists and their approach to understanding the brain's neural structure. They go on to say that one

> Cannot start a priori with a logician's set-theoretical models. Nor will they start a priori with a theory of meaning in which has nothing to do with mind, brain, body, or experience, but is given in terms of reference and truth. Meaning in a neurally based cognitive theory can only arise through the body and brain and human experience as encoded in the brain (Lakoff and Johnson, 256).

Like Dreyfus, their concern with this formal model of intelligence is that it objectifies our thoughts as if they were separate entities that exist independently from us. Thus, if computational

cognitive scientists are right in overlooking the factors that make our embodied experience in the world possible, then that would mean consciousness is more computational than it is intuitive. I argue that this binary conception of consciousness is dangerous because if we are too dependent on this mechanistic conception of the self, then our cognitive capacities will be limited to the same degree a robot or AI system already is.

And if we're to reflect on the way automation and computer technology has impacted our society in the last hundred years, one begins to realize that it has changed the way in which we measure or confuse 'intelligence' with the ability to predict, plan, and see the means as an end. In his book *Superintelligence: Paths, Dangers, and Strategies (2014),* philosopher Nick Bostrom says that the way modern society values 'instrumental reason' is the reason why we have the tendency to anthropomorphize what we call 'superintelligent AI,' since it is able to compensate for automated work better than humans in the social context we live today. The way our society utilizes and depends on technology today works in ways that require us to limit our own intellectual or creative capacities to compensate for the machine's ubiquity in modern society. Bostrom explains that we limit our own capabilities because

> technology's valence or normative character depends not only on the context in which it is deployed, but also the vantage point from which its impacts are evaluated: what is a boon from a person's perspective can be a liability from another's. Thus, although mechanized looms increased the economic efficiency of textile production, the Luddite handloom weavers who anticipated that the innovation would render their artisan skills obsolete may have had good instrumental reasons to oppose it. The point here is that if "technological

> perfection" is to name a widely convergent instrumental goal for intelligent agents, then the term must be understood in a special sense – technology must be construed as embedded in a particular social context and its costs and benefits must be evaluated with reference to some specified agents' final values (136).

Part of the reason we limit our skill sets, innovative thinking, and cognitive and sensory capacities is that the emergence of these new technologies in society replaces the older alternatives. The example of the luddite handloom versus the manufacturer urges us not to generalize or assume that everyone immediately complies with the way technology replaces manual work. However, we are still prompted to think about the flexibility we have when it comes to our adapting to the ever-changing social conditions. We change our goals, practices, or values for the instrumental goal of technological society, and our thinking changes with it.

While the example that Bostrom illustrates in his argument seems outdated in today's digital age, it still serves as a compelling parallel to the way we continue to modify our behaviour and regulate our wants and needs in order to be compliant with the demands of our digitally-surveilled society and the way that it values hours of sedentary work that decrease our embodied engagement with the physical world. Langdon Winner, in his article *Three Paradoxes of the Information Age (2013),* agrees with this line of reasoning as he further states the oversimplification of 'modern productivity' has also transferred over into our interpersonal lives as it places 'the strong demand of individuals' where 'communication technologies not only make it possible to reach them but obligates them to remain accessible' (Winner, 194). Thus, the convenience that these technologies have in day-to-day modern life make it inescapable to opt out of and suggests we may be at the premature stages of the future that is too easy to envision or fantasize about. And because our technology's resources give us more than enough to meet the

preconditions of survival and satisfy our biological needs, we are now driven by a ‘lesser physical desiderata' consisting of ‘gaining status, mates, friends, and influence, through wealth accumulation and conspicuous consumption’ (Bostrom, 137). Acquiescing to these kinds of constricting social conditions will not only limit our capacity to acquire new skills but could lead to anxiety, paranoia, and consistent monitoring of our behaviour. And on an interpersonal level, it could sedate and change how we engage with our physical environment. Countries such as China, for instance, use AI to evaluate people’s behaviour, interests, or social status into a credit score that manages its citizens and predicts whether they are eligible to secure a mortgage or a job (Campbell, 2019). And because our digitally co-dependent environment enables the instrumentality of AI, we will believe that it is more intelligent than ourselves because of how it mediates our everyday interaction with the world we live in. Our infrastructure is designed in ways that make it possible for AI to flourish in its sense of efficiency, giving us the illusion that it is more capable than people are.

The renowned computer scientist Jaron Lanier also believes that the consequence of modelling human behaviour on calculative rationality will be expected of all if we are to meet the machine's expectations. In other words, we risk limiting ourselves if we adapt to the cultural attitudes of Silicon Valley and buy into the cybernetic totalists' conception of reality as nothing but patterns of information. In his book, *You Are Not a Gadget (2010),* Lanier writes

> The first tenet of this new culture is that all of reality, including humans, is one big information system... there is a new kind of manifest destiny that provides us with a mission to accomplish. The meaning of life, in this view, is making the digital system we call reality function at ever-higher 'levels of description' (27).

Lanier's approach to the problem of the culture surrounding technology is unique because it demands that we think collectively and collaboratively about technology's ubiquity in our society and how it's changing the way we address the meaning of our lives. Lanier warns us about the dangers of presuming that psychologists and AI researchers understand reality or the human mind better than we do, because we will blindly mistake their judgments as if it were a law or a fundamental truth. The point we should take away from this passage is that if we continue to think of ourselves as *thinking machines* and see reality as a data system - then we will, without knowing it, inevitably create the conditions of a dehumanizing system that we'll likely regret later on.

Because of these concerns, philosophers such as Lakoff and Dreyfus believe it is 'the task of philosophy to help us confront… our lives at the personal, communal, and global levels. People want a philosophical understanding that provides realistic guidance for our lives' (Lakoff and Johnson, 342). While people are still reliant on the findings of psychology and science, we must start to question whether or not these scientific conceptions of the mind are accurate accounts of what makes us conscious. Adapting to the conditions of an AI-driven world will eventually make us dependent on these superficial conceptions of human behaviour, as it will increase the likelihood of limiting our potential and capacity to engage holistically with the world. In other words, our mastery or sense of agency in an AI driven world would then depend on altering the conditions of our society to the point where every decision we make would have to become completely predictable, thus eliminating the possibilities for innovation, creativity, and experience.

Critical thinking and cultivating new skills require a commitment to taking risks or trying out new practices. So, if we anticipate a future where we can always be 'clear about "presuppositions," [then] our actions would lack seriousness' (Dreyfus, 4). Thus, if we presume to

know the outcome of each decision, our sense of intuition would be jeopardized. While this is only a hypothetical scenario, I believe the limitations of relying on an epistemological model of the mind are parallel to the dangers of the technology that is deskilling us as we speak. In his work *The Singularity and The Human Condition (2018*), Roger Berkowitz reminds us that in our modern age, 'thought becomes reckoning, a "function in the brain" that can be accomplished better by artificially intelligent machines than by human beings' (Berkowitz, 353). Per Berkowitz, rule-bound behaviour and calculative rationality is what puts the human condition at risk. However, this does not imply that we should only settle with demonizing artificial intelligence, but instead evaluate how the implementation of these technologies, in turn, affects our behaviours and attitudes around it.

Contemporary theorists such as Mark Coeckelbergh and John Searle are also particularly interested in philosophy's place in an age where technology is changing the conception of who we are. Suppose we are to ignore the limits of AI's capabilities and continue innovating these technologies without serious introspection. In that case, we likely risk compromising the little we know of human intelligence as it reduces us to something more mechanistic than human. Thus, the practical question then becomes: if we are yet to understand how the human mind works with our physical bodies, how can we replicate human intelligence in a machine or computer program?

Suppose we are to believe that philosophy had split from the sciences in the twentieth century. In that case, the divide is especially apparent in the world of academia or today's digital culture. Breakthroughs in technology and cognitive science within the past decade have given AI researchers the naïve impression that there is no need for philosophical speculation. However, in the last chapter of his book *Skillful Coping (2014),* Dreyfus writes about an encounter with a

student at MIT in 1960 who told him, '"you philosophers have been reflecting in your armchairs for over 2,000 years and you still do not understand intelligence. We in the AI Lab have taken over and are succeeding where you philosophers have failed."' Though, during his visit to Alan Newell and Herbert Simons's AI lab, he claimed that while their research were quick to dispute philosophy, they had ironically turned 'rationalist philosophy into a research program' (249). One could justify their arrogance toward philosophers because they proved that computers in the late 50s could simulate unique aspects of human intelligence. These breakthroughs in computer science had raised the hopes of neuroscientists who believed they could artificially replicate a model of the human brain or refer to it as something analogous to a computer program.

However, Dreyfus's skepticism of machine learning was confirmed years later in 1972 when Eugene Charniak (a student of computer scientist Marvin Minsky) was developing a script-like approach for a computer program to understand the background information from a children's story. The script in the story reads as follows: 'Today was Jack's birthday. Penny and Janet went to the store. They were going to get presents. Janet decided to get a kite. "Don't do that," said Penny. "Jack has a kite. He will make you take *it* back."' (Goldstein and Papert, 7). The goal was to construct a theory of how the computer program could understand that 'it' referred to the kite that Jack already owns; however, as they acknowledge that the computer program could not know that '*It* refers to the new kite without knowledge about the trading habits of our society' (Goldstein and Papert, 29). This debunks the legitimacy of intelligent computers because for AI to understand the common sense of a four-year-old, the computer program would then have to acquire background knowledge about a variety of situations in which these contexts would arise in everyday situations.

The truth is, it would be both mentally exhausting and dreadfully time-consuming for an AI researcher or robotics engineer to make sure they can catalogue 10 million facts into a computer program for every fact or theory of human behaviour. These facts would need a million different contexts or hypothetical situations for a single human characteristic to be understood by a machine. Dreyfus makes this explicitly clear in the introduction to his controversial work, *What Computers Still Can't Do* (1992), when he says that 'commonsense understanding had to be represented as a huge data structure consisting of facts plus rules for relating and applying those facts' (Dreyfus, xi). While Dreyfus is not necessarily pointing out the impossibility of AI, he is making a practical claim that fixing these mishaps in understanding everyday knowledge would cost AI researchers more time and wasted money to have a machine function the same as an embodied human would. Challenges such as these indicate we could be making a great leap, overestimating what we think we know about the human mind.

What do these heuristic errors in the AI lab say about the tradition of western philosophy? And how do examples like these tell us that we must approach philosophy differently than we have been? As we have seen earlier, AI researchers share the naïve assumption that they have achieved where philosophers had failed. However, Dreyfus states that most AI labs, ironically, still depend upon the

> Cartesian idea that all understanding consists in forming and using appropriate symbolic representations. For Descartes, these representations were complex descriptions built up out of primitive ideas or elements. Kant added the important idea that all concepts are rules for relating such elements, and Frege showed that

> all rules could be formalized so that they could be manipulated without intuition or interpretation (Dreyfus, ibid).

The philosophical postulations espoused by Descartes, Kant, and Gottlob Frege have become the ontological presuppositions that researchers in AI laboratories use to justify their ingenuous attempts to manufacture human consciousness. Thus, there is a danger in presupposing that *ideas* or *basic concepts* have rules behind those concepts and that a computer is assumed to understand this without the embodied experience which is only accessible to the human subject. Lakoff clarifies this when he states that a philosopher's reliance on metaphorical language is not for the sake of embellishment but that it is constitutive to their theories of mind. Unlike the naiveté of researchers in AI labs, we know that even when language has its limits, it nonetheless remains intrinsic to our understanding of embodied experience. Thus, the metaphors that anchor philosophical concepts that concern human consciousness function under the presupposition that they can accurately account for all human experience. With this, pragmatic concerns are bound to arise.

Metaphors between body and mind are some of the fundamental questions that have agonized philosophers for centuries and are now gaining relevance due to the way the prospect of intelligent machines incites our wildest imagination. Recently, an article titled *Can Intelligence Be Separated from The Body (2023)* appeared in the New Yorker magazine. Its author, Oliver Whang, ironically opens his article with the many ways in which we regard our mind as something like a ‘video game controller’ or a ‘car on the road’ – or perhaps it is the body that ‘manipulates the mind with hunger, sleepiness, and anxiety, something like a river steering a canoe?... maybe no metaphor will ever… fit because there is no distinction between mind and body: there is just experience, or some kind of physical process, a gestalt’ (1). Metaphors like

these challenge AI researchers' conceptions of intelligent behaviour and raise doubts as to whether or not they can replicate an intelligent machine without a human body.

As someone involved with the development of AI, professor of technology and economics, Leslie Willcocks even admits that their language of computing 'is suffused with the fundamental misunderstanding that the brain is some kind of computer and that machines have progressively human qualities' (Willcocks, 3). While it is easy to dismiss the extremity of which these metaphors are used, we must take it seriously because the metaphors we choose in our everyday interactions are a direct result of our embodied experience of a world that relies on instrumental reasoning. While we (humans) use metaphor as something intrinsic to how we articulate the everyday experience of embodied experience, a machine would have a disembodied conception of metaphor and likely not understand it in the way that people do.

That is to say, if we were limited to the use of formal language to relay information to the world, the outcome of each decision prior to its moment of initiation would be completely predictable. If we were to consciously rid ourselves from the use of metaphor to adhere to this epistemological model of intelligence, our engagement with the world would be highly rigid and transactional.

The best case that can prove Lakoff's point on the difficulties of language, comprehension, and metaphor is his logical assessment of the empiricist John Locke and the rationalist Descartes. While these thinkers belong to two different schools of thought (i.e., empiricism: knowledge depending on sensory experience, and rationalism: knowledge depending on the use of reason) that are equally dependent on the use of metaphorical language, presuming even the syntactical use of metaphor is an apt description of the mind and how it works. Let us take this famous

passage from Locke's essay on human understanding and approach it from a cognitivist perspective:

> Whence, has it all the *materials* of reason and knowledge? To this I answer, in one word, from EXPERIENCE . . . Our observation employed either about external sensible objects, or about the internal operations of our minds perceived and reflected on by ourselves, is that which supplies our understanding with all the materials of thinking (Locke, bk. 2, chap. 1, p. 2).

Now the metaphors that Lakoff draws from this passage are evident as they consist of truisms such as: "Locke sees the mind as a container" and that perceptions, seen as materials, are an inevitable source for constructing complex ideas. However, Lakoff interjects and rightfully makes his own distinction between the two metaphors, e.g., the mind as a container and then the mind as a builder. Lakoff's ‘mind as builder’ metaphor is an important contribution because it shows how the internal logic behind Locke's statement presumes that the mind automatically ‘takes these perceptions and constructs complex ideas out of them’ (Lakoff and Johnson, 338). While these philosophical claims are written in a way that seems componential, it still needs to give a scientific explanation for the way neural networks construct complicated ideas.

Whereas Descartes, on the other hand, believed that ‘unregulated inquiries and confused reflections of this kind only confound the natural light and bind our mental powers’ (Descartes, 87). These ‘confused reflections’ Descartes speaks of could be interpreted as a metaphor that Locke may have perceived to be the reflections of human experience. Lakoff, however, believed that Descartes' conception of the mind was the same as Daniel Dennett's' understanding when he referred to it as ‘the “Cartesian Theater” – an inner light (the “Natural Light of Reason”) … observed by a metaphorical spectator (our faculty of understanding)’ (Lakoff and Johnson, 398).

In other words, the presumptuous tone is equally apparent in Descartes as in Locke's conception of the mind and how it works since it still depends on metaphorical indicators that speak on behalf of the hard science that would otherwise allude to the empirical findings from neurobiology.

Granted, these metaphors for the mind were written in the seventeenth century. However, even with all of the advancements in technology and the sciences today, have we gotten much further when it comes to understanding the human mind? To answer this question, we should turn our attention now to the contemporary example in John Searle's *Chinese Room Argument* against strong AI. Even in this contemporary example, we see Searle resorting to similar metaphors that Descartes and Locke used in their rationale. We see this in his argument where he refers to the *mind as a computer*. Without this metaphor (one that is so culturally relevant), the argument would fall on deaf ears. Let us look at his example, as it appeared in the *Scientific American* Journal (1990):

> Consider a language you don't understand. In my case, I do not understand Chinese. To me, Chinese writing looks like so many meaningless squiggles. Now suppose I am placed in a room *[physical computer]* containing baskets full of Chinese symbols. Suppose also that I am given a rule book in English for matching Chinese symbols with other Chinese symbols. The rules Identify the symbols entirely by their shapes and do not require that I understand any of them. The rules *[database]* might say such things as “take a squiggle-squiggle sign from any basket number one and put it next to a squoggle squoggle sign from basket number two.” Imagine that people [*programmers]* outside the room who understand Chinese hand in small bunches of symbols and that in response I manipulate the symbols according to the rule book and hand back more small bunches of symbols.

> The people outside might hand me some symbols that, unknown to me, mean, "what is your favorite color?" and I might after going through the rules give back symbols that, also unknown to me, mean, "my favorite color is blue, but I also like green a lot." I satisfy the Turing test for understanding Chinese. All the same, I am totally ignorant of Chinese… Like a computer, I manipulate symbols, but I attach no meaning to the symbols… The point of the thought experiment is this; if I do not understand Chinese solely on the basis of running a computer program for understanding Chinese, then neither does any other digital computer (Searle, 26-27).

While Searle is making an epistemological argument against machine intelligence, he, like Descartes and Locke, is intrinsically bound to the use of metaphor. Instead of referring to the mind as a container or a builder, he refers to it here as a physical computer. Of course, what makes the metaphor of a mind as a computer evocative is the fact that it is culturally relevant for our times. The plausibility of robotics or machine intelligence remains a frightening possibility. An example such as this presumes we will be conditioned to act as if we were detached third party entities (like the prospect of virtual reality). Phenomenologically speaking, the subject placed inside of a computer struggles to make sense of a language that he does not understand even though he has a rule book that tells him which Chinese symbols goes where, even though he has no experience with the language and doesn't know what any of it means. Thus, Searle's example still proves that AI depends on the way computer programmers operate it in order for it to function correctly.

The point is not to reject Searle's use of metaphor but to see it is an imperative for human communication while a metaphorical language system to an AI is nothing but a set of rules taken

outside of the context of shared human experience. AI scientists such as Marvin Minsky naively believe that an epistemological language system can help a computer reach the same level of human intuition if it could know something about 'cause-effect, time, purpose, locality, process, and types of knowledge' (Minsky, 68). Even though Minsky believes that robots can learn of the components that make us engaged beings in the world, it still does not eliminate the fact that an epistemological framework of what makes us active beings in the world is separate from the account of subjective human experience. Such a model presumes that a biased account of human behaviour can be turned into an empiric model that machines can learn from. Lakoff, in his book, *Metaphors We Live By (2003),* explains that these concepts that govern human intelligence are

> not just matters of the intellect. They also govern our everyday functioning, down to the most mundane details… if we are right in suggesting that our conceptual system is largely metaphorical, then the way we think, what we experience, and what we do every day is very much a matter of metaphor… in most of the little things we do every day, we simply think and act more or less automatically along certain lines. Just what these lines are is by no means obvious (3).

The conceptual system of metaphor that Lakoff alludes to here is not something that can be easily adopted by machine intelligence because our reliance on the use of metaphor is developed over time. A metaphorical model of language cannot be learned prior to human experience since machines cannot understand the use or meaning of metaphor before it has adapted to the unpredictable conditions of the world and everyday experience.

While Searle makes a strong case against machine learning, there is still no real metaphor for the person trapped inside a computer (Chinese room). The question that this example raises has to do with whether the person trapped inside a computer system is a neuron or just an embodied

subject? Aside from the aesthetic appeal of imagining a human being inside of a physical computer, it still does not give an empirical answer as to why machines cannot function and engage in the world in the same way humans do. Dreyfus furthers this by stating that

> adherents of the psychological and epistemological assumptions that human behavior must be formalizable in terms of a heuristic program for a digital computer are forced to develop a theory of intelligent behavior which makes no appeal to the fact that a man has a body since at this stage at least the computer clearly hasn't one (Dreyfus, 235).

And since the time that spanned from Plato to Descartes, we have taken the body for granted as we choose to see it as an appendage rather than something that is crucial to human intelligence and the way we engage in the world. But now, it seems that these 'psychological and epistemological assumptions' on human intelligence, without regard to the body, ultimately raise the ongoing concern that advancements of machine learning could very well reach the degree where AI surpasses the limits of human intelligence. Aside from the hype as to whether or not machines can be sentient, the question we should ask ourselves has to do with whether it is possible for machines to develop a conscience only through an epistemological model of the mind?

One of Dreyfus's primary concerns with AI researchers is their dependence on a symbolic information-processing model of the mind that did not account for the 'relevance of holistic and required involvement in ongoing activity, whereas symbol representations were atomistic and totally detached from such activity' (Dreyfus, 11). Holism, if we were to define it in the context of this discussion, means that human activity cannot be accounted for without considering a person's physiological state as well as the environment and societal factors that shape our

experience of the external world. Both the social and embodied aspects for a cognitive malleability to the world has to do with the way social 'norms' or 'beliefs' accustom us to engage efficiently, for instance, to the standardization of our technologically driven world. This interpretation of holism can be attributed to Dreyfus's notion of 'background practices,' as he explains it in his essay, *Holism and Hermeneutics (1980)*:

> Practical understanding is holistic in an entirely different way from theoretical understanding. Although practical understanding – everyday coping with things and people – involves explicit beliefs and hypotheses, these can only be meaningful in specific contexts and against a background of shared practices. And just as we can learn to swim without consciously or unconsciously acquiring a theory of swimming, we acquire these social background practices by being brought up in them, not by forming beliefs and learning rules (Dreyfus, *Holism and Hermeneutics*, qt in Coeckelbergh, 276).

It is easy to fall under the impression that these 'shared practices' come with a rational set of rules as necessary prerequisites for everyday coping. However, Dreyfus refuses to explicitly define the background knowledge of shared practices as something static. It's crucial to distinguish the necessary preconditions for skillful coping from the shared values and beliefs of society.

These two components of background knowledge are, in fact, interconnected. Dreyfus's approach to background knowledge is solely based on the 'habits and customs, embodied in the sort of subtle skills which we exhibit in our everyday interaction with things and people' (Dreyfus, 1980b, 8). Belgian technology philosopher Mark Coeckelbergh, on the other hand, wonders whether it is 'senseless to speak of social rules or norms, for example as social scientists do? And are philosophers who do so entirely misguided?' (Coeckelbergh, 276). So, for the sake

of our discussion, I will bridge these two approaches in our discourse on the limitations of machine learning and the cultural preconditions as an engaged being in a technological society. These social customs and rules should be accounted for because the shared beliefs of society not only shape our worldviews but impact the decisions we make in our everyday lives.

Comparing the goals of human beings and the objectives of machines may give us an objective look at our own desires, something we may have not considered before. Thus, the computer scientist and physicist, Satosi Watanabe discloses the cognitive study of pattern recognition to make the distinction between humans and machines:

> For man, an evaluation is made according to a system of values which is non-specific and quasi-emotive, while an evaluation for a robot could not only be made according to a table or specific criterion… this difference is subtle but profound… a man has values while a machine has objectives. Certainly, men too have objectives, but these are derived from a system of values and are not the final arbiter of his actions, as they would be for a robot (Watanabe, *Compte Rendu du Symposium sur La Technologie et l'humanité*, qt in Dreyfus, 273).

Watanabe's analysis proves that the possibility for humans and machines to be alike lies in the notion that humans would otherwise have to adapt a utilitarian behaviour which a machine could easily simulate only if the 'probability of each alternative event is fixed and given to the machine' (Watanabe, ibid). In other words, this would mean that we would have to objectify our *wants* and *needs* as *fixed objectives* (which we are already doing) if we were to prove machines could accomplish goals in the same way humans can. Thus, objectifying human behaviour would inevitably make us compromise ourselves to the point where we would begin to behave like machines. Though, to Dreyfus, the matter is not so simple. In order to know the difference

between values and objectives, according to Dreyfus, would require us to 'abandon his way of posing the problem.' He reminds us that

> to speak of [human] values already gives away the game. For values are a product of the same philosophical tradition which has laid down the conceptual basis of artificial intelligence… to understand the difficulty Watanabe is trying to get at, we must be able to distinguish between objects, and the field or situation which makes our experience of objects possible. For what Watanabe misleadingly calls values belongs to the structure of the *field* of experience, not the objects in it (Dreyfus, 274).

Dreyfus's account of holistic experience explains how human behaviour is more nuanced than a criterion of objectives that can be programmed into a machine's database. The reason Watanabe is unable to explain the difference between values and properties is because human values are only specific when they pertain to a particular situation. Thus, our experience of the world is a 'field in which there are areas of attraction and repulsion, paths of accessibility, regions of activity and of repose' (Dreyfus, ibid). Because these paths of possibilities give us choices to choose from, we are forced to be the masters of our perceptual world. And as I've mentioned before, it is impossible for machines to replicate the same perceptual worldview that a human being has without cataloguing a million different hypothetical situations that surround each decision that a human would otherwise make.

However, those who follow the general philosophical tradition, according to Dreyfus, have adopted the habit of 'trying to turn the concerns in terms of which we live into objects which we could contemplate and control' (Dreyfus, 275). What Dreyfus has revealed here is the human tendency to reduce our inhibitions and personal concerns into a table of values we can evaluate

from a third person point of view. The same philosophical tradition that trains us to think of ourselves as third-party entities is exactly the model that engineers and cognitive scientists use in their research of artificial intelligence.

And yet, Dreyfus again reminds us that we are more than just a means to an end. For our purpose is not to just 'achieve some goal which is the end of a series; rather, interest in the goal is present at each moment structuring the whole of experience and guiding our activity as we constantly select what is relevant in terms of its significance to the situation at hand' (Dreyfus, ibid). The point that this proves to computer scientists like Watanabe is that values have to be specific in accordance with certain situations a person would find themselves in. And in order to get an understanding of what these situations could be, we are best to draw in examples that relate to human psychology and social circumstances affecting how we go about solving our problems.

In 1968, the *Science Journal* published an article titled *Machines and Men*, where psychology professor N.S. Sutherland reminds us of the way computer scientists who try to replicate the model of a human brain ignore the ways in which human needs shape our psychology and behaviour in the world. Sutherland writes:

> survival and self-maintenance are achieved by genetically building into the human brain a series of drives or goals. Some of the obvious ones are hunger, thirst, the sexual drive and avoidance of pain. All of these drives are parochial in the sense that one could imagine complex information processing systems exhibiting intelligent behavior but totally lacking them (Sutherland, 48).

Psychological observations like these tell us that the body has an intelligence that is akin to the way our rational minds work. And human experience tells us that our bodily needs not only give

us a sense of what needs to be done but tell us how we should evaluate and learn from our experiences. Aside from the fact that a human's neural network is more sophisticated than an artificial replica of one, this kind of embodied intelligence cannot be replicated or understood by a computer system that does not have a human body that it can utilize. Perhaps this is a question that only a biologist in an AI lab can answer. However, from a phenomenological point of view, when we experience a need

> we do not at first know what it is we need… we must search to discover what allays our restlessness or discomfort. This is not found by comparing various objects or activities with some objective, determinate criterion, but through what Todes calls 'our sense of gratification' (Dreyfus, 276-277).

Here we see Dreyfus's hesitation towards an epistemological conception of an embodied subject, since he believes that gratification in itself is a discovery that can help us clarify what our physiological needs are. For Dreyfus, this is a phenomenological constituent for skilfully coping in the world and being engaged with it. Because he believes that values are not arbitrarily adopted by a person's given environments, these values, he asserts, have no determinate quality since experience is the only way that these values will reveal themselves.

However poignant his ontological insights might be, Dreyfus misses the crucial opportunity to talk about the impact of societal pressures on us and how they influence the decisions we make. In his article, *Skillful Coping With and Through Technologies (2018),* Coeckelbergh outlines Dreyfus's thinking and critically evaluates its potential for thinking about technology in the near future. In this work, he shares similar concerns and believes that the 'social and cultural can be connected to Dreyfus's thinking about background,' but believes it is yet to be

developed or theorized (Coeckelbergh, 276). However, when recalling Dreyfus' response to Searle, Coeckelbergh asserts that

> there are already social norms, there is already something binding on us, and we learn that from early ages on – without having to rely on explicit rules. This makes sense and opens up the possibility of a kind of middle position, which recognizes that there are rules, norms, etc. that have some normative power over us, but at the same time acknowledges that we do not (always?) learn them in an explicit way and that we do not need them in an explicit and formalized form in order to cope (Coeckelbergh, ibid).

And given what we have said about AI's ubiquity and how it mediates our interpersonal lives, the normative power that Dreyfus did not articulate in his suspicions of the digital age is evident now (i.e., in the interim) as we anticipate a future of being under constant surveillance. The singularity, however, promises us a homogenous future where robots will be competent enough to relieve us from work, and we will remain in control of them by merging our biological bodies with the nonbiological capacities of AI. Regardless of how far-fetched these ideas are, our society's conception of a 'post-human future' emerges as a 'collective fact' that puts us at risk of compromising our agency and understanding of the sensory experience that is fundamental to human existence. How we consent to the conditions of our technologically mediated world is yet to be fully understood or realized.

Chapter III: A Few Final Preliminaries

'But where danger is, grows
The saving power also.'
- Friedrich Hölderlin

The concluding segment of our discussion will assess Martin Heidegger and Jacques Ellul's early premonitions on technology and how they resonate now in the conditions of our world today. I will show how our complacency to the new societal shifts from a hyper-digitized world makes the dangerous aspects of the singularity more likely to happen. I will also show how scientists and technologists are either driven by the fear that these technologies will make us obsolete or that they will one day save us from ourselves. But there is also the suspicion that the nihilistic conditions of our society today result in us exchanging our intuitive thinking for transactional or instrumental reasoning that is dominating our social landscape today. AI's ubiquity is already marginalizing us through our dependency on these technologies and the role they play in our lives today. These concerns are urgent not only because they shape our culture's conflicting attitudes toward a technologically driven future, but they prove how malleable we are when it comes to how we model ourselves after computational AI, as it gives us the illusion of certainty, power, and control. Of course, with these psychological concerns arise the existential fear of human purpose when possibilities like these become fully realized.

But before we decode Heidegger's thinking, it is worth noting that Heidegger had never considered himself a luddite or a foe of technology. Rather, he only intended to understand the *nature* of technology. However, that doesn't mean he was an advocate for it either, as he saw its potential dangers early in the aftermath of World War II. But for the purposes of our analysis, I will unpack some of Heidegger's terminologies in his two complementary essays *The Question*

Concerning Technology and *The Turning (1954)* and develop his ideas in ways that are relevant for us today. As mentioned in the first chapter, Heidegger sees technology as a mode of *revealing* which he specifically defines as something that gathers resources and arranges it 'within itself the four modes of occasioning—causality—and rules them throughout' (12). This line of reasoning clarifies our understanding of technology as an instrumental phenomenon that remains relevant in the epoch of our AI driven world today, as the affectability of AI depends on the way we utilize it either for business, transportation, or to be immersed in a hyper-connected digital universe that not only caters to our interpersonal needs, but satisfies the desire for connection.

This conception of technology as it stands in today's context reveals what Heidegger calls the *standing-reserve.* To put it plainly, the *standing-reserve* applies to anything that is *ready for use,* or in other words, anything that can be used as a *resource.* In the same way coal miners see coal as a resource for coal mining and generating greenhouse gasses is analogous to the way that 'man is challenged, ordered' as he 'belong[s] even more originally than nature within the *standing-reserve…* the current talk about human resources, about the supply of patients for a clinic, gives evidence of this' (18). From here, the *standing-reserve* leads us to the process of *enframing* which, from pre to post-industrial technique, conceives the entirety of nature's resources or the planet as a whole resource for technological purposes. In our digital age, it even goes so far to say that the process of *enframing* puts people 'in [a] position that reveals the real, in the mode of ordering, as *standing-reserve.* As the one who is challenged forth in this way, man stands within the essential realm of *enframing'* (24). In other words, in this process of *enframing,* people also become objectified as resources (e.g., the 'elephant in the room' concerning corporate affairs).

The process of *enframing,* however, goes beyond technology in that it constitutes the

organization of life's affairs. Without getting into the ethical debate concerning technological neutrality, Heidegger sees the problem of *enframing* as the real danger as it jeopardizes our authentic sense of Being. This is because:

> in the truth of its coming to presence, remains veiled and disguised. This disguising is what is most dangerous in the danger in keeping with this disguising of the danger through the ordering belonging to *Enframing,* it seems time and time again as though technology were a means in the hands of man. But in truth, it is the coming to presence of man that is now being ordered forth to lend a hand to the coming to presence of technology (37).

This process of *enframing* can be seen as a trade-off, i.e., our authentic sense of self, in the context of coping or acquiescing to our technological conditions today (the process of *enframing)* is exchanged for an efficient mode of Being that makes us obedient, proving we are invaluable resources for the technological system. This authentic sense of being, in contrast to the one that makes us *efficient* (or 'spiritually impoverished'), is one that Heidegger describes as the authenticity of 'being-yourself [which] does not rest on an exceptional condition of the subject in which it is detached from anyone; it is rather an existential modification of anyone as an essential existential' (Heidegger, SZ 130. *Being and Time (1927),* qt in Käufer, 71). Thus, this detached sense of self now applies to the general mass of our working population tied to computer terminals, oil refineries, cyber security centers, hospitals, banks, and digital marketing agencies that shift the weight from the body to the mind.

Both the exchange for different modes of being (i.e., of coping) and acquiescing to the conditions that constrain us is what leads to the coming of *oblivion* as it 'turns away from this coming [to] presence, and in that way simultaneously turns counter to the truth of its coming to

presence' (41). The best example (or metaphor) I can give when trying to unpack what Heidegger means when he announces 'the turn' could be applied to how our sense of world time is altered through the earth's rotation around the sun. While we reside in one part of the world where it is morning, at the same time, we forget that there (where we once were), it *is* night. Thus, the *oblivion* for Heidegger occurs when our authentic sense of self turns its face away from us as we rescript our desires, behaviours, attitudes, wants, and needs to comply with the needs of the system. It is this process of *enframing* that makes us forget the way in which we trade the playful parts of ourselves for a self that is more rigid, efficient, and transactional.

But beneath these factors at play lies the question of humanity's purposive will for technological acceleration, something Ellul regards as the phenomenon of *invention.* And this phenomenon, as each epoch in history shows, is something that we've inherited from the start. It is a trait that has been embedded in our psychological makeup and has proved itself useful from time to time again. Unlike Heidegger's holistic conception of technology as an *instigating* phenomenon, Ellul believes that the existence of human technique is characterized by our relationship with any given environment. Near the end of his book *The Technological Society (1967),* Ellul concludes that a future society run by machines will condition its future citizens, leaving them under the impression that 'the only thing that matters technically is yield, production. This is the law of technique; this yield can be obtained by the… mobilization of human beings, body and soul, and this implies the exploitation of all human psychic forces' (Ellul, 324). Aside from their differing conceptions of technology and its origin, it is Ellul's recognition of mobilization that puts him in agreement with Heidegger since they both understand the *enframing* process of technology that utilizes us as its resources. However, the disembodied

conditions of our digitized society today not only affirm the *trade-off* of *being,* but in fact reinforces Heidegger's idea of *oblivion* since our instrumental sense of self will be the only mode of *being* that will be effective to us if we're to live and comply within the framework of technological society.

Given the recent developments in our digitized infrastructures, recent advancements in artificial intelligence have convinced us that AI could one day replicate itself. And inevitably, this raises the stakes for those of us today. In his book *Frankenstein Urbanism (2021),* geology professor Federico Cugurullo discusses autonomous cities by recounting the recent development of the *city brain* in Alibaba located in Hangzhou, China. The purpose of developing *city brain* (i.e., urban AI) was initially intended to monitor traffic conditions (Alibaba, 2020; Curran and Smart, 2020). But according to Cugurullos' research, this is not only an unethical phenomenon, but it poses a risk to human privacy and control. He says that this AI generated technology is an instrumental manifestation as it is

> capable of sensing the surrounding environment and making decisions across multiple domains in an unsupervised manner… [it] acquires data primarily by means of hundreds of cameras distributed across the city… it can learn about the city by processing large data sets… that Alibaba's computer scientists install and make available to it… but they cannot dictate what the AI will do. A city brain functions in a hyper complex and ever-changing system: the city (165).

Programs like these not only affirm or anticipate many of the far-fetched hypotheticals (e.g., the 'data revolution') we hear people speak of today but that this inevitably disrupts people's sense of privacy, especially if something like this becomes implemented in Western countries. Although, as we've been discussing, the superseding process of *enframing* as it could gradually make us

susceptible to conditions like these without realizing it. It is through possibilities like these that affirm Ellul's premonitions on the future of man's place in modern society. He writes that 'these technical forces and economic conditions are beyond the reach of man. They are not the result of thought, doctrine, discourse, or will. They are simply there as a condition of fact. All social reforms, *all changes, are located wholly within this condition of fact.'* (Ellul, 334). So, if technological change is not the result of doctrine but of fact, then this inevitably affirms the way technological developments such as these are built for the purpose of tending to the transactional conditions of a society and economy that relies on the data that humans feed it as well as the surveillance system that regulates our behaviour and conduct in modern society.

Examples like the *city brain* lead us back to the prospect or potential for the rise of a singularity (or something like it) and the motives behind it. It is an important phenomenon to consider since it has occupied the minds of renowned computer scientists since the 90's. This being a phenomenon we no longer can afford to dismiss as science fiction. However, the purpose of discussing the motives or inner narratives of techno-futurists has to do with the way it reveals what Nietzsche calls the *will to power* as it mirrors our desire to create or utilize more technologies in order to move beyond both our biological limitations and the constricting nature of our technical conditions today. Conditions and considerations such as these reveal the paradox 'characteristic of our times, that the abstract conquest of Space by Man (capitalized) corresponds to the limitations of place for men (in small letters)' (Ellul, 328). Given the course of technical history and its astounding breakthroughs in the sciences, it has left us in an interim period where the future and fate of our species seems to be unpredictable. But that has never stopped us.

In his renowned work, *The End of Science (1998),* the journalist John Horgan recounts a

rather entertaining experience he had with the father of artificial intelligence, Marvin Minsky, at MIT's AI lab in the Spring of '93. Similar to the claims and refutations we explored between cognitivists and AI researchers in chapter two, Minsky told him he maintained the belief that 'the brain is nothing more than a very complicated machine whose properties can be duplicated with computers' (Horgan, 183). And despite being warned several times by students of Minsky's hostile attitudes toward those who doubted his vision, Horgan showed no hesitation as he carefully rehearsed his questions before he set foot in the laboratory.

In Horgan's eyes, Minsky was a cranky eccentric who resented those who didn't take his thoughts on consciousness seriously. On their way to his office, Minsky shouted: '"En garde!"' – instigating a student lounging near his office door and then whipping 'their pliers repeatedly at each other, like punks practicing a switchblade technique' (ibid). However, Horgan also remembered how his behaviour changed when his pregnant candidate walked in the door; Minsky asked her calmly if she was nervous about her oral exam. When she admitted that she was, Minsky assured her by gently pressing 'his forehead against hers, as if seeking to infuse her with his strength' (Horgan, 185). This moment reminded him that the 'many sides' of Minsky's behaviour that day were just an example that emphasized the claims in his book, *The Society of Mind* (1986). It maintained that a compartmentalized model of the mind would further the development of artificially replicating a human brain based on these four modes of thinking, e.g., random, concentrated, focused, and effortless fields of cognition, which he believed could be implemented into a *thinking machine*. In the mid-'80s, Minsky was expressing concerns of a possible singularity in an essay titled *Self-Knowledge Is Dangerous,* which warns us that if '"we could deliberately seize control of our pleasure systems, we could reproduce the pleasures of success without the need for any actual accomplishment. And that would be the end of

everything.”’ (Minsky, 68). While these concerns are on par, what remains inconsistent, however, is Minsky's ambivalence toward the future of neuromorphic technological enhancement wherein we can artificially replicate a multifaceted model of the human brain through the mimicking of human behaviour.

And while Minsky’s ambivalence toward the rise of singularity lacks existential foresight, his opposition towards it makes sense since Minsky, according to Horgan, fears ‘single-mindedness’ as he went on to exclaim that cooperation only happens at ‘“the end of evolution… [and] when you don’t want things to change much after that”’ (Horgan, 252). While Minsky’s ambivalence about super intelligent machines ending evolution and robbing us of our individuality is absolutely a valid concern, he nevertheless does not hold humanity in high regard. He tells Horgan that while people may be approaching their limits, scientists will one day be able to ‘“create machines much smarter than we that can continue doing science”’ (Horgan, 187). Through Minsky’s amoral attitude toward humanity, we see someone who is more motivated by the *substitutive* pursuit of science instead of concern for the welfare of those who may have to live in such conditions in the near future. The problem with Minsky’s advocacy for a robot-dominant society over the evolutionary threat of singularity is that he fails to consider that a society under the totalitarian rule of AI could very well pose a threat to the character of human dignity and the welfare of the state. On this note, I question Minsky’s foresight when it comes to the placement of humans when replaced by AI. But then again, how does he value humans and their place in the world? Triggered by Horgan’s objection to machines taking the place of scientists, Minsky then called him a racist, saying the important thing is to ‘“not remain in our…present stupid state.” We humans, he added, are… “dressed up chimpanzees”’ (Horgan, 187). What’s contradictory about Minsky’s deep-seated pessimism around human nature is that it still falls under a similar premise

akin to the transhumanist's obsession with merging with nonbiological entities. Furthermore, examples like Minsky's neuroticism and moral biases should remind us to question the motives of scientists.

Cugurullo's example of the way artificial intelligence runs the infrastructures of our cities now affirms the growing tension between machines and humans. Cugurullo cites Aristotle's conception of *eudaimonia* as it pertains to the welfare of cities which is 'not a place for the gods, but rather for people find and follow a vocation, seeking to achieve their inner potential' (Aristotle, *The Politics* qt in Cugurullo, 171). Following this antiquated sentiment, he goes on to make the case that this still applies today. Cugurullo rightfully maintains the idea that

> cities are places of human development, where individuals understand who they are and eventually take up a role which is in harmony with their identity. The process whereby humans comprehend and, above all, realize their potential is, for Aristotle… *eudaimonia*… [and] service robots operating in cities then, by replacing an increasing quantity of human roles, have the potential to deprive humans of their eudaimonia, thus decreasing the social sustainability of the city. For a sustainable urbanism, eudaimonia is an essential resource to cultivate and protect, inasmuch as it is hard to imagine a sustainable type of urban living which is not conducive to happiness (Cugurullo, 171).

Cugurullos' example of service robots robbing us of our jobs and sense of innovation not only adds an emphasis on the tensions between biological and nonbiological intelligence, but also the process in which the *enframing* which could alter the conditions in a way where our total compliance will be the only requisite that is left for us to fulfil.

Of course, such a dystopian hypothetical mirrors the way in which our dependency on

technology could indefinitely change our sense of self. Ellul insists we have always known wide horizons, positing that

> even the city dweller had direct contact with limitless plains, mountains, and seas. Beyond the enclosing walls of the medieval city, was an open country. At most the citizens had to walk five hundred yards to reach the city walls, where space, fair and free, suddenly extended before him. Today man knows only bounded horizons and reduced dimensions. The space not only of his movements but of his gaze is shrinking (Ellul, 328).

Premonitions like these still hold weight for us today, especially with the culturally determined prospect of the singularity narrowing our gaze to the point of a singular totality that could potentially erase the boundaries between ourselves and the natural world. Thus, there also lies the risk of compromising our *authentic sense of being* to the point where we will lose the curiosity that solicits exploration, innovation, and creativity. Now, if we're to finally take this in, what should we then expect, do, or think?

In his essay, *The Turning (1954),* Heidegger cites a hefty couplet from the poem *Patmos,* by the German poet Friedrich Hölderlin (also in epigraph) that reads as follows: 'But where danger is, grows / the saving power also' (Hölderlin, *Patmos* qt in Heidegger, 42). This passage for Heidegger bears a lot of weight when it comes to his thinking on technology. He urges his readers to follow it closely as it tells us that even

> where the danger is as the danger, there the saving power is already thriving also. The latter does not appear incidentally. The saving power is not secondary to the danger. The selfsame danger is, when it is *as* the danger, the saving power. The

> danger is the saving power, inasmuch as it brings the saving power out of its – the danger's – concealed essence that is ever susceptible of turning (Heidegger, 42).

What Heidegger is suggesting is that only in our ability to see technology for what it is, i.e., a mode of revealing, can we see or move beyond it. Only through our awareness of technology and its ubiquity in society and human affairs can we turn from our *oblivion* (i.e., our forgetfulness) to keep our authentic sense of being intact. Heidegger's meditation of Hölderlin's poem Patmos has a relevant backstory behind it, as Patmos is an island on the Aegean Sea, rumoured to be the location where John wrote the Book of Revelations (96 CE). One of its aphorisms ironically anticipates Heidegger's eschatological thinking that questions the prospect of our post-human destiny: 'I am the Alpha and the Omega, the First and the Last, the Beginning and the End' (Revelations, 22:13). What's even more ironic is that while this assertion mirrors the *destining* that presumes the rise of singularity, it also makes the spiritual objection that humanity is not destined to remain stuck indefinitely to one epoch, contrary to the claims of the singularity's proponents. It is on this note that we should remember the eschatological turn concerning the fate of our species is in our hands. Having a fixed view of the future or being fooled into thinking that we know what's to come will divert us from tending to what is needed of us now. And regardless of what's to come, it is important that the concerns we've addressed continue being discussed so that we can restore the communities that keep us transparent with one another in regard to thinking about practical strategies moving forward. Proposals like these affirm Heidegger's early assertion that in the *turning* of an epoch it will expect us to properly be prepared for the next.

To proceed, we must weigh the existential risks of artificial intelligence and re-evaluate our priorities. If the advancements of artificial intelligence are not an absolute necessity for human survival (what technology should be), then what other reasons compel us to think that the progress of artificial intelligence or more technology is absolutely necessary – especially when it is likely to enslave, replace, or surpass us? The fact that there is no practical answer to this fundamental question should demand our attention. We should not, however, let our conclusions about the future convince us we have reached a dead end. The 'inevitabilities' of whether our future will be dystopian or utopian are only possible if we allow it to be. If we continue to collaborate, strategize, and encourage more transparency, we can make wiser choices on both a public and private level, so we can collectively shape and change our worldview concerning the future. This is a crucial remark to end on, as the redirection of technological implementation could potentially create more sustainable ways of living. As my friend Kush, who runs the Cloud House, once told me: '*The Gates of Eden are open. There are no Kings in the Gates of Eden. But there are people like you.*'

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