

Chapter 9: Immortality

An essay on science, technology and religion

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Age steals away all things, even the mind.

Virgil

The mission of the Immortality Institute is to conquer the blight of involuntary death.

Immortality Institute 2004

A common article of faith in Western civilization has it that there exists, and should exist, a sharp line of demarcation between science and religion. The general progress of the sciences, especially the empirical and experimental, is associated with or even seen as a “cause of”, secularization and a general decline in religiousness. This theme is itself a variation of a strong commitment once made in the West: when scientific knowledge increases, faith and superstition decreases. Such views can hardly be attributed to “science itself” or to “religion itself”: many practicing scientists discover God in Nature, and many religious persons take a keen interest in science. Rather, the demarcation of science and religion is an outcome of long-lasting efforts and practices intrinsic to Western societies.²⁷ This chapter explores an idea and phenomenon in which spaces between science and religion collapse: immortality. Recent years have seen a renewed turn towards *engineered immortality* as a serious goal for research and innovation, to the extent that it is becoming a *leitmotif* for the 21st century. Huge amounts of public and private money have been invested (especially in the US), and researchers have tuned their experiments towards new goals: delayed senescence, anti-aging treatments, cryo-preservation, up-and-down-loading of consciousness to computers and digital networks. The most ardent promoter of engineered immortality, transhumanism,²⁸ is a mixed bunch of social visionaries, techno-prophets, practicing scientists, entrepreneurs,

²⁷ What Bruno Latour (1993) has called “work of purification”.

²⁸ The transhumanist web-page [humanity+](http://humanityplus.org/learn/transhumanist-faq/#answer_19) defines transhumanism as follows: (1) The intellectual and cultural movement that affirms the possibility and desirability of fundamentally improving the human condition through applied reason, especially by developing and making widely available technologies to eliminate aging and to greatly enhance human intellectual, physical, and psychological capacities. (2) The study of the ramifications, promises, and potential dangers of technologies that will enable us to overcome fundamental human limitations, and the related study of the ethical matters involved in developing and using such technologies (http://humanityplus.org/learn/transhumanist-faq/#answer_19).

businessmen and policy makers. Although not a conventional movement, it has gained a number of followers among groups such as scientists, engineers, artists, gamers, computer scientists, hackers and ethicists. The recent emergence of the transhumanist movement coincides with a major technoscientific program to make “converging technologies”. Nano-, bio-, cogno-, info-, robo-: these are the prefixes in the naming of powerful, yet single-standing, new technologies. But imagine if they could all be united, could converge: solutions to our most pressing problems could be right around the corner, including old age, bad health, suffering and death.

This essay puts to the test the hypothesis that immortality, whereas clearly an esoteric and transcendent phenomenon, also possesses a number of earthly, social and cultural characteristics. I make three general presuppositions. First, that immortality aims to overcome a fundamental state of human existence, namely its finite character. Transcendence means to *rise above and beyond*: one’s time, one’s society or one’s life. Second, that immortality is a *goal* for human achievement and excellence, in many ways *the* ultimate achievement. Third, that such transcendence relates in complex ways to the society in which it subsists, and to the cosmology of that society. The quest for immortality is a matter of personal ambition and longing, but at the same time an expression of shared values, goals and commitments. Transcendence, even where it ventures deep into Nature, explores the Universe or faces the Gods, must still be embedded in society. Even to the extreme, the drive for transcendence is bound up with social interests and structures of power.

That said; let me immediately add the following: immortality is a highly heterogeneous phenomenon and may take a great number of forms. This text deals with one subspecies that I shall term *socio-technical immortality*: the ways in which outstanding individuals inscribe themselves into the collective coordinates of ultimate reality through science and technology. The immortal individual must conquer reality and inscribe himself into his people’s most basic aspirations, beliefs, values and ambitions. He (it is usually a man) must become a mythical figure by transcending and redefining the limits of reality as imagined by his fellow beings. By the sheer example of his achievement he has stretched the boundaries of the Universe, taken destiny into his own hands and overcome impossible obstacles and limitations.

This form of transcendence cannot remain immersed in Nature, lose itself in the Universe or unite with the mind of God: it must feed back into society by the power to shape history and inscribe itself in people’s minds. In many mythical tales, from Homer to Dante, this was especially the work of the *poet*. For most practical purposes it was he who bestowed the hero with immortality. For instance, on his way through

the cycles of Hell, it is the poet Virgil who rescues Dante from his own ignorance and sin, and who guides him on his journey towards God. The storyteller has the power to draw together life's *boundary conditions*: contingencies and accidents, catastrophes and victories, individual and collective destinies, tragedies, suffering, inhuman efforts and ambitions, justice and injustice, belonging and community. The meaninglessness and meaningfulness of it all can be brought within the fold of the Cosmos through a singular, beautifully told story. Although that may remain as true today as in ancient times, the coordinates and forms of cosmic storytelling have greatly changed. *Technoscience* emerges today as the utmost resource for projecting reality. Technoscience pushes hard at the boundaries of reality with promises to create new forms of life from a computer chip, or to reset the global climate system. It also challenges long-standing scientific storytelling rules: not to exceed the empirically verifiable; to retain a skeptical attitude; not to commit to single interests because they will corrupt objectivity (Merton 1973). In many ways, technoscience has wrought free of these limitations. At the same time it strongly relies on them to bestow legitimacy and credibility on its enterprise. What it lacks in scientific rigor it compensates for by re-directing its resources towards what *will* be: new techno-forms of life, new futures. Proponents of prolonged life do not hesitate for long to call upon religious and transcendent dimensions to pursue their business more efficiently. The wish to push away the specter of death is intimately connected with the desire to conquer the future, to get there before and above all others. *Speed* has become of utmost importance, nowhere more clearly seen than in transhumanist models of exponential growth: history is imagined as the pace with which change accelerates through new and game-changing technologies. We will soon arrive at a point in time, so the story goes, where evolution itself will pass through the loophole of technological change, issuing in an explosion of intelligence, the universe itself gaining consciousness and waking up: the Singularity.

It is not easy to write critically yet transparently about phenomena of the present, even less so when they lean towards the extreme. In many respects this chapter remains an essay: a preliminary attempt at mapping some issues and perspectives relevant for understanding engineered immortality in a wider cultural context. To gain some perspective, I start by making a rather lengthy detour to some of the historical origins, or cosmic coordinates, of socio-technical immortality: religion and cosmology, science and nationalism. I shall focus on a few outstanding individuals who succeeded in making themselves immortal. The cases are not intended to be biographical, but are instantiations of emblematic actions situated at defining moments and critical junctures of history. In the final part of the text I return to transhumanism and I ask what perspective could be gained by such a detour.

Variations of socio-technical immortality

Most religions articulate the human condition as one of finite existence within an infinite cosmological order. Many also hold out the promise or possibility of overcoming man's finitude and loneliness by merging with the infinite cosmological order, and so achieving immortality. For instance, the teaching of Hermes Trismegistus has it that "Death does not exist, and man never steps out of universal life; nevertheless, conscious immortality must be gained by each individual for himself" (Hermes in Blavatsky & Judge 1927). According to Hermes, then, men are already living immortal lives. The difficult task is to realize this immortal nature, and so liberate oneself from the eternal absurdities and contingencies to which mortal life is subject. This could only be done through extraordinary effort: "Oh, men, live soberly. Win your immortality" (*ibid.*). Hermes teachings can also be found in Greek philosophy and numerous Christian writings. In Plato's *Republic*, Socrates makes the similar claim that the soul is immortal and cannot be destroyed by its own wickedness. This prepares the ground for the argument that goodness is sought for its own sake, not for its consequences. Still, says Socrates, the good man is also rewarded by society in this life, and the bad man is punished. But the cycle of life does not stop there. Punishment and reward is handed out with even greater force and consequence after death:

He pays, therefore, tenfold retribution for each crime, and so for instance those who have been responsible for many deaths, by betraying state or army, or have cast others into slavery, or had a hand in any other crime, must pay tenfold in suffering for each offense. And correspondingly those who have done good and been just and god-fearing are rewarded in the same proportion (Plato 2007).

Within the cosmos of the Greek City State, then, good and rightful action could be seen as a goal in itself. But it made little sense to separate efforts to be a good person from the wider mores, aspirations and lives of one's fellow citizens. Thus life in the City State extended indefinitely towards a larger Cosmic whole, within the physical world, between the heavens and the lower worlds. No decisive boundaries existed between these; they were porous. For instance, the epic of Odysseus describes his efforts to return home. It includes his journey into the Underworld, where he meets the dead. He is helped by the advice of the gods, among them Circe, the daughter of Helios the Sun God. The journey takes place among Sirens, monsters, witches, gods and animals, and Odysseus's men are turned into swine and punished for their sins. The world of Odysseus could not be neatly separated into a "good" and a "bad" part; these co-existed, and efforts to be a good person or reach immortality would have to take this state of affairs into account. Efforts to rise above the forces of the Cosmos would lead to ignorance, *hubris*. This multi-layered, vertically ordered Cosmos

did not disappear with Christianity, but separations between the spheres gradually tightened. In Christianity there was still the upper world of the heavens; there was the human world, and there was the lower world of suffering, chaos and disorder (Hell). But the lower and upper worlds were gradually relegated from experience, increasingly the exclusive domain of priests.

From the sixteenth century onwards this development was helped by a grand-scale reconfiguration of the Cosmos in the name of the new mathematical sciences, what Weber termed the “disenchantment of the world”. Mathematics, geometry and the new experimental sciences provided the groundwork for modern cosmology and served as main resources for a slow but powerful upheaval: the *Universe* came to be seen as dead, mechanistic matter following the causal laws of nature (Shapin 1998). Galileo Galilei not only depicted the book of nature as written in the language of mathematics: he effectively *wrote* the book. Extension, breadth and depth, the three-dimensional space of geometric systems: quantifiable properties were elevated to the hardest and most indubitable forms of reality. Other modes of perception, such as the emotions and sensual impressions through which the world could be poetically, if not scientifically, grasped, were downgraded to illusion. The Universe became an extended surface, re-configured through the lenses of geometric, three-dimensional space. This opened up the perspective for new eternities, new immortalities: Galileo famously turned his gaze towards the heavens as the ultimate horizon. In the process he transcended his times a great many times: “The universe which I with my astonishing observations and clear demonstrations had enlarged a hundred, nay, a thousand fold beyond the limits commonly seen by wise men of all centuries past” (Galilei in Zax 2009). Through geometry and through tuning his telescope towards the heavens, he powerfully re-directed the gaze of those to come after him. But he also unashamedly inscribed the Universe into the *social world* in which he was living. In an unprecedented PR stunt, he used his discoveries to gain patronage from the Medicis, for centuries one of the most powerful families in Tuscany and well connected to the Catholic Church (with which Galileo had a more than difficult relation). Galileo proceeded to elevate the Medici name to eternity by naming a group of stars after one of their sons. This, according to him, was the way to “preserve from oblivion and ruin names deserving of immortality” (*ibid.*).

His telescope and his mathematics came to be seen as the most objective, highest expressions of pure observation that existed. They also provided the lenses through which the universe was re-configured, a spiritual and societal upheaval of cosmic dimensions, and so hardly free from interest. The telescope was a highly appropriate symbol for the emerging concept of *time* as well: a view of the cosmos stretching in a straight line towards a distant final point, *eternity*. Because the material world had

been re-imagined through mechanics and mathematics, it came to be seen as without intrinsic value, purpose or goal. At the same time Galileo himself remained a devout Christian. Transcendence and freedom were squeezed into a parallel dimension, existing alongside the physical universe in a strained dualism: supposedly free from the constraints of the physical, yet inscribed with its form. Philosophers like Descartes and Kant were hard at work to align the new sciences with Christianity. Two things fill me with awe, Kant said: *the starry heavens above and the moral law within*. In this way he sought to re-define (and rescue) both religion and science, and to re-align human finitude (morals) with the whole, the endless universe of cause and effect. Religion was possible, Kant said, but only within the limits of reason; the senses were not to be trusted nor relied upon as something other than sources of data acquisition. Immortality was separated from the realm of the real, and turned into something approaching an extra-terrestrial principle: something to be hoped for, but not a true goal of moral action. Within the Greek cosmology time had been circular, and eternity and immortality were never far off. But with the coming of “empty homogenous time” (Walter Benjamin),²⁹ the sources of transcendence were displaced: now existing outside of horizontal, secular time, they could only be revealed at the end of history or of individual life. It was not so much that the religious disappeared; it was displaced towards the future.

Even though the gods, the heavens, and spirits were expelled, human aspirations and needs for transcendence and belonging were not. Instead they found new expressions, re-located and re-imagined coordinates of self, nature and society. Other forms of social life emerged as the old world gave way to the new. Dynasties and kingdoms tuned into a cosmically ordered universe were replaced by nation states and secular ideologies. In their place appeared a phenomenon that was partially opposed to the universe as described by modern science: nationalism. Says Benedict Anderson.

With the ebbing of religious belief, the suffering which belief in part composed did not disappear. Disintegration of paradise: nothing makes fatality more arbitrary. Absurdity of salvation: nothing makes another style of continuity more necessary. What then was required was a secular transformation of fatality into continuity, contingency into meaning (Anderson 1983: 11).

Anderson does not ascribe “the ebbing of religious belief” to nationalism; if anything it was a response to an emerging vacuum. To some extent, this vacuum appeared with Galileo and the new sciences. But it was also instigated by the increasingly important role of modern ideologies, on the side of both the laboring and bourgeois classes: “[...]”

²⁹ Through which Benjamin referred to time as mathematical and standardized, and so always and anywhere the same. This, according to him, was how modern reformers saw history and progress.

neither Marxism nor Liberalism are much concerned with death and immortality” (*ibid.*). Neither, we may add, is Darwinism: the process of evolution, although now infused with forms of life, by and large confirmed the Galilean image of nature as a random process without intrinsic purpose. *Fame*, even more than in previous times, provided a way of rising above the ordinary, not the least through improved means of communication and information: national newspapers, novels, maps and museums. Through such media the extraordinary individual could enter the minds of his fellow citizens with much greater symbolic force and speed. Modern-day secular immortality became possible, adapted to the nation state and national consciousness. Living in the minds of his fellow citizens, if not in the flesh, the famous person’s memory could be handed down infinitely through the generations.

In Norwegian history two mythical scientist-explorers stand at the threshold of modernity: Fridtjof Nansen and Roald Amundsen, conquerors of the Arctic and the South Pole. At a time of liberation from Sweden these two men stood out as great symbols of newly gained national sovereignty. They eminently embodied the belief in progress and science, and the need for man to conquer nature in the name of the nation. The very name of Nansen’s ship expressed just this: “Fram”, in English “Forward”. The forward-moving momentum was intrinsic to Nansen’s explorations: as he set out to reach the North Pole, he described “[...] how well I know this feeling, from each time I set out, and the way back has been cut off [...]" (Nansen 1897, my translation). Although he did not actually make it to the North Pole, the expedition across the Arctic ice sheet was hailed as a huge success. “Fram” ventured further north than any ship before it.³⁰ Nansen forever inscribed himself in the Polar North, thereby also national consciousness; not only by physically putting it under his feet, but also by the way he documented the deed. Shortly after his return, he wrote a popular account, thanking the Norwegian Parliament, people and King. But the book was also one of meticulous description, using insights from a number of sciences. Between them, Nansen and his men covered disciplines such as botany, geography, meteorology, medicine (Nansen was an early theoretician of the nervous system) and astronomy. The findings and observations made during the expeditions into the Arctic became the basis for numerous scientific publications.³¹ In the popular account Nansen’s narrative was kept in a positivist and minimalist descriptive language. He did not seem to give in to airy speculations or metaphysical conjecture, and ended his narrative on scientific issues about geography, the movements of the ice, meteorology, the northern lights, animal life, and how to

³⁰ Later on, “Fram” also carried Amundsen on his expedition to conquer the South Pole.

³¹ In addition, Norwegian newspapers eagerly covered, to some extent also financed, his expeditions. Nansen’s “follower”, Amundsen, the first to set foot on the South Pole (also with “Fram”) was hired as a correspondent for *Aftenposten*.

navigate ships in polar areas. However, upon his homecoming he also recalled the North as follows: “The ice and the Northern full moon with all the longing of the night was only a remote dream, from another world, a dream that lived and faded [...] But then [...] what would life be, without these dreams?” (*ibid.*). This longing and the drive that sustained it were also mobilized for the sake of another struggle, the liberation of Norway from Sweden. As he returned from the Arctic he noted that: “One could feel the pulsation of power and life of this people. In the distance I saw the future rising, great and prosperous, when the powers now suppressed wrench loose and liberate themselves” (*ibid.*). Transcendence was never far from Nansen’s efforts: the dreamlike recollection of the distant and other-worldly North there to be conquered; the power of the Norwegian people to grasp destiny and create its own future. These were distinct phenomena. Still, through his actions he brought them together in ways that still linger deep in national consciousness.

Today, of course, much of the historical backdrop and motivation has faded. Obsessive individuals will walk alone to the North Pole as a matter of personal gratification. Such deeds no longer connect with a strong collective feeling or command much respect. It seems that people have already set their feet just about everywhere on the planet. If nationalism is not an option, and if all territories have been discovered: where to direct the drive for transcendence, the race for the future? Clearly, transhumanism is far from the only answer to that question, nor even an especially logical one. But it does, as we shall see, announce itself as one powerful response, and one that is heavily inscribed in the ever-more nervous pace of accelerated progress and growth of post-millennium Western societies. More than anything else, this new space of opportunity was opened up by the discovery of what Claude Bernard called the internal milieu: the internal life of the human body as a new horizon for experimental intervention through science and technology.

Engineered immortality

Transhumanism in its present form only emerged along with the large-scale successes of the experimental life sciences in the first part of the twentieth century. Most of its originators were not original inhabitants of the new experimental systems, as were scientist heroes such as Claude Bernard, Louis Pasteur or Alexander Fleming. Rather, they were a heterogeneous bunch of socio-technical visionaries, mainly from the UK, who mobilized the insights of the laboratories in creative ways. A characteristic trait was their capacity to cross the borders between the arts and the sciences, and to extract from these different worlds powerful visions of *future forms* of technological life as transformed through science and technology. Famous examples include Julian Huxley (scientist and founder of UNESCO), H.G. Wells (“father of science fiction”),

and J.D. Bernal (scientist, writer and political activist). These men conceived most of the ideas central to today's transhumanist movement: space travels and mechanical men capable of inhabiting outer space; man-machines and cyborgs, perfect control with emotions, life extension and science-based immortality. Central to their efforts was the articulation of an *ideology of extreme progress* (Coenen 2007), imagined to bring the whole of humanity to a new level. Indeed, human nature itself was seen as the next frontier for exploration:

We have pretty well finished the geographical exploration of the earth; we have pushed the scientific exploration of nature, both lifeless and living, to a point at which its main outlines have become clear; but the exploration of human nature and its possibilities has scarcely begun [...] The zestful but scientific exploration of possibilities and of the techniques for realizing them will make our hopes rational, and will set our ideals within the framework of reality (Huxley 1957).

Following WWII and the gradual migration of brainpower, technological and political hegemony away from Europe, the same ideas took hold across the Atlantic with California as the great stronghold. Other forerunners of today's movement include the so-called Extropians³² and thinkers such as Max More and Fereidoun M. Esfandiary (also known as FM-2030). Present-day transhumanism is also intrinsically linked with the broader cultural trend of post-humanism. Post-humanism, which emerged in the early 1980s, can be characterized by its celebrations of hybridity: especially cyborgs and increased man/machine interactions, but also information networks and sensors attached to the human body, prostheses, drugs and medications. Post-humanism was, and remains, highly diversified and without a strong center, message or unifying idea (perhaps apart from the image of the cyborg itself). No clear directionality emerged, and one would be hard pressed to call it a movement. It enjoys strong intellectual ties to post-modernism, with its general rejection of the idea of progress. But it also contained the seeds of what would later emerge as transhumanism, converging around a set of ideas sharing in the ideology of extreme progress. Some such ideas were associated with "space activism", i.e. various initiatives to promote space exploration, a specific goal being colonization and the creation of man/machines capable of inhabiting it. Other ideas included cryonics, the freezing of bodies for the sake of future downloading of consciousness, and up- and down-loading of consciousness to computer networks. Among the driving personalities are nanotech visionary Eric Drexler, the roboticist Hans Moravec and the artificial intelligence pioneer Marvin Minsky (STOA 2009). In terms of official politics, the strongest expression of the

³² A central claim of extropians being that science and technology have opened up the prospects for people to live indefinitely.

transhumanist movement may have been the so-called NBIC initiative, instigated by Michael Roco and William Bainbridge (Roco & Bainbridge 2002). In the early 2000s, they were at the cusp of efforts to establish converging technologies as a main research program in the US. Both were working for the National Science Foundation (NSF), Roco originally as an engineer and manager, Bainbridge a sociologist of religion. The project mobilized resources from powerful US institutions, such as NASA, the NSF and the Department of Commerce. Other supporters included major actors of the ICT industries such as Intel and Google. After a few years the project was abandoned, seemingly too un-scientific and speculative to be touched by official sanction and support. But such entanglements do say something about the extent to which transhumanism intersects with powerful contemporary trends, compressed by the ideology of extreme progress and a strong belief in the capacity of science and technology to provide solutions to most pressing problems.³³

Hence, transhumanism is more than anything an ideological phenomenon thriving on the fringes of technoscience. Especially powerful is the idea that sciences and technologies will converge.³⁴ With their powers immensely enhanced, they can be turned towards solutions for most problems facing humanity, including mortality. In 1993 the mathematician and science fiction writer Vernor Vinge made popular the idea of *the Singularity*. The Singularity refers to a transformative point in time, then predicted by Vinge to occur between 2005 and 2030. Vinge described the Singularity as an “intelligence explosion”, resulting from ever-faster implementations of intelligence to an ever-increasing number of processes, and finally to evolution itself:

We humans have the ability to internalize the world and conduct “what if’s” in our heads; we can solve many problems thousands of times faster than natural selection. Now, by creating the means to execute those simulations at much higher speeds, we are entering a regime as radically different from our human past as we humans are from the lower animals (Vinge 1993).

The idea implies a self-accelerating process culminating in large-scale transcendence: evolution *is* development and progress, and has been going on for millions of years. However, if humans think faster than evolution, and if computers can greatly enhance that process, then evolution itself may become intelligent: the universe may wake up, and evolution becomes a conscious process. Artificially created intelligence will

³³ Although abandoned, the NBIC initiative would find its way into other institutions, such as the Immortality Institute and the Singularity University.

³⁴ For the sake of comprehensiveness: there are varieties of transhumanism not covered in this chapter, some of which significantly deviate from those described here. For instance, humanist and liberal varieties can be found. These, however, have not enjoyed the same institutional influence as the mainstream version.

also have reached the level where it may self-consciously enhance itself, and so the process is one of an ever-faster enhancement-loop. At this point there is of course no guarantee that the artificial intelligence (AI) will be beneficent towards humans, and this was the reason for the sub-title of Vinge's article: *How to Survive in the Post-Human Era*. Humans could become the weaker link in the evolutionary chain, and so be counted out of progress and evolution. Taken to its extreme, the idea of the Singularity may denote the utter meaninglessness of techno-science as a human endeavor: humans making humans superfluous.

The inventor, entrepreneur and futurist Ray Kurzweil has further expounded on the Singularity, and taken it in a seemingly more optimistic direction. Kurzweil (2005) describes history as one of constantly occurring technological revolutions, or paradigm shifts: from the first agricultural settlements through roads through the printed word through air travel to computers. Paraphrasing Moore's law, which (roughly) states that computer processing power doubles every two years, Kurzweil sees history as developing through ever-faster growth, or "accelerating returns". Progress, he states, is not linear; it is exponential. By approximately 2045, evolution will pass through that magic point in time where progress within a number of technology areas, especially nanotech, robotics, artificial intelligence and computing, will converge.³⁵ The Singularity will radically transform humanity, the Earth, everything we know about it and the ways we inhabit it. Beyond this loophole of total transformation we know nothing, yet Kurzweil maintains the general consequences to be beneficial and worth striving for:

These technological revolutions will allow us to transcend our frail bodies with all their limitations. Illness, as we know it, will be eradicated. Through the use of nanotechnology, we will be able to manufacture almost any physical product upon demand, world hunger and poverty will be solved, and pollution will vanish. Human existence will undergo a quantum leap in evolution. We will be able to live as long as we choose. The coming into being of such a world is, in essence, the Singularity (Kurzweil 2006).

Among the main benefits of the Singularity, Kurzweil predicts, is the possibility for directly re-programming the human organism so as to delay or avoid death altogether. Here, transcendence is imagined as, first, proceeding through gradual "re-programmations" of the human body, be that through interventions with the body itself or by merging with machines and artificial intelligence. As an example of the first, life extension should be possible through genetic engineering or through biochemical and dietary measures. Kurzweil himself takes approximately 200

³⁵ Moore himself has decreed Kurzweil's writings as unscientific speculations, as have a number of other scientists.

supplement pills a day, follows a strict diet, drinks ionized water and meticulously monitors and records his health data from day to day. There is also biomedical and biochemical research going on, such as that of Aubrey de Grey, into “delayed senescence” (delayed aging). But Kurzweil ultimately believes that human DNA and biological evolution has handed humanity poor cards, rendering the body a “second-class robot”. Decay may be unavoidable. This could partially be fixed by nanotechnology, -enabling us to re-engineer the body molecule by molecule. Even more promising, though, is the coming robotics revolution, by which Kurzweil primarily means an explosion in artificial intelligence. Because human beings are essentially information (DNA), the patterns, knowledges and skills that make up each single individual can be “backed up” and stored in computers. Indeed, Kurzweil himself has already reserved a space for his body to be cryo-preserved, in case he is not able to sustain his own physical existence until the coming of the Singularity (Kurzweil was born in 1948, so with the coming of the Singularity, as predicted by himself, he will be 97 years old). The Singularity, thus, entails the total overcoming of most limitations still believed to be fundamental:

This merger of man and machine, coupled with the sudden explosion in machine intelligence and rapid innovation in gene research and nanotechnology, will result in a world where there is no distinction between the biological and the mechanical, or between physical and virtual reality (Kurzweil 2006).

Once overcome, human beings may take on God-like capacities. Kurzweil’s final remark in the movie made about him (*Transcendent Man*, Ptolemy 2009) goes: “So you might ask ‘Does God exist?’ Well, I would say not yet”. The extent to which Kurzweil conflates god-like powers with computing capacity is also tellingly illustrated by another scene in *Transcendent Man*, where he is standing in front of the ocean, seemingly contemplating it. In awe and wonder he exclaims: *imagine the computing capacity that goes into all this movement!* Bearing in mind the previous descriptions of transcendence, what stands out is how the future appears utterly locked into a techno-scientific materialist projection. That is, in Kurzweil’s universe there is no reality outside of information and the material, represented by nano-molecules and genes that can be manipulated at will. This process seems utterly incapable of conceiving anything outside of itself, and so also incapable of dreaming up anything but its own in(de)finite extension. There seems to be no way out of the process or the logic. *Transcendent Man anno 21st century* has gotten himself into a desperate position: the end of life as the ultimate disappointment. Death might appear as a failure to compute, as syntax error.

Concluding: changing coordinates of transcendence

In this chapter I have leaped through a number of epochs and some of their predominant ways of imagining immortality. I have made huge generalizations, and many forms of immortality have not even been mentioned. I have focused on what I have called “socio-technical immortality”. Clearly, a focus on immortality as seen by mystics, by everyday persons or by more humble-minded scientists than those described here would have resulted in very different stories to be told. In this text, the “immortal individuals” come across as transitional figures, as outstanding individuals situating themselves at the threshold of new eras and imprinting their marks on the new ages. However, the main point was to gain some perspective on a phenomenon of the present, transhumanism. Let it be said right away: I do not believe Ray Kurzweil to be of the same caliber as a Galileo, Socrates or Nansen. But I do believe him to be a transitional figure. And the *scale* of his claims puts him in this league. One may deride those claims as unscientific ramblings of a lost soul. But the kinds of arguments he uses, and the kind of dreams that he dreams, are more widely spread among those on the cusp of innovation and development than frequently recognized. This speaks about a fundamental problem on the intersections of technoscience, power and politics: Kurzweil himself has insulated himself from criticism in the present and seems to be living and speaking from a future point, from above and beyond his contemporaries. Counter-arguments can be discarded with as relics of the unenlightened past. In this sense, at least, he has transcended his times. There are numerous reasons (historical, scientific, religious, etc.) to believe that most transhumanist claims are wrong, indeed bound for tragedy. Its most ardent promoters would do wise to consider the Greek concept of *hubris*, as when Icarus flew too close to the sun and his wings (of wax) melted. They should also heed the story of the fortune-tellers from Dante’s *Inferno*: too eager to foresee the future, they were punished by having their heads put on backwards, forever condemned to look at the past even as they moved forwards.

The most striking contrast between transhumanism and earlier imaginations of immortality is how radically “eternity”, or “the universe”, has been transformed. It has ceased to be something “out there”, as seen by Galileo through his telescope or by Nansen dreaming of the North. Instead, it is transformed into extreme immanence in the form of computing capacity, the ability to process unfathomable amounts of information simultaneously and at an incredible speed. This capacity of computers is also a radical constructivism, imagined as extreme computation feeding directly into the material universe. The utmost horizon of reality is encountered at the molecular and nano levels, as eternally malleable matter to be manipulated at will. As man becomes all-powerful (or its opposite), there are no longer any boundaries

to what appears as possible, feasible, permissible or morally justified. The *social* horizon has by and large disappeared: transhumanists will occasionally speak about national competitiveness (mainly the US) or Humanity, but the main frame of reference remains the individual, and his and her choice (hence the market remains an important point of reference). The main driving force of this isolated individual, it seems, is pure survival for its own sake. Apart from an indefinite quantitative extension of life, there is almost a complete lack of vision of the good life, fundamental values or community. Perhaps if some fundamental values and community existed as *real presences* in life, death and disease could have a meaning and become bearable (as it was for most people in most periods of history). Lacking this, one (extreme) goal of the individual becomes that of driving out all discomfort, sickness and disease, to push these as far into the distant future as possible, where hopefully they will disappear altogether. For non-believers, it is denial of life's basic limits, hence a form of extremism.

Alternatively, the versions of transhumanism here dealt with are not expressions of real belief, but rather cynical, desperate or extremely naïve measures to regain control and a sense of purpose: re-conquering a future that seems to diminish with each passing day. It is indeed remarkable that, at a time when the general belief in Western progress and growth is at its lowest, the ideal of extreme progress fights its way back. It was not long ago that one famous cultural analyst proclaimed the "end of history" and the victory of the Western model. But right after that Western capitalism was hit at its core: first the Twin Towers collapsed in flames, then the economic crisis hit (the consequences of which we can still barely begin to grasp). This decline is no short-term trend: it has been going on since the early 1970s, when transhumanism in its present-day form began to grow. This was the time when the revolutions in genetic engineering and computer science gained traction, whereas traditional industries went into decline. Since then, pressures have been mounting for science and technology to inject the economy with renewed power and initiative. Genomics and computers are real game-changers. But they do not easily translate into growth, clean energies or improved health, as long-since proclaimed and expected. The metaphor of computer-driven, accelerated growth, then, is mainly referring to itself, and not to something outside it. This was clearly illustrated by the scene from *Transcendent Man*, where Kurzweil is standing in front of the eternal ocean, seemingly unable to appreciate anything but its digital quantity.

I have told a story of a certain co-production of the cosmos, science and society. Indeed, at times the story comes too close to the story of extreme progress that I wanted to criticize: Galileo laid down the fundamental coordinates, later generations filled in the spaces as best as they could. In certain ways, it now seems that we have

exhausted the potential of this cosmology, and the “long march of the West” (Taylor 2004) is at a turning point. The knee-jerk reaction to the same conclusion is to push even harder for business as usual, for *much* more of the same. But perhaps this is just a symptom of a certain exhaustion, and perhaps one does not have to change one’s perspective that much for new meanings and horizons to appear. And perhaps we may even stay with the computer and with information, but inscribe them in a universe of *tangible* change and aspiration. 2011 was the year when millions of people across the globe used computers and social media to mobilize protests against the injustices of globalization, in many ways the true face of the progress celebrated by Kurzweil and his peers. In spite of obvious dangers and pitfalls: there lie the seeds of another form of transcendence, one that has humanity as its ultimate horizon.

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