Excerpt from an Essay on:

Heidegger's Critique of Technology in the Context of Modern Transhumanism

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Heidegger's Critique of Technology in the Context of Modern Transhumanism

"Man is something that shall be overcome" declares Zarathustra in Nietzsche's philosophical fiction and hereby encompasses the spirit of numerous scientists, theorists, writers and philosophers within the transhumanistic movement. The rapid and ever-growing developments in artificial intelligence and cybernetics in the last decades opened up new possibilities of being and make the discourse about a "posthuman" as relevant as ever. The visions and speculations found in such discourse vary greatly - from future applications of cybernetics to man himself, such as the development of man into cyborg to the perseverance of human consciousness without a biological basis – to just name a few.

Speculations and ideas of this kind are often associated with the term transhumanism and are results of today's scientific paradigm. Some of its most extreme technological manifestations in our current time, seem to be leading us on an irreversible path towards the height of Heidegger's Seinsvergessenheit or forgetting of Being.

Heidegger characterises modern scientific thinking as the result of a development that began with Descartes and led to a narrowing of thinking in one direction. Heidegger sees the instrumental thinking of science, primarily of natural science, as a necessary and also important kind of thinking, but in its totality as essentially having come too short. As much as science has evolved our way of living and led us to a supposedly better understanding of the world, it has yet to answer the elementary and primal questions about human existence, and even makes them seem as not worth asking.

Heidegger's account of science and technology opens up an understanding that goes beyond our everyday instrumental conception of technology and allows a critical examination of transhumanism. By applying Heideggerian concepts such as "Enframing" and "the standing-reserve," the current transhumanistic movement can be critically examined and possible dangers identified.

1. Transhumanism

Transhumanism is not a very clearly defined intellectual movement, as it exists in several forms and each of them with different emphases. Nevertheless, the core element of all directions of transhumanism, can be identified as the improvement of man by technical and scientific means. The goal is the transcendence of the present state of human beings towards an initially transhuman and finally posthuman state. The scientific movement of transhumanism follows an ultra-humanist trajectory in which freedom and autonomy are understood as the highest values of human existence and are to be achieved by overcoming the constraints of our current biology.

Philosophers like Nick Bostrom understand the ideals of transhumanism as part of Renaissance humanism with the goal of "fundamentally improving the human condition through applied reason, especially by using technology to eliminate aging and greatly enhance human intellectual, physical, and psychological capacities."[1]

First ideas of transhumanism can be traced back to the 17th and 18th century for example in form of Homunculus in alchemistic theory or Golem as a human like being with special powers.

Following the introduction of evolution theory by Charles Darwin in the 19th century, the eugenicist J. Huxley was one of the first to use the term Transhumanism and defined it as:

"Man remaining man, but transcending himself, by realising new possibilities of and for his human nature."[2]

Since this first definition, the acceleration of digitisation and technological development prompted further and new ideas of transhumanism.

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[1] Nick Bostrom, *Superintelligence* (Oxford: Oxford University Press, 2016).
[2] Huxley, *New Bottles for New Wine*, 17.

Some of the most prominent works in the sphere include Ettinger's Man into Superman (1972), which discusses technological improvements of man, or Engines of Creation by E. Drexler, which explores nanotechnology and its possibilities. The range of transhumanistic ideas spans wide from evolutionary-eugenic advancements to speculations about the colonisation of space with human computer intelligence.

The pinnacle of transhumanism however is the idea of technological singularity by R. Kurzweil – the fusion of human consciousness with artificial intelligence and the point at which human intelligence is overtaken.[3] These ideas have led to numerous further speculations about future possibilities, some of which include "mind uploading" – the transfer of the human mind onto a computer. Considerations of such nature require an understanding of mind and body as separate entities, or as computer scientist Moravec said: "A natural duality of physical body and abstract, self-interpreting mind."[4]

The assumption about a duality of this kind reminds us of Descartes' categorisation of the substances *res cogitans*, as mind and consciousness and *res extensa* as the material body. Transhumanism commonly views the Cartesian ego as distinct from the world and our physical body and as an autonomous Being. Under this assumption, the physical body becomes an external and modifiable product rather than an inherent part of our being.

While this view opens up endless possibilities of technological optimization, it leads us on a dangerous path on which the human body is treated as something calculable and commoditised, something that Heidegger would call standing-reserve.

Heidegger's terminology and his critique of modern technology in the sense of enframing provides us with a helpful lens under which the possible dangers of transhumanism can be identified.

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[3] Kurzweil, *The Singularity Is Near*.
[4] Moravec, *Computer übernehmen die Macht*, 120.

2. Heidegger on Technology

Reflections of Heidegger on technology can be found in various works such as in his essay "The Origin of the Work of Art" (1950), his account of tools in Being and Time (1927), or through his understanding of science and math in What Is a Thing? (1962). His most extensive deliberations on technology however are developed in the essay "*The Question Concerning Technology,"* which was held as a lecture in 1949 and published in 1953. In such, Heidegger aims to explore the essence (*Wesen*) of technology through questioning. Heidegger makes it clear that he seeks to go beyond the everyday understanding of technology as instruments, inventions and devices that are made and controlled by humans to achieve the means to an end. While this "instrumental and anthropological definition"[5] is applicable to a lot of our current employed technologies, it fails to reveal the true essence of technology which is "by no means anything technological."[6]

2.1 The Essence of Technology

To determine the essence of technology, Heidegger first uses the example of a silver chalice which is brought together through the Aristotelian fourfold of causality – more specifically through four modes of occasioning as in the Greek notion of *aitia* being the essence of causality. The four modes are at play together and make the silver chalice come into presencing (*Anwesen)* in its form, matter and purpose before us.

A bringing forth and bringing out of unconcealment through occasioning requires a revealing (*Entbergen*) to take place, which Heidegger points to being found within the Greek term *aletheia*.

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[5] Martin Heidegger, *The Question Concerning Technology, and Other Essays*, trans. William Lovitt (New York: Harper & Row, 1977), 5. Hereafter cited as QCT.

[6] Heidegger, QCT, 4.

Heidegger famously understands truth as being *aletheia* throughout his philosophy and hereby marks an important distinction between mere correctness and truth.

In Greek philosophy, Heidegger retrieves a concept of truth that is more original to him and happens through the bringing forth into presencing (*Poiesis*) and revealing (*Entbergen*).

The essence of technology can therefore not be found in its man-made or instrumental character, but in that it unconceals and brings forth: "technology is a way of revealing."[7]

Moreover, this understanding of technology can be traced within the etymology of the word itself and its origin in the Greek techne. In its original interpretation, *techne* is not only a word used for craftsmanship, but also for art; *techne is therefore a mode* of *aletheia* and brings forth to *poiesis*.

Heidegger's flagship example of modern technology that illustrates an important distinction between two different types of revealing, is a hydroelectric power plant in the Rhine river.

The beauty of the nature of the Rhine, poetically inhabiting its environment, is disrupted through the monstrous construction of human technology. The hydroelectric plant follows the purposes of energy transformation and hereby forces the Rhine into the role of an energy supplier or object of sightseeing for tourism. In this way, modern technology is a revealing not in the sense of *poiesis* but instead through a challenging (*herausfordern*) of the forces of nature, so that a setting upon (*stellen*) takes place.

Through the construction of the power plant, the challenging forth leads to unlocking the energy of the water currents and transforming those into electricity. Although Heidegger also classifies this as a way of revealing, he distinguishes all that presences after a challenging forth as standing reserve (*Bestand*).

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[7] Heidegger, QCT, 12.

When Heidegger mentions a challenging forth leading to a standing reserve, he exclusively applies it to modern technology and claims that it does not hold true for older technologies such as an old windmill: "the windmill does not unlock energy from the air in order to store it."[8] Although this is true and there is no intention of converting and storing energy before, one could nevertheless say that even with the windmill nature is put into the demand of supplying power for the grinding of grain.

To what extent is there really a qualitative difference between the modern technology of the hydroelectric plant and the technology of the windmill?

While it is undoubtedly true that post-modern technological possibilities were much more limited, there can be many examples of radical human-technical interventions and quantifications of nature found. One could think of the extensive deforestation in the Middle Ages in which nature was made or "challenged forth" to serve the purpose of shipbuilding or agriculture. Is it right to apply the process of objects disappearing into standing reserve only to inventions and machines in modern technology?

Or is there a second characteristic of modern technology that Heidegger uses to make this distinction, namely the employment of exact science which quantifies and constrains nature into measurable systems and units – something that has not been done prior to the age of modern technology?

Beyond these ambiguities, it nevertheless becomes clear that modern technology has led mankind to a point in which the majority of our natural environment is employed as a resource – or what Heidegger calls standing-reserve.

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[8] Heidegger, QCT, 24.

And exactly this characteristic of modern technology – its primary mode of "the revealing the real as standing reserve"[9] – is what Heidegger coins under the term Enframing and where he identifies the dangers of modern technology.

2.2 *Gestell* and Its Dangers

In the beginning of "*The Question Concerning Technology,*" Heidegger makes it clear that in technology a revealing takes place. However this revealing can take different forms – one of bringing forth in the sense of *poiesis* and one of challenging forth into standing reserve. Man himself is challenged forth into a position of ordering – he orders nature's forces and resources into new forms as part of machines or to serve new purposes and hereby drives technology forward. The terminology that Heidegger uses to describe the gathering of man into a position of ordering is Enframing. This term finds its origins in the German *Gestell* which comprises the meanings of challenging, producing and presenting within *stellen*. It is precisely enframing through which the revealing of the real as standing reserve takes place, as it does not happen through human activity. Heidegger emphasises that the process of unconcealment and revealing is not a result of human handiwork – rather it is man standing in the essential realm of enframing that puts him into the position of ordering.

But how is man started upon his way of revealing through ordering in the first place? This question leads us to another key terminology employed by Heidegger and that is found in the German *Geschick*.

Heidegger uses destining to describe the process that sends man upon his way of revealing: "Always the destining of revealing holds complete sway over a man."[10] The danger of modern technology, lies in that revealing only takes place through man ordering nature into standing reserve, whereas revealing its original sense of coming forth and

[9] Heidegger, QCT, 2.
[10] Heidegger, QCT, 25.

appearing does not take place anymore: “The destining that sends into ordering is consequently the extreme danger.”[11] Heidegger points to enframing as posing the real danger, for when enframing reigns, a revealing in the sense of *poiesis* and coming into appearance is blocked. The consequences of this are a misinterpretation of that which is unconcealed:

Truth (*aletheia*) only presents itself through a revealing as coming forward into appearance however in the modern times that which is unconcealed through challenging forth, is mistakenly understood to be true. While modern technology and the sciences might lead us to a more correct and mathematically precise way of representing nature, it cannot uncover the primal truth found in its mystery and transcendence. It is only through *poiesis* that the mystery of the concealed and its fundamental characteristics are revealed and a more original truth emerges.

A further consequence of Enframing being the primary mode of revealing, is the oblivion of being which Heidegger further describes as the *abandonment of being* in his work *Contributions to Philosophy*.[12] In modern technology, humans order nature to fit into the mathematical models and frameworks science built for it. Nature and its being is reduced to a quantifiable resource and ultimately to *non-being*.

This phenomenon of modern technology causes us to lose any sense of wonderment and awe about the mystery of being and nature. Even worse, this essential loss of wonderment in the presence of beings remains unnoticed by mankind and is referred to as “the hidden distress of no-distress-at-all”[13] by Heidegger.

All that said, Heidegger never points to the creations of modern technology itself as posing the danger or being inherently negative: “there is no demonry in technology.”[14]

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[11] Heidegger, QCT, 28.
[12] Heidegger, *Contributions to Philosophy*, 6.
[13] Heidegger, *Contributions to Philosophy*, 8.
[14] Heidegger, QCT, 28.

Instead he argues that technology becomes dangerous, when its true essence, which is mystery and something ambiguous is ignored.

Heidegger doesn't offer a concrete course of action to avoid these dangers, but rather suggests a new way of reflection (*Besinnung*) and thinking that focuses on what comes to presence in technology "instead of merely staring at the technological" [15]

Such reflection and confrontation with the essence of technology cannot be achieved through the application of modern mathematical sciences "and must instead happen in the realm of art." [16]When we are faced with new technological developments and efforts of transhumanism, the way forward as suggested by Heidegger is not to get rid of them but to instead change the way we inhabit them.[17]

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[15] Heidegger, QCT, 32.
[16] Heidegger, QCT, 32.
[17] Vallega-Neu, *Heidegger's Contributions to Philosophy*, 15.

References

Bostrom, Nick. Superintelligence. Oxford: Oxford University Press, 2016.

Bostrom, Nick. "The Transhumanist FAQ: A General Introduction." Version 2.1. World Transhumanist Association, 2003. https://www.nickbostrom.com/views/transhumanist.pdf.

Hayles, N. Katherine. How We Became Posthuman. Chicago: University of Chicago Press, 1999.

Heidegger, Martin. Being and Time. Translated by Joan Stambaugh. Albany: State University of New York Press, 1996.

Heidegger, Martin. Contributions to Philosophy: From Enowning. Translated by Parvis Emad and Kenneth Maly. Bloomington: Indiana University Press, 1999.

Heidegger, Martin. The Question Concerning Technology, and Other Essays. Translated by William Lovitt. New York: Harper & Row, 1977.

Huxley, Julian. New Bottles for New Wine. London: Chatto & Windus, 1957.

Kurzweil, Ray. The Singularity Is Near: When Humans Transcend Biology. New York: Viking, 2005.

Heidegger, Martin. Being and Time. Translated by John Macquarrie and Edward Robinson. Oxford: Blackwell, 1962.

Moravec, Hans. Computer übernehmen die Macht: Vom Siegeszug der künstlichen Intelligenz. Hamburg: Hoffmann und Campe, 1999.

Vallega-Neu, Daniela. Heidegger's Contributions to Philosophy: An Introduction. Bloomington: Indiana University Press, 2003.