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Posted Date: 7 May 2025

doi: 10.20944/preprints202505.0206.v1

Keywords: Heidegger; philosophy; technology; freedom



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Article

# Heideggerian Approach to the Contemporary Philosophy of Technology

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**Abstract:** Martin Heidegger's philosophy of technology remains one of the most profound critiques of modern technological thought, particularly in '*The Question Concerning Technology*.' Heidegger approaches technology as a collection of tools and a way of revealing the world, which shapes human understanding and existence. His perspective is relevant to contemporary discussions on the philosophy of technology as it challenges the dominant instrumental view, emphasizing the dangers of perceiving technology as neutral. Heidegger warns that modern technology enframes human existence in a calculative mindset, threatening the deeper essence of being and nature. This paper examines Heidegger's technology analysis, situating it in contemporary technological developments and exploring its implications for current philosophical debates on artificial intelligence, automation, and the ecological crisis. By engaging with Heidegger's work, we can critically evaluate whether technological advancements enhance or diminish the essence of human existence and the world around us.

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## Introduction

Martin Heidegger's examination of technology transcends the conventional understanding of technology as merely tools or devices. His work explores technology as a mode of revealing (*aletheia*), fundamentally altering the relationship between humans and the world. In his seminal essay *The Question Concerning Technology*, Heidegger critiques the instrumentalist view, which considers technology neutral and subject to human control. Instead, Heidegger argues that technology shapes how the world is disclosed to humans and how humans understand their being. This perspective has become increasingly relevant in the contemporary world, where technology's pervasive influence on society raises questions about its ethical, ontological, and existential implications.

## Technology as a Mode of Revealing

Heidegger's inquiry into technology begins with the idea that technology is not merely a collection of tools or machines but a way of understanding and engaging with the world. He distinguishes between ancient and modern technologies to illustrate his point. Ancient technology, such as the craft of building a bridge, exemplifies a harmonious relationship between humans and nature. The bridge brings forth (*poiesis*) the potential inherent in natural materials. Heidegger uses the Greek word *techne* to describe this kind of creation, emphasizing that it involves both knowing and making. *Techne* implies understanding the world where humans work with the grain of nature (Heidegger, 1954/1977).

Borgmann in his work *Technology and the Character of Contemporary Life* articulates that the modern technology, in contrast, does not merely reveal or work in harmony with nature. Instead, it imposes an instrumental and calculative framework on the world. Heidegger argues that technology is not neutral but shapes our perception of reality. Modern technology reveals the world not as a place of intrinsic meaning but as a resource waiting to be exploited. This shift, for Heidegger, marks a fundamental change in how beings and things are revealed to human understanding (Borgmann, 1987).

## Technology as a Means to an End

We ask questions concerning technology when we ask what it is. Everyone knows the two Statements that answer our question. One says that technology is a means to an end. The other says that technology is a human activity. The two definitions of technology belong together. To posit ends and procure and utilize the means to them is a human activity. Two definitions of “technology.”

- Instrumental—a means to an end
- Anthropological—a human activity

These definitions are not mutually exclusive since using something as a means to an end is a Human activity. The “Correct” and the “True” — While it’s correct to say that technology is a means to an end, It is not necessarily true. But being correct is not the same as unconcealing or “uncovering the Thing in its essence.” “Only when such an uncovering happens does the truth come to Pass.” Only the truth brings us into a free relationship with the thing. So, we must pursue the true nature of technology by way of the correct. A means to an end implies a cause that brings about an end.

Interpreting Aristotle’s Four Causes—Four Ways of Being Responsible Contrary to the common interpretation of Aristotle’s four causes in instrumental terms, Heidegger claims the material, formal, final, and efficient causes are how a thing Is held responsible or indebted. To understand what Heidegger has in mind here, we need to Focus on suggestive examples of making and the concepts he develops to give us a pretechnological understanding of the process.

We’ll start with the example of a marble sculpture of a discus thrower. In Heidegger’s terms, the Statue is “indebted” to the material (marble), the form (discus thrower), and the goal(memorializing a heroic athlete). The sculptor, as an efficient cause, gathers together the “aspects Of indebtedness” — matter, form, and goal—and “brings forth” (poiēsis) the sculpture. Thus, the Bringing or “bursting forth” happens through the artist. This distinguishes it from bringing forth an object in nature (physis). In the latter case, it has the bringing forth in itself. But It’s Important to note that the artist’s activity does not take place apart from the other components or causes gathered by the artist’s activity, i.e., how the work is brought forth. Now, what is this bringing forth? How does it happen in nature and art? Heidegger says, “The Four ways of being responsible bring something into appearance. They let it come forth into Presencing [An-wesen]. They set it free to that place and so start it on its way, namely, into its Complete arrival.” The bringing-forth “is a unified process, a single leading-forth to which [each Of the causes] is indebted.” (Heidegger, 1954/1977)

## Aristotle’s Four Causes

- Material — matter (hyle) is responsible
- Formal — form (morphe) is responsible
- The final — goal (telos) is responsible
- Efficient — maker is responsible for gathering together the other three

Heidegger says all four are interwoven and “co-responsible” for what is made. Furthermore, Albert Borgmann’s example of the wheelwright helps us understand the phenomena<sup>1</sup>.

- Material — wood
- Formal — wagon; the form brought forth from the wood
- Final — purpose linked to the particular wood and shape of the wagon
- Efficient — wheelwright works respectfully with nature (“human to nature”) (Borgman, 1987).

Borgmann contrasts the wheelwright’s wagon with a technological device — a watch — to show.

That instrumental means and ends in technological production, in which the product — what Is the only genuine concern, is not overriding or determined in the traditional mode of revealing And

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<sup>1</sup> This application to Heidegger’s interpretation of the four causes was developed in Sean Kelly’s seminar course on Heidegger’s late works, Harvard Univ., 22 Oct 2008.

output. The bringing-forth is also part of an unconcealing. “Bringing forth comes to pass only insofar as Something concealed comes into unconcealment [alētheia].” But what does this have to do with the essence of technology? “Everything...[for] technology is a Way of revealing.”

### Three Claims of Heidegger’s Analysis of Technology

As we just heard, Heidegger’s analysis of technology in *The Question Concerning Technology* consists of three central ‘claims’:

1. Technology is “not an instrument” but a way of understanding the world.
2. Technology is “not a human activity” but develops beyond human control and
3. Technology is “the highest danger,” risking us only to see the world through technological thinking.

Heidegger is a notoriously difficult philosopher to read. However, presenting you with his original writing will still be valuable. The following fragment presents Heidegger’s analysis of what technology is and how it is positioned in our world: industrial production. A sawmill in a secluded valley of the Black Forest is a primitive means of transportation compared with the hydroelectric plant in the Rhine River (Heidegger, 1954/1977).

But this remains correct: modern technology is a means to an end. That is why the instrumental conception of technology conditions every attempt to bring man into the proper relation to technology. Everything depends on properly manipulating technology. We will, as we say, “get” technology “spiritually in hand.” We will master it. The will to master becomes all the more urgent as technology threatens to slip from human control.

But suppose now that technology was no mere means, how would it stand with the will to master it? Yet we said, did we not know that the instrumental definition of technology is correct? To be sure. The correct always fixes upon something pertinent in whatever is under consideration. However, to be correct, this fixing must not uncover the thing in question in its essence. Only when such an uncovering happens does the truth come to pass. For that reason, the merely correct is not yet valid. Only the truth brings us into a free relationship with what concerns us from out of its essence. Accordingly, the correct instrumental definition of technology still does not show us technology’s essence. To arrive at this, or at least come close to it, we must seek the truth by way of the correct. We must ask: What is the instrumental itself? Within what do such things as means and end belong?” (Heidegger, 1954/1977, pp. 20-27).

### Technology as Enframing (Gestell)

Heidegger’s central concept in his critique of technology is “Enframing” (*Gestell*), which refers to the technological way of revealing the world. According to Heidegger, in the modern technological age, the world is enframed in a calculative mode of thinking, where everything—including nature and human beings—is viewed as a resource or standing reserve (*Bestand*) to be optimized and exploited. Enframing limits the possibilities of experiencing the world more authentically, reducing all forms of existence to their utility and functionality (Cocchiarella, 2019).

This enframing of reality is not simply the result of human choice but is intrinsic to modern technology’s essence. Heidegger emphasizes that humans do not control this process but are shaped by it. This insight is particularly relevant in contemporary debates about automation, artificial intelligence, and digital technologies, where the tendency to optimize and control all aspects of life has intensified. For instance, the proliferation of data-driven systems reduces complex human experiences to measurable and manipulable information, echoing Heidegger’s concerns about the calculative nature of technological thinking.

### The Danger of Technology and the Forgetting of Being

Hubert Dreyfus in his work , *Being-in-the-World: A Commentary on Heidegger’s Being and Time*, opines that for Heidegger, the greatest danger of modern technology lies in its potential to obscure



deeper dimensions of existence. Technology distances humans from a more primordial relationship with beings by reducing the world to a standing reserve. Heidegger fears that technology alienates people from their authentic selves and nature, preventing them from experiencing the world fully. This is particularly evident in the ecological crisis, where nature is increasingly commodified and exploited (Dreyfus, 1991).

Heidegger suggests that the essence of technology is not merely a tool to be used but a mode of being that shapes human experience. He cautions against the unquestioning embrace of technological progress, arguing that such progress often comes at the cost of losing a more profound connection with being. In contemporary discussions on technology, this insight critiques the view that technology is value-neutral. Heidegger's work challenges us to consider the ontological impact of technologies such as artificial intelligence, which may alter the very nature of human identity and agency (Heidegger, 1954/1977).

## Technology and Human Freedom

Despite his critique of technology, Heidegger does not advocate rejecting technological advancement. Instead, he calls for a more thoughtful and reflective way of relating to technology. Heidegger distinguishes between modern technology and pre-modern forms of technology, which he argues were more attuned to the rhythms of nature and human life. Pre-modern technologies, such as farming, engaged with nature more harmoniously, whereas modern technology seeks to dominate and control.

Heidegger sees the possibility of human freedom in developing a more meditative thinking that resists the calculative logic of technology. This type of thinking allows humans to engage with technology without being dominated. In the contemporary philosophy of technology, this idea has been taken up by thinkers who advocate for a more critical and responsible approach to technological development. For example, debates about ethical AI and sustainable technological practices can be seen as efforts to develop a more mindful relationship with technology that acknowledges its power without succumbing to its totalizing logic (Scharff, 2010).

## Heidegger's Influence on Contemporary Philosophy of Technology

Heidegger's insights continue to influence contemporary discussions on the philosophy of technology. Postmodern and critical theorists examining technological systems' social and political consequences have taken up his critique of technological enframing. For instance, in media theory, thinkers like Marshall McLuhan and Friedrich Kittler have explored how technologies shape human perception and communication in ways that resonate with Heidegger's concerns about enframing (Borgmann, 1987).

In the context of artificial intelligence and automation, Heidegger's philosophy offers a framework for understanding how these technologies may reshape human identity and agency. AI systems, which increasingly perform tasks that were once the exclusive domain of humans, raise questions about what it means to be human in a world where machines can think and act. Heidegger's emphasis on authentic human existence challenges the view that artificial intelligence (AI) and automation are purely beneficial. Instead, it invites reflection on how these technologies may alter the very essence of humanity.

Moreover, Heidegger's work has influenced ecological and environmental thought. His critique of the technological exploitation of nature anticipates contemporary concerns about sustainability and environmental degradation. Ecological philosophers like Arne Naess and Timothy Morton have drawn on Heidegger's ideas to critique the anthropocentric and exploitative relationship with nature that modern technology fosters (Timothy, 2010).

## Conclusion

Heidegger's philosophy of technology provides a profound and enduring critique of the modern technological worldview. His insights into the nature of enframing, the forgetting of being, and the need for meditative thinking continue to resonate in contemporary debates about the role of technology in society. As technological systems become ever more pervasive and powerful, Heidegger's work challenges us to think critically about the impact of these technologies on human existence, freedom, and our relationship with the world. In doing so, Heidegger's philosophy remains a vital resource for those seeking to navigate the complexities of contemporary technological life. Heidegger's critique of technology challenges us to rethink how we interact with the world. Even though modern technologies provide many benefits, they can limit human freedom and obscure other ways of experiencing the world. His concept of enframing encourages us to reflect on how technology shapes our thinking. At the same time, his notion of saving power suggests that we can still find meaning through non-technological modes of engagement, like art and contemplation.

Heidegger's insights remain relevant in a world increasingly dominated by AI, automation, and data-driven technologies. His work invites us to pause and reconsider how we engage with technology not by rejecting it outright, but by remaining open to other ways of being.

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