Sociology, Philosophy and Psychology; Vol.2, No.2; 2025
E-ISSN: 3006-3620 P-ISSN: 3006-3612
DOI: https://doi.org/10.70267/ spp.v2n2.0109
Published by: Zeus Press

Technology and Existence: A Critique of Human Enhancement Based on Heidegger

Qikai Zhang*

Department of Philosophy and Science, School of Humanities, Southeast University, Wenzhou 325100, China

**Corresponding author: Qikai Zhang, E-mail: 1228803028@qq.com.*

Abstract

Driven by cutting-edge technologies such as brain-computer interfaces, gene editing, and cognitive enhancement, the structural framework of human existence is undergoing profound transformation. Human enhancement technologies are no longer neutral tools external to and serving humanity but are increasingly becoming foundational conditions that constitute the essence of humanity. This paper aims to elucidate how human enhancement technologies have transitioned from their traditional role as "tools" to become conditional mechanisms that constitute the "essence of humanity," and to analyze the profound implications of this transformation for subjectivity, sense of meaning, and ethical order. Drawing on Heidegger's philosophy of technology as a theoretical foundation, combined with post-humanist ideas from thinkers like Sloterdijk and Simondo, the analysis unfolds across three levels: first, traditional tool theory struggles to explain technology's deep integration into cognitive and social structures; second, technology is gradually transforming human subjectivity into system components; third, this process may trigger a nihilistic crisis of meaning. In this context, it is argued that we should not simply resist technology but instead rebuild sensitivity to existence and ethical boundaries in the dimensions of "authentic existence" and "coexistence," promoting a technology ethics with ontological depth. This includes interventions at the levels of design, institutions, and public participation to uphold human dignity and meaning in the age of enhancement.

Keywords

human enhancement technology, philosophy of technology, posthumanism, authentic existence, nihilism

1. Introduction

Against the backdrop of rapid advancements in cross-disciplinary technologies in the 21st century, emerging technologies such as Human Enhancement Technologies (HET) are redefining the biological boundaries and modes of existence of humanity. Human Enhancement Technologies represent a "grand endeavor to improve current human physical capabilities, intellectual abilities, emotional states, and moral capacities through scientific progress—particularly advancements in biotechnology" (Sandel, 2013). Unlike traditional medical interventions aimed at treating or compensating for defects, these technologies seek to transcend normal capabilities by actively intervening in and designing cognition, perception, the body, emotions, and even genetic structure. Brain-computer interfaces (BCIs), gene editing (such as CRISPR-Cas9), emotional regulation devices, augmented reality systems, bionic prosthetics, and smart drugs are already widely applied across multiple fields and are quietly reshaping the very essence of what it means to be human.

Technology is no longer merely a “tool” but is gradually evolving into a foundational structure that determines the way humans exist. Traditionally, technology has been understood as Aristotle's “means created for a specific purpose,” embodying the “instrumental rationality” logic of the Enlightenment, i.e., the external extension of human will. However, as technology has become deeply embedded in human life, its role has shifted from “serving humanity” to becoming a “constitutive condition of existence”: technology not only intervenes in human survival but also becomes its prerequisite and medium, bringing about a ontological leap. In an era where “enhancement” has become a fundamental characteristic of humanity, philosophical inquiries into the essence of humanity, autonomy, and existential sovereignty have become increasingly urgent. In this context, Heidegger's philosophical critique of technology regains its significance. In “The Question Concerning Technology,” he points out that the essence of modern technology is not a tool but a 'disveiling' method, i.e., a way of revealing beings (Heidegger, 2005); Being and Time (Heidegger, 2014) further emphasizes the co-constructive relationship between “Dasein” and “the world,” and it is precisely this relationship that is being undermined by technological concealment.

Against this backdrop, Heidegger's ontological critique of modern technology provides a theoretical foundation for re-examining the impact of technology on the “essence of humanity.” Technology is no longer merely an external means of human will but gradually becomes a structural mechanism determining the mode of human existence. In conjunction with recent developments in post-humanist technology philosophy, it is necessary to systematically analyze the deconstructive role of human enhancement technology within the conceptual framework of “instrumentality-worldliness-Dasein,” manifested across three interrelated levels: from derivative functions to essential structures, from the existential questioner to the constructed existence, and from authentic existence to systemic functional components. Building on this, the question that needs to be addressed is whether this deconstruction leads to the nihilization of “humanity.” Is it possible for the technological era to open up a “non-obscuring” ethical counter-pathway, thereby reestablishing the ontological relationship and value foundation between humanity and technology? Based on the above thesis, human enhancement technology has shifted from an external tool to a constitutive condition of existence: within Heidegger's “scaffold-unveiling/concealing” framework, enhancement technology both reveals and commodifies the world, eroding the authenticity of Dasein by functionalizing and programmable subjectivity. Without reconstituting existential sensitivity and ethical boundaries to impose limits, this may ultimately lead to the nihilization of meaning. Under the premise of acknowledging the constitutive nature of technology, this study will rely on Heidegger's analytical approach to elucidate the mechanisms through which human enhancement technology alienates Dasein into systemic functional nodes. Based on this, it will propose ethical design strategies aimed at preventing or mitigating subject alienation and the nihilization of meaning.

2. The Rise of Human Enhancement Technologies and Their Philosophical Challenges

In contemporary society, where technology is increasingly embedded in the fabric of human life, the age-old philosophical question of “what is humanity?” is being reignited. Especially against the backdrop of rapid advancements in human enhancement technologies such as brain-computer interfaces, gene editing, and cognitive enhancement, technology is no longer merely an external tool to meet human needs but is increasingly becoming a fundamental force reshaping the very essence of humanity. In the face of this unprecedented trend, the traditional philosophical view of technology centered on instrumental rationality is increasingly inadequate. Given the transformation of the ontology of technology, it is necessary to critically examine the applicability of instrumentalism in the modern technological context and further reveal the profound philosophical crisis triggered by this transformation.

2.1 The Ontological Transformation of Technology: From Tool to Constituent of “Human Essence”

Traditional philosophy generally holds that technology is the externalization of human will, a tool-like means existing to achieve human purposes (Zhong, 2025). From Aristotle to Kant, and through the rationalist tradition of the Enlightenment, technology has never ceased to occupy a subordinate position as an “intermediary.” However, with the rapid development of human-enhancing technologies, this instrumentalist structure is now facing a profound ontological crisis. These technologies are no longer merely extensions of human capabilities but have become direct participants in and shapers of the essential elements of human nature. For example, in the field of brain-computer interfaces, teams such as BrainGate have achieved clinical

breakthroughs enabling paraplegic patients to control robotic arms or computer cursors through implanted electrodes using their thoughts, demonstrating that neural signals can bypass peripheral motor organs to directly interact with computational systems, thereby conceptually undermining the "mind-body" dualistic structure; In the field of gene editing, since the maturation of CRISPR-Cas9 technology, experimental and controversial reports on editing human embryos—such as the 2018 case claiming to edit twin embryos to eliminate HIV susceptibility—have sparked international ethical and regulatory discussions, revealing the potential for genetic intervention to reconfigure the body and its potential across generations; Additionally, practical examples of biohacking and bionic implants are increasing, such as individuals implanting NFC chips to enable access control and payment functions, or experimentally implanting sensors to expand perception, reflecting that some individuals are actively internalizing technology as part of their "existence." These specific practices demonstrate that human enhancement technologies have transcended traditional therapeutic paradigms on multiple levels: on one hand, they expand human potential and well-being; on the other hand, they gradually integrate human capabilities, perceptions, and values into technological networks through pathways of implantation, editing, algorithmization, and commodification. As such, instrumentalism cannot adequately explain the current technological landscape. Technology is not merely a means but has become a decisive force in shaping the conditions of human existence in practice. These specific practices collectively compel philosophy to reexamine an ancient yet urgently relevant question: "What is humanity?"

Technology is no longer an external system of tools but is increasingly becoming the very "conditions of human existence" themselves. Human perception, visual enhancement, memory, cognitive drugs, emotions, neural stimulation, reproduction, and genetic screening are increasingly dependent on the structures and logic provided by technological devices. In this process, technology has reversed its role from being "a tool of humanity" to becoming "the foundation of humanity"—no longer merely used by humans but determining the very structure of what it means to be human. For example, philosopher Bernard Stiegler explicitly states that technology is not an accessory to humanity but rather "the means that originally constitutes human temporality and memory processes" (Stiegler, 1999), meaning that technology and human existence are in a co-constructive relationship, not a subject-object duality. Therefore, human enhancement technologies is not a "more complex tool," but a technological event that triggers "essential restructuring." In this context, continuing to use traditional tool theory to understand technology can no longer explain the contemporary technology's ontological intrusion and rewriting of humanity.

2.2 Epistemological Revolution in Technology: From Instrumental Rationality to Value Rationality

In the early stages of modern technological development, technology was generally understood as a neutral means to serve human purposes. This "instrumental rationality" asserted that humans have the ability to dominate and control technology, emphasizing its predictability, operability, and value neutrality. However, with the deepening development of the philosophy of technology since the 20th century, and the emergence of human enhancement technologies such as brain-computer interfaces and gene editing, this "instrumental" perspective is facing serious challenges. The understanding of technology is undergoing an "epistemological revolution"—no longer merely viewing technology as a system of means, but re-examining the value structures, social logic, and existential consequences embedded within technology, thereby moving toward the perspective of "value rationality."

First, Lewis Mumford, in his seminal work Technology and Civilization, argues that the triumph of modern industrial technology is not a victory of tools, but a victory of social organization over the individual: "The triumph of modern technology is not a triumph of tools, but a triumph of organization." Mumford argues that since the Industrial Revolution, technology has become embedded within the social structure itself, serving as the central hub for political, economic, and cultural control, rather than merely a utilitarian tool. The complexity of technological systems demands centralized management and standardized operations, thereby eroding individual freedom, creativity, and diversity. Mumford's insights reveal the power dynamics and social value orientations underlying technology, dispelling the myth of "technological neutrality" within instrumental rationality.

Secondly, Jacques Ellul introduced the concept of "technological autonomy" in *The Technological Society*, further undermining the foundations of instrumental rationality. He argued that once a technology becomes possible, it will inevitably be developed and irreversibly drive adjustments to social structures and human

behavior. In Ellul's (1964) view, the development of technology is not guided by ethical objectives but is a self-driven, self-accelerating systemic process. Therefore, instrumental rationality cannot explain why technology continues to expand even in the absence of explicit human needs. This is particularly applicable to human enhancement technologies, such as gene editing and brain-computer interfaces, where many cases proceed from “possibility” to 'implementation' before “ethical consequences” are considered. In the context of human enhancement technologies, this issue is particularly pronounced: technologies like gene editing and brain-computer interfaces often enter practice under the guise of “feasibility,” only to trigger belated ethical reflection afterward. This means we must re-examine the development trajectory and legitimacy of technology from the perspective of value rationality.

Furthermore, Ernst Kapp proposed the theory of “organ projection,” arguing that technology is not external to humans but rather an external extension of human bodily organs (Gao, 2019). This perspective suggests that the relationship between humans and technology has never been one of a subject-object separation but has always been a process of mutual generation and reshaping. human enhancement technologies is the extreme form of this mechanism: humans use technology to “project” the functions of their bodily organs, while technology, through feedback mechanisms, 'shapes' the way humans exist. As individuals extend and enhance their capabilities through technology, they are also gradually reshaped by technological structures, forming a “technologized self.” This bidirectional interactive process reveals that technology not only describes the world but also participates in the construction of the subject, thereby possessing fundamental epistemological significance.

In summary, the traditional philosophical understanding of technology, centered on “instrumental rationality,” is no longer sufficient to address the profound intervention of modern technology into the ontological structure of humanity. In the present era, technology is no longer merely a neutral means of human activity but has gradually become a new “existential domain,” profoundly altering human ontological structure, modes of existence, and future possibilities. It is not merely a controllable collection of tools but a structural force embedded within value networks and the logic of social operation. In the face of this transition from “tool” to “existential mechanism,” it is necessary to introduce a philosophical perspective that transcends instrumental rationality and shifts toward ontological reflection. In this context, Heidegger's analysis of the essence of modern technology, particularly his profound critique of “technological existence,” provides a problem-oriented path from “tool to existence” and lays the theoretical foundation for rethinking the constitutive impact of human enhancement technologies on “the essence of humanity.”

3. The Concealing Path of Technological Existence and the Deconstruction of “Human Essence” — A Critique of Human Augmentation from Heidegger's Perspective

Technology is not a neutral tool, nor is it merely a system of means; it is a mode of existence, a “de-concealing mechanism” through which humans interact with the world. When technology unfolds comprehensively in the form of a “framework,” the authenticity of human existence also faces the risk of being concealed. In this context, faced with the rapid development of human enhancement technologies, Heidegger's thought provides a profound critical foundation: we must not only ask “what technology can do,” but also focus on “what technology makes us forget.” By leveraging Heidegger's key concepts, we can gain deeper insights into how technology shifts from revelation to concealment, and the impact of this transformation on the authentic existence of humanity.

More importantly, when this “obscuration” no longer remains solely at the perceptual level but directly acts upon the structural existence of human beings within technological systems, it brings about not merely instrumental obscurity but ontological reconfiguration. In the context of human enhancement technology, technology is no longer an external means but becomes a conditional mechanism constituting “the essence of humanity.” Therefore, based on the revelation of “technological existence,” further analysis of how humans are shaped and replaced within enhancement systems is crucial to understanding the “possibilities of humanity” in the contemporary technological era.

3.1 The “Unveiling” Function of Tools: From “Things at Hand” to “Channels of Existence”

In *Being and Time*, Heidegger sought to challenge the traditional understanding of technology and tools. He argued that tools are not pre-existing, neutral objects waiting to be used by humans, but rather reveal their

“usefulness” and 'worldliness' through human manipulation. In other words, human existence inherently involves the understanding, use, and embedded interaction with tools. The “tool-like” nature of technology is not its essence but rather the manifestation of a deeper ontological structure. He refers to tools as “handy objects,” emphasizing that their significance lies not in their physical properties but in the network of uses they form in actual use, such as the relationship between a hammer and nails, planks, and houses. This 'operationality' is a mode of experience of Dasein in the world. Technology and tools do not exist independently but are embedded within the “world-within-existence” structure of Dasein. Humans participate in the construction of the world through tools and through operation. Technology itself is a “de-veiling” method that constitutes the relationship between humans and the world. Therefore, tools are not merely “means,” but rather “channels” leading to existence. Through the use of technology, humans not only alter the world but also reveal and understand it.

3.2 “Gestell”: The Essence of Modern Technology

Although technology was not yet the central object of Heidegger's critique in *Being and Time*, in his later thought, especially in *The Question Concerning Technology* published in 1954, Heidegger launched a systematic ontological critique of modern technology. He argued that the essence of modern technology is not “instrumentality” but “Gestell.” The term “Gestell” refers to the “challenging stance” adopted by modern technology, which no longer functions in the traditional sense of 'use' or “assistance,” but instead forces nature and beings into a state of optimization, mobilization, and storage. In this process, the earth becomes a “resource,” and humans are transformed into “mobilized reserve energy.” “Gestell is not merely humanity's demand on the world; it is the historical unveiling of the mode of being” (Huang, 2022). Under the dominance of the framework, the world no longer presents itself as “thingness” but as “resourcefulness.” For example, a tree is no longer a living entity in its own right but “usable timber”; a river is no longer a naturally flowing existence but “potential hydropower resources”; and humanity itself is also incorporated into this logic, becoming “labor force data,” “biological templates,” or “information nodes.”

Heidegger emphasized: “The danger of modern technology lies not only in its alteration of our perception of objects, but also in its transformation of our capacity to sense existence itself.” This represents a profound existential obscurity: in a world where everything is reduced to “resources,” the diversity and mystery of existence are “standardized,” leading to a forgetting of existence (Huang, 2022).

3.3 Technology as Veiling: The Decline and Forgetting of Dasein

In *Being and Time*, Heidegger points out that human existence is not merely “living in the world,” but also the ability to “pose the question of existence.” What distinguishes Dasein from other beings is its capacity to “question existence,” that is, it is “the questioner of its own existence.” However, when technology becomes the dominant means by which humans perceive the world, especially when it exists in the form of a “framework,” it transforms from 'unveiling' to “concealing.” Dasein no longer understands existence through “worldliness” but is instead organized and driven by technological structures, gradually losing its grasp on its authentic existence. Heidegger refers to this state in Being and Time as “falling into being”: Dasein becomes immersed in daily affairs, public opinion, and technological systems, losing its original openness to “being.”

The danger of modern technology does not lie in its “power,” but in the fact that it makes people forget who they are. In Heidegger's view, the real threat of technology is not material control, but “the forgetting of the question of being.” When we understand everything as quantifiable, accessible, and enhanceable objects, we lose the ability to “hear the voice of being” in things.

3.4 Constructive Transformation: The Ontological Challenge of Human Enhancement Technologies

If Heidegger revealed how modern technology obscures existence and weakens the authenticity of “Dasein,” then in the contemporary context of human enhancement technologies, this obscuring is no longer an implicit process but rather a direct reconstruction of human essence through “constructive technology.” From an ontological perspective, we can further analyze how humans undergo structural transformation within technological systems and thereby pose a critical question: When “Dasein” can no longer ask the “question of being,” is humanity still “human”?

3.4.1 Structural Restructuring in Enhancement: Recoding Human Potential

Traditionally, technology has been understood as a tool of human will, serving to transform and control the natural world. However, with the advent of human enhancement technologies, this structure has undergone a fundamental change. Against the backdrop of widespread applications such as brain-computer interfaces, gene editing, neural modulation devices, and bionic prosthetics, technology is no longer an external "auxiliary entity" but directly intervenes in and shapes the structural framework of human existence. Augmentation technologies not only extend human cognitive and motor capabilities but also, ontologically, become the foundational force determining the possibilities and limits of humanity.

Philosopher Bernard Stiegler offers profound insights into this matter. In his trilogy *Technics and Time*, he introduces the concept of "technicized existence," emphasizing that technology is not merely an accessory to humanity but rather the core mechanism shaping human memory, temporality, and processes of individuation. "Human existence does not precede technology; rather, technology is an extension or projection of humanity itself". Stiegler (1998) analyzes the continuity of "craftsmanship—memory—tools" to argue that from the earliest stone tools to today's data algorithms, humans have always been beings who "exist through technology." In the context of human enhancement technologies, this constitutive aspect becomes particularly evident: when algorithms directly intervene in human decision-making systems or gene editing rewrites human physiological structures, technology is no longer an "external object" but becomes the "conditional existence" of what it means to be human (Meng, 2023).

3.4.2 The Interruption of Dasein: The Silence of the Question of Being

In *Being and Time*, Heidegger explicitly states that the essence of humanity is not some kind of substantive definition, but rather a dynamic structure capable of posing the "question of being." He refers to humanity as "Dasein," or "an entity that is aware of its own existence and questions its meaning." However, under the influence of human enhancement technologies, the structure of this "questioner of being" is facing complete collapse. When cognition is optimized by intelligent algorithms, emotions are regulated by neural stimulation, and memory is extended through external data storage systems, the individual's experience of "Dasein" no longer depends on the original body, temporality, and worldliness, but is instead mediated by technology. The authentic connection between Dasein and the world is severed, replaced by dependence on and submission to technological logic.

In this situation, the human condition shifts from the "openness of existential awareness" to the "functional execution of technical specifications." The "world-within-existence" structure emphasized by Heidegger—where humans co-construct existence with the world through entities and events—is replaced by the "system-within-function" structure, where humans exist by assuming specific roles within technical systems. This also implies that the fundamental capacity of "Dasein"—to pose the question "Who am I? Why do I exist?"—is being eroded. While the enhanced "human being" may possess greater intelligence, longer lifespan, and stronger sensory capabilities, whether such existence still retains the self-aware perception and interrogative power regarding existence itself remains an unresolved philosophical question.

3.4.3 The Fate of the Constructed: The Trend Toward Nullification Under Technological Logic

The deepest philosophical crisis triggered by human enhancement technology lies in the fact that human subjectivity is being re-coded as a "system-controllable object." In other words, the individual is no longer an ontological being capable of understanding the world, creating meaning, and posing existential questions, but rather a constructed, reprogrammable technological product. Within this system, "humanity" is gradually transforming into a functional node within a cyborg or "human-machine hybrid." Human rationality, perception, and even desire can be digitized, modeled, and integrated into larger technological systems for operation. Compared to the traditional notion of "poetic dwelling"—where humanity maintains an open, reverent, and non-instrumental relationship with the world—this represents a "technologically dependent existence."

The ideal emphasized by Heidegger in his later years—that "human beings should dwell poetically on the earth"—is gradually losing its possibility within the logic of modern technology. The technological world, with its logic of high speed, efficiency, and control, suppresses meditation, contemplation, and non-utilitarian openness toward existence. In this context, human beings are no longer "creators of meaning" but have become

"executors of calculations." More seriously, this "technologically constructed" image of humanity may lead to the nihilization of existence. When the meaning of existence is solely generated and maintained by technological systems, the question of "what is humanity" loses its metaphysical tension. Once humanity abandons the pursuit of 'existence' and completely surrenders its self-definition to technological logic, the essence of "humanity" will also come to an end.

4. Reconstruction: The Possibilities of Humanity in the Technological Age

Once humans are recoded as "functional components" and "constructed entities" within technological systems, a deeper philosophical question arises: Does "humanity" still hold meaning? Responses to this question can be explored from two dimensions: first, the mechanisms of generating technological subjects in a post-human context and their dissolution of human boundaries and autonomy; second, the nihilistic crisis triggered by technological logic, namely, how meaning can be possible in a future where everything can be optimized, replaced, and reconstructed.

4.1 Reassessing Subjectivity: Humanity in a Posthuman Context

Human enhancement technologies construct not only a technical "new body," but also an ontological "new subject." In this context, philosophy must reexamine whether the concept of "humanity" still possesses stability, continuity, and a sense of boundaries. Posthumanist thought emphasizes the end of traditional humanist cognition, asserting that humans are no longer the center of the universe nor do they occupy a privileged position in cognition and value judgment. Non-human elements such as technology, animals, the environment, and artificial intelligence also possess decisive existential significance.

German philosopher Peter Sloterdijk argues in his *Draft Rules for the Human Zoo* that humanity has entered an active phase of self-shaping, a "human self-experiment," where "humans are no longer passive creatures adapting to nature but rather their own laboratory". Sloterdijk (2017) argues that modern genetic technology, cognitive science, and body enhancement techniques have turned "humanity" into its own "design project." This has shattered the mystique of humanity's organic evolution, replacing "natural growth" with "selective optimization," thereby raising serious ethical and existential questions: Can humanity still be regarded as an "original being" that is not shaped by external forces?

At the same time, French philosopher Gilbert Simondon proposed the concept of "technological individuation" in his work The Mode of Existence of Technical Objects. He argued that technology is not a static tool but a dynamic entity undergoing an ongoing "process of individuation." "Technology is not a collection of objects but an individual with developmental momentum. Humans cannot dominate technology; instead, they should co-individuation with it." Simondon's (1958) understanding of the subject emphasizes the co-evolutionary relationship between humans and technology: technology must grow in tandem with human psychological, social, and cultural structures; otherwise, its development will devolve into a structure that alienates humanity. This offers an alternative perspective for understanding human enhancement technologies: the issue is not whether to enhance humanity itself, but whether such enhancement incorporates reflection on human existence and ethical norms.

However, in reality, the implementation of human enhancement technologies is often based on market logic and data efficiency. Technology is no longer a process of co-individualization with humans but rather a means of controlling, replacing, and optimizing the human body. Subjectivity is weakened in the process of enhancement, and "active shaping" ultimately slides into "systematic construction." The ideas of Sloterdijk and Simondo collectively remind us: without reflecting on "the human in technology," the post-human society will not achieve liberation but may instead enter a new form of enslavement.

4.2 Non-obscuration: The Possibility of Rebuilding Technological Ethics in the Trend toward Nihilism

As human enhancement technologies become more deeply integrated into our lives, the greatest philosophical risk we face is not the harmfulness of the technology itself, but the collapse of meaning it brings. Logically, the ultimate goal of augmentation technology is infinite optimization and infinite possibility: bodies can be reconstructed, memories can be stored, decisions can be predicted, and genes can be edited. Under this

“limitless possibility” framework, the traditional boundaries that define humanity's limitations, mortality, suffering, and even ethical choices are gradually being erased by technology.

However, as Nietzsche strongly pointed out in his insight into nihilism, “the essence of nihilism lies in the fact that the highest values have lost their binding force.” For Nietzsche, nihilism is not a pessimistic mood, but a state of collapse of the value structure: when people no longer believe in any transcendent meaning or value, and everything becomes “data” that can be redefined, reconstructed, and reevaluated, human existence also loses its ultimate belonging.

Heidegger continued this critique, pointing out that while modern technology provides efficiency, optimization, and order, it is also leading to a profound forgetting of “being.” Technology does not actively guide us toward the source of meaning; rather, it is a mechanism that accelerates the “obscuring of being.” “Nihilism is not meaninglessness, but the proliferation of the meaning machine” (Heidegger, 2003). This proliferation of meaning paradoxically creates a form of “meaninglessness”: when everything can be replaced and reconstructed by technology, true value and meaning no longer become scarce, sacred, or irreplaceable. For example, if ethical judgments can be simulated by AI, happiness can be regulated by drugs, and death can be delayed or avoided through consciousness uploading, then does human suffering, choice, and sacrifice still have meaning? These are precisely the deep-seated factors that constitute “what it means to be human.” In this sense, nihilism becomes the deepest philosophical crisis triggered by human enhancement technology: technology eliminates constraints and also eliminates meaning; it liberates human capabilities and also dissolves human values.

5. Conclusion

In the context of the ongoing development of human enhancement technologies, technology is no longer merely an accessory or means of human survival but has gradually evolved into a foundational force shaping the very nature of human existence. Drawing on Heidegger's philosophical perspective on technology, we can trace the evolutionary logic of technology from its “instrumental” nature to its “constitutive existence,” and further reflect on the profound deconstruction of “human essence” caused by human enhancement technologies: the autonomy of Dasein is weakened, the “questioner of existence” is transformed into a “technologically constructed product,” and ultimately slides into a nihilistic crisis dominated by technology. However, technology itself is not inherently dangerous. The true risk lies in the fact that when humanity loses its sensitivity to and capacity for questioning “existence,” and allows technological logic to fully dominate the construction of life, value, and meaning, technology transforms from a “means of unveiling” into a “mechanism of obscuring.” Heidegger precisely points out from this perspective: “The essence of technology is not technology itself, but the veiling of existence.” In this sense, the danger of technology does not lie in itself, but in its potential to make us forget existence, ignore authenticity, and abandon freedom.

Therefore, a forward-looking ethical philosophical task is not simply to reject technology, but to reawaken the “capacity for reflection on existence” and respond to the challenges of technology with an authentic attitude. This means that we must reshape the openness of 'Dasein' as an existent being, enabling humanity to maintain awareness and critical reflection on its own existential state within a technological society; we should reject technology's obscuring of “existence,” rather than rejecting technology itself. The use of technology should be grounded in respect for the essence of humanity. The ethical shift in the technological age may serve as an opportunity to rediscover “existence itself.” As technology becomes an inevitable mode of existence, it becomes even more necessary to relearn how to dwell poetically within it. Through a philosophical approach, we can awaken a deeper concern for the question of “the essence of humanity” in the context of enhanced technology. Future technological ethics should transcend functional and utilitarian logic, shifting toward a profound ethics with an ontological dimension, reestablishing the dignity, freedom, and source of meaning of humanity in a world coexisting with technology.

References

Ellul, J. (1964). *The technological society*. Alfred A. Knopf.

Gao, Y. (2019). *A study on Ernst Kapp’s theory of “organ projection”* [Unpublished master's thesis, Northeast Normal University]. Changchun.

Heidegger, M. (2003). The word of Nietzsche: "God is dead". In *Pathmarks*. Cambridge University Press.

Heidegger, M. (2005). *Speeches and essays*. Sanlian Bookstore.

Heidegger, M. (2014). *Being and time*. Life·Reading·New Knowledge Sanlian Bookstore.

Huang, D. (2022). *Heidegger's reflection on technology* [Unpublished master's thesis, Yangzhou University]. Yangzhou.

Meng, Q. (2023). From being and time to technics and time: Stiegler's development of Heidegger. *Studies in Dialectics of Nature, 39*(3), 68-73.

Sandel, M. J. (2013). *The case against perfection: ethics in the age of genetic engineering*. CITIC Press.

Simondon, G. (1958). *Du mode d'existence des objets techniques*. Aubier.

Sloterdijk, P. (2017). Rules for the human zoo. In P. Sloterdijk (Ed.), *Not saved: Essays after Heidegger* (pp. 193-216). Polity Press.

Stiegler, B. (1998). *Technics and time, 1: The fault of Epimetheus*. Stanford University Press.

Stiegler, B. (1999). *Technics and time: The fault of Epimetheus*. Yilin Press.

Zhong, W. (2025). Where will technology lead us: Reflections on Heidegger's ontology of technology. *Journal of Yibin University, 25*(1), 44-52.

Funding

This research received no external funding.

Conflicts of Interest

The authors declare no conflict of interest.

Acknowledgment

This paper is an output of the science project.

Copyrights