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Transhumanismo y posthumanismo transhumanista: ¿evolución o deshumanización? un breve comentario

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RESUMEN
El objetivo de este trabajo es analizar el transhumanismo y su avance hacia el posthumanismo transhumanista desde perspectivas filosóficas, históricas y éticas, evaluando su potencial y sus riesgos. Se adopta una metodología cualitativa y crítico-reflexiva basada en investigación documental, revisando fuentes primarias y secundarias para examinar fundamentos conceptuales, desarrollos tecnológicos actuales y sus implicaciones sociales. El análisis identifica como rasgo clave el paso de la selección natural a la modificación intencional, así como el carácter fragmentado de su desarrollo, condicionado por desigualdades en acceso, recursos y motivaciones. El concepto de "evolución personalizada" evidencia cómo estas diferencias pueden reforzar desigualdades estructurales. Si bien existen avances notables en mejora sensorial y restauración funcional, no transforman de forma radical la biología humana, lo que cuestiona la existencia de verdaderos "transhumanos". Se concluye que el impacto del transhumanismo depende de su implementación y gobernanza. Orientado por principios éticos e inclusión, puede ampliar el potencial humano y preservar identidad, individualidad y dignidad. Sin estas garantías, podría derivar en un proceso excluyente y regresivo.

Palabras clave: Transhumanismo; posthumanismo transhumanista; biotecnología; ética; evolución personalizada.

Transhumanism and transhumanist posthumanism: evolution or dehumanization? a brief comment

ABSTRACT

The aim of this work is to analyze transhumanism and its progression toward transhumanist posthumanism from philosophical, historical, and ethical perspectives, assessing its potential and risks. A qualitative, critical-reflective methodology based on documentary research is used, reviewing primary and secondary sources to examine conceptual foundations, current technological developments, and their social implications. The analysis identifies the shift from natural selection to intentional modification as a key feature, as well as the fragmented nature of its development, conditioned by inequalities in access, resources, and motivations. The concept of "customized evolution" shows how these differences can reinforce structural inequalities. Although there are notable advances in sensory enhancement and functional restoration, they do not radically transform human biology, which questions the existence of true "transhumans." It is concluded that the impact of transhumanism depends on its implementation and governance. When guided by ethical principles and inclusion, it can expand human potential and preserve identity, individuality, and dignity. Without these safeguards, it could become an exclusionary and regressive process.

Keywords: Transhumanism; transhumanist posthumanism; biotechnology; ethics; customized evolution.

INTRODUCTION

Debates about changing human development through science and technology have become more common in academic and philosophical discussions. These ideas suggest going beyond current physical, mental, and sensory limits, seeing the human condition not as something fixed but as part of a continuous process of change. This way of thinking is not only about new inventions but also about protecting identity, keeping human values, and setting clear ethical rules for any intentional change.

Although such ideas are often described as a way to achieve broad progress, their real development shows a more uneven and dependent path. Social, economic, and cultural differences influence how these changes happen, who can access them, and what results they bring. This raises important questions about whether these changes truly help everyone or if they mostly serve personal goals.

The importance of this topic is that it combines philosophy, ethics, and science. Studying these areas together helps to understand how changing human abilities on purpose could shape the future. This work takes a critical and reflective approach to look at the main ideas, current expressions, and possible effects of these changes, and to consider if they move toward shared human progress or away from it.

METHODOLOGY

This work is a critical-reflective essay that examines transhumanism and its progression toward transhumanist posthumanism from philosophical, historical, and ethical perspectives. It follows a

qualitative approach based on documentary research, using primary and secondary sources such as classical philosophical works, contemporary theoretical models, and documented case studies of technological innovations.

The methodological process had three stages: (1) identifying and selecting literature on conceptual foundations, ethical debates, and practical applications of transhumanism; (2) organizing the material into thematic categories, including historical-philosophical origins, current technological developments, and ethical implications; and (3) integrating these dimensions into a coherent analytical framework.

Source selection prioritized peer-reviewed academic articles, recognized philosophical treatises, and empirical reports on emerging technologies such as sensory enhancement devices and neurotechnological interfaces. This ensured both historical depth and contemporary relevance.

No empirical data collection was carried out, as the analysis relies on reasoning and comparative discussion. No ethical approval was required. The aim is to determine whether current technological advances meet the transformative goals of transhumanist theory or remain limited to solving specific functional human limitations.

MAIN DISCUSSION

Origins and conceptual foundations of transhumanism and transhumanist posthumanism

The 14th-century neologism of the poet Dante Alighieri, *Trasumanar*, now related to the English term *transhumanism*, is possibly the first written reference to the transcendence of man beyond his own nature expressed in a single word. According to Webb (2016), "*go beyond the human, it cannot be put into words*" (p. 177) is an early precedent of the current transhumanist criterion.

In the 20th century, and within the modern transhumanist vision, Julian Sorell Huxley, a renowned evolutionary biologist, used the term *transhumanism* in his 1957 work *New Bottles for New Wine*. He argued that the human species could, if it wished, transcend itself collectively rather than merely sporadically at the individual level, and proposed *transhumanism* as a suitable name for this belief. Huxley stated that once enough people could sincerely adopt this idea, humanity would stand on the threshold of a new kind of existence, as different from ours as ours is from that of the Peking Man. While this view is similar in some ways to Dante's, it is more detailed and arguably more idealistic. However, because perceptions of human limitations are inherently subjective, establishing a consensus is difficult, which reduces Huxley's idealism to a utopian vision (Huxley, 1957; Huxley, 2015).

Part of Huxley's ideas can be interpreted as an expression of a form of neo-idealism that arose in the late 19th and early 20th centuries, linked to non-rigorous extra-scientific forms of Darwinism. These forms had been incorporated into various strands of "*evolutionism*," many of which envisioned evolution as a vast process placing humans at the top, still moving toward ever-greater heights (Dunér, 2025).

Decades later, Fereidoun M. Esfandiary—known as FM-2030—introduced in *Are You a Transhuman?* (1989) a self-assessment intended to measure adaptability to *transhumanism*. High scores indicated a strong capacity for adaptation, while low scores suggested little or no adaptability. As Halapsis

(2019) explains, the test encouraged readers to reflect on their individual potential to become a biotechnologically modified human whose adaptations might improve quality of life.

This framework raises critical questions: How attainable would it be for the average citizen to achieve an "improvement" of their nature? Could those barely covering basic needs—food, housing, education—afford technological enhancement? According to the World Bank (2022), individuals living on less than $3.65 a day (purchasing power parity) are considered in extreme poverty, raising doubts about their ability to access such advances.

Posthumanism, which extends beyond *transhumanism*, should not be confused with classical posthumanism, which critiques anthropocentrism in the 21st century (Kopnina, 2019). In this article, *transhumanist posthumanism* refers to surpassing even the most advanced biotechnological enhancements, envisioning an existence beyond that of a transhuman. The *transhumanist posthuman* is conceived as an individual whose biotechnological modifications grant suprahuman capabilities. While this notion may seem futuristic or speculative, it has been examined in scholarly discussions, including in the *Journal of Posthumanism* and the *Journal of Posthuman Studies*. Ultimately, its goal is what some call "*the death of Death*," meaning the complete transcendence of human limitations through advanced technological and biotechnological innovation (Cordeiro & Wood, 2018).

This vision involves halting the aging process and enabling indefinite life extension through advances in genetic therapies, regenerative medicine, and molecular nanotechnology. In this paradigm, death from natural causes becomes a choice rather than an inevitability.

From collective evolution to "customized evolution"

Biologically, evolution refers to changes in heritable traits in a population of organisms over generations. It is important to note that evolution affects populations, not individuals (Herron, Zamani-Dahaj, & Ratcliff, 2018).

Within this framework, what does transhumanism mean?

Consider a practical example: as a scientific writer, I often need to read a 100-page book in two days to develop a theoretical framework, retaining about 80% of the content. This requires setting aside most of my daily tasks. Now, imagine a technology allowing me to read the same book in just 10 hours while improving retention to 90%. This enhancement would help me overcome natural limitations and significantly increase efficiency. Although this improvement would not match Anne Jones's extraordinary ability—reading a *Harry Potter* book in about 47 minutes at a rate of over 4,200 words per minute—it represents a meaningful step forward (Rayner, Schotter, Masson, Potter, & Treiman, 2016)

From a biological perspective, however, this enhancement does not change heritable traits or involve population-level evolution (Diamond & Martin, 2021). Instead, it reflects individual evolution, tailored to specific needs. This illustrates what I term **"customized evolution."**

This concept introduces a paradigm in which individual advancements depend on personal goals, financial resources, medical expertise, technology quality, and the skills of designers. Such evolution

contrasts sharply with traditional collective evolution, highlighting the interplay of personal circumstances and technological progress.

Technological humanization or dehumanization?

To humanize means "to become human, to give a humane condition," and also "to become benevolent, affable, and tractable" or "to acquire polished social habits; to civilize" (Waldow & Borges, 2011, p. 416). To dehumanize is to perceive someone as lacking humanness (Haslam & Loughnan, 2014).

The Transhumanist Manifesto (2020) defines a transhuman as "a bio-technological organism, a transformation of the human species that evolves with technology. This evolution is studied in paleontology, archaeology, evolutionary biology, anthropology, philosophy, social, and cultural studies. It is realized through technology such as human-computer interaction, wearable devices, and communication infrastructures, and evidenced in medicine and genetic therapies. It is experienced in space adaptation and personalized use of avatars in virtual environments" (Vita-More, 2020).

For me, a "*transhuman*" is an individual (free from pathology or physical injury related to their modification) who can be biotechnologically modified (whether genetically, through nanotechnology, or by other suitable means), surgically, or pharmacologically (but not limited to these types of modifications), at their own will and with the purpose of exceeding (or improving) a physical condition (whether medical, physiological, anatomical, or otherwise) compared to an individual (or group of individuals) whose functionality is standard according to the biological nature of their species. The modification of the transhuman must not be subjective or personalized but should be useful to more than two individuals from a diverse social environment in a similar condition to the modified human prior to their change.

Considering what it means to be transhuman, we must also consider what it means to be human. Being human is tied to personhood. Boethius defines a human being as "*an individual substance of a rational nature*" (Teichman, 1985). This highlights our capacity for reason and individuality. In ordinary discourse, "person" often equates to "human being," a natural entity with moral and legal significance. Being human involves existing as a biological and rational creature with intrinsic value and rights (Teichman, 1985).

As artificial intelligence advances, life becomes increasingly digitized, and mental processes are reduced to neuronal activity. Humans are progressively viewed as products of data and algorithms. We begin to see ourselves "in the image of our machines," while simultaneously attributing new capacities to both machines and our own brains. This trend fuels transhumanist ideas that seek to elevate human evolution to a higher level. In contrast, Harzheim (2025) advocates for a humanism rooted in embodiment: our physicality, vitality, and lived freedom form the basis of self-determined existence, with technology serving as a tool rather than a master. The work challenges reductionist naturalism across science and society and proposes an embodied and enactive understanding of the human person. Humans are not merely minds or brains; we are primarily embodied beings interacting with others. Harzheim applies this perspective to topics including AI, transhumanism, enhancement, virtual reality, neuroscience, psychiatry, and societal trends that increasingly detach everyday life from embodied experience. Overall, the book integrates contemporary concepts of embodiment and enactivism to examine scientific, technological, and cultural developments shaping twenty-first-century human life.

Contemporary cases and evaluation of current technologies

The cases of Neil Harbisson and Moon Ribas illustrate early forms of human-technology integration, yet their interventions primarily explore sensory expansion rather than fundamentally enhancing human capacities. Harbisson, recognized as the first cyborg, was born with achromatopsia, a condition preventing color perception, limiting his vision to black, white, and shades of gray. To overcome this, he had an antenna implanted in his brain that enables him to "hear" color frequencies through bone conduction, expanding his sensory perception. Ribas developed seismic sensors implanted in her feet to feel earthquakes anywhere in the world. Together, they founded the Cyborg Foundation, promoting technology to expand human capabilities (Łukaszewicz Alcaraz, 2019). Although both are active in the cyborg movement, their modifications aim to explore new ways of coexisting with the environment rather than transcending humanity, distinguishing them from transhumanist objectives.

Similarly, non-invasive Brain-Computer Interfaces (BCIs) and EEG (electroencephalography) devices allow humans to interface directly with artificial intelligence, translating neural signals into actionable commands that control robotic limbs, wheelchairs, or digital systems (Soufineyestani, Dowling, & Khan, 2020). While these technologies provide notable benefits—particularly in neurorehabilitation, entertainment, and robotic teleoperation—they function as assistive tools rather than as true enhancements of cognitive or biological capacities. BCIs interact with the existing human condition without fundamentally transforming it, highlighting the distinction between assistive technology and the radical human enhancement envisioned by transhumanism.

In 2016, Elon Musk's NEURALINK exemplified advancements in brain-computer interface (BCI) technology through its invasive approach. NEURALINK utilizes ultra-thin electrodes called "threads" implanted via robotic surgery to enable direct communication between the brain and external devices. The system offers groundbreaking applications in restoring motor function, treating neurological conditions, and enhancing cognitive abilities (Shaima et al., 2024). Neuralink's proposed innovations in brain-machine interfaces (BMIs) represent a promising frontier in neural engineering; however, these advancements should be considered in the context of decades of prior research and existing technologies (Kumar, Waisberg, Ong, & Lee, 2025).

In 2018, Arnav Kapur, a researcher at MIT's Media Lab, introduced ALTEREGO, a wearable silent speech interface that non-invasively captures neuromuscular signals from the face and neck to translate internal speech into commands or text without requiring vocalization or visible movements (Kapur, Kapur, & Maes, 2018). ALTEREGO enables silent, seamless communication between users and computing devices, allowing for discreet interactions. The device has been demonstrated in applications such as web browsing, where users can silently navigate the internet and receive responses through bone-conduction headphones integrated into the device. Beyond web browsing, ALTEREGO shows promise in medical applications, particularly for individuals with conditions like multiple sclerosis (MS) or dysphonia, enabling real-time communication without the need to learn alternative methods. By enhancing the functionality of the speech production system, ALTEREGO provides a natural and intuitive form of interaction.

According to the provided definition of transhuman technologies (from the biological sciences definition of "transhuman"), neither ALTEREGO nor NEURALINK fully qualifies as such. ALTEREGO, a non-invasive wearable device, enhances communication by translating neuromuscular signals but does not

modify or surpass the natural human biological system. NEURALINK, which involves an invasive brain implant, focuses primarily on therapeutic applications, such as restoring lost motor or cognitive functions, rather than exceeding standard human capabilities. While both technologies innovate within their respective domains, they do not meet the criteria for biotechnological modification aimed at transcending natural human limitations.

Building on these contemporary developments in human-technology integration, Augmented Reality (AR) cognitive enhancement exemplifies a modern form of technological supplementation consistent with transhumanist thinking. As Gordon (2024) argues, AR-assisted cognition, implemented through superimposed information overlays and imaginative simulation, enhances perceptual and reasoning capabilities without altering the underlying biological or genetic substrate. From a transhumanist perspective, humans are naturally predisposed to use tools and environmental resources to achieve goals—a view exemplified by Clark's (2003) concept of "*natural born cyborgs*." Even without fully committing to a strong transhumanist stance, it remains clear that employing AR to support cognitive tasks is compatible with essential human characteristics, enabling performance improvements while preserving authenticity. Importantly, AR-assisted cognitive enhancement resists traditional bioconservative objections based on achievement and authenticity, suggesting that such technologies may represent a "sweet spot" for cognitive enhancement: a form that expands human capacities in a manner defensible to those cautious about more radical interventions (Gordon, 2024).

In the context of anti-aging, current developments prioritize logical reasoning and scientific evidence over approaches that remain experimental or lack full validation in humans. Beyond medical treatments, lifestyle interventions significantly influence longevity and regenerative capacity. Intermittent fasting, caloric restriction, and plant-based diets rich in polyphenols enhance cellular repair mechanisms and reduce visible signs of aging. Regular physical activity stimulates myokine release—signaling proteins that promote collagen synthesis and skin elasticity—while deep sleep supports growth hormone secretion and reduces cortisol-induced inflammation. Advances in skin longevity diagnostics now integrate online and in-person assessments, combining clinical evaluations with real-time, data-driven insights to optimize both skincare and medical interventions (Haykal et al., 2025).

In clinics and retail environments, advanced diagnostic tools enable detailed skin analysis, detecting subclinical conditions before they become apparent. These assessments can be complemented by biomarker profiling from blood, urine, or saliva samples, offering data on inflammation, metabolic health, and oxidative stress. Furthermore, next-generation health monitoring extends beyond clinical settings: wearable devices, AI-driven scoring systems, and real-time sensors continuously track skin hydration, UV exposure, and overall physiological status. Integrating these non-invasive strategies with regenerative therapies delivers a holistic approach to aesthetic longevity. The interplay between lifestyle choices and medical innovation is poised to shape the future of aging, promoting sustainable and effective solutions for preserving youthful, resilient skin (Haykal et al., 2025).

Transhumanism in a near future: a transhuman device

Focusing on enhancement or transhumanism through the implantation of a medical device, and based on all the information gathered in this brief commentary, a transhuman device, theoretically, would be an implantable medical technology designed to enhance human capabilities in a way that transcends

natural limits while aligning with evolutionary and ethical principles. Such a device would enable individuals—free from any pathology or injury related to their modification—to undergo biotechnological enhancements via (or with the joint support of) genetic engineering, nanotechnology, surgery, or pharmacological methods. Its purpose would be to exceed or improve physical, cognitive, or physiological conditions beyond the standard functionality of their species. To ensure universal relevance, the enhancement must benefit a diverse group of individuals in similar circumstances rather than being overly subjective or personalized. Crucially, these advancements must avoid causing evolutionary regression or counterproductive outcomes and ensure that enhanced individuals retain core aspects of humanity—such as rationality, individuality, and intrinsic value—thus contributing positively to human progress without compromising human identity.

From theory to praxis, the decision on what to improve as humanity must be the first step in developing a transhumanist device, as without a clear definition of these objectives, any subsequent progress would lack focus and relevance. This design must align with achievable, ethical, and economically accessible improvements, ensuring it benefits broad and diverse groups without creating exclusion or compromising human identity. It is crucial that the device's impact be positive, adhering to fundamental principles such as rationality, individuality, and the intrinsic value of humanity, thereby contributing to collective progress without causing inequalities or evolutionary setbacks.

Regarding the hypothetical commercialization of a transhumanist device in Ecuador, all medical devices must comply with the requirements established by ARCSA (National Agency for Regulation, Control, and Health Surveillance of Ecuador). According to Resolution ARCSA-DE-026-2016-YMIH, medical devices must obtain a sanitary registration prior to manufacturing, importation, distribution, or commercialization. This registration requires classifying the device based on its risk level (I to IV) and type (active, invasive, non-invasive, diagnostic, etc.), submitting technical and legal documentation including international certifications such as ISO 13485 (quality management) and ISO 10993 (biocompatibility), and having technical supervision by a pharmaceutical chemist registered with SENESCYT for manufacturing or importing establishments. Labels and inserts must comply with detailed requirements in Spanish and optionally in English to ensure safety and traceability. The registration is valid for a minimum of five years and includes periodic inspections and post-market controls to guarantee regulatory compliance (Agencia Nacional de Regulación, Control y Vigilancia Sanitaria [ARCSA], 2017).

The estimated timeframe to translate a transhumanist device from theory to practical implementation in Ecuador extends far beyond initial local preclinical and clinical studies. Even assuming that a laboratory has a fully developed device by 2026, obtaining approval from a high-surveillance regulatory agency such as the FDA—including completion of all clinical trials, safety evaluations, and efficacy assessments—could take an additional six to eight years. Furthermore, patent considerations must be accounted for: a typical 20-year patent from its original filing date may not expire until around 2046, delaying opportunities for licensing or importation by third parties. Once the device is eligible for importation, registration with ARCSA (the Public Healthcare Control Agency) would require an additional two to three years for technical review, certification, labeling, and compliance verification. Consequently, under realistic conditions, the total timeframe from a theoretically developed transhumanist device to commercial availability in Ecuador could range approximately from 2050 to 2054. Importantly, this projection assumes that pharmaceutical industries or medical device manufacturers have already identified which biotechnological innovations in the human species are both ethically suitable and

financially viable for commercialization, a decision that represents the fundamental challenge in translating transhumanist theory into practice.

CONCLUSIONS

Transhumanism, understood as the pursuit to transcend human limitations through the integration of biotechnological, neuroscientific, and cybernetic advancements, represents one of the most disruptive and complex proposals in contemporary thought. Rooted in Dante Alighieri's trasumanar and formally articulated in Julian Huxley's modern framework, it originally envisioned a collective and harmonious evolution of humanity. However, current developments reveal a fragmented and uneven progression, shaped by socioeconomic disparities, unequal technological access, and individual motivations, which hinder the realization of a unified transcendence.

The concept of customized evolution illustrates this fragmentation, as advancements emerge from specific contexts and individual capabilities rather than a shared, uniform process, thereby risking the deepening of structural inequalities. The shift from natural selection to intentional modification constitutes a paradigm change in humanity's evolutionary trajectory, yet it demands robust ethical governance to safeguard essential principles such as rationality, individuality, and intrinsic worth. In the absence of such governance, transhumanism risks devolving into a form of involution or counter-evolution, in which technology exacerbates existing divisions rather than fostering collective advancement.

As of 2025, notable examples include Neil Harbisson's antenna for color perception, Moon Ribas's seismic sensors, Arnav Kapur's ALTEREGO device, and the neurological applications of NEURALINK. While these innovations demonstrate significant achievements in sensory enhancement and functional restoration, they do not fundamentally alter human biology and thus fall short of producing the transformative "transhumans" envisioned by transhumanist theory.

The question of whether transhumanism is inherently dehumanizing admits no simple answer. It does not intrinsically strip humanity of its defining attributes; rather, its impact depends on the manner and purpose of its implementation. Guided by ethical principles and inclusive governance, transhumanism could serve as a transformative force, expanding human potential while upholding universal values. Conversely, when pursued in isolation and inequality, it risks becoming a regressive and exclusionary phenomenon. The decisive challenge lies in ensuring that these innovations benefit humanity as a whole, preserving the shared identity, dignity, and values that define the human condition.

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