Subhasita: Journal of Buddhist and Religious Studies
Vol. 4, No. 1, 2026: 1-32
https://www.smaratungga.ac.id/journal/index.php/jsb

Quantum Buddhism as an Ethical Framework for Digital Modernity: Artificial Intelligence, Reflective Consciousness, and Sustainable Human Development

ABSTRACT

This study aims to analyze the relevance of Buddhist thought in responding to the development of digital technology, artificial intelligence, and the crisis of human development. This study is important because technological advancement not only increases efficiency and computational capacity but also produces social inequality, digital surveillance, cognitive dependence, and ecological pressure. This study employs a qualitative method with a philosophical-critical approach and conceptual analysis. The data were collected through a literature review and analyzed through a critical interpretation of the Buddhist concepts of interdependence, consciousness, change, and causality. The findings show that the main challenge of digital modernity does not lie solely in the increasing sophistication of artificial intelligence but also in the declining human capacity to guide technology through reflective awareness and moral responsibility. The interdependent relationship among humans, technology, and nature causes every technological development to produce social, cognitive, and ecological consequences that subsequently reshape human life. Therefore, the digital crisis constitutes a crisis of consciousness in which computational capabilities develop faster than the human capacity to evaluate their purposes, limits, and impacts. This study contributes to the development of technology ethics and sustainability-oriented AI governance. Its originality lies in the formulation of Quantum Buddhism as an ethical-philosophical framework for reflective, ecological, and intergenerational human development.

Keywords: Quantum Buddhism; artificial intelligence ethics; cognitive crisis; reflective awareness; intergenerational ecological responsibility.

ARTICLE INFO

Authors:
Anis Bajrektarevic[1]

Affiliations:
[1] International Law and Global Political Studies, Austria.

Article History:
Received: 09-01- 2026
Revised: 11-02- 2026
Accepted: 10-04-2026
Published: 30-06-2026

Corresponding author:
anis@bajrektarevic.eu

How to Cite (APA Style):
Bajrektarevic, A. (2026). Quantum Buddhism as an Ethical Framework for Digital Modernity: Artificial Intelligence, Reflective Consciousness, and Sustainable Human Development. *Subhasita: Journal of Buddhist and Religious Studies, 4*(1), 1-32.
DOI: 10.53417/jsb.147

INTRODUCTION

The development of digital technology and artificial intelligence has transformed the relationships among humans, knowledge, the environment, and spiritual life (Jiang, Li, Luo, Yin, & Kaynak, 2022). Technology no longer functions only as a tool that helps people complete tasks; it also shapes how they think, communicate, make decisions, and understand themselves (Hirsch-Kreinsen, 2024). Artificial intelligence, quantum computing, bioinformatics, robotics, and algorithmic

technologies have increasingly expanded human capacities to process information and engineer life. However, this expansion has not always produced greater wisdom, moral responsibility, or ecological awareness. Instead, the use of AI-based technologies has also generated problems related to digital manipulation, surveillance, algorithmic dependency, declining autonomy, and shifts in human values (Buijsman, Carter, & Bermúdez, 2025; Prunkl, 2024). This condition shows that technological problems concern not only innovation and efficiency but also the moral orientation that determines the purposes of technological creation and use.

These changes become increasingly significant as artificial intelligence begins to assume activities that people previously understood as distinctively human capacities (Ågerfalk, 2020). Algorithmic systems can rapidly generate texts, images, predictions, recommendations, and decision-support outputs. These developments have created optimism about increased productivity and expanded access to knowledge, but they have also raised concerns about human autonomy, responsibility, and meaningfulness. When people transfer attention, memory, judgment, and decision-making to intelligent systems, technology does not merely replace physical labor; it may also take over human cognitive practices. Research shows that dependency on generative AI is associated with greater cognitive failures, lower levels of critical thinking, weaker self-concept clarity, and poorer performance across several tasks (Goh, Hartanto, & Majeed, 2025). Uncontrolled AI use may also encourage *cognitive offloading*, namely the transfer of cognitive effort to technology, which may reduce cognitive engagement and long-term knowledge retention (Barcaui, 2025). Hershock (2026) likewise argues that intelligent technologies create risks when people transfer their capacities to attend, judge, and act to artificial intelligence. Therefore, the primary challenge of artificial intelligence lies not only in the possibility that technology may become more intelligent than humans, but also in the possibility that humans may lose competence, autonomy, and reflective capacity through excessive technological dependence.

The expansion of artificial intelligence can also be situated within the longer civilizational history of anthropotechniques, namely, the techniques through which human beings preserve life, extend their capacities, shape social orders, and transform both themselves and their environments. Kulić (2003) employs anthropotechnics as a civilizational concept connected to the relationship among economic organization, human development, life, and sustainability. Bajrektarevic (2013) subsequently extends this perspective by connecting technological development with environmental ethics, geopolitics, sustainability, and the relational foundations of Quantum Buddhism. From this standpoint, artificial intelligence represents not an entirely unprecedented phenomenon but the latest and potentially most pervasive form of anthropotechnique because it extends beyond physical labor into attention, memory, interpretation, prediction, and judgment. Its legitimacy must therefore be evaluated not merely according to technical sophistication but according to whether it strengthens human autonomy, dignity, wisdom, ecological responsibility, and the possibility of meaningful human development.

Studies on the relationship between Buddhism and digital technology have developed along several major lines. The first line examines the digitalization of Buddhist teachings, communities, and authority. Prebish (2013) uses the concept of

cybersangha to explain the formation of Buddhist communities through the internet, whereas Tarocco (2017) shows that digital media create new spaces for religious self-cultivation, communication between religious leaders and practitioners, and the formation of Buddhist social imaginaries. In virtual environments, Connelly (2012) demonstrates that Buddhist rituals, sacred spaces, and artifacts can be reconstructed through platforms such as Second Life. These studies show that digital spaces function not only as channels for distributing religious information, but also as sites where identity, authority, community, and religious experience are reconstructed.

The second line of research treats technology as a means of reproducing and extending spiritual practices. Han (2022) shows that a Buddhist meditation group on WeChat developed practices of digital merit-making and maintained spiritual connectedness during the COVID-19 crisis. Xue (2025) explains that Buddhist rituals undergo structural transformation, symbolic reconfiguration, and changes in reception when they move to short-video applications and livestreaming services. Kaewkitipong et al. (2023) subsequently develop the concept of *augmented spirituality* to explain how technology extends spiritual experience from physical spaces into digitally mediated environments. From this perspective, technology does not necessarily eliminate spirituality, but it can transform the spaces, mediators, artifacts, and forms of interaction that sustain spiritual experience.

The third line of research examines the encounter between Buddhism and artificial intelligence as a process of negotiation between religious tradition and technological innovation. Zheng (2024) shows that artificial intelligence can support the dissemination of Buddhist teachings, but its use requires an alignment between technological innovation and the ethics of Humanistic Buddhism. The study also identifies points of convergence between Humanistic Buddhism and posthuman ethics, particularly in efforts to direct technology toward the well-being of sentient beings. Hershock (2026) extends this discussion by warning that intelligent technologies may weaken practices of attention, judgment, and wisdom when people transfer these capacities to algorithmic systems. Recent studies have therefore begun to shift attention from how Buddhism uses technology to how Buddhism evaluates the direction of technological development.

These studies provide an important foundation for understanding the transformation of Buddhism in digital spaces. However, most research still focuses on ritual migration, the formation of online communities, the digitalization of religious authority, the mediation of spiritual experience, and the use of artificial intelligence to disseminate teachings. These approaches tend to position technology as a medium that transforms Buddhist practices. As a result, scholars have not sufficiently examined technology as an expression of human consciousness and as a civilizational force that can intensify social, ecological, and cognitive crises. Yet technological problems extend beyond changes in ritual forms or religious communication. They also involve the exploitation of nature, the commercialization of attention, data colonialism, unequal access to knowledge, and the weakening of intergenerational responsibility. This gap requires an approach that not only examines the digitalization of Buddhism but also uses Buddhism as a critical framework for evaluating digital modernity.

The need for such a framework also resonates with humanistic critiques of modern technological society. Fromm (1955) argues that the health of a society cannot be measured solely by economic productivity, institutional stability, or material accumulation, but must be evaluated through its capacity to support freedom, relatedness, creativity, and the realization of the human person. Applied to digital modernity, this perspective suggests that technological development loses its civilizational legitimacy when it promotes dependence, alienation, instrumental control, or the reduction of persons to objects of economic and algorithmic optimization. The fundamental question is therefore not only what artificial intelligence can accomplish, but also what kinds of human beings and social relationships emerge through its development and use. Human development, rather than technological expansion itself, must remain the purpose and criterion of innovation.

Accordingly, this article analyzes how Buddhist thought can critique the development of artificial intelligence, cognitive crisis, and the orientation of human development in digital modernity. The analysis focuses on the relationships among interdependence, reflective consciousness, ecological responsibility, and technology use. In doing so, the article expands the study of digital Buddhism from discussions of ritual mediation and online communities toward an ethical critique of the structures of consciousness that underlie technological development. The article also proposes Quantum Buddhism as a framework that positions technology not as the master of life, but as a means that remains subordinate to wisdom, sustainability, and meaningful human development.

This article uses the concept of Quantum Buddhism to address this gap. The term does not refer to a direct equation between Buddhist teachings and quantum physics. Instead, it functions as an ethical-philosophical framework for understanding reality as a dynamic relationship among consciousness, action, technology, and the environment (Bajrektarevic, 2024). The adjective quantum is thus employed as a philosophical metaphor for a paradigmatic movement beyond mechanistic reductionism and toward a relational understanding of existence, rather than as scientific proof of Buddhist doctrine.

This metaphorical use of the term may be situated within a limited philosophical dialogue among distinct intellectual traditions that have challenged the reduction of reality to externally observable matter alone. Rumi's spiritual poetry, as interpreted and translated by Nasr (2007), presents visible forms as dimensions of a deeper and relational reality rather than as the totality of existence. Reflections attributed to Planck concerning the nature of matter similarly contributed to debates about the limits of a purely mechanistic account of reality and the place of consciousness in human knowledge (Planck, 1944). These traditions emerged from substantially different historical, religious, and epistemological contexts and should not be treated as doctrinally or scientifically equivalent. Nevertheless, their limited philosophical resonance helps clarify the use of quantum in this article as a metaphor for moving beyond the rigid separation of matter, consciousness, observer, action, and environment.

This framework draws on the principle of *paticcasamuppāda*, or dependent origination, which explains that phenomena do not arise independently but emerge through conditions and causal relationships with other phenomena (Shulman,

2008). The framework also engages Yogācāra thought, which emphasizes consciousness, perception, and the construction of experience as central elements in how humans understand reality (Lusthaus, 2002). From this perspective, humans do not stand as subjects who remain entirely separate from technology and nature. Technology emerges from human orientations, needs, and structures of consciousness, but it also reshapes human perception, action, social relations, and ecological conditions. This reciprocal relationship corresponds with the view that observers do not stand entirely outside the reality they observe but instead form part of the framework through which they understand that reality (Hawking & Mlodinow, 2010). Therefore, technological crisis cannot be separated from a crisis of thought that places humans at the center of life, treats nature as an object of domination, and defines progress as the unlimited expansion of material capacity. In this context, Quantum Buddhism offers a critique of technology that evaluates not only the sophistication of technological devices but also the quality of consciousness, moral purposes, and ecological consequences that underlie their creation and use.

By bringing Buddhist relational ethics into dialogue with the civilizational concept of anthropotechnique and the humanistic orientation of Fromm, the framework further distinguishes technical capability from genuinely human progress. Science may expand knowledge, and technology may expand capability, but neither automatically produces wisdom or human flourishing. Artificial intelligence acquires ethical and developmental value only when it remains a means through which human beings cultivate freedom, reflective awareness, solidarity, ecological balance, and responsibility toward future generations. In this sense, the history of anthropotechniques can be understood as a history of techniques created initially to sustain human survival and subsequently to expand the possibilities of human development. Their ultimate normative purpose, however, is not the perfection of machines but the fuller realization of human capacities within a sustainable network of life (Bajrektarevic, 2013; Fromm, 1955; Kulić, 2003).

Based on this framework, this article argues that the central problem of digital modernity lies not merely in the sophistication of artificial intelligence, but in the cognitive and moral crisis that directs its creation and use. Technology becomes exploitative when humans build innovation around the desire to dominate, accumulate, and replace rather than around an awareness of interdependence. In this context, Quantum Buddhism offers three analytical dimensions. First, the principle of interdependence rejects the separation of humans, technology, society, and nature. Second, reflective consciousness places attention and wisdom at the foundation of efforts to control manipulative uses of technology. Third, intergenerational responsibility directs human development toward the preservation of life rather than merely toward the expansion of consumption, computation, and technological power. These dimensions also provide ethical criteria for evaluating artificial intelligence as an anthropotechnique: technology remains legitimate insofar as it advances human dignity, autonomy, wisdom, ecological responsibility, and intergenerational well-being, but loses its civilizational purpose when it produces dependence, alienation, domination, or the algorithmic reduction of the human person. These three dimensions shift the

discussion from what technology can do to what forms of life technology creates and what possibilities of human realization it either enables or restricts.

METHOD

The unit of analysis in this study consists of the conceptual relationships among Buddhism, digital technology, artificial intelligence, consciousness, ecological crisis, and human development. The analysis focuses on five main concepts: interdependence, reflective consciousness, impermanence, ecological responsibility, and human dependence on technology. The analysis also considers anthropotechnique and human self-realization as complementary concepts for evaluating the civilizational purpose and ethical legitimacy of artificial intelligence. This study does not empirically examine individuals, Buddhist communities, or specific religious practices. Instead, it analyzes the structure of ideas that can support the development of Quantum Buddhism as an ethical-philosophical framework for digital modernity.

This study employs a qualitative design that combines a philosophical-critical approach with conceptual analysis. The qualitative design enables the study to examine meanings, assumptions, relationships among concepts, and ethical consequences within the literature rather than measure statistical relationships among variables (Creswell & Poth, 2018). The philosophical-critical approach evaluates the anthropocentric, materialistic, and technocentric assumptions that underlie technological development. It also examines whether technological progress remains oriented toward human dignity, autonomy, ecological sustainability, and the realization of human capacities. Conceptual analysis clarifies the definitions, boundaries, relationships, and internal consistency of Quantum Buddhism so that the concept does not imply a direct equation between Buddhist teachings and quantum physics. This analysis also distinguishes the metaphorical-philosophical use of the term quantum from scientific claims about quantum theory.

The data sources include journal articles, academic books, scientific reports, and conceptual works on digital Buddhism, artificial intelligence, the philosophy of technology, Yogācāra, *paticcasamuppāda*, consciousness, environmental ethics, and human development. The sources also include works on humanistic philosophy, anthropotechnique, human self-realization, and civilizational critiques of technological development. The study purposively selected the literature according to its relevance to three research areas: the relationship among humans, technology, and nature; the effects of technology on human cognitive and moral capacities; and the contribution of Buddhist ethics to technological and ecological problems. A fourth area concerns the extent to which technology functions as an anthropotechnique that supports or restricts human development. Earlier works on technology, Buddhism, and civilizational crisis form part of a broader academic dialogue rather than serving as independent primary data sources. Likewise, philosophical reflections drawn from different intellectual traditions are used as supporting interlocutors rather than treated as equivalent theoretical systems.

The study collected data through a focused literature review. The search used keywords such as “digital Buddhism,” “Buddhism and artificial intelligence,” “dependent origination,” “Yogācāra consciousness,” “technology ethics,” “ecological ethics,” and “human development.” The study selected each source according to

thematic relevance, argumentative clarity, academic significance, and its contribution to the construction of Quantum Buddhism. The researcher then recorded concepts, propositions, debates, and relationships among ideas in an analytical matrix. Document analysis enabled the researcher to examine texts systematically as sources of social and intellectual knowledge (Bowen, 2009).

The study analyzed the data through thematic-conceptual analysis in four stages. First, the researcher selected sections of the literature that directly addressed the research objectives. Second, the researcher coded the data according to the themes of interdependence, reflective consciousness, cognitive crisis, ecological responsibility, and human development. Third, the researcher compared different theoretical positions to identify similarities, differences, tensions, and possibilities for conceptual synthesis. Fourth, the researcher constructed Quantum Buddhism through three main dimensions: the relationality of humans, technology, and nature; reflective consciousness as the basis for governing technology; and intergenerational ecological responsibility. These dimensions were subsequently used to evaluate artificial intelligence as an anthropotechnique whose value depends on its contribution to sustainable human development and the fuller realization of human capacities. This process followed the principles of thematic analysis, which emphasize the identification, organization, and interpretation of patterns of meaning in qualitative data (Braun & Clarke, 2006).

RESULT

1. The Interdependence of Humans, Technology, and Nature

This study explains that technology functions not merely as a means of production but also as a force that shapes the trajectory of civilization. During the agrarian era, technology organized the production and distribution of resources, making economic distribution the central concern of society. The industrial era subsequently expanded mechanization, mobility, and the concentration of production while simultaneously generating demands for political participation as labor structures and power relations changed. The development of modern technology further accelerated the circulation of knowledge, patents, and innovation, particularly in Europe, thereby supporting the formation of empires, liberal economic institutions, and the utilization of scientific knowledge for military interests and political expansion (Bajrektarevic, 2024). In the era of artificial intelligence, these transformations have progressed even further because technology has entered cognitive domains that were previously exclusive to humans, including analysis, prediction, communication, and decision-making. This transition across technological phases demonstrates that each technological cycle not only enhances technical capabilities but also restructures production systems, knowledge distribution, social relations, and power organization. Therefore, technological development always carries civilizational consequences because technology determines not only how people work but also who controls knowledge, gains economic benefits, and directs the course of social change.

Viewed through the concept of anthropotechnique, this historical transition reflects the development of techniques through which human beings preserve life, extend their capacities, organize social relations, and transform their environments.

Earlier anthropotechniques primarily expanded physical production, mobility, and material control, whereas artificial intelligence extends technological intervention into cognition, attention, interpretation, and judgment. AI therefore represents a distinctive civilizational stage because the techniques created by humans increasingly participate in shaping the cognitive capacities through which humans understand and govern themselves (Bajrektarevic, 2013; Kulić, 2003).

Technological advancement does not always coincide with the development of a more just, harmonious, and sustainable society. Technological progress has undoubtedly expanded human capacity to generate knowledge, improve productivity, and accelerate communication. At the same time, however, it has also produced new forms of social inequality, concentrations of power, the exploitation of natural resources, and the control of information by particular actors (Bajrektarevic, 2013, 2024). These conditions indicate that digital modernity does not automatically create more equitable social relationships; instead, it also generates new mechanisms of domination through data accumulation, digital colonialism, and technology-based systems of control (Bajrektarevic, 2024). Consequently, the success of technology should not be measured solely by the degree of innovation or efficiency it produces but also by its capacity to strengthen human dignity, social justice, and the sustainability of life. Thus, technological progress is not synonymous with human development because the value of any technology ultimately depends on the moral orientation that underlies its creation and use. From the perspective of anthropotechnique, technological legitimacy does not arise from novelty, computational capacity, or economic productivity alone. It depends on whether a technology strengthens human dignity, autonomy, social participation, and the sustainability of the conditions that make human life possible. A technological system that expands capability while simultaneously producing dependence, inequality, ecological destruction, or the concentration of power may therefore constitute technical advancement without representing genuine civilizational development.

Bajrektarevic explicitly emphasizes this perspective by stating:

> "When we talk about technology, it's not about the art of science, it's about the state of mind! It is not a linear progression in mastering the disciplines of natural sciences, but a cognitive puzzle in achieving critical insight." (Bajrektarevic, 2024).

This statement indicates that the primary issue of technology does not lie in the sophistication of technological devices or the acceleration of scientific innovation but rather in the orientation of consciousness that guides its creation and application. From this perspective, technology represents a manifestation of how humans perceive themselves, society, and nature. Therefore, the technological crisis is fundamentally a crisis of human thinking that neglects ethical, ecological, and humanitarian dimensions in the process of technological development.

Furthermore, technology is never entirely neutral because its creation, design, and application are always influenced by human needs, perceptions, economic interests, and structures of power (Bajrektarevic, 2013, 2024). The development of modern technology has been directed not only toward satisfying human needs but also toward expanding domination, accumulation, and control

over both people and natural resources (Bajrektarevic, 2024). In the digital context, this orientation becomes evident through the collection of personal data, the concentration of knowledge within limited groups, and the creation of user dependence on technological platforms. These conditions demonstrate that technology embodies particular values and interests from the very beginning of its design process, making its outcomes inseparable from the objectives of those who develop and control it. Therefore, the technological crisis originates not primarily from technical devices but from a human mindset that regards efficiency, profit, and domination as the principal indicators of progress (Bajrektarevic, 2013, 2024). Technology becomes problematic when technical sophistication advances more rapidly than humanity's moral capacity to evaluate its purposes, limits, and consequences.

The relationship between humans and technology is reciprocal because technologies created by humans subsequently reshape human behavior, perceptions, and the structure of social life. Digital systems no longer merely provide communication tools; they also influence how people build social relationships, access information, make decisions, and understand their own freedom (Bajrektarevic, 2024). Within the pattern of life referred to as the *McFB way of life*, users voluntarily surrender their personal data, social activities, and preferences to technology companies, even though similar practices would likely be considered repressive if carried out directly by the state. This condition demonstrates that digital surveillance operates not only through direct control but also through user consent, convenience, and voluntary participation. Dependence on digital platforms further centralizes information control in the hands of particular actors while simultaneously narrowing individuals' range of choices through mechanisms embedded within technological systems. Consequently, humans are not merely the creators of technology but also subjects who are continuously shaped by digital architecture, platform logic, and surveillance mechanisms that increasingly permeate everyday life.

This reciprocity is central to the concept of anthropotechnique. Human beings create technologies to extend their capacities, but those technologies subsequently reorganize the habits, perceptions, dependencies, and possibilities through which human capacities develop. Artificial intelligence therefore functions not only as an external instrument but also as a formative environment that can either cultivate or weaken attention, autonomy, and reflective judgment.

Digital technology is often perceived as a virtual innovation that does not depend on the physical environment. However, every technological development fundamentally relies on energy consumption, mineral extraction, infrastructure construction, and production processes that place pressure on ecosystems. Therefore, humans, technology, and nature do not exist separately but remain interdependent within the same material cycle. The concept of anthropotechnique therefore cannot be restricted to the enhancement of human capacities. Every anthropotechnique is embedded in material infrastructures and ecological relations that determine who bears the social and environmental costs of technological expansion. AI may appear immaterial at the level of digital interaction, but its operation depends on extractive industries, energy-intensive computation, water use, global supply chains, and the disposal of electronic equipment. Global data show

that natural resource extraction has more than tripled since 1970, while the extraction and processing of materials, fuels, and food account for approximately half of global greenhouse gas emissions and more than 90% of biodiversity loss and water resource stress (UNEP, 2019). This trend will likely continue because global material extraction may increase by approximately 60% between 2020 and 2060 if current production and consumption patterns remain unchanged (UNEP, 2024). At the same time, the expansion of digital technology has also increased energy demand on a large scale. Data centers consumed approximately 415 terawatt-hours of electricity, or around 1.5% of global electricity consumption, in 2024, and this demand may rise to approximately 945 terawatt-hours by 2030, primarily because of the development of artificial intelligence (International Energy Agency, 2025) (see Table 1). In addition, the world generated approximately 62 million metric tons of electronic waste in 2022, but official records show that only 22.3% of this waste was collected and recycled in an environmentally sound manner (International Telecommunication Union [ITU] & United Nations Institute for Training and Research [UNITAR], (2024)). These facts demonstrate that digital transformation does not occur without ecological consequences. Instead, it depends on natural resource consumption, energy use, and waste production on a global scale.

Table 1. The Ecological Footprint of Digital Technology Development

Ecological Dimension of Digital Technology	Finding	Global Indicator
Resource extraction	Digital technology development continues to depend on the exploitation of natural resources and therefore remains embedded in the global material system.	Natural resource extraction has increased more than threefold since 1970 and may rise by approximately 60% by 2060 if current consumption patterns remain unchanged.
Energy consumption	Digital infrastructure and artificial intelligence require increasing amounts of energy, thereby intensifying environmental pressure.	Data centers consumed approximately 415 TWh of electricity in 2024, equivalent to about 1.5% of global electricity consumption, and this figure may increase to approximately 945 TWh by 2030.
Electronic waste	Digital transformation generates electronic waste much faster than existing waste management and recycling systems can process it.	The world generated approximately 62 million metric tons of electronic waste in 2022, but official records show that only 22.3% was recycled.

Source: UNEP, 2019; UNEP & IRP, 2024; IEA, 2025; ITU & UNITAR, 2024.

Table 1 demonstrates that digital transformation does not eliminate humanity's dependence on nature. Instead, it intensifies ecological pressure through increased resource extraction, energy consumption, and electronic waste production. These findings confirm that researchers must understand technological development as part of an interdependent environmental system rather than as a process that operates separately from the Earth's ecological limits.

Therefore, these ecological pressures do not merely represent technical consequences of digital industrial development. They also reflect the structural consequences of the ways in which humans develop technology. Modern development models tend to separate human development from ecological sustainability and primarily measure progress through increases in production, consumption, mobility, and energy use. As a result, humans often direct technology toward expanding extraction capacity, resource appropriation, and environmental exploitation rather than establishing relationships that remain compatible with the planet's ecological limits (Bajrektarevic, 2024). Under these conditions, each cycle of technological development intensifies human antagonism toward life and the Earth. Consequently, technological progress does not always reflect humanity's ability to adapt more effectively to its environment (Bajrektarevic, 2013, 2024). The ecological crisis ultimately manifests a cognitive and moral crisis because humans position themselves at the center of life while treating nature merely as an economic object and an instrument for satisfying human needs. Therefore, technology can support human development only when humans direct it toward preserving and creating life rather than using it as an instrument of domination that sacrifices ecosystem sustainability.

Within this framework, an anthropotechnique fails its civilizational purpose when the expansion of human capability depends on the degradation of the ecological systems that sustain human and nonhuman life. Conversely, technology contributes to human development only when the extension of present capacities does not diminish the conditions of life available to other communities, species, and future generations.

2. The Cognitive Crisis and the Loss of Reflective Awareness in Digital Modernity

The primary crisis facing digital society does not arise from the increasing sophistication of technology but from the declining human capacity to understand, evaluate, and control the technologies that humans create. A close reading of the text shows that artificial intelligence, quantum computing, bioinformatics, and digital technology have developed much faster than the human reflective capacity to consider their purposes, limits, and ethical consequences. This condition represents a cognitive deficit crisis, namely, a situation in which advances in science and technology outpace the development of moral awareness, critical thinking, and collective responsibility for their social and ecological consequences (Bajrektarevic, 2024). From this perspective, the central problem of digital modernity does not involve a lack of technological innovation. Instead, it involves the human tendency to equate technical progress with civilizational progress. However, scientific advancement does not always produce wisdom, just as computational capability

does not automatically generate the ability to distinguish morally appropriate goals from merely efficient ones. Therefore, the digital crisis fundamentally constitutes a crisis of consciousness because technology develops faster than the human ability to reflect on the meaning, direction, and responsibility associated with its use.

This cognitive crisis becomes more significant when artificial intelligence is understood as a form of anthropotechnique. Unlike earlier technologies that primarily extended physical strength, mobility, or productive capacity, AI increasingly extends—and potentially substitutes for—attention, memory, interpretation, reasoning, and judgment. As a cognitive anthropotechnique, AI therefore participates directly in shaping the capacities through which human beings understand reality and govern their actions. Its ethical significance depends not only on the accuracy of its outputs but also on whether its use cultivates or diminishes the reflective capacities of its users (Bajrektarevic, 2013; Kulić, 2003).

The development of artificial intelligence further intensifies the cognitive crisis when people perceive computational capability as a form of intelligence equal to, or even superior to, human intelligence. The term artificial intelligence creates the assumption that algorithmic systems can represent the full range of human intellectual capacities, although these systems essentially operate through data processing, pattern recognition, and computational decision-making. From this perspective, computational intelligence differs fundamentally from human intelligence because it lacks the social, sensory, physical, and reflective dimensions that enable humans to understand meaning, develop empathy, and consider the moral consequences of each action (Bajrektarevic, 2024). Therefore, the main problem of artificial intelligence does not lie in the increasing capabilities of algorithms but in the human tendency to equate computational capacity with wisdom. When people treat efficiency, speed, and accuracy as the primary measures of intelligence, technology may replace the reflective processes that have traditionally supported ethical judgment in human life. This replacement becomes problematic because human intelligence includes not only the ability to calculate or predict but also the capacity to question purposes, interpret meaning, experience responsibility, and revise one's actions through ethical reflection. Computational systems may optimize the means required to achieve a predetermined objective, but they cannot independently determine whether the objective itself is humane, just, or ecologically sustainable. Consequently, the transfer of judgment to AI risks separating technical decision-making from moral responsibility.

Bajrektarevic (2024) emphasizes this criticism through the following statement:

> "The trap, of course, is hidden in the naming: Intelligence (be it artificial) implies ancestry and development, general well-being. This is rather a tool offered by the prospect of digital captivity, the minority over the majority – the slenderness of knowledge over the sluggishness of ignorance, the naivety of the giver (of information) against the greed of the gatherer disguised in good intention." (Bajrektarevic, 2024).

This quotation shows that the primary problem of artificial intelligence does not lie in its technical capabilities but in the construction of meaning attached to the term intelligence. The use of this term creates the illusion that every algorithmic

development necessarily represents civilizational progress and human well-being, even though technology can also function as an instrument for data collection, knowledge concentration, and the reinforcement of power relations concealed behind narratives of digital innovation. Therefore, criticism of AI does not target the technology itself. Instead, it addresses the ways in which humans interpret and use it without questioning the ethical orientation that underlies its development and application.

This condition resonates with Fromm's critique of modern society, in which human beings may become increasingly subordinated to the systems, institutions, and technical mechanisms that they themselves create. Fromm (1955) identifies alienation as a condition in which individuals experience their own social products and capacities as external powers that confront and govern them. In digital modernity, this condition emerges when algorithmic systems cease to function merely as instruments and increasingly determine how individuals work, communicate, evaluate themselves, and perceive their available choices. The crisis of consciousness therefore involves not only dependence on technology but also the gradual loss of human agency in relation to technologies produced by human intelligence.

Digital surveillance in contemporary society increasingly operates through users' voluntary participation rather than solely through coercive mechanisms. The development of the internet, social media, and artificial intelligence-based services encourages billions of people to continuously generate, share, and update data about their identities, preferences, activities, locations, and social relationships. At the beginning of 2025, approximately 5.56 billion people used the internet, while the number of active social media user identities reached approximately 5.24 billion worldwide (Kemp, 2025). The scale of this user population shows that digital spaces have become inseparable from contemporary social life while simultaneously expanding the volume of data that users voluntarily generate each day. Under these conditions, personal data no longer function merely as by-products of digital activity but have become strategic resources that support the operation of platforms, algorithms, and the data economy. Bajrektarevic (2024) describes this condition through the concept of the *McFB way of life*, namely, a pattern of life in which individuals voluntarily surrender their personal information, social activities, and preferences to technology companies without realizing that these actions simultaneously construct a systematic mechanism of digital surveillance.

This condition demonstrates that digital surveillance operates through a participatory logic that combines convenience, connectivity, and service personalization, thereby encouraging users to continue generating data voluntarily. Within this mechanism, algorithms do not merely collect information. They also analyze behavioral patterns, shape preferences, predict decisions, and direct user interactions through recommendations tailored to users' digital footprints. As a result, computational systems operating behind digital platforms increasingly influence human perception, judgment, and decision-making. Therefore, algorithms no longer function merely as instruments for processing information but have become social infrastructure that shapes how people understand reality, interact with their surroundings, and make decisions in everyday life (Bajrektarevic, 2024).

In this sense, digital technologies operate as formative anthropotechniques because they do not merely assist pre-existing human capacities but also participate in constructing habits of attention, patterns of desire, perceptions of relevance, and standards of social recognition. When these formative processes remain opaque, users may gradually internalize algorithmic priorities without consciously evaluating the commercial or political interests embedded within them. Reflective awareness is therefore necessary not only for controlling technology externally but also for recognizing how technological environments shape the human self from within.

The cognitive crisis ultimately develops into a moral crisis when people lose the ability to recognize the injustices occurring around them. Under these conditions, society may accept practices that restrict freedom, expand surveillance, or deepen social inequality as normal aspects of everyday life. The analogy of ancient Greek society shows that prominent thinkers of the period produced major achievements in philosophy, science, and politics, yet they rarely questioned the system of slavery that formed the foundation of their social life. This silence demonstrates that a society can coexist with unjust practices without recognizing the moral problems embedded within them (Bajrektarevic, 2024). In the context of digital modernity, a similar condition emerges when society accepts the collection of personal data, algorithmic surveillance, digital colonialism, and platform domination as normal consequences of technological progress. As a result, people no longer direct their attention toward evaluating whether a technology strengthens human dignity and freedom. Instead, they focus only on the efficiency, convenience, and practical benefits that the technology offers. This normalization may be understood as a form of normative alienation in which individuals become detached from the moral consequences of the systems in which they participate. Convenience narrows reflective distance, while repeated participation transforms technologically mediated practices into apparently natural conditions of social life. As a result, people may continue to reproduce systems of surveillance and domination without recognizing themselves as participants in those systems. Therefore, the greatest threat posed by digital technology does not come from artificial intelligence itself but from the loss of reflective awareness that enables people to criticize technological structures, question their moral orientation, and assess their effects on social life and human sustainability.

Bajrektarevic (2024) describes this condition through his reflection on ancient Greek society as follows:

> "This myopia, this absence of critical reference on the obvious and omnipresent is a historic message – highly disturbing, self-telling and quite a warning for the present day." (Bajrektarevic, 2024).

This quotation confirms that the central problem of a civilization does not always arise from a lack of knowledge but from society's inability to recognize practices that have become normalized despite the injustices they contain. In digital society, this condition becomes visible when people accept algorithmic surveillance, data exploitation, and platform domination as consequences that no longer require critical examination. This form of moral blindness demonstrates that the technological crisis ultimately constitutes a crisis of consciousness, namely, the loss

of the reflective capacity to distinguish technical progress from human progress. From the perspective of anthropotechnique, this loss of reflective capacity indicates a reversal of technology's civilizational purpose. A technology intended to extend human capacities fails ethically when it weakens the autonomy, attention, and judgment required for human beings to direct their own lives. AI contributes to human development only when it supports reflection without replacing it, expands access to knowledge without concentrating epistemic power, and strengthens human agency without converting persons into objects of prediction and optimization.

3. Ecological and Intergenerational Responsibility as an Orientation for Human Development

Human development cannot be reduced solely to increases in economic growth, productivity, consumption, or technological capacity. A close reading of the text shows that the modern development paradigm tends to measure progress through material indicators, such as production expansion, increased purchasing power, accelerated innovation, and wealth accumulation, while treating ecological sustainability and the quality of social life as secondary concerns (Bajrektarevic, 2024). This orientation separates human development from ecological balance and encourages society to assess development success through levels of energy consumption, mobility, commodity production, and economic growth rather than through the capacity to sustain life. However, various studies on human development show that improvements in well-being cannot be separated from ecological sustainability because planetary pressures will ultimately restrict the choices, quality of life, and opportunities available to future generations (UNDP, 2020, 2022). In the era of artificial intelligence, human development increasingly depends on society's ability to use technology responsibly so that digital progress expands human freedom rather than restricts it (UNDP, 2025). From this perspective, meaningful human development depends not only on increased material capacity but also on the growth of awareness, moral responsibility, and the ability to build sustainable relationships with other people and with nature.

This orientation resonates with Fromm's humanistic understanding of development, which places the realization of the human person above the accumulation of possessions, productive capacity, or technical power. Fromm (1955) argues that a healthy society should enable individuals to develop freedom, relatedness, creativity, responsibility, and the capacity to live meaningfully with others. From this perspective, human development cannot be understood merely as an expansion of what people possess or what technologies enable them to perform. It must also involve the fuller realization of human capacities for reflection, ethical judgment, solidarity, and responsible participation in social and ecological life.

The principle of *paticcasamuppāda*, or dependent origination, provides a foundation for understanding human development as a process that never occurs separately from society, technology, and nature. This principle explains that every phenomenon arises from specific conditions and produces consequences that, in turn, influence the network of life within which the phenomenon emerges (Shulman, 2008). In the context of digital modernity, technology emerges from human needs,

value orientations, economic structures, and choices, but it subsequently reshapes social behavior, the distribution of power, resource use, and ecological conditions. This relationship shows that humans do not exist as autonomous subjects outside technology and the environment. Instead, they form part of a relational system whose components continuously shape one another. Therefore, ecological degradation cannot be understood merely as an external effect of technological development. It constitutes a disruption to the network of life that sustains human existence itself. This perspective also corrects the anthropocentric paradigm that treats nature as a passive object because human continuity always depends on ecosystem stability, while ecosystem conditions depend on technological choices and patterns of human consumption. Thus, *paticcasamuppāda* shifts the assessment of technology from its immediate benefits toward the broader social, moral, and ecological chains of cause and effect that it produces. Human self-realization therefore cannot be conceived as an isolated achievement of an autonomous individual. It emerges relationally through the conditions that sustain human dignity, social cooperation, ecological continuity, and the possibility of responsible action. A form of development that expands individual capability while destroying these relational conditions cannot constitute genuine human realization because it weakens the network of life upon which such realization depends.

The following statement emphasizes this interconnection by arguing that life and the universe sustain themselves through cooperation rather than confrontation:

> "From the cell to Cosmos; from the smallest organised structure of life to the largest harmonised order of space-time, the system sustains itself on cooperation not on confrontation." (Bajrektarevic, 2024).

This statement presents cooperation and interdependence as fundamental principles of life's sustainability. From this perspective, technologies built through exploitation, domination, and antagonism toward nature contradict the relational structure that sustains life. Therefore, technological development cannot qualify as human development when its success depends on weakening ecosystems and transferring ecological burdens to other societies or future generations. The concept of anthropotechnique further clarifies the relationship between technology and human development. Anthropotechniques are techniques through which human beings preserve life, extend their capacities, organize social existence, and transform themselves and their environments (Bajrektarevic, 2013; Kulić, 2003). Their original function can be associated with survival and adaptation, but their normative purpose cannot be limited to the expansion of control, production, or technical efficiency. Anthropotechniques acquire civilizational legitimacy only when they contribute to the development of the human person while preserving the social and ecological conditions upon which life depends.

The principle of *anicca* identifies impermanence as a fundamental characteristic of all phenomena. No social, technological, or ecological condition remains permanent because every phenomenon continuously changes according to the conditions that shape it. This idea has a philosophical correspondence with Heraclitus's expression *panta rhei*, which affirms that reality constantly exists in a state of flux. However, Buddhism does not understand change as random movement or merely as the replacement of one form with another. Change occurs through

relationships of causes and conditions, as the principle of *paticcasamuppāda* explains, so every transformation always produces consequences for other phenomena within the same relational network (Shulman, 2008). In the context of technology, society therefore cannot treat accelerated innovation as evidence of progress in itself. New technologies may expand human capabilities, but they may also produce algorithmic dependency, social inequality, and ecological pressure when exploitative orientations shape their development. Artificial intelligence illustrates this ambiguity particularly clearly. As the latest form of anthropotechnique, AI can extend access to knowledge, support decision-making, and expand human creative and analytical capacities. At the same time, it can weaken judgment, intensify dependency, concentrate power, and reduce persons to data profiles and objects of algorithmic optimization. Its novelty therefore provides no sufficient evidence of progress; its value depends on the forms of human and ecological life that it helps to create. This perspective corrects the illusion of linear progress that regards every technical change as an advancement of civilization. Technological development contributes meaningfully to human development only when such change strengthens freedom, awareness, and the sustainability of life. Thus, *anicca* and *panta rhei* help explain technology as a continuously changing process, while *paticcasamuppāda* provides an ethical foundation for evaluating the direction and consequences of that change.

> The following statement further emphasizes this understanding of change:
> "Nature does not change. Change, as a cosmic constant, is nature itself." (Bajrektarevic, 2024).

This quotation does not imply that every form of change is constructive. Technological change may sustain life or accelerate destruction, depending on the orientation of consciousness and the structures of interest that direct it. Therefore, society must evaluate change not only according to its novelty or speed but also according to the patterns of cause and effect that it creates for humans, society, nature, and future generations.

Ecological responsibility fundamentally constitutes intergenerational responsibility because present-day technological and development decisions determine the quality of life in the future. Climate change, ecosystem degradation, pollution, and the threat of nuclear annihilation not only harm people who live today but also transfer involuntary risks to future generations. From the perspective of *paticcasamuppāda*, human actions always emerge within networks of cause and effect that extend beyond spatial and temporal boundaries. Therefore, society cannot evaluate technologies that generate emissions, waste, resource exploitation, or habitat destruction solely according to their immediate benefits. Society must also assess their long-term consequences for humans, other species, and planetary sustainability. Bajrektarevic (2024) identifies technology, ecological crises, and nuclear threats as planetary challenges that require a multilateral approach and a fair distribution of historical and generational responsibility. Society cannot fulfill this responsibility merely through corrective policies after damage has occurred. Instead, this responsibility must guide the design, production, and use of technology from the outset. The human development perspective also emphasizes that the expansion of the capabilities of the present generation must not reduce the choices

and opportunities available to future generations to live dignified lives (UNDP, 2020, 2025). Every anthropotechnique also carries an intergenerational dimension because the infrastructures, dependencies, environmental burdens, and institutional arrangements created today become conditions inherited by future generations. The ethical evaluation of AI must therefore include not only its immediate benefits for present users but also the technological systems, ecological costs, and forms of social dependence that it leaves behind. Therefore, society must direct technology toward sustaining life and reducing intergenerational risks rather than merely increasing production, consumption, and humanity's capacity to dominate nature.

The following statement explicitly formulates the urgency of this responsibility:

> "For the three most serious planetary challenges—technology, ecology, nuclear annihilation—we need an accurate, fair and timely multilateral approach. In this struggle for relevance, everyone has their stake, and their share of historical (generational) responsibility." (Bajrektarevic, 2024).

This statement demonstrates that individual actions or isolated national policies cannot resolve technological and ecological problems. Their impacts cross territorial, generational, and species boundaries and therefore require collective responsibility that is equitable, coordinated, and oriented toward the long term. Within this framework, intergenerational responsibility involves more than an obligation to preserve resources. It also requires the present generation to avoid transferring technological systems, ecological risks, and structures of life that restrict the possibilities available to future generations.

Quantum Buddhism can be formulated as an ethical-philosophical framework that places human development within an inseparable relationship among consciousness, technology, society, and nature. Three principal concepts form the foundation of this framework. First, *paticcasamuppāda* affirms that every action and technological innovation arises from specific conditions and generates consequences that subsequently affect the broader network of life. Second, the *Yogācāra* perspective and the practice of reflective awareness place the quality of human perception, attention, and inner orientation at the foundation of the evaluation of the purposes and consequences of technology. Third, intergenerational ecological responsibility expands the moral scope of development by incorporating the interests of future generations, other species, and ecosystem sustainability. Within this framework, technology does not represent the ultimate goal of development. Rather, technology constitutes an anthropotechnique whose legitimacy depends on its contribution to human development and human self-realization. Human self-realization in this framework does not mean unlimited individual self-expression or mastery over nature. It refers to the cultivation of freedom, reflective awareness, moral responsibility, social relatedness, and the capacity to participate in sustaining the wider network of life. Instead, it functions as an instrument that must remain subject to wisdom, the preservation of life, and shared responsibility. Technology acquires developmental value only when it serves as a servant of creation rather than as an instrument of appropriation, domination, and destruction (Bajrektarevic, 2013, 2024). Artificial intelligence therefore

succeeds as an anthropotechnique when it enlarges human agency without replacing judgment, expands knowledge without diminishing wisdom, and supports present well-being without undermining ecological and intergenerational sustainability. Conversely, it fails its civilizational purpose when it produces dependence, alienation, domination, ecological degradation, or the reduction of human beings to objects of technical management. Therefore, the quality of a civilization does not depend on the speed of innovation, computational capacity, or the scale of material consumption. Instead, it depends on the civilization's ability to cultivate reflective awareness, maintain ecological balance, and expand the possibility of dignified life for all beings across generations. Quantum Buddhism therefore does not reject technology. Rather, it reconstructs the orientation of technology so that technical progress genuinely contributes to ethical, relational, and sustainable human development. Accordingly, the ultimate criterion of technological progress is not the perfection of the machine but the fuller realization of humanity within a just, reflective, and ecologically sustainable civilization.

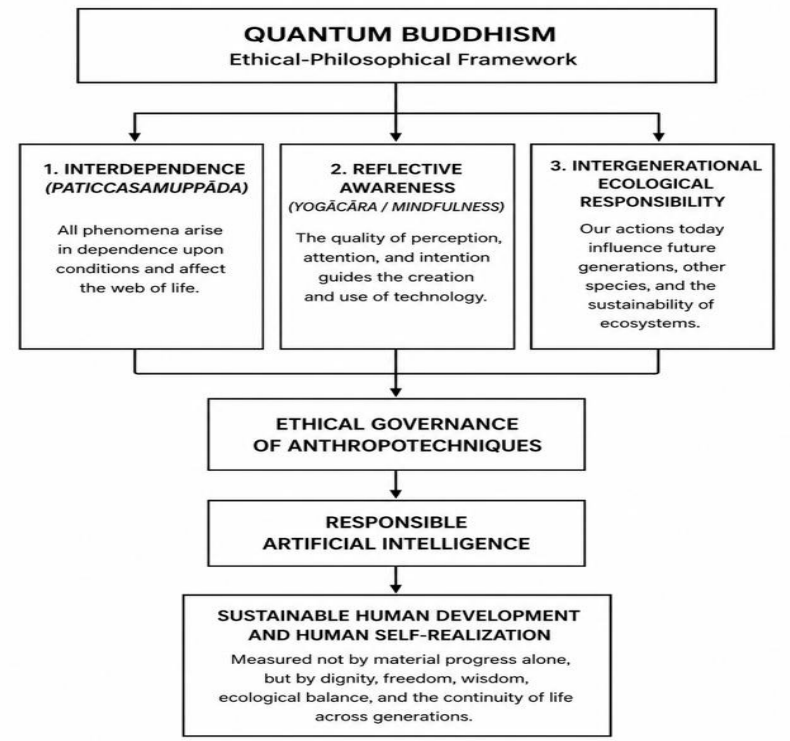
Table 2. The Ethical-Philosophical Framework of Quantum Buddhism

Core Principle	Conceptual Meaning	Orientation Toward Technology and Human Development
Interdependence (*paticcasamuppāda*)	Humans, technology, society, and nature do not exist separately. Every action arises from specific conditions and produces consequences for other parts of the network of life.	Society must evaluate technology according to its full social, moral, and ecological consequences rather than solely according to its function or efficiency.
Reflective awareness (*Yogācāra* and mindfulness)	Human perception, attention, and inner orientation determine how people create, use, and interpret technology.	Human wisdom must govern technology so that technology does not take control of users' attention, judgment, and moral autonomy.
Intergenerational ecological responsibility	Present technological actions affect future generations, other species, and ecosystem sustainability.	Technology must function as a servant of creation, namely, as a means of preserving life rather than as an instrument of appropriation, domination, and destruction.
Human development orientation	Human progress cannot be measured solely through economic growth, material consumption, or computational capacity.	Society must assess human development through the quality of awareness, freedom, social justice, ecological sustainability, human self-realization, and

Core Principle	Conceptual Meaning	Orientation Toward Technology and Human Development
		the continuity of dignified life across generations.
Anthropotechnique and human self-realization	Technology constitutes a means through which human beings preserve life, extend their capacities, and transform themselves and their environments. Its legitimacy depends on whether it contributes to the fuller realization of human capacities within sustainable social and ecological relations.	Artificial intelligence should strengthen dignity, autonomy, wisdom, relatedness, ecological responsibility, and intergenerational well-being rather than produce dependence, alienation, domination, or the algorithmic reduction of persons.

Source: Adapted from Bajrektarevic (2013, 2024), Shulman (2008), Lusthaus (2002), Hershock (2026), and United Nations Development Programme (2020, 2025).

Figure 1. Conceptual Framework of Quantum Buddhism for Human Development in the Digital Age



Source: Authors' synthesis based on Bajrektarevic (2013, 2024), Shulman (2008), Lusthaus (2002), Hershock (2026), and United Nations Development Programme (2020, 2025).

Figure 1 synthesizes the conceptual findings of this study into the Quantum Buddhism framework as an ethical-philosophical orientation for human development in the digital age. The framework demonstrates that meaningful human development cannot be reduced to technological advancement, economic growth, or computational capacity alone. Instead, meaningful human development emerges through the integration of three interrelated principles. The first principle, interdependence (*paticcasamuppāda*), understands humans, technology, and nature as mutually constitutive. The second principle, reflective awareness (*Yogācāra* and mindfulness), places consciousness at the center of technological judgment and ethical action. The third principle, intergenerational ecological responsibility, extends moral responsibility beyond the present generation to include future generations, other species, and planetary sustainability. These three principles reposition technology not as the ultimate goal of civilization but as a servant of creation whose value depends on its contribution to preserving life, strengthening ecological balance, and expanding human flourishing. Within this framework, artificial intelligence is understood as the latest form of anthropotechnique: a technique through which humanity extends and transforms its capacities. Its ethical value does not reside in computational sophistication itself but in whether it supports sustainable human development and the fuller realization of human capacities. Human self-realization therefore becomes both the purpose and the criterion of technological development, while interdependence, reflective awareness, and intergenerational responsibility provide the ethical conditions through which that purpose can be pursued. Consequently, Quantum Buddhism offers a reconstructed paradigm of development in which society evaluates technological progress through ethical consciousness, relational sustainability, and the continuity of life rather than through material accumulation or technological sophistication alone.

DISCUSSION

The crisis of digital modernity operates at three interrelated levels: relational, cognitive, and moral-ecological. At the relational level, human needs, interests, and power structures not only shape technology, but technology also reshapes human behavior, communication patterns, knowledge distribution, and relationships with nature. At the cognitive level, the rapid development of artificial intelligence and algorithmic systems produces a cognitive deficit crisis when technical capabilities develop faster than the human capacity to evaluate the purposes, limits, and consequences of their use. At the moral-ecological level, the loss of reflective awareness leads society to accept digital surveillance, data exploitation, technological inequality, and ecological pressure as normal consequences of progress. These three levels do not operate independently. An exploitative orientation of consciousness produces technologies that expand domination over humans and nature, while dependence on technology further weakens the human ability to recognize the consequences that technology creates. In this context, Quantum Buddhism offers an ethical-philosophical synthesis that connects interdependence, reflective awareness, and intergenerational ecological responsibility. These three dimensions also indicate that artificial intelligence

should be understood as a civilizational anthropotechnique: a humanly created technique that not only extends capacities but also reshapes the conditions under which human beings perceive, judge, relate, and act. This framework shifts the evaluation of technology away from questions about its sophistication and efficiency toward more fundamental questions about the forms of life, social relationships, ecological futures, and possibilities of human realization that it produces.

The reciprocal relationship among humans, technology, and nature demonstrates that technology never functions as an entirely neutral instrument. Technology emerges from decisions about the problems that people seek to solve, the interests that they intend to serve, and the values that they consider important. Technology then reshapes human behavior, social relationships, and the distribution of power. Therefore, the relationship between humans and technology is circular: humans create technology according to particular social and moral orientations, while technology subsequently reshapes human choices and ways of life. The concept of anthropotechnique sharpens this circularity. Technologies are created to extend human capacities, yet they subsequently reorganize the habits, institutions, environments, and forms of consciousness through which those capacities develop (Bajrektarevic, 2013; Kulić, 2003). Anthropotechniques are therefore never merely external instruments; they participate in the formation of human beings and civilizational life.

The principle of *paticcasamuppāda* provides a framework for understanding this circular relationship. According to the teaching of dependent origination, every phenomenon arises through a network of conditions and subsequently becomes a condition for other phenomena (Shulman, 2008). In the context of technology, digital systems emerge not only from scientific advancement but also from economic interests, political policies, consumer culture, and the utilization of natural resources. In turn, technology creates new conditions, including platform dependency, data concentration, changing communication patterns, and ecological pressure. Therefore, the effects of technology always return to influence humans, although different social classes, regions, and generations experience these effects in different ways. *Paticcasamuppāda* expands the civilizational concept of anthropotechnique by showing that technological extension always occurs within a network of social and ecological conditions. The capacity gained by one group may produce environmental burdens, political dependency, or restricted possibilities for other communities and future generations.

This interpretation aligns with Winner (2017), who demonstrates that artifacts contain political consequences, and Feenberg (2012), who understands technology as a product of social relations rather than as a neutral force. However, *paticcasamuppāda* expands this critique by situating technology not only within sociopolitical networks but also within ecological networks. Digital technology continues to depend on energy, minerals, water, and material infrastructure. Therefore, apparently virtual experiences actually emerge from highly concrete relationships with nature.

The *Yogācāra* perspective further emphasizes that technology also shapes consciousness. Lusthaus (2002) explains that perceptual habits construct human experience, while algorithms, interfaces, and personalization systems in digital environments also direct users' attention, preferences, and actions. This finding

demonstrates that humans do not merely use technology. Technology also continuously shapes the perceptions of its users.

These findings broaden the direction of digital Buddhism studies. Previous research has primarily examined how technology transforms Buddhist rituals, communities, and authority (Connelly, 2012; Prebish, 2013; Tarocco, 2017). This article shifts that focus by demonstrating that Buddhist principles can also provide a framework for evaluating the structures, orientations, and consequences of technology itself. Through *paticcasamuppāda*, researchers can evaluate technology not only according to its functions and efficiency but also according to the social, moral, and ecological effects that it produces.

Therefore, interdependence provides a simultaneous critique of two modern assumptions: the assumption that technology remains neutral and the assumption that society can separate the benefits of digital technology from its material and ecological consequences. Quantum Buddhism demonstrates that technology always emerges from a particular network of values and subsequently creates a new network of life. The novelty of this article lies in its shift from examining technologically mediated Buddhism toward using Buddhism as an ethical framework for criticizing technology as a social, cognitive, political, and ecological system.

The expansion of artificial intelligence capabilities does not necessarily indicate an expansion of human wisdom. AI can process data, recognize patterns, generate predictions, and optimize decisions at high speed, but these capabilities differ from human intelligence, which involves meaning-making, empathy, moral judgment, and responsibility for actions. Digital modernity tends to treat efficiency and predictive capacity as the principal measures of intelligence, thereby presenting computational intelligence as though it represents the full range of human capabilities. However, AI cannot independently determine morally appropriate goals. Therefore, the central problem of AI does not merely concern its ability to perform human tasks. It also concerns the reduction of intelligence to the capacity to calculate and optimize. Artificial intelligence is therefore best understood as a cognitive anthropotechnique. Unlike earlier tools that primarily extended bodily strength or material production, AI intervenes in attention, memory, language, interpretation, and decision-making. Its significance lies not only in what it performs for humans but also in which human capacities it strengthens, displaces, or allows to atrophy.

The finding concerning the cognitive deficit crisis aligns with Hershock (2026), who argues that intelligent technologies can reduce the human capacity for attention, judgment, and reflective presence. Dependence on AI not only transfers some cognitive processes to machines but also reduces opportunities for humans to practice reflection and cultivate wisdom. In this context, cognitive offloading becomes problematic when it changes from a form of cognitive assistance into a substitute for the processes of understanding and deliberation. Empirical findings reinforce this argument. Goh et al. (2025) demonstrate that the use of generative AI can develop into cognitive dependence, while Barcaui (2025) finds that the use of ChatGPT as a form of cognitive support relates to weakened knowledge retention when system-generated outputs replace the thinking process. These risks do not arise simply because people use AI. Instead, they emerge when AI replaces the

processes of understanding, verification, and reasoning. The problem begins when cognitive assistance becomes cognitive substitution. An anthropotechnique fails its developmental purpose when it reduces the occasions through which humans cultivate understanding, verification, judgment, and responsibility.

This problem also relates to human autonomy. Prunkl (2024) demonstrates that AI can influence autonomy by shaping preferences and manipulating choices, while Buijsman et al. (2025) emphasize that AI supports autonomy only when humans retain an active role in evaluation and decision-making. Therefore, AI should function as a decision-support system rather than as a substitute for human judgment. The dialogue between Zheng (2024) and Hershock (2026) demonstrates that humans can use AI to support human development as long as reflective awareness and moral orientation continue to guide its use. The Quantum Buddhism perspective brings these two positions together by placing technology as a means of strengthening human agency rather than replacing wisdom. Therefore, the primary threat of AI does not lie in the possibility that machines may become more intelligent than humans. Instead, it lies in the human tendency to surrender attention, judgment, and moral responsibility to systems that possess neither consciousness nor responsibility for the consequences of their actions. Responsible AI should therefore function as an aid to human deliberation rather than as an authority that displaces it. From the perspective of Quantum Buddhism, the ethical criterion is whether AI expands agency while preserving reflective awareness and responsibility.

The findings demonstrate that digital surveillance primarily operates through users' voluntary participation. To gain convenience, personalization, and connectivity, people continuously surrender their personal data, preferences, and activities to digital platforms. This condition, which Bajrektarevic describes as the *McFB way of life*, demonstrates that digital domination no longer depends on coercion. Instead, habits, convenience, and forms of participation that society considers normal construct this domination. Consequently, surveillance becomes a normalized social practice, while users find it increasingly difficult to distinguish between digital services and the data collection practices that sustain power relations.

This normalization can also be interpreted through Fromm's concept of alienation. Fromm (1955) describes a condition in which human beings become subordinated to the social systems and products that they themselves create. In digital modernity, algorithmic platforms may appear as external authorities that organize attention, identity, social recognition, and choice, even though they originate from human institutions and interests. Individuals thus risk experiencing their own technological creations as forces that govern them. Such alienation is not merely psychological. It is also normative because individuals may lose the reflective distance required to recognize how convenience, personalization, and participation reproduce surveillance and asymmetrical power.

This phenomenon can be understood as a form of moral blindness, namely, a condition in which society fails to recognize injustices in everyday life because people have accepted them as normal. The analogy of ancient Greek society illustrates that intellectual sophistication does not guarantee moral perception. A civilization may normalize injustice precisely because its institutions and habits

render that injustice ordinary. Digital moral blindness emerges when surveillance, data extraction, and algorithmic domination become perceived as unavoidable features of progress. Therefore, the central problem does not merely involve the existence of surveillance technology. It also involves the loss of reflective awareness required to question the moral orientation that underlies such technology.

This interpretation aligns with studies of surveillance capitalism, which demonstrate that personal data have become both a source of economic accumulation and an instrument for shaping user behavior (Zuboff, 2019). Studies of datafication and algorithmization also explain that digital platforms do not merely record behavior. Through data-driven recommendation mechanisms, these platforms also shape preferences, choices, and patterns of social interaction (Couldry & Mejias, 2019). Hershock (2026) expands this critique by demonstrating that the threat of intelligent technology does not arise solely from data collection but also from the weakening of the human capacity to pay attention, evaluate, and act reflectively.

Unlike studies that primarily frame digital surveillance as a regulatory or data governance problem, this study demonstrates that the root of the problem lies in a crisis of moral awareness. Digital domination becomes effective not only because platforms possess substantial power but also because humans lose their reflective distance from the technologies they use. Therefore, Quantum Buddhism offers an ethical critique that positions reflective awareness as a prerequisite for restoring technology to its primary function: supporting human life without obscuring the power relations that technology constructs.

The findings of this study demonstrate that Quantum Buddhism can be understood as an ethical-philosophical framework for evaluating the direction of technological development through three interrelated principles: *paticcasamuppāda* as the foundation of the interdependence of all life, reflective awareness through the perspectives of *Yogācāra* and mindfulness, and intergenerational ecological responsibility. Within this framework, technology is not evaluated solely on the basis of its sophistication or efficiency but according to the full range of social, moral, cognitive, and ecological consequences that it produces. Change *(anicca)* is understood as a continuous process of conditioned transformation, which means that every technological innovation carries responsibility toward humans, society, nature, and future generations. Technology is therefore positioned as a servant of creation: a means of sustaining and developing life rather than an instrument of appropriation, domination, and destruction. To understand how this framework connects consciousness, technological development, and human realization, however, the meanings of both quantum and anthropotechnique require further clarification.

The use of the term Quantum Buddhism requires careful clarification. It does not suggest that quantum physics scientifically validates Buddhist teachings or that scientific, religious, and mystical traditions form a single system of knowledge. Rather, *quantum* functions as a philosophical metaphor for moving beyond rigid reductionism toward a relational understanding of consciousness, matter, action, technology, and the environment. Within this limited dialogue, Rumi's spiritual poetry, as presented by Nasr (2007), and reflections associated with Planck may be read as questioning purely material and mechanistic accounts of reality. However,

these traditions arise from different historical and epistemological contexts and should not be treated as doctrinally equivalent or as mutually validating one another.

Quantum Buddhism employs this limited resonance to criticize technological reductionism, particularly when intelligence is reduced to computation, persons to data, progress to efficiency, and nature to exploitable resources. The concept of anthropotechnique provides a bridge between this critique and the orientation of human development. Kulić (2003) presents anthropotechnics as a civilizational problem involving technology, economy, life, and human development, while Bajrektarevic (2013) situates technological development within wider ecological, geopolitical, and civilizational relations. From this perspective, artificial intelligence is a cognitive anthropotechnique that extends human capacities in language, memory, attention, interpretation, and judgment, while also reshaping how those capacities develop.

However, technical extension alone does not constitute human progress. An anthropotechnique acquires legitimacy only when it strengthens human dignity, autonomy, wisdom, social relatedness, ecological responsibility, and intergenerational well-being. Fromm's humanistic philosophy reinforces this criterion by emphasizing that development concerns not merely what humans possess or produce, but what they are able to become (Fromm, 1955). Human self-realization in Quantum Buddhism therefore refers to the relational cultivation of freedom, reflective awareness, compassion, responsibility, and participation in sustaining a shared world. Accordingly, artificial intelligence should remain a means of human development rather than becoming the measure or destination of civilization.

This framework differs from most studies of digital Buddhism, which focus on the transformation of rituals, communities, and religious practices in digital spaces (Connelly, 2012; Han, 2022; Prebish, 2013; Tarocco, 2017; Xue, 2025). This study also goes beyond research that views technology as a means of expanding spiritual experience (Kaewkitipong et al., 2023) or examines the dialogue between AI and Humanistic Buddhism (Zheng, 2024) by positioning Buddhism as a critical perspective for evaluating the relational structure of technology itself. In line with Hershock's (2026) critique, this article emphasizes that the central problem of artificial intelligence does not lie merely in technological development but in the transformation of human consciousness in interpreting and engaging with technology.

The theoretical contribution of this study lies in repositioning Buddhism from an object transformed by digital media into an ethical-philosophical framework for evaluating technological civilization. Quantum Buddhism integrates paticcasamuppāda, reflective awareness, intergenerational ecological responsibility, anthropotechnique, and human self-realization. This synthesis connects questions of artificial intelligence with power, cognition, ecological materiality, and the normative purpose of human development.

The framework differs from studies that focus primarily on digital rituals, online communities, religious authority, augmented spirituality, or the use of AI in disseminating Buddhist teachings. It asks not only how technology transforms Buddhism but how Buddhist relational ethics can evaluate the forms of life created

by technology. Its originality therefore lies in treating AI as an anthropotechnique whose civilizational legitimacy depends on its contribution to reflective, ecological, and intergenerational human development.

The practical implication of this framework is the need for ethical governance of anthropotechniques. AI developers should incorporate human autonomy, social justice, ecological costs, and intergenerational consequences from the earliest stages of design. Governments should strengthen data protection, algorithmic transparency, energy efficiency, and electronic-waste governance. Educational and religious institutions should cultivate digital literacy that includes reflective awareness, ethical judgment, and resistance to cognitive dependency. Responsible artificial intelligence is therefore not defined solely by safety or technical reliability, but by its ability to strengthen human agency, preserve ecological balance, and support sustainable human development and human self-realization.

CONCLUSION

The unprecedented acceleration of artificial intelligence and digital technologies has fundamentally transformed the conditions under which humanity lives, governs, communicates, and understands itself. Yet the principal challenge of the digital age does not lie in the increasing sophistication of algorithms, computational power, or autonomous systems. Rather, it lies in humanity's diminishing capacity to guide technological development through reflective awareness, ethical judgment, and responsibility. Humans, technology, and nature exist within a relationship of profound interdependence in which every technological innovation reshapes the social, ecological, cognitive, and political conditions of human existence. Consequently, the contemporary digital crisis is ultimately not a crisis of technology, but a crisis of consciousness.

Human development can therefore no longer be measured solely through economic growth, productivity, or computational capability. It must equally be evaluated through the quality of human consciousness, ecological sustainability, social cohesion, justice, and the preservation of life across generations.

The principal contribution of this study lies in the formulation of Quantum Buddhism as an ethical-philosophical framework for understanding the relationship between technology and human development (for details, see my earlier works). Unlike studies of Digital Buddhism that primarily examine the transformation of rituals, communities, or religious practices in digital environments, this article positions Buddhist philosophy as a critical framework for evaluating the trajectory of technological civilization itself. Built upon the principles of paticcasamuppāda (dependent origination and interdependence), Yogācāra (reflective consciousness), and intergenerational ecological responsibility, Quantum Buddhism offers a normative orientation that evaluates technological progress according to its contribution to human flourishing, ecological balance, and the continuity of life rather than merely by technical sophistication or economic efficiency.

The use of the term Quantum is therefore neither an attempt to equate Buddhism with quantum physics nor to derive religious conclusions from scientific discoveries. Rather, it acknowledges that some of the most profound philosophical and scientific traditions have independently challenged the reduction of reality to

matter alone. More than seven centuries before the emergence of modern science, Jalal ad-Din Rumi reminded humanity that existence cannot be confined to the visible and the material, warning against the illusion that external forms alone constitute reality.

Centuries later, Max Planck, whose discoveries inaugurated the quantum revolution, questioned the mechanistic worldview of classical science and argued that consciousness occupies a fundamental place in our understanding of reality. Although emerging from entirely different intellectual traditions, Rumi, Planck, and Buddhist philosophy converge in recognising that matter and consciousness cannot be understood as isolated or competing domains. To reduce one to the other—or to imagine that technology may ultimately substitute for human consciousness—is not merely philosophically inadequate but fundamentally contrary to the relational order of nature itself. Quantum Buddhism therefore employs the adjective *quantum* not as a scientific proof of Buddhist thought, but as a metaphor for a paradigmatic shift beyond reductionism toward a relational understanding of existence.

This understanding resonates equally with the humanistic philosophy of great European post WWII thought, most notably of Erich Fromm, who argued that the highest achievement of civilization is not the accumulation of technical power or material possessions but the realization of the human person. The essential question is therefore not what technology can accomplish, but what human beings are capable of becoming through its responsible use. Technology derives its legitimacy not from novelty, speed, or efficiency, but from its capacity to deepen freedom, cultivate reflective awareness, strengthen solidarity, and enable the flourishing of individuals and communities. Human development—not technological development—must remain both the purpose and the measure of genuine progress.

Artificial intelligence should therefore be understood as the latest form of anthropotechnique—one of the techniques through which humanity extends, cultivates, and transforms its own capacities.[1]

(The history of civilization is, in essence, the history of anthropotechniques. Their original purpose was survival; while the end purpose is the human self-realization. Such realisation is therefore both the purpose and the criterion by which every anthropotechnique—from the first stone tool to AI—must ultimately be judged.)

Throughout history, anthropotechniques aided humans in their normative orders. This legitimacy has never resided in technical sophistication itself, but in their contribution to the development of the human person and the advancement of civilization. Whenever technological development ceases to enhance human dignity, autonomy, wisdom, ecological responsibility, and intergenerational well-being, and instead promotes dependence, alienation, domination, environmental degradation,

[1] *As anthropotechniques, we should assume the (precognitive and) conscious clustering of different experiences, knowledges, discoveries, patents and the like; its practical application in any human activity (including all modes of horizontal and vertical transmission) aimed at acquiring resources for consumption in space and time by variety of tools and weaponry. As the only compensation for the biological and neurological limitations of humans (inferior to other forms of life on the planet), the anthropotechniques were answering the central pre-cognitive concern of humans: Survival!* This is a self-coined definition based on works of prof. Kulic from late 1990 and early 2000 that for years I use in my lectures on the Institutions and Instruments of Sustainable Development (chapter: Environmental ethics). As such, the definition is extensive enough to describe the event of first usage of the sharp stone/broken bone by early *homo faber* all the evolutionary way to the development and deployment of the nuclear bomb.

or the reduction of persons to objects of algorithmic optimisation, it fails its fundamental civilizational purpose. Technology was created to advance humanity; humanity was never created to advance technology.

From this perspective, Quantum Buddhism neither rejects science nor opposes technological innovation. Rather, it restores their original human purpose. Science expands knowledge. Technology expands capability. Philosophy cultivates wisdom. A sustainable civilization requires the harmonious balance of all three. If technology is the vehicle through which civilization advances, Quantum Buddhism provides the ethical orientation that ensures the journey remains directed toward humanity rather than away from it. Technology may be the vehicle and Quantum Buddhism the moral compass that guides its course, but neither the journey nor its destination is technology itself. The journey begins with the human being, and its destination is the fuller realization of the human person.

Ultimately, the future of artificial intelligence will not be determined by machines but by humanity's capacity to preserve wisdom alongside knowledge, responsibility alongside power, and consciousness alongside innovation. The true measure of technological progress is therefore not whether machines become more intelligent, but whether humanity itself becomes wiser, freer, more compassionate, and more fully human.

Clearly and ultimately, human development is the criterion by which every anthropotechnique must ultimately be judged. Quantum Buddhism proposes one possible philosophical framework for ensuring that this criterion remains at the centre of technological civilization. For technology is humanity's greatest invention only when humanity never ceases to remain its greatest purpose. The ultimate purpose of every anthropotechnique is not to perfect the machine, but to enable the complete self- realization of humanity itself.

REFERENCES

Ågerfalk, P. J. (2020). Artificial intelligence as digital agency. *European Journal of Information Systems*, *29*(1), 1–8. https://doi.org/10.1080/0960085X.2020.1721947

Bajrektarevic, A. (2013). Geopolitics of Quantum Buddhism: Our Pre-Hydrocarbon Tao Future (No Breakthrough at the Rio+20 Summit). *E-Learning and Digital Media*, *10*(3), 216–225. https://doi.org/10.2304/elea.2013.10.3.216

Bajrektarevic, A. (2024). Devolution Through Technology: Digital Colonialism Of The New-Age Technofeudalism. Retrieved from Eurasia Review website: https://www.eurasiareview.com/14082024-devolution-through-technology-digital-colonialism-of-the-new-age-technofeudalism-analysis/

Barcaui, A. (2025). ChatGPT as a cognitive crutch: Evidence from a randomized controlled trial on knowledge retention. *Social Sciences & Humanities Open*, *12*, 102287. https://doi.org/10.1016/j.ssaho.2025.102287

Bowen, G. A. (2009). Document Analysis as a Qualitative Research Method. *Qualitative Research Journal*, *9*(2), 27–40. https://doi.org/10.3316/QRJ0902027

Braun, V., & Clarke, V. (2006). Using thematic analysis in psychology. *Qualitative Research in Psychology*, *3*(2), 77–101. https://doi.org/10.1191/1478088706qp063oa

Buijsman, S., Carter, S. E., & Bermúdez, J.-P. (2025). Autonomy by Design: Preserving Human Autonomy in AI Decision-Support. *Philosophy & Technology*, *38*(3), 97. https://doi.org/10.1007/s13347-025-00932-2

Connelly, L. (2012). Virtual Buddhism: Buddhist ritual in second life. In *Digital Religion* (pp. 128–135). Routledge.

Couldry, N., & Mejias, U. A. (2019). Data Colonialism: Rethinking Big Data's Relation to the Contemporary Subject. *Television & New Media*, *20*(4), 336–349. https://doi.org/10.1177/1527476418796632

Creswell, J. W., & Poth, C. N. (2018). *Qualitative inquiry and research design: Choosing among five approaches*. SAGE Publications.

Feenberg, A. (2012). Questioning technology. In *Questioning Technology*. https://doi.org/10.4324/9780203022313

Fromm, E. (1955). *The sane society*. Rinehart. Retrieved from https://www.ncbi.nlm.nih.gov/nlmcatalog/2758

Goh, A. Y. H., Hartanto, A., & Majeed, N. M. (2025). Generative artificial intelligence dependency: Scale development, validation, and its motivational, behavioral, and psychological correlates. *Computers in Human Behavior Reports*, *20*, 100845. https://doi.org/10.1016/j.chbr.2025.100845

Han, X. (2022). Digital Merit: A Case Study of a Chinese Buddhist Meditation Group on WeChat During the Early Outbreak of Covid-19 in China. *Journal of Media and Religion*, *21*(4), 175–192. https://doi.org/10.1080/15348423.2022.2147324

Hawking, S., & Mlodinow, L. (2010). *The grand design*. Bantam Books.

Hershock, P. D. (2026). Buddhism and Intelligent Technology: A Futures Meditation. *Contemporary Buddhism*, *26*(1), 30–49. https://doi.org/10.1080/14639947.2025.2562762

Hirsch-Kreinsen, H. (2024). Artificial intelligence: a "promising technology." *AI &*

SOCIETY, *39*(4), 1641–1652. https://doi.org/10.1007/s00146-023-01629-w

International Energy Agency. (2025). Energy and AI. International Energy Agency. Retrieved from International Energy Agency website: https://www.iea.org/reports/energy-and-ai

ITU, & UNITAR. (2024). The global e-waste monitor 2024. Retrieved from International Telecommunication Union & United Nations Institute for Training and Research website: https://www.itu.int/en/ITU-D/Environment/Pages/Publications/The-Global-E-waste-Monitor-2024.aspx

Jiang, Y., Li, X., Luo, H., Yin, S., & Kaynak, O. (2022). Quo vadis artificial intelligence? *Discover Artificial Intelligence*, *2*(1), 4. https://doi.org/10.1007/s44163-022-00022-8

Kaewkitipong, L., Beaunoyer, E., Ractham, P., & Guitton, M. J. (2023). Augmented spirituality: Renewing human spirituality in a technology-driven world? *Computers in Human Behavior*, *148*, 107904. https://doi.org/10.1016/j.chb.2023.107904

Kemp, S. (2025). Digital 2025: Global overview report. Retrieved from DataReportal website: https://datareportal.com/reports/digital-2025-global-overview-report

Kulić, S. (2003). Filozofija, ekonomija i antropotehnika. *Filozofska Istraživanja*, *23*(2), 339–351. Retrieved from https://www.eizg.hr/userdocsimages/O_NAMA/izvjestaj_o_radu/Izvjesce_o_radu_2003.pdf

Lusthaus, D. (2002). Buddhist phenomenology: A philosophical investigation of Yogācāra Buddhism and the Ch'eng Wei-shih lun. In *RoutledgeCurzon*.

Nasr, S. H., & Rumi, J. (2007). *The pilgrimage of life and the wisdom of Rumi*. Foundation for Traditional Studies. Retrieved from https://www.amazon.com/dp/0962998451

Planck. (1944). Die Person Max Planck und ein zweifelhaftes Zitat. Retrieved January 6, 2025, from Archiv der Max-Planck-Gesellschaft website: https://www.archiv-berlin.mpg.de/201046/Max-Planck-und-ein-zweifelhaftes-Zitat

Prebish, C. S. (2013). The cybersangha: Buddhism on the Internet. In *Religion Online* (pp. 35–148). Routledge.

Prunkl, C. (2024). Human Autonomy at Risk? An Analysis of the Challenges from AI. *Minds and Machines*, *34*(3), 26. https://doi.org/10.1007/s11023-024-09665-1

Shulman, E. (2008). Early Meanings of Dependent-Origination. *Journal of Indian Philosophy*, *36*(2), 297–317. https://doi.org/10.1007/s10781-007-9030-8

Tarocco, F. (2017). Technologies of salvation:(Re) locating Chinese Buddhism in the digital age. *Journal of Global Buddhism*, *18*, 155-175. https://doi.org/10.5281/zenodo.1284254

UNDP. (2020). *Human Development Report 2020*. New York: United Nations. https://doi.org/10.18356/9789210055161

UNDP. (2022). *Human Development Report 2021/2022*. United Nations. https://doi.org/10.18356/9789210016407

UNDP. (2025). Human Development Report 2025: A Matter of Choice-People and Possibilities in the Age of AI. In *United Nations Development Programme*. New York. Retrieved from https://hdr.undp.org/content/human-development-

report-2025

UNEP. (2019). Global resources outlook 2019: Natural resources for the future we want. Retrieved from United Nations Environment Programme website: https://wedocs.unep.org/bitstream/handle/20.500.11822/27517/GRO_2019.pdf?sequence=3&isAllowed=y

UNEP. (2024). Global resources outlook 2024: Bend the trend-Pathways to a liveable planet as resource use spikes. Retrieved from United Nations Environment Programme website: https://www.unep.org/resources/Global-Resource-Outlook-2024

Winner, L. (2017). Do Artifacts Have Politics? In *Computer Ethics* (pp. 177–192). Routledge. https://doi.org/10.4324/9781315259697-21

Xue, X. (2025). The Digital Reproduction Mechanisms of Buddhist Rituals in Mobile Media Environments. *Studies on Religion and Philosophy*, *1*(2), 46–62. https://doi.org/10.71204/ftq1ev54

Zheng, Y. (2024). Buddhist Transformation in the Digital Age: AI (Artificial Intelligence) and Humanistic Buddhism. *Religions*, *15*(1), 79. https://doi.org/10.3390/rel15010079

Zuboff, S. (2019). *The age of surveillance capitalism: The fight for a human future at the new frontier of power: Barack Obama's books of 2019*. Profile books.