A DISCOURSE ON THE EMERGING ISSUES IN HEIDEGGER'S IDEA ON TECHNOLOGY AND ITS IMPLICATIONS FOR NIGERIA

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Abstract

This paper offers a reflective discourse on the emerging issues in Martin Heidegger's philosophical conception of technology, with a specific focus on the implications for Nigeria's technological advancement. Heidegger's thought moves beyond instrumental and anthropological definitions of technology, situating it within the broader context of Being and revealing. His concern lies in how modern technology reduces the world and humanity to mere resources, perpetuating what he terms the "forgetfulness of Being." In fact, everything is reduced to standing-reserve (Bestand) for human exploitation, manipulation and optimization. In this sense, technology leads to objectification, desecration, demystification of reality – every aspect of reality is subjected to optimum violent investigation, manipulation and optimization. This raises profound metaphysical and ethical concerns. While his critique is rooted in a European metaphysical tradition, its relevance to post-colonial, technologically dependent societies like Nigeria cannot be overlooked. This paper argues that Heidegger's abstract ontological framework presents both insights and limitations when applied to the Nigerian context, where technology intersects with cultural identity, development, and socio-political realities. Drawing on African communal ethics, indigenous knowledge systems, and contextual philosophical analysis, this paper advocates for a meditative and culturally sensitive approach to technology that prioritizes human dignity, ethical innovation, and sustainability. Ultimately, it calls for a synergy between philosophy and policy to ensure Nigeria's technological growth does not fall into the very dangers Heidegger cautions against. This paper adopts the analytic method of philosophical investigation.

Keywords: Heidegger, technology, enframing, Nigeria, African Philosophy, ethics

Introduction

We live in an age of science and technology. In fact, as from the Twentieth Century, the world has moved into a period of history marked by global awareness of technological advancement (Ehusani,1991,p.5). The rapid and pervasive advancement of technology in contemporary society has prompted profound questions about its impact on human existence. Thus, science and technology have become almost the two most powerful and invincible gods of our 21st century universe. This has both positive and negative implications. No doubt, the question concerning technology lies at the heart of human existence. The accelerating pace of technological innovation in the 21st century has prompted renewed philosophical interest in the essence and implications of technology. Although many philosophers and authors over time have questioned the domineering nature of technology and the consequences of its products, Heidegger remains the most spectacular thinker who extended this question to the essence of technology (Inkman,1996, p.4). Martin Heidegger stands as a towering figure in 20th-century philosophy, renowned for his significant contributions in view of his critique of technology, primarily articulated in his essay "The Question Concerning Technology" (Die Frage nach der Technik), where he presents technology not merely as a collection of tools but as a mode of revealing that fundamentally shapes human existence and our relationship with the world (Heidegger,1977,p.3). Heidegger's critique of technology emerges from his broader philosophical project, which is deeply rooted in existential and phenomenological traditions. Influenced by Edmund Husserl's phenomenology, Heidegger sought to move beyond Husserl's focus on consciousness to a more fundamental inquiry into the nature of being itself. His existential analysis in *Being and Time* sets the stage for his later work on technology, where he critiques the reduction of being to mere presence and utility, a theme that resonates with the works of existentialists such as Jean-Paul Sartre and Maurice Merleau-Ponty (Dreyfus, 1991, p.42; Thomson, 2005, p. 65). However, it should be noted that what compelled Heidegger to write on technology lies in his observation that "everywhere man remains unfree and chained to technology" (Heidegger,1977, p. 287), a situation in which the more technology advances itself, the more it "threatens to slip from human control " (p. 289). Heidegger aims at questioning technology so as to prepare a free human relationship towards it. This relationship, he believes, will be free if it opens our human existence to the essence of technology (p. 3). This relationship leads human person not to an abandonment of technology but a deciphering of its latent dangers.

While Heidegger's critique emerged from a European metaphysical tradition, his insights raise import philosophical questions for nations on the periphery of global technological development, including Nigeria. Nigeria's technological trajectory is marked by uneven growth, overreliance on imported technologies and limited integration of indigenous knowledge systems. The prevailing technocratic mindset often neglects ethical, cultural, and ontological considerations, resulting in a disconnect between technological progress and genuine human development. In this regard, Heidegger's reflection offer an opportunity for a critical interrogation of how technology is appropriated and experienced within the Nigerian context. The danger, as Heidegger posits, is not technology itself, but humanity's unreflective submission to its mode of revealing, which prioritizes efficiency over essence, and production over presence (Heidegger, 1977; Dreyfus, 1993).

This paper therefore, offers a critical and reflective discourse on the emerging issues in Martin Heidegger's philosophical conception of technology, with a specific focus on the implications for Nigeria's technological advancement. Through a philosophically grounded but

contextually relevant lens, this paper seeks to bridge Heideggerian insights and Nigeria's developmental realities. The ultimate goal is to reorient Nigeria's technological aspirations towards a model that is not only innovative but also ethically responsible, culturally rooted, and human-centered.

Heidegger's Idea of Technology

Martin Heidegger (1889-1976) was one of the most influential philosophers of the 20th century, renowned for his contributions to existentialism and phenomenology. Martin Heidegger's philosophy of technology is a cornerstone of his later thought, offering profound insights into the nature of modern technology and its impact on human existence. Martin Heidegger's philosophical sojourn began with his engagement in phenomenology and existentialism, heavily influenced by Edmund Husserl. However, Heidegger soon developed his unique approach, which he called fundamental ontology, primarily articulated in his work, *Being and Time* (1927). This text introduces the concept of *Dasein*, or "being-there," which serves as the cornerstone for Heidegger's exploration of being and existence (Heidegger, 1962, p.39). Heidegger's philosophy is fundamentally an ontological inquiry into the nature of Being. For him, Being manifests itself anew at different times. He approaches this problem of Being in three stages; the first stage is *Dasein* analysis; the second stage is art and truth as a path to Being; the final stage is being as a process that is expressed as *ereignis* (eyes of the mind) and *Gelassenheit* (surrender). Science and technology falls with the second stage of Heidegger's view on Being (Alawa, 2008, p.66).

Martin Heidegger's philosophical engagement with technology represents one of the most profound critiques of modernity and its mechanistic worldview. Investigations and discussions of technology have, according to Heidegger, solicited one basic response which has two components. This is the contemporary definition of technology which he refers to as the instrumental-anthropological definition (Heidegger, 1977, p.5). The first component is that technology is human activity and the second concerns instrumentality and means to ends relations:

> One says: Technology is a means to an end. The other says: Technology is a human activity. The two definitions of technology belong together. For, to posit ends and procure and utilize the means to them is a human activity. The manufacture and utilization of equipment, tools, and machines, the manufactured and used things themselves, and the needs and ends that they serve, all belong to what technology is. The whole complex of these contrivances is technology (1977, p. 288).

Heidegger holds that these two definitions are not mutually exclusive and are inseparable, for to posit ends and procure or utilize the means to them is a human activity (p. 4). A means is that whereby something is effected and thus attained (p. 6). A means to an end implies a cause that brings about an end. Every effect is a consequence of a cause, therefore a recline on the principle of causality is pertinent in the venture of discovering the essence of technology. To establish his point clearer, Heidegger draws us back to the Aristotelian four causes: "What technology is when represented as a means discloses itself when we trace instrumentality back to fourfold causality" (p. 6).

Aristotle outlined four causes: the *causa materialis*, the *causa finalis*, the *causa formalis* and the *causa efficiens*. The *causa formalis* (the formal cause) is the essence of a thing, the form being actualized in its matter; that which makes it the sort of thing it is (Lawhead, 2002, p.78). The *causa*

materialis (the material cause) is that out of which a thing is made, the *causa efficiens* (the efficient cause) signifies that by what a thing is made while the *causa finalis* (final cause) designates the end for which it is made (Stumpf, 2008, p. 77). According to Heidegger, the four causes are co-responsible for whatever that is made. Yet, discussing the primacy of the human element, Heidegger asserts: "the *causa efficiens* but one among the four causes, set the standard for all causality" (1977, p. 7).

Originally, in Greek, "cause" (*aition*) has nothing to do with bringing about and effecting rather it refers to something of which something else is indebted. The four causes are ways, all belonging at once to each other, of being responsible for something else (p. 7). This can be illustrated using a wood out of which a table is made. As a matter (hyle), the wood is co-responsible for the table and the table is indebted to the wood as well as it is indebted to the *tableness* (its form) and to the carpenter. Heidegger goes ahead to sustain that:

> The four ways of being responsible bring something into appearance. They let it come forth into presencing. They set it free to that place and so start it on its way, namely, into its complete arrival. The principal characteristic of being responsible is starting something on its way into arrival that being responsible is an occasioning... (p. 3)

Heidegger strongly opposes the view that technology is "a means to an end" or "a human activity". For him, the definitions are correct but not true because they do not go deep enough. Unquestionably, Heidegger notes that technological objects are means for ends, and are built and operated by human beings, but the essence of technology is something else entirely. Just as the essence of a tree is not itself a tree, Heidegger points out, so the essence of technology is not anything technological (p. 4).

What, then, is technology, if it is neither a means to an end nor a human activity? Heidegger goes beyond the colloquial understanding technology as availing means for an end, of man's transactions with nature, the merely instrumental and anthropological definition of technology. He expands the concept of technology to encompass *poiesis* (poetry) and *episteme* (knowledge or science), Greek words that belong to the domain of revealing (*aletheia*) and, hence, have something to do with engendering and truth (Nadal quoted in Kanu, Ejikeme & Chike. 2017, p. 55). In doing so, Heidegger moves beyond the initial meaning of *techne* as making. He holds this position because, first, *techne* is related to *poiesis* because before it is a making, it is a bringing-forth. *Poiesis*, the Greek word from which we get the word poetry, names that which brings something forth into presence, or that which renders the potentiality of the not-yet into explicit actuality. Hence, any activity or action which is the cause of a thing in the sense of bringing something into presence belongs to *poiesis*. Second, *techne-as-poiesis* is linked to *episteme* (knowledge/science) not only because every rational design is enabled by a certain knowledge, but also because what is brought-forth, what is disclosed, is a truth (p. 55).

Thus, stitching together *techne*, *poiesis*,and *episteme*, that is to say, linking the power of making (*techne*) as primarily a mode of bringing-forth (*poiesis*), in which what is revealed is truth (*episteme*), Heidegger takes us away from the conventional and instrumentalist definition of technology as "a means to an end" toward an idea of technology as "a way of revealing."

For Heidegger, "if we inquire step by step into what technology represented as a means actually is, then we shall arrive at revealing...Technology is therefore no mere means. Technology is a way of revealing. If we give heed to this, then another whole realm for the essence of

technology will open itself up to us. It is the realm of revealing, i.e., truth" (1977, p. 12). "Revealing" is one of the terms developed by Heidegger in order to make it possible to think what according to him, is not thought anymore. In his translation of the Greek word *Aletheuein*, which means "to discover," to uncover what was covered over. Related to this verb is the independent noun *aletheia*, which is usually translated as "truth," though Heidegger insists that a more adequate translation would be "un-concealment."

But how can technology be "a way of revealing"? For Heidegger, 'reality' is not something absolute that human beings can ever know once and for all; it is relative in the most literal sense of the word – it exists only in relations. Reality "in itself," therefore is inaccessible for human beings. As soon as we perceive or try to understand it, it is not "in itself" anymore, but 'reality for us.' This means that everything we perceive or think or interact with "emerges out of concealment into unconcealment" in Heidegger's words (1977, p. 13). By entering into a particular relation with reality, reality is 'revealed' in a specific way. And this is where technology comes in since "Technology is a mode of revealing. Technology comes to presence in the realm where revealing and unconcealment take place, where *aletheia*, truth, happens" (p. 13). The revealing of modern, therefore, is not *bringing-forth*, but rather *challenging-forth* that expedites in that it unclocks and exposes (p. 224).

Having established the fact that technology is a mode of revealing, Heidegger argues that both ancient and modern technologies are both ways of revealing. However, while the ancient Greeks experienced the 'making' of something as 'helping something to come into being,' Heidegger argues that modern technology is rather a 'forcing into being':

> And yet the revealing that holds sway throughout modern technology does not unfold into a bringing-forth in the sense of *poiesis*. The revealing that rules in modern technology is a challenging (*Herausfordern*), which puts to nature the unreasonable demand that it supplies energy that can be extracted and stored as such" (1977, p. 14).

The revealing of modern, therefore, is not *bringing-forth*, but rather *challenging-forth* that expedites in that it unlocks and exposes (p. 224). Heidegger continues to write:

> The revealing that rules throughout modern technology has the character of a setting-up, in the sense of a challenging-forth. That challenging happens in that the energy concealed in nature is unlocked, what is unlocked is transformed, what is transformed is stored up, what is stored up is, in turn, distributed, what is distributed is switched about ever new. Unlocking, transforming, storing, distributing, and switching about are ways of revealing. But the revealing never simply comes to an end. Neither does it run off into the indeterminate. The revealing reveals to itself its own manifoldly interlocking paths, through regulating their course. This regulating itself is, for its part, everywhere secured. Regulating and securing even become the chief characteristics of the challenging revealing. [...]Everywhere everything is ordered to stand by, to be immediately at hand, indeed to stand there just so that it may be on call for a further ordering. Whatever is ordered about in this way has its own standing. We call it the standing-reserve (*Bestand*). The word expresses here something more, and something more essential, than mere stock. The name "standing-reserve" assumes the rank of an inclusive rubric. It designates nothingless than

> the way in which everything presences that is wrought upon by the challenging revealing. Whatever stands by in the sense of standing-reserve no longer stands over against us as object [*Gegenstand*] (1977, pp. 224-225).

Andrew Mitchell explains that modern technology as challenging-forth leads to technological homogenization that diminishes the gap between subject and object; and transforms everything into an orderable and deliverable standing reserve, the human being included (Mitchell 125). This phenomenon in which challenging gathers man into ordering the self-revealing as standing-reserve is defined as *Ge-stell* (Enframing) by Martin Heidegger. It precisely means "the gathering together of that setting-upon which sets upon man, challenges him forth, to reveal the real, in the mode of ordering, as standing-reserve" (227). In sum, to challenge-forth means to reveal whatever there is as a variety of resources (standing-reserve), to be effectively organized and used (Cerbone 142). Hence, the revealing that reigns in Modern technology, unlike that of pre-modern technology, is violent, artificial and rape-like.

Heidegger also makes a distinction between technology and the essence of technology using a tree analogy. For him, one has to understand the essence of technology from the way it is, through a free relationship with it. In his words: "when we can respond to this essence, we shall be able to experience the technological within its own bounds" (2-4). In the tree analogy, Heidegger declared that:

> When we are seeking the essence of tree, we have to become aware that, that which pervades every tree, as tree, is not itself a tree that can be encountered among all the other trees. Likewise, the essence of technology is by no means anything technological. Thus we shall never experience our relationship to the essence of technology so long as we merely conceive and push forward the technological, put up with it, or evade it. Everywhere we remain unfree and chained to technology, whether we passionately affirm or deny it (1977, p.4).

This paradox invites a deeper ontological inquiry: rather than understanding technology through its function or utility, Heidegger seeks to uncover the mode of revealing it embodies. For him, technology is a way through which truth (*alethia*) unfolds or comes into presence.

The real peril, according to Heidegger, lies not in the technological devices themselves but in the worldview they foster. He writes: "The essence of enframing is the danger" (Heidegger, 1977, p.28). This danger is existential; it lies in the possibility that other modes of revealing – such as poetic, artistic, or spiritual dimensions – may be concealed. When enframing becomes dominant, it obscures the full range of human experience and narrows being to what is quantifiable and useful.

Nevertheless, Heidegger also identifies within this danger a "saving power." He writes, "Where danger is, grows the saving power also" (Heidegger, 1977, p.28). This paradox implies that within the dominant technological worldview, there still lies the possibility of an alternative relationship with being. The potential for salvation does not come from rejecting technology, but from a transformed mode of thinking that resists the totalizing force of enframing.

Heidegger contrasts two modes of thinking: calculative thinking and meditative thinking. Calculative thinking is pragmatic and goal-oriented; it computes, plans, and solves problems but

does not question the meaning or value of what it calculates. It dominates in technological societies, where efficiency and productivity are paramount. Meditative thinking, by contrast, is reflective and open. It contemplates the meaning of existence, allowing beings to "be" rather than controlling or manipulating them (Heidegger, 1966).

Emerging Issues in Heidegger's Philosophy of Technology

Martin Heidegger's philosophy of technology continues to be a fertile ground for exploring and understanding the complex relationship between humans and technology. While formulated in the context of 20th-century Western industrialization, it raises timeless and globally relevant issues that continue to resonate, especially in rapidly modernizing societies such as Nigeria. As the country pursues digitalization, industrialization, and technological innovation, several emerging concerns drawn from Heidegger's thought warrant critical attention. These issues transcend mere technical efficiency or policy frameworks and strike at the core of how technological progress is conceived, implemented, and lived.

One of the foremost issues in Heidegger's account is the risk of alienation and the loss of being. Heidegger introduces the concept of *enframing* (*Gestell*) to describe the way in which technology transforms our understanding of being. *Enframing* reduces everything to calculable resources, obscuring the deeper meanings of existence and reducing human beings to mere standing reserve. Heidegger argues that technology fundamentally alters human existence by transforming our relationship with the world. He suggests that modern technology imposes a calculative thinking that reduces the world to a resource for exploitation (Heidegger, 1977, p. 19). This transformation leads to an instrumental view of both nature and human beings, where efficiency and utility become the primary metrics of value. Instead of living in harmony with nature, humans are positioned as controllers and exploiters of resources. This shift has profound implications for our sense of self and our place in the world (Dreyfus, 1991, p. 145). In the age of technological dominance, Heidegger warns of the danger of losing touch with our authentic selves. The pervasive presence of technology can lead to a sense of alienation, estranging us from our own being and the world in which we dwell. In Nigeria, this is increasingly evident in the shift towards digitalized labour, automated governance, and technological consumerism, which risk creating a generation more attuned to devices and algorithms than to cultural identity, communal values, or existential purpose (Onyeocha, 2006, p 15).

Heidegger's critique of *Gestell* alerts us to the threat of technological determinism – the belief that technological progress is inevitable and should shape social and ethical frameworks rather than the reverse. In Nigeria, this deterministic approach often manifests in the uncritical adoption of Western technologies and models without evaluating their compatibility with indigenous cultures and ecological realities. The dominance of one mode of revealing (calculative thinking) marginalizes other ways of knowing, such as oral tradition, myth, spirituality, and African metaphysics, leading to epistemological colonization (Asouzu, 2004, p. 7).

Another critical issue in Heidegger's account is the concealment of truth. When technology enframes the world as standing reserve, it blinds humanity to other dimensions of Being. This concealment is dangerous because it deprives societies of the full richness of experience and interpretation. For Nigeria, the unchecked embrace of technological modernity may obscure vital

elements of traditional knowledge systems, communal solidarity, and ecological sensitivity – elements that are essential for sustainable development and cultural integrity (Fayemi, 2009, p. 6).

Heidegger's notion of *Bestand* – where everything is seen as resources – raises concerns about the commodification of both nature and humanity. In Nigeria, the exploitation of natural resources (e.g., oil, minerals, forests) is often framed in technological-economic terms, with little regard for long-term environmental or ethical consequences. Similarly, human labour is increasingly commodified in the gig economy, where people are valued primarily for their productivity. This mindset threatens ecological balance and undermines the dignity of the human person (Ekanola, 2006, pp. 179-192).

Finally, Heidegger calls for a return to meditative thinking, a reflective attitude that questions the essence of technology and its place in human life. For Nigeria, this suggests the need for a philosophical framework in policymaking – one that prioritizes human dignity, cultural heritage, and existential meaning over mere technological efficiency. Without this reflective orientation, technological policies may replicate the very dangers Heidegger cautions against, resulting in a future shaped more by machines than by meaning.

The Nigerian Technological Context

Nigeria, often described as the "giant of Africa," is a nation blessed with vast human and material resources. Despite this potential, its technological development has been inconsistent, hampered by infrastructural deficits, weak policy implementation, inadequate investment in research and development, and a longstanding dependence on foreign technological systems. The nation continues to grapple with the tension between technological aspiration and underdevelopment, a tension that mirrors the philosophical issues Heidegger raises about the essence and direction of modern technology (Nwoko, 1991, pp. 61-85).

In Nigeria, the adoption of technology has largely followed a utilitarian trajectory, where technological tools are evaluated primarily by their capacity to enhance productivity and solve immediate economic challenges. This instrumentalist view aligns with what Heidegger criticizes as the essence of modern technology – enframing (*Gestell*) – where everything, including human beings and nature, is seen through the lens of efficiency, control, and calculability (Heidegger, 1977). This reduction of technology to a mere tool for economic advancement, while pragmatic, often overlooks the cultural, ethical, and existential dimensions of technological life.

The proliferation of mobile telephony, social media, financial technologies (FinTech), and infrastructural advancements in Nigeria reflects a strong enthusiasm for digital transformation. However, the country has not yet developed a robust indigenous technological philosophy or a critically reflective framework for assessing the implications of these developments. Technological adoption in Nigeria tends to be reactive rather than proactive, often driven by global trends and market forces rather than grounded national priorities or philosophical reflection (Olatunbosun, 2018, pp. 583-589). As a result, technology is often imposed upon, rather than emerging from, the lived experiences and cultural frameworks of Nigerian society.

Moreover, the dominance of imported technologies – particularly from Western and Asian countries – has created a form of technological dependency that echoes the colonial legacy of epistemic and material control. This reality raises questions about Nigeria's technological

sovereignty and its ability to define development on its own terms (Akinwale, 2010). Indigenous knowledge systems, which once supported sustainable technologies in agriculture, medicine, and architecture, have been marginalized, further reinforcing Heidegger's concern that technology, when uncritically embraced, can obscure more authentic modes of revealing.

The Nigerian educational system, particularly in science and technology, also reflects these limitations. While significant emphasis is placed on technical skills, there is little attention to the philosophical and ethical education that should accompany technological training. This has led to a disconnection between technological practice and moral responsibility, a concern Heidegger articulates in his warning about the loss of *poiesis* – the capacity for technology to be a form of creative and responsible revealing (Heidegger, 1977).

Furthermore, the lack of technological regulation and ethical oversight in sectors such as biotechnology, surveillance, artificial intelligence, and environmental engineering threatens to exacerbate social inequality and ecological degradation in Nigeria. Without a coherent ethical and philosophical framework to guide these developments, technology risks becoming a force that alienates rather than empowers. In this context, Heidegger's critique of technology provides a valuable lens through which to interrogate the philosophical underpinnings of Nigeria's technological ambitions.

Implications for Nigeria's Technological Future

Applying Heidegger's thought to Nigeria suggests several philosophical and policy-oriented imperatives. Thus, the relevance of Heidegger's critique of technology to Nigeria is not merely theoretical – it has profound practical and philosophical implications for how the nation navigates its technological development. Nigeria stands at a crossroads where the pressure to modernize and industrialize often clashes with the imperative to preserve cultural identity, social cohesion, and environmental integrity. Heidegger's notion of *Gestell* urges Nigeria to reflect critically on the nature and trajectory of its technological adoption, questioning not just what technologies are used but how they reveal the world and shape the human experience.

A first implication is the urgent need to rethink technological development beyond the narrow confines of economic efficiency and industrial utility. Nigeria's current approach often prioritizes technological solutions that promise rapid gains in infrastructure, finance, agriculture, or security, but with limited regard for long-term cultural or ecological consequences. This utilitarian mindset aligns with Heidegger's warning that under *Gestell*, everything – including human life – is viewed as a resource to be optimized. Consequently, such an approach risks entrenching technological dependency, eroding indigenous knowledge systems, and fostering a form of cultural self-alienation.

Second, Heidegger's critique encourages a contextual and participatory philosophy of technology – one that is rooted in local knowledge, ethical reflection, and the lived realities of Nigerian communities. This would involve fostering technological innovation that is culturally responsive and ecologically sustainable. For example, integrating traditional architectural practices with modern materials, or blending indigenous agricultural techniques with appropriate technologies, can yield solutions that are both modern and authentically Nigerian (Akinwale, 2010;

Eze, 2020). In this way, technology becomes a mode of *poiesis* – a creative revealing that harmonizes rather than disrupts the cultural and natural order.

Third, Nigeria must develop institutional structures that support ethical technology governance. Heidegger's emphasis on the meditative over the calculative mode of thinking suggests that technological progress must be accompanied by philosophical and ethical inquiry. Educational institutions should integrate humanities, philosophy of technology, and ethics into curricula, cultivating technologists who can think critically about the broader implications of their work, policymakers, likewise, must engage not only engineers and economists but also ethicists, cultural theorists, and environmental scholars when crafting national innovation policies.

Finally, Nigeria's religious and communal traditions – often overlooked in policy discourse – can serve as sources of resistance to the nihilistic tendencies of *Gestell*. Many Nigerian communities maintain strong relational worldviews in which nature, technology, and humanity are interconnected. These worldviews can serve as a counterbalance to the reductionist tendencies of Western technological rationality. Thus, Heidegger's thought, read in dialogue with African philosophies of harmony and community, can help articulate a more holistic vision of technological development in Nigeria.

Conclusion

Martin Heidegger's philosophy of technology challenges contemporary society to rethink its relationship with technological advancements fundamentally. His critique of *enframing* reveals the profound implications of technology on human existence, urging us to transcend mere efficiency and control to consider the ethical and existential dimensions of technological development. Particularly, his concept of *Gestell* offers Nigeria a powerful critical lens through which to examine the trajectory of its technological development. While Heidegger's concerns were rooted in a Western metaphysical tradition, his insights transcend geographic boundaries and invite deeper reflection on how technology reveals and shapes reality. For Nigeria, the uncritical adoption of modern technological systems risks replicating the very dangers Heidegger warns against: the reduction of nature and humanity to mere resources and the loss of more authentic ways of being. However, Heidegger does not call for a rejection of technology but advocates for a more thoughtful, meditative relationship with it – one that allows space for creativity, cultural identity, and ethical responsibility. Applying this to the Nigerian context means moving beyond a purely instrumental or economic understanding of technological advancement. It requires grounding technology within the cultural, philosophical, and ecological realities of Nigerian life. To this end, Nigeria must foster indigenous technological thinking, integrate ethical reflection into scientific education and policy, and resist the totalizing narratives of Western technocracy. By doing so, Nigeria can forge a path toward technological growth that is not only economically beneficial but also ontologically enriching and socially responsible. In a nut shell, Heidegger's critique does not suggest a rejection of modern technology. Rather, it calls for a deeper engagement with its essence and a cautious, reflective attitude towards its adoption. For Nigeria, this means charting a technological path that not only seeks economic advancement but also preserves cultural integrity, supports human flourishing, and respects the ontological richness of both people and nature.

References

Akinwale, A.A. 2010. 'The intellectual dimension of technological underdevelopment in Africa', *Journal of Sustainable Development in Africa*, 12 (6), pp. 169-185

Alawa, P.Z. 2008. Heidegger on Being: An Expository Analysis. Port Harcourt: Unpublished PhD Dissertation.

Arendt, H. 1958. *The Human Condition*. Chicago, Illinois: Chicago University Press.

Arthur, B. 2009. *The Nature of Technology*. New York: Free Press.

Asouzu, I.I. 2004. *The Method and Principles of Complementary Reflection in and Beyond African Philosophy* . Calabar: University of Calabar Press.

Barad, Karen. 2007. "Meeting the Universe Halfway: Quantum Physics and the Entanglement of Matter and Meaning," Duke University Press.

Borgmann, A. 1984. *Technology and the Character of Contemporary Life: A Philosophical Inquiry*. University of Chicago Press,.

Borgmann, A. 2005. "Technology" in *A Companion to Heidegger*, ed. Hubert L. Dreyfus and Mark A. Wrathall. Malden, MA: Blackwell Publishing.

Borgmann, Albert. 1984. *Technology and the Character of Contemporary Life: A Philosophical Inquiry*. University of Chicago Press.

Botha, C. F., 2003. "Heidegger, Technology, and Ecology", *South African Journal of Philosophy* 22, No. 2.

Brynjolfsson, Erik, and Andrew McAfee. 2014. *The Second Machine Age: Work, Progress, and Prosperity in a Time of Brilliant Technologies*, New York: W.W. Norton & Company.

Callahan, D. 1973. *The Tyranny of Survival*. New York: Macmillan.

Cerbone, D. R. 2008. *Heidegger: A Guide for the Perplexed*. New York: Continuum International Publishing Group.

Dreyfus, Hubert L. 1972. *What Computers Can't Do: A Critique of Artificial Reason.* New York: Harper and Row.

Dreyfus, Hubert L. 1991. *Being-in-the-World: A Commentary on Heidegger's Being and Time*. Division I. MIT Press.

Dreyfus, Hubert L. 1993. "Heidegger on the Connection between Nihilism, Art, Technology, and Politics."*Cambridge Companion to Heidegger*, edited by Charles Guignon, Cambridge University Press, pp. 289-316.

Dreyfus, Hubert L. 2001. *On the Internet*. London & New York: Routledge.

Dreyfus, Hubert L., and Charles Spinosa. 1990."Further Reflections on Heidegger, Technology, and the Everyday."*Bulletin of Science, Technology & Society*, vol. 10, no. 4, pp. 157-169.

Durkheim, E.1951. *Suicide: A Study in Sociology*. New York: Free Press.

Ebeh, J. I. 2020. *A Philosophical Analysis of the Morality of Modern Reproductive Technologies*. Ankpa: Prolov Integrated Services.

Ebeh, J. I. 2020. *Hans Jonas' Thought on the Ethics of Research on Human Subject: Implications for Nigeria*. Ankpa: Prolov Integrated Services.

Ehusani, G.O. 1991. *An Afro-Christian Vision "OZOVEHE!": Toward A More Humanized World*. New York: University Press of America.

Ekanola, A.B. 2006. "African Communalism and the Search for African Personhood." *Journal of African Cultural Studies*, 19 (2), pp. 179-192.

Ellul, J. 1965. *The Technological Society*.Trans. John Wilkinson. London: Jonathon Cape.

Eze, M. O. 2020. *Indigenous Knowledge and Sustainable Development in Africa: Challenges and Opportunities*. London: Routlege.

Faye, Emmanuel. 2009. *Heidegger: The Introduction of Nazism into Philosophy*. Yale University Press.

Feenberg, A. 1991. *Critical Theory of Technology*. New York: Oxford University Press.

Feenberg, A. 1995. *Alternative Modernity*. Cambridge: Harvard University Press.

Feenberg, A. 1999. *Questioning Technology*. New York: Routledge.

Floridi, Luciano, and Mariarosaria Taddeo. 2018. "What is Data Ethics?" Philosophical Transactions of the Royal Society A. Vol. 376, no. 2128.

Floridi, Luciano. 2013. *The Ethics of Information*. Oxford University Press.

Floridi, Luciano. 2014. *The Fourth Revolution: How the Infosphere is Reshaping Human Reality*. Oxford University Press.

Foltz, Bruce V. 1995. *Inhabiting the Earth: Heidegger, Environmental Ethics, and the Metaphysics of Nature*. Humanities Press.

Foucault, M., 1988. Technologies of the Self, in L. H. Martin, H. Gutman, & P.H. Hutton (Eds.), *Technologies of the SelfA Seminar with Michael Foucault*. Amherst: University of Massachusetts Press, 16-49.

Galbraith, J. K. 1967. *The New Industrial State*. New York: New American Library,.

Gendron, B. 1977. *Technology and the Human Condition*. New York: St. Martin's Press.

Godzinksi, R. 2005. "Enframing: Heidegger's Philosophy of Technology", *Essays in Philosophy* 6, No. 1, January.

Habermas, J. 1987. *The Philosophical Discourse of Modernity: Twelve Lectures*. Cambridge: MIT Press.

Harman, G. 2002. *Tool-Being: Heidegger and the Metaphysics of Objects*. Open Court.

Harman, Graham. 2007. *Heidegger Explained: From Phenomenon to Thing*. Open Court.

Heidegger, M. 1962. *Being and Time*.Translated by John Macquarrie and Edward Robinson.Revised edition. New York: Harper and Row Publishers.

Heidegger, M. 1966. *Discourse on Thinking*. New York: Harper Torch Books.

Heidegger, M. 1977. *The Question Concerning Technology*.B*asic Writings*, edited by David Farrell Krell. New York: Harper and Row, pp. 287-317.

Heidegger, M. 1977. "The Turning."In *The Question Concerning Technology and other Essays*.Trans. William Lovitt. New York: Harper and Row Publishers.

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

Heidegger, Martin. 2000. *Introduction to Metaphysics*. Translated by Gregory Fried and Richard Polt, Yale University Press.

Henry, G. L. and Scott R. 1980. *A Greek-English Lexicon*. Oxford: Oxford University Press.

Herman, P. 1998. *Heidegger's Philosophy of Being: A Critical Interpretation*. New Jersey: Princeton University Press.

Hui, Yuk. 2016. *The Question Concerning Technology in China: An Essay in Cosmotechnics*. Urbanomic.

Ihde, D. 2010. "Heidegger on Technology: One Size Fits All." *Philosophy Today*, 54, 101-105.

Ihde, D. 2023. "Heidegger's Philosophy of Technology." In Robert Scharff and Val Dusek (eds), *Philosophy of Technology – The Technological Condition: An Anthology*. London: Blackwell Publishing..

Ihde, Don. 1990. *Technology and the Lifeworld: From Garden to Earth*. Indiana University Press.

Inkmann T. 1996. "Being-in-the-World and Technology: An Exposition of the Philosophy of Martin Heidegger". A Thesis presented at the University of Windsor, Canada.

Jonas, Hans. *1984. The Imperative of Responsibility: In Search of an Ethics for the Technological Age*. University of Chicago Press.

Kanu, I. A. , Ejikeme, P. O. & Chike, A. B. 2012. "Questioning Heidegger's Question Concerning Technology." *Journal of Humanities and Social Sciences*, vol. 9, no. 4, Junne, pp. 47-63.

Keller, D. 2001. New Technologies/New Literacies: Reconstructing education for the new millennium, in L. Stone (Ed.), *Philosophy of Education 2000*, Philosophy of Education Society, 21-36.

Lakatos, I. 1976. *Proofs and Refutations*. Cambridge: Cambridge University Press.

Lawhead, W. H. 2002. *The Voyage of Discovery: A Historical Introduction to Philosophy*. USA: Eve Howard,

Marcuse, H. 1964. *One-Dimensional Man: Studies in the Ideology of Advanced Industrial Society*. Beacon Press.

Marcuse, H. 2010. The New Forms of Control, in Technology and Values: Essential Readings. C. Hanks (ed.), West Sussex, UK: Wiley-Blackwell Edition, 160.

Mitcham, C. 1994. *Thinking Through Technology: The Path between Engineering and Philosophy*. Chicago & London: University of Chicago Press.

Mitchell, A. J. 2019. "The Question Concerning the Machine: Heidegger's Technology Notebooks in the 1940s-1950s", in *Heidegger on Technology*, ed. Aaron Wendland, Christopher Merwin, Christos Hadjioannou, Routledge, New York: Routledge, 115-135.

Moser, S. "1971. Toward Metaphysics of Technology." *Philosophy Today*, vol. 15, no. 2/4, 1971, pp. 129-156.

Nwoko, M.I. 1991. *Philosophy of Technology and Nigeria*. Owerri: Claretian Institute of Philosophy.

Ofuasia, E. and Ojieko, S. 2017. "A Further Reflection on Martin Heidegger's Contemplation on Technology within 21st Century Mode of Being" *Philosophia* 17 philosophia-bg.com.

Olatunbosun, O. 2018. 'Technology, dependency and development: A Philosophical assessment of Nigeria's Experience,' *African Journal of Science, Technology, Innovation and Development*, 10 (5), pp. 583-589.

Onyeocha, I.M. 2006. *Africa: The Question of Philosophy*. Washington: The Council for Research in Values and Philosophy.

Pacey, A. 1983. *The Culture of Technology*. Cambridge: MIT Press.

Rosen, Stanley. 1993. *The Question of Being: A Reversal of Heidegger*. Yale University Press.

Scharff, Robert C., and Val Dusek, (editors). 2003. *Philosophy of Technology: The Technological Condition*. Wiley-Blackwell.

Sloane, M. G. 2006. "Heidegger and the Essence of Modern Technology" A thesis submitted for Doctor of Philosophy of The Australian National University, Australia.

Stumbaugh, J. 1991. *Thoughts on Heidegger*. Maryland: University Press of America Inc..

Stumpf, Enoch. 2008. *Philosophy, History and Problems*. New York: McGraw Hill.

Taylor, M. J. 2006. "The Question Concerning Heidegger Technology: Technology and Being, a Deeper Understanding". A Thesis submitted to Texas A&M University, Texas, 2006.

Thomas, I. 2000. "What's Wrong with Being a Technological Essentialist? A Response to Feenberg."*Inquiry*, 43, 429-444.

Thomson, Iain. 2011. *Heidegger, Art, and Postmodernity*. Cambridge University Press.

Thomson, Iain. 2005. *Heidegger on Ontotheology: Technology and the Politics of Education*. Cambridge University Press.

Turkle, Sherry. 2015. *Reclaiming Conversation: The Power of Talk in a Digital Age*.Penguin Press.

Turkle, Sherry. 2011. *Alone Together: Why We Expect More from Technology and Less from Each Other*. Basic Books.

Uka, E. M. 2006. "Issues in Technology: Man and Technology, Who Controls the Other?" in ed. P. Alozie, *Technology, Science and Environment*. Calabar: University of Calabar Press.

Verbeek, Peter-Paul 2005. . *What Things Do: Philosophical Reflections on Technology, Agency, and Design*.Penn State University Press.

Verbeek, Peter-Paul. 2011. *Moralizing Technology: Understanding and Designing the Morality of Things*. University of Chicago Press.

Zimmerman, Michael E. 1990. *Heidegger's Confrontation with Modernity: Technology, Politics, Art*. Indiana University Press.