

Heidegger's Critique of Science and Technology and Its Implications for Humanity

By

Itohowo P. Ignatius (Ph.D in view),
Itopi093@gmail.com

&

Inameti L. Udo, Ph.D
inametiudo@aksu.edu.ng

&

Francis O. Ating,
Abasiating1@gmail.com
Department of Philosophy, Akwa Ibom State University

Abstract

There is no doubt that the contemporary society in which we live is one typically noted for techno-scientific progress. The level which the contemporary man has reached concerning scientific cum technological developments is quite amazing. Unfortunately, there has been a basic tension between the awareness of the “limit to growth” and the idea of “continuous progress” in science and technology. Behind these great ideas and discoveries is an awful desire to drag humanity to the precipices of nothingness and meaninglessness. Science and technology has gone too excess such that it has moved from pro-man to contra-man. While some scholars attribute this ugly scenario to negligence of moral sense of science and technology by modern man, Heidegger in inquiring into the mood-basis of modern technology however appeals to the Greek understanding of *techne* which connotes a ‘bringing forth’ and maintains that technology itself is not good or bad, rather the problem lies with technological thinking which has become the only form of thinking. Using expository, analytical and critical methods of Philosophical research, this work attempts to expose and critically analyse Heidegger's critique of science and technology and its implications for the being of man. The paper agrees with Heidegger that although technological advancements are quintessential for the growth of every society as it helps man to develop and facilitate life, yet many scientific inventions/creations endanger and degrade the being of man. Hence their excesses should be checkmated.

Keywords: *Science, Technology, Implications, Man, Being*

Introduction

Technological advancements are no longer impressions of phantasmagoria. They are rather real. Drowned in a technocentric world is the man of today. The manifesto of the contemporary world is that of technology. The modern age has witnessed tremendous advancement in science and its application technology such that it has affected all spheres of human endeavours viz governance, educational sector, finance, agriculture, craftsmanship, etc with the objective of making life easier. Be that as it may, science has its own problems. Through the ingenuity of man in this area, a lot of harm has been done to humanity. It has awfully underrated and reduced man to mere objects and devalued the dignity of the human person in many ways. For instance, the destruction of human environments through pollution, depletion of ozone layer and bastardization of human dignity etc has done more harm to man. But this should not be the case because according to Udo and Essiet (2024:p.54)

People look out for certain values when getting into relationships or partnerships. We associate with individuals when they are sympathetic, honest, considerate and generally humane. This shows that humans cannot ignore the value of virtues because they are necessary for life to go well. There is a correlation between virtue and the good life.

When modern science ignores virtues it creates problems for the being of man like promoting the culture of death instead of life, shortage of resources, the ecological problem, the arms race and the neglect of morality to mention but few. This then implies that Science and technological advancements is a double-edge sword with both merits and demerits. But most often, people fail to see its demerits and only focus on the merits. Udo Etuk, cautions that there is a need to:

Correct the one-sided view of science which only sees the good that science has brought to mankind and ignore the fact that the activities of science and scientists need to be checked and counter-balanced on other fronts by other areas of human endeavour and concern (cited in Idang and Afia, 2011, p.167)

It is with this thought of Udo Etuk in mind that we see to analyse Martin Heidegger's concerns with the everyday growing hegemony of science and technology and its implications for the being of man. But first, let us consider the concepts of science and technology.

The Concept of Science

The term 'science' has no univocal definition. The term has been variedly defined by scholars based on their opinion, worldview or interest. Various dictionaries have literally defined science as "knowledge arranged in an organised or orderly manner, especially knowledge derived from experience, observation and experimentation. For this reason, it is often claimed that scientific knowledge is a proven knowledge" (Uduigwomen, 2007, p.20). For Ratzsch (1986,

p.15), science is a theoretical explanatory discipline which objectively addresses natural phenomena within the general constraint that (1) its theories must be rationally connectable to generally specifiable empirical phenomena, and that (2) it normally does not leave the natural realm for the concepts employed in its explanation. In fact, scientific realism holds an extreme position of science. Scientific realists maintain the view that something only exists if and only if it can be proven so through the rigors of scientific process (Umotong, 2018). Buttressing this point further, Blanshad (cited in Idang and Afia, 2011), notes how Bertrand Russell remarked that ‘what is knowledge is science, and what is not science is not knowledge’. Going by this definition, one can easily observe that there is no place for any knowledge claim that cannot be empirically verifiable in science.

Etymologically, the term ‘science’ is derived from the Latin noun *scientia* (knowledge) which has its root in the Latin verb *scire* which means ‘to know’. Its Greek equivalent is *Episteme* (knowledge) (Udokang, 2018). According to Aigbodioh (1997, p.1), the term science refers to “any systematic, organised or classified body of knowledge which has been critically tested and is beyond reasonable doubt”. According to Umoren (1996), science is a systematic process of obtaining knowledge (and the knowledge obtained) through experimentation and empirical testing of speculations. Uduigwomen (2007) sees it as a process of searching for truth about nature, and the product that result from such a process. As a process, science involves scientific methodology; as a product, science involves scientific knowledge, facts, concepts, laws, theories, generalisation and other forms of knowledge which guide practices and find applications as technology, and as stored and written in textbooks and taught to learners as science.

However, Uduigwomen (2007) alludes that physical matter is not all that science concerns itself with. He argues that science is more than just matter. Science sometimes concerns itself with non- material. That is to say that, in as much there is a physical realm of science, there is also a non-physical real. According to him,

Science has been broadly classified into two, namely, real science and formal science. While the former goes after sensory realities or empirical data, the latter goes after abstract structures or entities. While the former achieves its results through experience, observation and testing of facts, the latter achieves its result through logical reasoning (Uduigwomen, 2007, p.21).

This implies that science is not only concerned with physical realities but also on the non-physical or abstract realities. Included within the purview of real science are the natural sciences, the social sciences and the cultural sciences; whereas formal science includes mathematics, structural science and formal logic (Uduigwomen, 2007; Udokang, 2018). Experimental sciences are different from Philosophy and mathematics. Philosophy and mathematics are rational sciences which are developed by systematic reflection and analysis. Neither the mathematician nor the philosopher appeals to any observable facts except those of the common sense. Both can conduct in their exploitations while sitting at a desk, both are arm chair thinkers (Alawa 2013).

The Concept of Technology

As observed from Uduigwomen's definition of science above, it can be deduced that technology is simply the application of science. However, this definition seems limited and obscure. Thus, in further explication of the term, Uduigwomen (2007, p.22) asserts that technology has to do with "the application of scientific knowledge, principles, laws and theories in solving man's environmental problems". According to Umoren (1996), the term technology, refers to the application of science and other forms of organised body of knowledge towards the solution of practical problems. This is to say that technology is not simply the application of science, but that it is purpose driven, that is, to solve mans problem. Thus, we can say that technology is a problem-solving process that is developed to control the environment as well as improve the quality of life. For instance, technology has solved long-distance communication problem through the innovation of communication network and devices like mobile phones, radio, television, and even communication platform like social media for easy and efficient communication.

The concept of technology is mostly mentioned while talking about the advancement in science. In fact, the idea of science and technology is very common in our contemporary society especially with the growing influence of the latter. Technology is closely related to science because scientific enterprise generates development of new technologies, and from the application of science, older technologies are modified (Idang and Afia, 2011). However, despite the fact that these two concepts 'science' and 'technology' go in *pari passu*, both do not mean the same thing.

According to Alawa (2013), the term 'technology' is derived from "Techné" and "logos" referring to discourse on both fine and applied arts. Later in the seventeenth century, it came to mean both the discourse and practice of applied arts only. Furthermore, in the first part of the twentieth century, it is referred not only to tools and machines but also to ideas, means and processes. The term has in recent years, come to be understood as "means or activities by which man seeks change or manipulates his environments:" (Heidegger, 1977). According to Moses Udoh, technology refers to "the application of scientific knowledge to practical task in producing goods and services" (Udoh, 2018, p.149). To this effect tools are developed by man for his use. These tools which are ideas and concepts existed only mentally are no longer impressions of phantasmagoria as they have attained physical and practical existence. Consequently, the immaterial is materialized. At this level, utility is primarily emphasized. Indeed, some of the applied sciences have practical values. It is the practice of this category of applied sciences that is referred to as technology (Alawa 2013).

Heidegger on Science and Technology

To understand the fundamental orientation of an age, one must discover its dominating and persistent mood. And to understand the scientific and technological era, Heidegger says, that we must discover the mood, which leads men to scientific discovery. It is in this regard that Heidegger in his *Question Concerning Technology* sets out to inquire into the mood-basis of modern

technology. In this inquiry, he started off by first appealing to the Greek understanding of *Techne*. Heidegger maintains that the discourse on technology cannot go by without reflection on art. This implies that, Heidegger sees technology and art as a set of conjoined twins. For him, *techne* means 'bringing-forth'. Another Greek word for bringing-forth was *poiesis*, which was understood as the highest mode of art (Essien 2000). The contents of *techne* and *poiesis* were drawn together until *techne* itself came to mean art. Art brings about Being in an essent. It brings Being to stand in something present. *Techne* is a mode of knowing, and knowledge for Heidegger, is a seeing. From earliest times in Greek thought, *techne* was understood as that which brings forth "whatever that does not bring itself forth and does not yet lie here before us" (Heidegger, 1959, p.234). As a mode of knowing, *techne* looks beyond mere artistic products which present themselves to the Being which must be put to it.

Another aspect of technology according to Heidegger is about instrumental and anthropological. It is exactly at this juncture, that the anthropological aspect has overriding importance. The essence of technique is to pass beyond the instrumental concept (Ziarek, 1998). Modern technology and modern science are one of reciprocal dependence. Modern technology is indeed the application in practice of the result of modern science; but modern science as experiment depends to a great extent on technological development. In buttressing Heideggers position, Manfred Fringes quips thus:

Scientific progress is relayed by progress in the construction of experimental apparatus. Modern technique in as much as it is mechanized is mediated by mathematized science; and modern science in as much as it is experimental is mediated by modern techniques but more radically, transformation into Bestand; a fund, proceeds and requires the practice of a certain language; that certain reason, which is the modern, mathematized sciences (Fringes, 1967, p.128).

Metaphysics arrives at its conception of Being (*Sein*) by abstracting from beings (*Seiende*), which, according to Heidegger (2008), makes for the most abstract and therefore emptiest concept. This is how metaphysics (and traditional metaphysicians) neglects Being (*Sein*) and as a result, posits an empty and meaningless concept of it at its core (Farr cited in Ignatius, 2016). According to Heidegger (2008), every significant thinker in the west since Plato has interpreted reality, Being, and truth in a 'subjectivistic' manner in which reason and logic dominated. As a result thinking became mere representation and calculation. Calculative thinking is used for solving problem and it is inferior to meditative thinking.

To arrive at the essential feature of modern science we have to see how modern science appropriates "what rules and determines the basic movement of science itself". Science in any age and at every stage of its development arises out of man's "metaphysical projection" it is of natural things and the way it relates to things (Alawa, 2013). Heidegger says the basic characteristics of modern science are the fact that it is "mathematical". This does not mean that modern science is numerical or deals essentially with figures. Heidegger pursues the essential meaning of the

‘mathematical ‘ by means of a mediation on the meaning of the Greek word: *Mathesi* and *ta mathemata* meaning what can be learned and what can be taught, respectively. By “mathematical”, Heidegger refers to that aspect of reality that one can learn and it can also be taught (1996, p.250).

To understand modern science and technology, it is important to go beyond their practical instrumentality and investigate into the mathematical and axiomatic as well as modern subjectivity. Modern science and technology are in essence the result of how modern man conceives the nature of things and its relationship to them. The men of science and technology are conscious of what happens in their age and this is about truth. Art, science and technology have a common root in the event of truth; this is because each is a form of production not in the sense of fabrication but in the sense of *unconcealment*; of making what is known or what is produced to emerge (Alawa, 2013). The way a particular people of a particular epoch uncovers the event of truth or participated in this happening, would determine their history and civilization. In addition, Heidegger remarks:

The meaning pervading technology hides itself...that which shows itself and at the same time withdraws is the essential trait of what we call the mystery. I call the comportment which enables us to keep open to the meaning hidden in technology, openness to the mystery (cited in Alawa, 2013, p.3).

Heidegger also makes a clear distinction between technology and the essence of technology. In *The Question Concerning Technology and other Essays* Heidegger writes about this distinction thus: “We shall be questioning concerning technology, and in so doing we should like to prepare a free relationship to it, the relationship will be free if, it opens our human existence to the essence of technology” (1977, p.3). Heidegger believes that art is a reflection which leads to the understanding of Being as Being. What is this limitation; this is the route through which Heidegger overcomes the limitation of aesthetics (Alawa 2013).

For Heidegger (1977), the understanding of art as aesthetics within metaphysics occurred with Plato and Aristotle. Art as aesthetics dimension which debases art as imitation occurred at this time. Prior to this and with the Greek early tradition of philosophy, the ideal status of art was upheld and which Heidegger attempted to restore. What is this ideal status? This ideal status is that art is a mystery and every artist was inspired that is why if one does not tell an artist the day he will deliver the work, he/she will continue to work without stopping. In the experience of reality, the Greeks were immediately responsive to whatever was ‘presencing’ (what is gotten in immediate experience) to them. They openly received whatever spontaneously met them (Heidegger, 1977). Reflecting on Heidegger’s thought on *techne*, Nwodo (1977, p.296) says that:

There is for him (Heidegger) the early and later tradition. The former covers the pre-Socratics, especially Anaximander, Parmenides and Heraclitus. It is at this period, according to Heidegger, that philosophy reached its surpassed purity and excellence. The later includes Plato and Aristotle, to whom Heidegger attributes the end of philosophy and the beginning of metaphysics.

Heidegger's assessment of art as an overcoming of aesthetics is a strong enquiry about the essence and nature of art, "a deepening of aesthetic categories that have lost their real meaning and force in the course of the history of western metaphysics" (Nwodo, 1977). Furthermore, Heidegger believes that art is not mere thing. By implication the work of art is not strictly speaking of a thing. The confusion is due to the fact that being equipment shares in both the nature of art and the nature of mere thing. Art is not a particular people at a particular time. According to Heidegger, the art work can be considered as a thing. But it is more than a thing (Alawa 2013). In the case of the relationship between the artist and the work of art, an artist depends on the work of art, also the art does depend on art work because without it, art is nothing but an abstract concept hence there is a mutual dependence at work (Heidegger, 1977).

The art of the mind were equally called *techne*. Heidegger makes further claim that the Greek man of antiquity received openly and made known that which offered itself to him. But nevertheless, he, in the face of the onrush of the revealing Being in all that met him, tended to seek and master it. It is just this tendency towards mastery that danger looms for man against Being. Man seeks, Heidegger says,

To grasp and consider reality to discover whatever might be permanent within it, so as to know what it truly was. But precisely in so doing, he distanced himself from Being...in seeking, he searched out not simply to receive with openness, but to control (cited in Essien, 2000, p.20).

It is this incessant quest for, this seeking grasp, this eagerness to master and control, that Heidegger in his thing, found the mode of modern technological age. It is therefore revealing that *techne* is raised beyond the struggle of the earth, sea and of physics. It is raised to the level of struggle with Being and from it, man takes his essence. Through knowledge, it wrests Being from concealment into the manifest on the *essent* (Ignatius, 2022).

More so, Heidegger examines and describes the work of art in "Van Gogh's Shoes of the Peasant" which reveals three modes of being: of useful artifacts, of natural things and of works of fine arts (Alawa, 2013). This work of art of "Van Gogh's Shoes of the Peasant" explains the value of *thingness* in the peasant who walks in those shoes while working on earth. Then it also shows the world picture; and finally discloses the kind of equipment used. These modes fully account for and have become quintessential in our view of the world today. Today, we cannot talk about the world without equipment. When we are talking about equipment we mean technology. For Heidegger, the basic characteristics of modern science and technology are the subject/object relation, reason, calculation and manipulation. At the root of technology, Heidegger insists, "we must find out the truth of our age" (Alawa, 2013, p.2). Hegel however, quips that "art should not be merely a useful instrument in the realization of an end which possesses real and independent importance outside the realm of art" (Hegel, 1969, p.231).

Heidegger in his *Being and Time* tasked himself with finding the answer to the question of the meaning of Being; a task which he said was only possible by inquiring the enquirer of Being, the

Dasein (Heidegger, 2008). He coined the notion of “*Dasein*” which means “being there” designating the being of man and his mode of existence in the world (Ignatius, *et al*, 2022, p.76). In Heidegger’s view, man (*Dasein*) is the only being that is capable of disclosing Being. The reason being that *Dasein* is an entity that is capable of understanding other being or entities it encounters. This reasoning of Heidegger follows from the fact that man (*Dasein*) possesses rationality. Thus, through rationality, *Dasein* discloses or take other being from their state of concealment’ and this is the ontological truth of *Dasein*. (Ignatius, *et al*. 2022, p.76).

Heidegger, while articulating on the idea of technology opines that technology is the manifestation of Being. Nwodo in addressing Heidegger’s position on this writes:

...art and technology are epochal manifestations of Being, both rooted upon the essence of truth as aletheia. The work of art is an incarnation in the history of the world of particular people at a particular time; that is an expression of their understanding of themselves and their relation to Being. It is also setting forth of the earth, thus the work of art is essentially a conflict between world and earth is also the event of truth as aletheia, a strife between light and darkness, between obscurity and unconcealment. This indicates the essential relationship between the work of art and the essence of truth as unconcealment (Nwodo, 1974, p.14)

As Alawa (2013) rightly points out, the deduction from the following quoted text implies the relation between art and technology. In fact, art if properly understood (in line with the Greeks *techne*) is technology. Also, art and truth (*aletheia*) are co-related in that both lead to the mystery of Being.

Heidegger on the Implication of Science and Technology to Humanity

Heidegger’s concern on the implications of the hegemony of science and technology comes from his dire concern on the being of man. As an existentialist, man is the central point in Heidegger’s Philosophy (Ignatius, 2023, p.190). It is an indubitable fact that, man by nature is technological. Man thinks for himself, the other entities, and indeed, the world (Dennis, 2018). He is driven by the desire to explore nature and make tools to enhance his living condition. This is why Franklin (1998), describes man as “a tool making animal”. In fact, he is the only tool making animal, it means that he does not only make tools but uses tools, he also has the concept and idea of tools which he uses (Alawa, 2013; Helms and Dobson, 2016). On this view, technology is basically that which man controls. However, Heidegger argues that this everyday account is, in a sense correct, but provides only a limited “instrumental and anthropological definition of technology” (Heidegger, 1977, p.312), and does not cover its essence which is the revealing of technology as a mode of Being (Wheeler, 2020). Thus, the essence of technology according to Heidegger is that technology is a revealing. It is that which reveals and *unconceals* the true essence of an entity (Taylor, 2006).

Heidegger's primary concern is not with just the mere sociological criticism of technology, but on ontology. His critique of technology is ontological, not sociological. This ontology is so contrary to common sense that it is very difficult to understand. We tend to think that reality is "out there" while our consciousness is an inner domain that gains access to things through the senses. Heidegger rejects this model (Feenberg, 2008:4). For Heidegger, there is a misunderstanding of the essence of technology and, due to this misunderstanding, we are in grave danger. This danger is our imminent ecological catastrophe, from which Heidegger said 'only a God can save us' (cited in Huttunen and Kakkori, 2016).

Heidegger's criticism of technology is best understood from his concern for Being. In his *Being and Time*, Heidegger declares that his primary focus is to find an incontrovertible answer to the question of the meaning of Being which has been forgotten in modern time. In fact, he queried and decreed "forgetfulness of Being on his predecessors" (Heidegger, 2008). Heidegger holds that this forgetfulness of Being has led to misinterpretation of reality and its nature. It has led to depersonalization and dehumanization of man, his place on earth, and the destination of man. This is evident in the subjectivity of the modern society and the objectification of man. Man has left from being 'man the creator' (*homo faber*) to 'man the machine' (*homo machina*). Man has been trapped in his own creation. He has become a slave of his own creation (Heidegger, 1977).

According to Heidegger as quoted by Thompson technology is "a state in the unfolding of being that brings us to the brink of a kind of secularised salvation, by awakening in us a discovery or rediscovery of the sacred, approximately understood" (Thompson, 2003, p.64-66). Heidegger argues that the essence of technology is that technology is a revealing. It is that which reveals and *unconceals* the true essence of an entity (Taylor, 2006; Alawa, 2013; Huttunen and Kakkori 2021). The question then is: can modern technology be said to be a revealing? In answering this question, Heidegger avers thus:

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 supply energy which can be extracted and stored as such (Heidegger, 1977, p.320).

It means that modern technology violates the self limiting capacity or capacity that would seem to be "essential" to the organisms in question by treating human beings like machines. Man is not just *homo faber* (man the creator) but also *homo machine* (man the machine). The dignity of man has been subjugated in subjectivity which is made manifest by modern science (Ignatius, 2016). Man is no longer natural; his physical, psychical capabilities are either under used or artificialized. Modern ethics added to the artificialization and dehumanization of humanity by inventing life taking and life sustaining devices (Alawa, 2013).

Heidegger saw the essence of technology in modern times as *Ge-stell* (frame, framing, 'enframing', construct, exposition, universal imposition) (Huttunen and Kakkori, 2021). This

mode of revealing “Enframing” (*Gestell*) challenges forth nature, ordering it as a standing-reserve (*Bestand*), where everything, including humans, is seen merely as a resource to be optimized and utilized. Even modern technology reveals what a thing is, but its revelation takes place through a kind of violence. This is the danger of “enframing”. It reduces all entities to resources, stripping them of their intrinsic value and meaning. This reductionist view leads to a dehumanizing effect, where human beings themselves are seen as resources to be exploited. This mindset can lead to ecological destruction, social alienation, and the loss of a more authentic way of being. The main difference between ancient and modern technology lies in how modern technology reveals the world as resource. Modern technology reveals the world as resource, and it also sets upon the entities in the world in order to extract those resources. These resources have no inherent purpose, but rather they only exist to further the process of resource gathering and storage (Taylor, 2006; Alawa; 2013; Dias, 2003).

It is the case that we now have global warming which is due to industrial pollution, we get more attached to our phones (culture of individualism) as against the real human interactions, and man has no time for his fellow man except for his machines. Heidegger's concept of “calculative thinking” emphasizes the way technology can dominate human existence. The widespread use of smartphones, social media, and other digital tools can be seen as a form of addiction, where individuals are constantly connected to technology and lose touch with the world around them. Industrialization uses man as a means and not as an end, human beings now lack full use of their faculty and potentials. Indeed, we are now slaves to what we have produced. Environmental pollution from industrial wastes causes skin diseases, cancer which is one of the most deadly diseases of our time. Therefore, there is need to treat our environment better by properly disposing waste and avoiding actions that are harmful to nature, which in turn has effect on the being of man.

Furthermore, in recent times, we have witnessed another catastrophic pandemic which has infected people across the globe and killing some. This virus called “coronavirus” or “covid-19”, which many have believed to be a product of modern science. This then calls for proper check-mating of scientific researches such as human cloning, transgender operation, trans-facial, human trials of new drugs, etc. All these constitute ethical concerns in the medical fields of modern science. There is need to establish the limit to which science should not go beyond. Such limit should be one which clearly prohibits science from conducting perilous experiments to the detriment of the human person.

Technological advancement in nuclear weapons seriously threatens the continued existence of humanity and even the whole range of living things. The case of the atomic bomb used on Hiroshima and Nagasaki during the second world war is still a topic of discuss as it cause irreparable damage to the planet and its inhabitants, yet, we are still in great danger of witnessing a possibility of a third world war which will bring the whole world to a pause. According to R. E. Leakey, “the third world war would almost certainly be the last war...our planet would be completely devastated and almost all forms of life, animals, plants and bacteria would suffer the same fate” (Leakey, 1981). Though, it is quite clear that science is an attempt to conquer nature

and use it for man's own good, it is evident that the same nature is over exploited not only to the detriment of nature but also of the exploiter – man (Alawa, 2013). Therefore, there is need for man to be cautious in his dealings with regards to technological advancement. There is need for international treatise on the limit of science and technology if we are to avoid being lost in modern science and technology.

Evaluation of Heidegger's Assessment

Dias (2003) posits four different dangers inherent in all technologies, namely: physically hazardous, unjust, sociologically damaging, and psychologically destructive technologies. He finds those four areas to be the main areas of concern that tend to motivate questions about technology. Technology, in its many forms, elicits certain dangers and hazards that cause humanity to reflect on its nature. Dias is convinced that Heidegger was particularly motivated by the psychological and sociological threats of certain technologies.

Heidegger places his interpretation of ancient technology against modern technology. The essence of Greek technology is revealing; equals the approach of the modern peasant who cares for and maintains his world. On the other hand, the essence of modern technology is also “revealing” but the revealing that rules in modern science and technology is challenging which puts nature to unreasonable demands (Heidegger, 1977). Therefore, technology leads to an inauthentic existence, chiefly because up till today, it has been taking the dignity of the human person into inadequate consideration (Alawa, 2013). From all indications, Heidegger antagonised the dehumanization of man by modern science and thereby promoting the dignity of the person.

However, Heidegger's thought is not without criticisms. Heidegger's critique is overly focused on the past, particularly ancient Greek thought, and does not adequately address the complexities of modern technology and its role in shaping contemporary society. Supposing that Heidegger is infallibly correct in his critique, the question then is, so what? What alternative do we have according to Heidegger? Unfortunately, his critique does not provide clear alternatives or practical solutions to the problems he identifies. This can make his critique seem more like a philosophical exercise than a call to action (Feenberg, 2008).

Heidegger's limitation, however, prove his human nature. The most formidable hurdle for any attempt to understand Heidegger is no doubt linguistic. He coins words like *Sein*, *Dasein*, *Seinfrage*, etc., to communicate his thought without providing a glossary as a key or introducing his new coinages by explicit definitions. This makes proper understanding of his works difficult. Heidegger in his *Letter on Humanism* asserted that “language is the house of Being” (cited in Essien, 2000, p.48), in the sense that language comes to a greater understanding of life. But whereby his use of language is obscure, he who complained of ‘enframing’ of Being has become the chief ‘enframer’ of Being.

Again, Heidegger's critique of technology is too broad and does not distinguish between different technologies. This can lead to an unfair blanket condemnation of all technological advancements

while neglecting new and emerging technologies that are present now that pose little or no threat to humanity. Heidegger argues that science and technology brings about negativity in the existence of humans by exploring nature using means that are sometimes (if not most times) injurious to man and his environment, for instance, where humans are used as lab rats in the development of a new drug for instance, or where nuclear bombs are being tested on tested in some regions. These experiments have adverse effects on the being of man and his environment. Therefore, Heidegger criticises modern science and technology on that basis. However, it is worthy of note that there cannot be any advancement in science and technology without any negative effect on man. That is, science and technology cannot be without negativity of some sort. In fact, it is on these negativities that science and technology strive. Therefore, Heidegger's search for a perfect science and technology is not possible at the very least. The best we (and Heidegger) can hope for is a reduced and considerate activity in science and technology, one that will limit and control the negative impact of science and technology on man.

His critique also fails to acknowledge the role of humans in shaping technology, neglecting the role of other factors such as economic and social pressures. Heidegger's emphasis on the individual's relationship with technology and the need for a "turning" in human existence can be seen as too individualistic and neglects the role of social and historical contexts in shaping technological development (Betros, 1986). Critics argue that Heidegger's emphasis on the concept of "Being" can lead to an overly abstract and metaphysical critique of technology, which may not be relevant to the practical concerns of modern society (Feenberg, 2008).

Furthermore, Heidegger's philosophy does not give room for transcendence. This is so since he believes adherently in the finitude of man. In his critique of modern science and technology, Heidegger was solely concerned with the negatives of technological advancements. He made little or no commendation of the positive achievements of science and technology. This then might force one to ask if he wanted man to remain perpetually primitive. If the answer for Heidegger is on the affirmative, then it is not possible because "Man, as a meaning making being is constantly in search of ways for betterment and furtherance of his well-being irrespective of its implication on his person (Obioha, 2009).

Conclusion

Science and technological advancements is a double-edge sword. Its application has both merit and demerit. But most often, people fail to see its demerits and only focus on the merit. Heidegger is not against science and technology but against abuse of technology. He also makes a clear distinction between technology and the essence of technology. Despite his critique, Heidegger does not call for a rejection of technology. Instead, he suggests that within the essence of technology lies the potential for a "saving power". This saving power emerges when we become aware of the "Enframing" and open ourselves to alternative ways of revealing the truth. He calls for a more reflective, contemplative engagement with technology, one that respects the autonomy and intrinsic worth of beings. The essence of technology is very important to Heidegger and it is

based on *aletheia* (truth) of each age and at every stage of all developments. In Heidegger, Being and truth are closely related. It follows, therefore, that “the Philosopher who thinks Being, the real artist and the man of technology are like the poet who names the holy” (Alawa, 2013). They are both responding to the call and the challenge of Being; to the way Being chooses to manifest itself to man. The way Being chooses to reveal itself to man, either through art or through technology, does not depend on man; it depends on Being. For Heidegger, when man has learned to be “calmed”, when he no longer tries with the aid of technology to bend nature to his will only then will he be able to carry out his tasks as the “guardian of Being”. Knowledge should therefore be humanized (Alawa, 2013).

Heidegger’s critique is a call to recognize and challenge the dominant technological paradigm, seeking instead a more balanced, reflective and humanized approach to science and technology that honours the full spectrum of human existence and the natural world. All advancements in science should be geared towards the improvement of the human condition in a world which he has been “thrown into”. It is only in so doing, that we can guard against the impending danger posed by the hegemony of science and technology on humanity.

References

- Alawa, P. (2013). “Martin Heidegger on Science and Technology: It’s Implication to the Society”. *Journal of Humanities and Social Science* 12(6), 1-5.
- Betros, C. L.(1986). “Heidegger's Critique Of Technology”. *ETD Collection for Fordham University*, AAI8615705. Retrieved on 23/05/2024 from <https://research.library.fordham.edu/dissertations/AAI8615705>
- Dennis, O. (2018). Man and the Universe. In I.Umotong and E.Udokang (eds.), *Rudiments of History and Philosophy of Science* (91-112). Robert Minder International.
- Dias, W.P.S. (2003). Heidegger’s Relevance for Engineering: Questioning Technology. *Science and Engineering Ethics* 9(3), 389-396.
- Essien, E (2000). Hegemony of modern technology in Martin Heidegger’s metaphysics of science. (Long Essay, Pontifical Ubaniana University). Rome.
- Feenberg, A. (2008). “Heidegger, Marcuse and the Critique of Technology”. *Critical Theory and Metaphysics: A symposium*, Simon Fraser University, pp. 1-11.
- Franklin, B. (1998). Authentic Existence. In *Encyclopedia Britanica*, Vol. 18.
- Frings, M. (1967). *Heidegger and the Quest for Truth*. Indiana Indiana University Press.

- Hegel, G. (1969). Philosophy of Fine Art. In Tilman and Cahn (eds.) *Philosophy of Art and Aesthetics* (54-87). Harper and Row publishers.
- Heidegger, M (1959). *An Introduction to Metaphysics*. Ralph Mannheim (Trans.)Trans. Yale University Press.
- _____(1977). *The Question Concerning Technology and Other Essays*. William Lovitt (trans.). Harper and Row publishers.
- _____(1996) *Basic Writings*. D.F. Krell (ed.). Routledge publishers.
- _____(2008). *Being and Time*. J. Macquarrie and Edward Robinson (Trans.). Harper and Row Publishers.
- Helms, E. and Dobson, J. (2016). Heidegger's Critique of technology and the contemporary return to artisan business activity. *Philosophy of Management* 15, 203-220.
- Huttunen, R. and Kakkori, L (2021). Heidegger's critique of the technology and the educational ecological imperative, *Educational Philosophy and Theory*.
<https://doi.org/10.1080/00131857.2021.1903436>
- Idang, G. and Afia, U (2011). *Human exploration: Introduction to philosophic and scientific studies*. Abaam Pub. Co.
- Ignatius, I. P. (2016). Martin Heidegger's concept of Being: A critical analysis. (Long Essay, Akwa Ibom state University). Akwa Ibom State.
- Ignatius, I. P. (2023). Existentialism. In Iniobong Umotong (ed.), *Theories of Knowledge* (189-209).Robertminder Ltd.
- Ignatius, I., Umotong, I. and Dennis, O. (2022). Heidegger's notion of truth as *Alethia*: a critical exposition. *International Journal of Humanities and Innovation (IJHI)*, 5 (2), pp. 74-79.
- Leakey, R.E. (1981). *The Making of Mankind*. Penguin books.
- Nwodo, C (1974). A Study of Martin Heidegger's Thinking on Art. (Doctoral Dissertation, university of Louvain). Louvain.
- _____(1977). *The Role of Art in Heidegger's Philosophy*. The fall publishers.
- Obioha, P. (2009). Technological materialism and the loss of spiritual values. *International Journal of Humanities* 1(2), 20-25.
- Taylor, J. (2006). *The question concerning Heidegger: Technology and Being, a deeper understanding*. (Master's thesis, A&M University). Texas.

- Thompson I. (2003). The philosophical fugue: understanding the structure and goal of Heidegger's *Beitrage*. *Journal of the British Society for Phenomenology*, 34(1), 57-73.
- Udo, I & Essiet, S. (2024). "The Necessity of Virtue in the Search for the Ultimate Goal of Human Life: Aristotle in Dialogue with the Contemporary World" in *ASU Journal of Administration and Corporate Governance*. Vol.4:2, PP.54-65.
- Udoh, M. (2018). Energy, Technology, Science and the Environment. In I.Umotong and E.Udokang (eds.), *Rudiments of History and Philosophy of Science* (137-165). Robert Minder International.
- Udokang, E. (2018). History and Philosophy of Science In I.Umotong and E.Udokang (eds.), *Rudiments of History and Philosophy of Science* (1-37). Robert Minder International.
- Uduigwomen, A (2007). *A textbook of history and philosophy of science*. AAU Vitalis books.
- Umoren, G. (1996). Science, Technology and Society: A framework for scientific and technological literacy. In P. Alozie (ed.), *Technology, Society and Environment: A current overview* (25-38). AAU Vitalis Books.
- Umotong, I. (2018), Conceptual Considerations in Philosophy of Science. In I.Umotong and E.Udokang (eds.), *Rudiments of History and Philosophy of Science* (138-59). Robert Minder International.
- Umotong, Iniobong D. & Otto Dennis, (2018). *An Expository Analysis of Martin Heidegger's Quest for the Meaning of Being*, **Ifiok Journal of Interdisciplinary Studies Volume 4, Number 1, July 2018** Robert Minder International.
- Umotong, Iniobong (2018). *Exploration of Metaphysics*, Nigeria: Robert Minder International.
- Wheeler, M (2020). Martin Heidegger. In Zalta, E. (ed.), *The Stanford encyclopaedia of Philosophy*. <https://plato.stanford.edu/archives/fall2020/entries/heidegger/>>.
- Ziarek, K (1998). Powers to be: art and technology in Heidegger and Foucault. *Research in Phenomenology*, 28, 162-194. <http://www.jstor.org/stable/24659055>