

# The Problem of Science and Technology in Heideggerian Thought

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## Abstract

*This paper begins by recognizing the roles Martin Heidegger played towards the restructuring of metaphysics. The paper argues in defense of the thesis that scientists need to come back to the source of reality, which is Ontology. Our method is textual analysis, a critical look at the original tools of Heidegger, which would enable us to reflect systematically, coherently, consistently; and be able to know the effects of science and technology on our society and the global sphere at large. Heidegger is not against the use of science and technology, but against the abuse of it, which has made us to annihilate human beings, a situation which has made become slaves to things they produced. To Heidegger, this has affected us to the extent that we are unable to see things as they really are 'in-themselves'. The study contributes to knowledge in the sense that, it ultimately grounds the meaning of Being, by trying to understand Being comprehensively in the context of the past, present and future, with a view to moving towards man's ontological end. Another cardinal discovery of this paper, therefore, is that metaphysics cannot be radically rejected, because it is the foundation of all systematic human inquiries. Upholding the Heideggerian thought or solution of phenomenology, we argue that this attitude of mind, will help us understand that reality consists of much more than what we perceive with the senses.*

*Keywords: being, Dasein, Martin Heidegger, science, technology*

## Introduction

The aim of this paper is to show how the conception of being spearheaded by Parmenides, becomes the very root cause of the misunderstanding and misrepresentation of being, from time past, even till date. It has led to compulsory exile, it has also misled and misdirected our focal point from the actual treatment of pure being or pure ontology. According to Heidegger, man alone exists. Man gives meaning to this world by making tools, manufacturing equipment and different instruments, and uses things in his environment. The question arises: Does science and technology in any way lead man to a higher level of existence? In other words, does it facilitate authentic existence? If yes, how, and if no, how can it be made so? Answers to these questions will be our major preoccupation in this work. For Heidegger, the question of Being today has been forgotten, the challenge therefore, is

that the question of the meaning of Being must be reformulated. His main focus is that Being is eternal and unchanging, that Being, the One is, and that Becoming, change is illusion. The scientists in similar fashion have restricted everything about life to the empirical world, that is, the ontological omission is a problem of science. Scientists should stop feeling like they are in total control of everything, even though, we can attest to the fact that they have brought about a lot of discoveries and have made life easier for human beings.

It is important to state that the task of philosophy is to mirror science. Although, through the process of experimentation, rigour of hypothesis, science wants to capture the recurrent things in nature, and, in an attempt to do this, the after effect is a universal law. The problem for Heidegger, is that we forget to ask salient fundamental questions of Being, before embarking on any other task or concentrating on various aspects of beings. So, this attitude of mind has informed or strengthened science to the extent that it arrogates to itself the mastery of explaining things. The point we are making here is that, science as a discipline, broke out or drifted away from philosophy, which is the mother of all disciplines; of which metaphysics is a major or core branch. Scientists think that they have got to the stage of maturity, and therefore, forgot their source, which invariably led to the neglect of the real nature of being. We see them chasing after beings, portraying themselves as the lords and masters of it all or even their discipline as the ultimate reality, as all there is to life itself, as if nothing else exists. They feel they do not need to be guided, checked or monitored by metaphysics anymore.

### **Martin Heidegger's Notion of Being**

Heidegger gave an apt conceptualization of being when he writes:

Being, as the basic theme of philosophy, is so genus of an entity; yet it pertains to every entity. Its "universality" is to be sought higher up. Being and the structure of Being lie beyond every entity and every possible character that an entity must possess. Being is the transcendence pure and simple... Every disclosure of Being as the transcendence is transcendental knowledge (Philpse, 1998:34).

Heidegger believes that Being is the theme of philosophy, because if Being is veiled, it is only through analysis that its hiddenness shall be unveiled. The central theme of Heidegger's philosophy is fundamental ontology. By this, he understands the critical or preliminary step of first studying human being before one then pursues the investigation of the 'sein'. On the question of Being, Heidegger avers:

The question of Being aims therefore at ascertaining the *a priori* conditions not only for the possibility of the sciences that examine

entities as entities of such and such type, and, in so doing, already operate with an understanding of Being, but also for the possibility of those ontologies themselves which are prior to the ontical sciences and which provide their foundations (Philpse, 1998:39).

No doubt, the central focus of Heidegger's philosophy was on Being, which he believed had been abandoned for the study of beings. His method of retrieving Being was ontology, but he noted that it was only through phenomenology that such retrieval was possible. For him, what is left of metaphysics after its specialized aspects is called ontology. Metaphysics for Aristotle, is the study of first principles, foundation of all possible sciences. This was what gave birth to other sciences.

Ontology makes possible the exhibition of the general structures of beings. The phenomenological attitude enables beings to come into light as without preconceptions.... Hence, only as phenomenology is ontology possible (Philpse, 1998:40).

### **What is Science and Technology?**

The word 'science' comes from the Latin word, 'Scientia', which means to know. Therefore, anything that can be known is science, and it is different from mystery, which is that which one cannot comprehend, and it is beyond human knowledge. To be specific, science searches for that kind of 'knowledge' which is rigorous, empirical, rational, veridical, measurable, factual and evidential. Science is a conscious quest for factual or concrete evidence (Ndubuisi, 2003:iii). Karl Popper, Thomas Khun, Imre Lakatos and Paul Feyerabend were the four foremost philosopher-scientists who treated the methodology that would yield incontrovertible truth and greater results in science. Popper advocated for the 'falsifiability theory', which operates on the hypothetico-deductive method of 'conjectures and refutations'. Kuhn projects the doctrine of 'normal science', which results into a 'paradigm shift'. Lakatos comes forward with his 'hard-core theory', which insists on the maintenance of an incontrovertible starting point of science. Feyerabend on his own part, in his book, *Against Method*, postulates the 'no method' doctrine. All these, are views on how science proceeds or should proceed. It also goes to show that there can be no absolute laws, theories and methods of science. However, the discovery of new truths in science, does not mean that old theories cease to be relevant, it only means that improvements or advancements have been made in science. This is how growth is recorded in science (Ndubuisi, 2003:iii-iv).

Science was reinterpreted as an activity ('research') closely allied with

machine, technology, and oriented towards more extensive and intensive manipulation and ordering of things. Understood as such, science for Heidegger was an essential manifestation of the modern age; he portrayed science and technology as the conclusion. Generally, the word science in recent times, refers to knowledge in physics, chemistry, physiology, etc; which are called experimental sciences. For Heidegger, science and technology is not evil, but the abuse of it, is harmful and also because it portrays itself as the only mirror to capture the nature of reality.

On the other hand, technology itself has a long history of its own. In the early Greek period, the word technology is derived from 'techne' and 'logos' referring to the discourse on both fine and applied arts. However, in more recent years, it has come to be understood as "means or activities by which man seeks change or manipulates his environments" (Heidegger, 1977:4). To this effect, tools are developed by man for his use. These tools which are ideas and concepts existed only mentally and have attained physical and practical existence.

For centuries, the history of the philosophy of science has been important for plotting the course of human endeavour. Science is a systematic enterprise that builds and organizes knowledge in the form of explanations and predictions about nature and the universe. While technology is the collection of these techniques, methods or processes used in the production of goods and services, or in the accomplishment of objectives, such as investigation or any other consumer demands (James 2018). Science may drive technological development by generating demand for new instruments to address a scientific question, or by illustrating technical possibilities previously unconsidered. In turn, technology may drive scientific investigation, by creating demand for technological improvements that can only be produced through research, and by raising questions about the underlying principles that a new technology relies on. For the majority of human history, technological improvements were achieved by chance, trial and error or spontaneous inspiration (James 2018). The goal of science is to expand knowledge, while the goal of technology is to apply that knowledge. That is, the goal of science is the pursuit of knowledge for its own sake, while the goal of technology is to create products that solve problems and improve human life. Simply put, technology is the practical application of science. Technological activities are always value-laden. Science is knowing, technology is doing. Science and technology are the study of how society, politics and culture affect scientific research, technological innovations, and how these, in turn affect society, politics and culture (James 2018). Science encompasses the systematic study of the structure and behaviour

of the physical and natural world through observation and experiment, and technology is the application of scientific knowledge for practical purposes.

Naturally, man is technological. B. Franklin writes that, "Man is a tool making animal." (Franklin, 1998:21). In fact, he is the only tool making animal, it means that he does not only make tools, but also has the concept and idea of tools which he uses. However, Heidegger believes that science and technology have some effects on man; some are positive, while others are negative. On a positive note, it has enhanced man's standard of living. His traditions of existence and standard of living becomes better with improved science and technology. The invention of sophisticated tools makes labour easier for mankind. Communication and transportation have become more effective, to the extent of making life become more comfortable. On the other hand, there are some inhuman effects of science and technology in the society which outweigh the advantages, for example, industrial and environmental pollution. 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. A person cannot think mathematically again without calculator or cellphones to calculate things he or she buys in the supermarket. Environmental pollution from technology comes from industrial wastes and causes skin diseases (cancer) which is one of the deadliest diseases of our time. To be sincere, the disadvantages of science and technology in the society are more than the advantages. No wonder Heidegger says, "the essence of modern technology is enflaming. It means that modern technology is now putting nature into an unreasonable encounter" (Alawa, 2008:21).

In *The Question Concerning Technology*, Heidegger begins with the everyday account of technology, which according to him, is the vast array of instruments, machines and instruments, artefacts and devices that we human beings invent, build and then exploit. On this view, it is basically a tool that we control. Heidegger claims that this everyday account is in a sense correct, but it only provides a limited 'instrumental and anthropological definition' of technology. It depicts this as a means to an end (instrumental) and as a product of human activity.

Man is no longer natural, his physical, psychical capabilities are either used or artificialized. Modern ethics added to this dehumanization of humanity by inventing life taking and life sustaining devices. Above all, technological advancements in nuclear weapons seriously threaten the continued existence of humanity and even the whole range of living things. On this phenomenon, R. E. Leakey writes that, "The 3<sup>rd</sup> 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, 1998:21). Though, it is quite clear that science is an attempt to conquer nature and use it for man's good, it is evident that in this process, the value of the conqueror himself is gradually destroyed and his very existence is threatened (Nasir, 1968:23).

Now that man's existence is threatened in this way and he exists in fear and doubt of continued existence, it becomes clear that technology enhances human existence, to some extent, but to a larger extent, it is an agent of dehumanization. Bertrand Russell is of this persuasion when he says that, "Some of these scientific advancements create new fears and doubts as to the effects of science of human life" (Russell, 1976:87). These characteristics of technology are an objectification of its role as a door to man's inauthentic existence (Russell, 1976:87), since whatever kind of relation to the other that depersonalizes and dehumanizes is an inauthentic existence. Furthermore, we can assert that the disadvantages of science and technology can also be seen in the ways by which people are getting lazy, because they depend too much on the modern appliances at home. The modern equipment that are now being used in the factories produce bad smoke that results to air pollution which destroys the ozone layer that leads to global warming. Also, water pollution leads to dirty rivers and sea that make the fishes die. The pollution also leads to diseases and sicknesses to people. There have also been bad medicines like addictive drugs and contraceptives, all due to science and technology.

Heidegger's concern was that science has been a fixated or restricted part of reality, under which a meaning has been proffered and this nature becomes a labyrinth or network for things to operate. We also argue for the fact that science cannot be fixated on a particular narrative. Furthermore, science has turned man into an object of empirical study to be used and discarded. We also aim to show that any attitude that depicts that there is only one true story or single statement narrative is not sincere enough. According to Heidegger, we are encouraged through the phenomenological temper to let entities disclose themselves as they are; that is, 'live and let live'. This is because crisis begins when we see and uphold one-side to all the available issues or problems. Reality is an on-going process; it is an inter-working system.

Science establishes certain laws, and these laws become capsules of explanation, for both the 'explanandum', which is the phenomenon that is being explained and the 'explanan', which is the theory with which we explain the phenomenon. Science works within the deductive normological theory of explanation, e.g. litmus paper turns red when it is dipped into acid.

To further prove this and make it a theory, a scientific community comes together to carry out a research, and after series of guess works, hypotheses, testings and experimentations, they will now come up with a theory that given any circumstance, when you dip a litmus paper into acid, it must turn red. After trying it out in different communities, it then becomes a universal law to capture that event. This theory is further strengthened, when you do the same in either Nigeria, Burundi, Lagos, etc, and it works. Therefore, it becomes deductive under general laws. So, science proceeds either from particular to general or from general to particular (inductively or deductively). For example, also, adding a particular quantity of hydrogen to a particular quantity of oxygen turns to water, and whenever or wherever you try it out, it gives you the same result.

So, science has restricted reality into a particular dimension, because every of its attempts has been foundationalist. Also, science has fixated its own ideas alone to itself, such that it appears to have answers to everything. It has been seen as the after-effect of the traditional presentation of ontology by the Parmenidean thesis of 'Being is, Non-Being is not'. That is, whatever is, must either come from Being or Non-Being, if it comes from Being, it already is, for it cannot not be, but if it comes from Non-Being, then it is not, for nothing comes out of nothing; *ex-nihilo nihil-fit*. The idea of Non-Being has made a callous forgetfulness of the process of Being itself. So, science has short-changed the process of Being with what is. They have made an ontological omission or created an ontological difference between what is and what it means for what is to be. In other words, Being is not a fixed entity. Science investigates beings and not Being (in itself). Scientists have replaced Being with beings, that is; they replaced the origin of reality with the profiles of Being.

The traditional presentation is what science is following and the after-effect of science is technology. Science has restricted the world, because of the successes, achievements, power and influence they have gathered. Due to the idea of profiling Being or reality, science has infused bad omen of terrorism, with the manufacture of atomic or nuclear weapons, the after-effect of which can destroy a whole nation, and indeed, the whole world. This has made some nations to be more privileged over others. While we cannot close our eyes to the usefulness of science, we cannot also deny its disadvantages. However, before moving into the philosophical arguments in Heidegger's reflection on science and technology, it is pertinent to define some of our terms.

Metaphysics as it pertains to the specialized sciences tries to resolve the problem of reality by presenting aspects of reality, with each aspect metamorphosing into a region or field of study. So, when the question of

reality or 'what is' is posed, answers in form of proposals come from different directions. Every clearly thought out answers or well-articulated proposal as to the nature of 'reality' or 'what is' crystallizes into a field of study. That is how the various sciences broke away from philosophy, leaving behind the purest sense of metaphysics (Unah, 2016:x).

The purest sense of metaphysics is ontology, which means the study of Being. But by its designation as *metaphysica generalis*, it was somehow construed in its literal meaning as general metaphysics. From this mode of understanding, metaphysics was to determine the most general and comprehensive character of reality. Thus, the search for the really real, the search for reality took the form of determining the general principle, the comprehensive principle, which connected all things. In other words, philosophy as metaphysical thinking began to manifest as the search for true being, the search for the ultimately real, the search for one true story. This is how confusion was introduced into the study of Being (Unah, 2016:xi).

According to Heidegger, we really need to make good use of the advantages, and try as much as possible to minimize its disadvantages that have wrecked havocs to the world. This is because for him, such thinking not only affects the world at large, but turns mankind itself into a governable object. In particular, man has become the object of cybernetics. The human mind and soul have thus become machine-like. Man-the-machine can be controlled, 'operated' with pills and implanted with devices. Our genetic inheritance can be 're-programmed', our social condition re-engineered. We are now a 'thing' to be tinkered with. Consequently, our environment is subject to profound alteration; rivers are dammed, natural resources extensively mined, transportation systems and cities make greater claims on the earth's surface. According to Heidegger, we regard our environment as merely a 'standing reserve' of energy which can be tapped at will. For example, a river ceases to have any 'being' of its own; it now becomes a fodder for a hydroelectric power plant.

As we try to perfect our mastery over ourselves and 'our' world, Heidegger fears that we court catastrophe; that is, we could turn ourselves into monsters, not happier humans. The humanistic philosophy which cheered on a technological revolution that was intended to liberate us from ignorance and fear has, infact, made the world less predictable and more terrifying than ever before. At its core, humanism is thus profoundly dehumanizing, it legitimates the pact of our collective suicide. That is, virtually everything has been contaminated at its core. It would seem that our fate is sealed, but Heidegger sees a ray of hope, by insisting that our darkest hour may also be our hour of redemption, containing what he calls the 'saving power'. This does



not mean that we will destroy technology or aim to render science useless, there is no turning back. Nevertheless, he suggests that we might be able to develop a 'free' (rather than an enslaved or enslaving) relationship to science and technology. We cannot force being to change, being's transformation is up to Being, and it will transform according to its own time-table (which is unknown to us). However, we can prepare ourselves for change only by taking a reflective 'step-back' can we step out of our current quandary. Science can serve as an evil master and it continues to do so, but it can also be a force for good, as evidenced by undeniable advances in medicine, agrotechnology, and communications; and these advances have improved the lives of millions of people all over the world. Heidegger ranks philosophy as the 'First Science' or 'First Principles', whose prerogative is to establish the truth-criteria of the particular sciences. He stands out as one of the greatest philosophers in the contemporary period.

Furthermore, Heidegger encourages us to try as much as possible to avoid living an inauthentic life and live an authentic life to the best of our abilities. According to him, the recognition of the primacy of the human person vis-à-vis technological consideration of weapons would be a long step towards the solution of our problems. According to him, man should be seen as a human being, who should be loved, respected, cared for and preserved, instead of not knowing what the future holds. Man should only produce things that will make life better and not what will cause more havoc, destroy life or harm human existence the more.

Instead of being hostile to metaphysics, the scientists should welcome metaphysical investigations; as this will help to complement their findings and efforts. The fact remains that, in man lies a metaphysical need that cannot be done without. The concepts of the purpose of human existence, causality, origin of man and his destiny are metaphysical concepts, and are of great concerns to man. Metaphysics should be upheld or we reduce man to an object that can be spoken of only in terms of materiality. Upholding metaphysics will help us understand that reality consists of much more than what we perceive with the senses.

Heidegger's concern with technology is fully depicted because his writings are explicitly dedicated to it, and a full appreciation of his views in technology requires some understanding of how the problem of technology fits into his broader perspective: philosophical and phenomenological project. Phenomenology for Heidegger, is a method that tries to let things show themselves in their own way, and not see them in advance through a technical or theoretical lens. The argument in *Being and Time*, that is relevant for Heidegger's later thinking about technology is that theoretical activities,

such as the natural sciences, depend on views of time and space that this narrow understanding implicit on how we deal with the ordinary world of action. Indeed, this detached and 'objective' scientific view of the world restricts our everyday understanding. Our ordinary use of things and our 'concernful dealings' within the world are pathways to a more fundamental and more truthful understanding of man and being than the sciences provide; science flattens the richness of ordinary concern. We even treat human capabilities as though they were the only means for technological procedures, as when a worker becomes nothing, but as instrument of production. Leaders and planners and the rest of us are meant to be arranged, re-arranged, and disposed of. Each and everything that presents itself technologically thereby loses its distinctive independence and form. We push aside, obscure, or simply cannot see other possibilities.

Heidegger attempts to show a way-out, a way to think about science and technology, that is not itself beholden to it. For Heidegger, placing ourselves back in this realm, avoids the reduction of things. He believes his work to be preparatory, illuminating ways of 'Being' and of being human that are not merely technological. For him, the problem is not just that it makes it harder for us to access that realm, but that it makes us altogether forget that the realm exists.<sup>1</sup> (Blitz, 2018:63).

### **Martin Heidegger**

Martin Heidegger (1889-1976) was perhaps the most divisive philosopher of the twentieth century. Many hold him to be the most original and important thinker of his era. His undoubted influence on contemporary philosophy and his unique insight into the place of science and technology in modern life made him a thinker worthy of careful study. In his landmark book, *Being and Time* (1927), is hailed as one of the most significant texts in the canon of what has come to be called Contemporary European or Continental Philosophy. This catapulted him to a position of international intellectual visibility and provided the philosophical impetus for a number of his later programmes and ideas. He made the bold claim that western thought from Plato onward had forgotten or ignored the fundamental question of what it means for 'something to be'. He sought to clarify throughout his work how, since the rise of Greek philosophy, Western civilization had been on a trajectory toward nihilism was intimately linked to this forgetfulness of Being. Only a re-discovery of Being and the realm in which it is revealed might save modern man.

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1 Mark Blitz, "Understanding Heidegger on Technology," *The New Atlantis*, Number 41, Winter 2014, p.63. Accessed on June 12, 2018.

In other words, what Heidegger means by this is that, the history of Western thought has failed to heed the ontological difference, and so has articulated Being precisely as a kind of ultimate being, as evidenced by a series of the naming of Being, for example as idea, *energeia*, substance, monad or will to power. In this way, Being as such, has been forgotten. So, he sets himself the task of recovering the question of the meaning of Being. In this context, he draws distinctions between different kinds of inquiry. The first, which is just another way of expressing the ontological difference, is between the ontical and the ontological, where the former is concerned with facts about entities and the latter is concerned with the meaning of Being, with how entities are intelligible as entities. Using this technical language, we can put the point about forgetting of Being as such by saying that the history of Western thought is characterized by an 'onticization' of Being (by treating Being as being). The second distinction between different kinds of inquiry, drawn within the category of the ontological, is between regional ontology and fundamental ontology, where the former is concerned with the ontologies of particular domains, say biology, banking or science, and the latter is concerned with the *a priori* transcendental particular modes of Being (that is, particular regional ontologies). For Heidegger, the ontical presupposes the regional-ontological, which in turn presupposes the fundamental ontological).

*Dasein* is a German word that means 'being there' or 'presence' (German: *da* 'there'; *Sein* 'being'), and it is often translated into English with the word 'existence'. It is a fundamental concept in the existential philosophy of Heidegger. He uses the expression to refer to the experience of being that is peculiar to human beings. Thus, it is a form of being that is aware of and must confront such issues as personhood, mortality, and the dilemma or paradox of living in relationship with other humans, while being ultimately alone with oneself. Scientific research is not the only manner of Being which this entity can have, nor is it the one which lies closest. Heidegger's *Being and Time*, stresses the ontological difference between entities and the being of entities. Being is always the Being of an entity.

The primary task of philosophy, according to Heidegger, is the re-thinking of the problem of Being, which the tradition of Western philosophy has subjected to callous forgetfulness. But rather than following the path of his teacher and founder of phenomenology (Edmund Husserl), Heidegger went ahead to give an elaborate explanation of both 'phenomenon' and 'logos' before arriving at his conception of phenomenology.

Metaphysics, so construed, is the foundation and most basic branch of philosophy. Heidegger attempted to define metaphysics by asking

metaphysical questions. His philosophy centred on Being (Dasein)? He wrote that Being itself (Das Sein Seist) reveals itself in human existence (Dasein). This paper argues the thesis that, Heidegger's contribution to philosophy is to recover the real meaning of Being that other philosophers, scientific and technological traditions had forgotten. In this paper, we wish to make us aware of certain elements which might prove destructive to our society, if they are not properly guarded against in our bid to reach the apex of science and technology. Also, Heidegger he encourages us to imbibe the phenomenological temper as a panacea to solving some salient problems of human existence.

In this phase, Heidegger applies 'epoche' to the history of Western ontology. He does this by taking an excursion into the history of philosophy. Each example of a historical philosophy that he cites is laid to bare to the foundation, thus making it possible for us to see 'clearly and distinctly' how each philosophy in the Western tradition has woefully omitted the ontological difference, that is, the difference between Being and beings. The consequence of such omission is far reaching. Being has come to be thought of as a being, thereby subjugating the former to a hardened forgetfulness. Such callous obliviousness to Being arising from the omission of the ontological difference has led to an unfortunate treatment of things as mere objects which in turn leads to nihilism. Now that things are reduced to objects and as objects disintegrate under our vengeful manipulations, only a full-bloodied phenomenological attitude can bring us to regain the essence of Being (Unah, 2010:62). This means returning to 'the things themselves' in a humble, respectful and thankful attitude. Such a humble, respectful, prayerful and thankful approach to the treatment of things (Heidegger's fashion) can only be informed by the phenomenological temper. On this count, we stress here that Heidegger is, first and foremost, a phenomenological ontologist (Unah, 2010:62).

Phenomenology urges us to approach things and issues with an unbiased, open mind, without preconceptions. 'Let things be, let things speak for themselves' is the phenomenological principle (Unah, 2010:117). The good thing about philosophy, through phenomenology, is that it best suites resolving the problem of being, by letting us see things freely whether they are described as being or non-being. It allows us to accept non-being as part of reality, rather than attempt to extinguish non-being and causing crisis in the process. It urges us to see it as that which makes sense of our own being. Because without something to identify as non-being, we would not be able to assert ourselves as being. Unah puts it succinctly by saying, "I am because others are. By affirming the other, I simultaneously affirm my

own being, my being is meaningful only in relation to the other, I myself who reduces the other to nothing is indeed nothing (Unah, 2010:153).

### **Martin Heidegger and Technology**

Most philosophers of technology would probably agree that, for good or (at least as often) for ill, Martin Heidegger's interpretation of technology, its meaning in Western history, and its role in contemporary human affairs is still the most influential position in the field (Scharff & Duesk, 2014:299). Heidegger's consideration and core position of technology spans over some 40 years. It treats technology (and its association with science) in a way that opens up what Heidegger initially called his 'question of the meaning of Being'. In his view, scientifically informed technology that increasingly dominates our world is not something fundamentally new or modern. Rather, it fulfills Western philosophy's old desire for knowledge of what is real as expressed in the pre-Socratics, Plato, and Aristotle. (Scharff & Duesk, 2014:299). For all the specific satisfactions this fulfillment obviously brings, however, Heidegger questions whether it can make us feel genuinely 'at home' (Scharff & Duesk, 2014:299).

From the start, Heidegger was convinced that a science-driven, technologically-informed 'understanding of Being' – in other words, our primary, operative sense of what it means for something to be 'real' – is increasingly experienced as more constraining than satisfactorily illuminating of our encounters with each other and with our surroundings (Scharff & Duesk, 2014:299). In *Being and Time*, he proposes to raise the Being-question again, in hopes of opening up our thinking to a less hegemonic and more pluralistic conception of the ways that things can 'be' (Scharff & Duesk, 2014:299).

*The Question Concerning Technology* is one of many works in which Heidegger recasts his original project in terms of this 'thinking'. What is it like", Heidegger asks, to be in the midst of a technological existence? Presently, typically, we tend to be 'chained' to technology, but analysis of precisely this condition can show the way to open up a 'free' relationship with technology instead (Scharff & Duesk, 2014:299-300).

Modern technology is a means to an end. This is why the instrumental conception of technology conditions every attempt to bring man into the right relation to technology. Everything depends on our manipulating technology in the proper manner as a means. We will, as we say, 'get' technology 'intelligently in hand'. We will master. The will to mastery becomes all the more urgent, the more technology threatens to slip from human control (Scharff & Duesk, 2014:306). But suppose now that technology were no

more means: how would it stand with the will to master it? Yet we said that the instrumental definition of technology is correct. To be sure. The correct always fixes upon something pertinent in whatever is under consideration. However, in order to be correct, this fixing by no means needs to uncover the thing in question, its essence. Only the true brings us into a free relationship with that which concerns us from its essence (Scharff & Duesk, 2014:306). Technology is a mode of revealing. Technology comes to presence in the realm where revealing and unconcealing takes place, where *aletheia*, truth, happens (Scharff & Duesk, 2014:308).

Enframing means the gathering together of the setting-up, that sets upon man, i.e., challenges him forth, to reveal the actual, in the mode of ordering, as standing-reserve. Enframing means the way of revealing that holds sway in the essence of modern technology and that is itself nothing technological. On the other hand, all those things that are so familiar to us and are standard parts of assembly, such as rods, pistons, and chassis, belong to the technological. The assembly itself, however, together with the aforementioned stockparts, falls within the sphere of technological activity. Such activity always merely responds to the challenge of enframing, but it never comprises enframing itself or brings it about (Scharff & Duesk, 2014:311).

First, Heidegger distinguishes a 'correct' from the 'true' understanding of technology. A correct understanding interprets technology the way many readers interpreted *Being and Time*, that is, in terms of what it is 'for us'. Interpreted this way, technology seems obviously to be a human activity that provides the means to our ends (Scharff & Duesk, 2014:300). Second, with this question in mind, Heidegger considers instrumentality in terms of the notion of 'for what end(s)?' and – through analysis of the traditional concepts of 'cause' and of 'techne' as a practical art involving a kind of bringing-forth (*poiesis*) – he suggests that with technology comes a distinctive mode of disclosiveness, or revealedness, that is, a kind of ontological truth (*aletheia*). Third, Heidegger develops the idea that technological truth needs to be treated not just as a disclosure but as a 'sent' disclosure. Considered in this way, technological truth can be seen to account for the way we characteristically find ourselves already 'put in the midst' of our busy instrumental circumstances (Scharff & Duesk, 2010:300).

In *Being and Time*, Heidegger analyzed practical and theoretical being-in-the-world, respectively, in terms of relatively simple tasks and a critique of modern epistemology. In the "Technology" essay, however, he describes these activities in the more specifically contemporary terms of technoscientific practice and theory. Our activities, the things we encounter and deal with,

and even we ourselves all seem to happen together in a 'world' where everything is set up and 'enframed' as part of a stockpile of available materials and personnel – what Heidegger calls a 'standing-reserve' (*Bestand*), always ready for technologically determined purposes. Enframing (*Gestell*), then, is the 'essence' of the technological – essence, not in the traditional sense of a permanent and unchangeable character or set of properties, but in the sense of a predominant way of disclosing meaning, which 'gives' the instrumentally useful its familiar 'instrumental' sense (Scharff & Duesk, 2010:300).

Finally, Heidegger urges us to 'thoughtfully reflect' upon the 'eventuation' (*Ereignis*) of this enframing instead of 'falling away' from it into the ever more frantic pursuit of instrumental means to techno-scientifically defined ends. Becoming captive to this pursuit, he says, is the ever-present 'danger' of our age. By reflecting upon the very occurrence of enframing, however, we may come to recognize a 'saving power' – the other possibility into which enframing places us – namely, the possibility into which enframing places us – namely, the possibility of opening up a 'free relation with technology'. Such a relation, he concludes, would be one in which technological engagements, no matter how pervasive and compelling, do not close us off from non-instrumental possibilities (Scharff & Duesk, 2010:300). A free relation with technology would thus have to happen, he says, "in a realm that is, on the one hand, akin to the essence of technology and, on the other, fundamentally different from it" (Scharff & Duesk, 2010: 300).

Some philosophers of technology have expressed a strong preference for Heidegger's earlier analysis of practical and theoretical relations in *Being and Time* and reacted with disapproval toward his later thinking, both about technology and almost everything else (Scharff & Duesk, 2010:301). The world of modern industrial technology does indeed threaten to reduce our relations to the instrumental/utilitarian; and Heidegger is undoubtedly right that only by "raising the rule of technology from its anonymity" (i.e., think the enframing itself), "might we learn to let something extra-technological – what Borgmann, renaming Heidegger's idea of 'things thinging' and 'shining forth', calls 'focal things' – enrich and bring greater purpose to our lives" (Scharff & Duesk, 2010: 01).

Borgmann argues, however, that what Heidegger says about enriching experiences needs to be improved on in two directions. First, he rejects Heidegger's 'misleading and dispiriting' tendency to appeal only to 'the simple things of yesterday' as potentially enriching. Second, he complains that Heidegger fails to adequately trace out the way focal concerns shape our social relations as well as our relations with things. Borgmann even suggests that a reversal of the current priorities of technological practice and

focal concern might lead to the development of a new conception of the good life that is directed by focal practices and merely enhanced by technological means (Scharff & Duesk, 2010:301).

In their response to Borgmann, Hubert Dreyfus and Charles Spinosa join him in affirming Heidegger's interpretation of the 'danger' inherent in technology, but they object to Borgmann's further claim that technology itself cannot be a source of focal concerns. The problem in their view, is Borgmann's reliance on Heidegger's earlier rather than later thought. At first, Heidegger understood technology as simply the last, greatest expression of 'subjectivity' – that is, of a world full of individual human selves, each treating everything as an 'object' of their desires and so as something to be controlled and/or consumed. Acceptance of this view forces Borgmann to conceive all focal concerns in terms of resistance to technological practices and thus to conceive these concerns as necessarily non-technological. For Dreyfus and Spinosa, however, Heidegger's later notion of developing a 'free relation' to technology offers a more positive possibility. In their postmodern construal, which they claim to validate with reference to Heidegger's own writings, technological practices do indeed tend to fragment, or 'disaggregate' our lives so that we lose any sense of our having single, unified self-identities; and the danger is indeed that this disaggregation threatens our ability to 'disclose the world' in any way other than instrumentally and arbitrarily (Scharff & Duesk, 2010:302).

In a provocative interpretation of Heidegger's notion of technological enframing 'saving power', Dreyfus and Spinosa argue that entering into a free relation with technology really means "freeing us from having a total fixed identity so that we may experience ourselves as multiple identities disclosing multiple worlds." The question of whether Freenberg's interpretation of Heidegger is correct – and whether that makes any difference to the concrete question of how technological engagements might be delimited and transformed – has become a central issue in the debates over the importance of Heidegger's work (Scharff & Duesk, 2010:302).

We shall be raising issues 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, we shall be able to experience technology within its own bounds. Technology is not equivalent to the essence of technology. 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 represent and pursue the technological, put up with it, or evade it. Everywhere, we remain unfree and chained to technology, whether we passionately affirm or deny it. But we are



delivered over to it in the worst possible way when we regard it as something neutral; for this conception of it, to which today we particularly like to pay homage, makes us utterly blind to the essence of technology ((Scharff & Duesk, 2010:305).

According to ancient doctrine, the essence of a thing is considered to be *what* the thing is. We ask the question concerning technology when we ask: 'what it is'? Everyone knows the two statements that answer our question. 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. Technology itself is a contrivance – in Latin, as *instrumentum* ((Scharff & Duesk, 2010:305).

The current conception of technology, according to which it is means and a human activity, can therefore be called the instrumental and anthropological definition of technology. The instrumental definition of technology, is indeed, so uncannily correct that it even holds for modern technology, of which, in other respects, we maintain with some justification that it is, on contrast to the older handicraft technology, something completely different and therefore new. Even the power plant with its turbines and generators is a man-made means to an end established by man. Even the jet aircraft and the high-frequency apparatus are means to ends ((Scharff & Duesk, 2010:305-306).

However, this much remains correct: modern technology too is a means to an end. This is why the instrumental conception of technology conditions every attempt to bring man into the right relation to technology. Everything depends on our manipulating technology in the proper manner as a means. We will, as we say, 'get' technology 'intelligently in hand'. We will master it. The will to mastery becomes all the more urgent the more technology threatens to slip from human control ((Scharff & Duesk, 2010:306).

Suppose now that technology were no mere means: how would it stand with the will to master it? Yet we said, did we not, that the instrumental definition of technology is correct? To be sure. The correct always fixes upon something pertinent in whatever is under consideration. However, in order to be correct, this fixing by no means needs to uncover the thing in question in its essence. Only at the point where such an uncovering happens does the true one shows itself. For that reason, the merely correct is not yet the true. Only the true brings us into a free relationship with that which concerns us from its

essence. Accordingly, the correct instrumental definition of technology still does not show us technology's essence. In order that we may arrive at this, or at least come close to it, we must seek the true situation by way of the correct. We must ask: What is the instrumental itself? Within what do such things as means and ends belong? A means is that whereby something is effected and thus attained. Whatever has an effect as its consequence is called a cause. But not only that by means of which something else is effected a cause. The end that determines the kind of means to be used may also be considered a cause. Whatever ends are pursued and means are employed, wherever instrumentality reigns, there reigns causality ((Scharff & Duesk, 2010:306).

On the issue of technology, we have arrived now at *aletheia*, at revealing. What has the essence of technology got to do with revealing? The answer: everything. For every-bringing forth is grounded in revealing. Bringing-forth, indeed, gathers within itself the four modes of occasioning – causality – and rules them throughout. Within its domain belong end and means as well as instrumentality. Instrumentality is considered to be the fundamental characteristic of technology. If we inquire step by step into what technology represents that is when we shall arrive at revealing. The possibility of all productive manufacturing lies in revealing ((Scharff & Duesk, 2010:308). Technology is therefore no mere means. If we give heed to this, then another realm for the essence of technology will open itself up to us. It is the realm of revealing, i.e. of truth ((Scharff & Duesk, 2010:308). Technology is a mode of revealing. Technology is present in the realm where revealing and unconcealment take place, where *aletheia*, truth happens.

### Evaluation

In writing about technology, Heidegger formulates the goal we are concerned with here as that of gaining a free relation to technology – a way of living with technology that does not allow it to “warp, confuse, and lay waste our nature.” According to him, our nature is to be world disclosers. That is, by means of our equipment and coordinated practices we human beings open coherent, distinct worlds in which we perceive, act, and think. Each such world makes possible a distinct and pervasive way in which things, people, and selves can appear in which certain ways of acting make sense ((Scharff & Duesk, 2010:350).

It is important to reiterate the fact that this paper is contributing to knowledge in the sense that, we want to ultimately ground the meaning of Being, we want to understand Being comprehensively in the context of the past, present and future, with a view to coming towards man's ontological end. In *Being and Time*, Heidegger calls for an understanding and argues that

such an understanding of being is what makes it possible for us to encounter people and things as such. ((Scharff & Duesk, 2010:350). He considers his discovery of the ontological difference – the difference between the understanding and the beings that can show up giving an understanding of being – his single great contribution to Western thought. But until late in his development, Heidegger was not clear as to how technology worked. He held for a long time that the danger of technology was that man dominating everything and exploiting all beings for his own satisfaction, as if man were a subject in control and the objectification of everything were the problem ((Scharff & Duesk, 2010:351).

As Heidegger's thinking about technology deepened, however, he saw that even objects cannot resist the advance of technology. He came to see this in two steps. First, he saw that the nature of technology does not depend on subjects' understanding and using objects. In 1946, he said that exploitation and control are not the subject's doing, that man becomes the subject and the world the object, is a consequence of technology's nature establishing itself, and not the other way around. And in his final analysis of technology, Heidegger was critical of those who are still caught in the subject/object picture, thought that technology was dangerous because it embodied instrumental reason. Ultimately, he insists that modern technology is something completely different and therefore new. "The goal of technology", Heidegger then tells us, "is the more and more flexible and efficient ordering of resources, not as objects to satisfy our desires, but simply for the sake of ordering" (Scharff & Duesk, 2010:351).

Another cardinal discovery of this paper, therefore, is that metaphysics cannot be radically rejected, because it is the foundation of all systematic human inquiries. Upholding the Heideggerian thought or solution of phenomenology, we argue that this attitude of mind, will help us understand that reality consists of much more than what we perceive with the senses. Thus, questioning, we bear witness to the crisis that in our sheer preoccupation with technology, we do not yet experience the essential unfolding of technology, that in our sheer aesthetic-mindedness, we no longer guard and preserve the essential unfolding of art. Yet, the more worrisome we consider the essence of technology, the more mysterious the essence of art becomes. The closer we come to the danger, the more glowingly the saving power begins to shine, and the more questioning we become. For questioning is the piety of thought (Scharff & Duesk, 2010:317).

## Conclusion

It is crystal clear from the above that this paper has been able to thoroughly examine science and technology through the thoughts of Martin Heidegger, who states that science cannot do without metaphysics, that we have to return to the foundation, the science of first principles. He insists that no matter how great the scientists have become or the number of breakthroughs they have recorded, they still have to return to the rock-bottom, root, foundation, substratum, which is Being; a process and not a fixed entity. Heidegger also avers that in order to understand the essence of science and technology, we must understand things non-technologically, we must enter the realm where things can show themselves to us truthfully in a manner that is not limited to the scientific and technological realms alone. But science and technology are such a domineering force, that it tends to eliminate our ability to experience this realm. The danger is that this domination fully darkens our horizon, and makes us forget our understanding of ourselves as the beings who can stand within this realm. Also, because we have allowed science and technology to reign supreme, we have been prevented from encountering the reality of the world. This situation has made us to forget Being altogether, as well as our own essential freedom. We no longer realize the world; we have lost our bearing. Heidegger maintains that all these may prevent us from experiencing the call of a more primal truth. Thus, his giant contribution and profound analysis of the question of Being is refreshing and unquestionable.

In line with the above exposition of Heideggerian thought on phenomenology, one can easily deduce the fact that metaphysics is the foundation of philosophy, from which phenomenology sprung out. Without an explanation or an interpretation of the world around us, just like what science and technology have produced through numerous leaps of developments, achievements and improvements many years back, we would be helpless to deal with reality and it would also be difficult to get to where we are today. The degree to which our metaphysical worldview is correct is the degree to which we are able to comprehend the world, and act accordingly.

Unah agrees with Heidegger that we need to rejuvenate metaphysics, as well as apply its knowledge to address man's existential challenges. The sciences and the scientific worldview should accept the fact that they are just a specialized aspect of seeing or viewing. They should, therefore, contribute their quota to reality without much showing-off because too much of portraying oneself as all there is to reality by the specialized disciplines will lead to extreme worldviews and greater problems. So, phenomenology

is urging us to imbibe the spirit of 'live and let live'. We must also reiterate here, that the discourse of metaphysics through phenomenology, indeed, has a far-reaching relevance, especially towards addressing contemporary global challenges such as extremism, fanaticism, hatred and terrorism, amongst others. It is important to state the fact that the proper conception of being by all disciplines (especially science and technology, also in our political, social, economic spheres of life) will save humanity from the problem traditional metaphysical thinking has subjected it to.

The beauty of phenomenological temper is that, it fosters the attitude of tolerance, accommodation of contrary views, non-judgmental attitude, and most importantly, the proper understanding of the nature of reality. It grasps the fact that beings are in profiles, and there are various manifestations of them. It abhors the ideas of rigidly holding unto a particular view or lionizing a particular discipline as if it captures the entire aspects of Being. Also, having a clearer understanding that there are multifarious ways of approaching reality, will throw more caution for one to avoid rigid traditional metaphysical thinking. Scientists should also imbibe the attitude of 'live and let live', they should learn and always try as much as possible to become more humane in the treatment of the world. Thus far, efforts have been made to expose not just the relevance or significance of metaphysics, but to also show that it can never be done without considering all spheres of human endeavour.

The essence of truth is very important to Heidegger and it is based on *aletheia* (truth) of each age and at every stage of all developments. For him, 'Being' and 'Time' are closely related. It follows, therefore, that the philosopher and the man of technology 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 'calm', when he no longer tries with the aid of science and technology to bend nature to its will, only then will he be able to carry out his tasks as the 'guardian of Being', or showing or revealing itself as he really ought to be. This is because we are thrown into this world without background. Heidegger believes that any good interpretation should disclose something about human existence and the world.

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