

# **The Intersection of Philosophy and Technology: Deconstructing the Presuppositions that shape Innovation**

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## **Abstract**

This paper identifies and discusses three philosophical presuppositions on technology, namely: epistemological, metaphysical and ethical. The epistemic presupposition on technology states that there is a world out there which is knowable and transformable through human subjectivity. The metaphysical presupposition goes further to describe the nature and character of this world out there. It states that this world out there is not of idea, forms or spirit; it is a world of things or matter. If it were a world of ideas, it contends, it would be practically difficult to manipulate things the manner technology does. The ethical presupposition interrogates the notion of value in technology, that is, whether or not technological inventories should be value laden or value neutral. The objective is to examine the roles they have played in shaping technological innovation and its perpetuation in human history. In the final analysis, the study concludes on non-neutrality principle and posits that since technology receives its being within a culture, and all cultures are value-based, it follows that technology is a cultural artefact and as such, defines the cultures within which it evolves. The paper adopts the method of phenomenological analysis.

**Keywords:** Philosophy, Presuppositions, Innovation, Technology, Phenomenology

## **Introduction**

The phenomenon of technology has not only changed man's perception about himself but has also shaped his views and interaction with fellow human beings and the universe at large. Technology, as it is understood today, could be traced backward to about two million years ago, when a species of primate was said to have evolved. The anthropologists named this species *Homo habilis* in admittance of its ability to make tools and improve his existential conditions. In other words, technology in form of stone tools, literally began hand-in-hand with human kind. Within this period, the Stone Age man, developed a kind of tool which assisted him to cope with his changing environment and daily existential demands. In their forage for food, with the use of bare hands, the early man was confronted with drudgery and existential absurdity. And as human population increased, manual food production became tedious and insufficient. According to McClellan III and Harold Dorn, "it was only toward the end of that long prehistoric era did they begin to observe the natural world systematically in ways that appear akin to science".<sup>1</sup>

Prehistory as used above by McClellan, is used to draw a distinction between the biological

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<sup>1</sup> James E. McClellan III and Harold Dorn, *Science and Technology in world history: An Introduction*, second Edition, (Baltimore: The John Hopkins University Press, 2006), P. 3

beginnings of human kind down to the origin of civilisation. The latter is known as history because it marked the advent of record and writing traditions.

Prehistory because of the exclusively material nature of its artifacts, mainly in the form of stone, bone, or ceramic products, has inescapably become the province of the archaeologist, while the historical era, with its documentary records, is the domain of the historian.<sup>2</sup>

The prehistoric itself, covers two distinctive periods. One is the *Paleolithic* or primitive Stone Age. This period held sway for about two million years, and was characterized by rudimentary stone tools fashioned for the gathering and processing of tools. The second period was known as the *Neolithic or New Stone Age*. This period entailed more complex implements fashioned to cope with the demands of “an economy of low-intensity food production in the form of gardening or herding”.<sup>3</sup> Accordingly, when we juxtapose the *Neolithic* or *Paleolithic* era with what is obtainable today, it will not be an overstatement for us to emphatically say that we now live in an era when technology determines and has permeated all facets of our lives to the extent that thinkers have begun to raise the question whether it is man who is made for technology or technology for man. Supported by Larry Hickman, he says:

It is by now a commonplace that the characteristic traits of our culture are pervasively and irrevocably technological. Each of us pays tribute to this fact in innumerable ways during each day of our lives. No longer does any aspect of the food we eat, the clothes we wear, the goods and services we produce, the means by which we travel and communicate with one another, or the ways in which we organize ourselves socially, untouched by complex technological factors.<sup>4</sup>

Although Hickman agrees with McClellan that techniques have been part of human life since the period of *Homo habilis* “but advanced technology, as the deliberate and systematic study of tools and techniques stamps our own milieu as unique”.<sup>5</sup> Not until after the catastrophic consequences of the two great world wars due to the incautious and reckless use of technological innovations, that it was dawn on thinkers of the need to begin to question and investigate the rationality of man in relationship with technology. It is in the same calling that we attempt the discussion on philosophical presuppositions of technology with a view to ascertaining what role these presuppositions have played in the development of technology, its applications, and the shaping of man and his environment. While philosophical assumptions may have generated lively debate in discourses on social and natural sciences, very few literature have adequately articulated same on technology. In view of that, this study examines the fundamental assumptions which form the bedrock for the evolution and development in technology. Our discussion will be segmented in different parts, ranging from a conceptual clarification of the subject-matter to the identification/analysis of the aforementioned

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<sup>2</sup> Ibid, p. 3

<sup>3</sup> Ibid p. 5

<sup>4</sup> Larry A. Hickman, *Philosophical Tools for Technological Culture: Putting Programmatism to Work*, (Bloomington: Indian University Press, 2001),p.1

<sup>5</sup> Ibid, p.1

fundamental assumptions, and the various arguments therefrom, then, a conclusion.

### Notional Scrutiny

#### 1 Technology

Teks, technik, techne, technologie, technology, has passed through different levels of evolutions and revelations beginning from its earlier Greek notion to the contemporary period.

Accordingly, to Langdon Winner,

For many persons, “technology” actually means apparatus, that is, the physical devices of technological person ... technique, the root of this world is the Greek *techne* (“art” craft” or “skill”), which Linguists have further traced to the Indo-European root *teks* –(to weave or fabricate”). From the earliest times, technique has been distinguished from other models of human action by its purposive, rational step-by-step way of doing things<sup>6</sup>

*Logos* on the other hand could stand for (study, inquiry or probe). In that case, we conceive technology as the study, inquiry into the tools, artifacts and hardwares manufactured by man. Kline refers to it as manufactured articles-things made by humans that do not occur naturally on earth in form of hard ware. Another way of conceiving technology is to see it as machinery; resources; process; and legal, economic political and physical environment. Another way of viewing it is as knowledge, technique, know-how, or methodology. Furthermore, Kline mentions yet another notion of technology to mean a combination of hardware and people.<sup>7</sup> In its broadest sense therefore, Jorge Nef Writes: “technology refers to a society’s set of practices, skills and instruments for problem solving: the society’s know-how. All societies, whether “traditional” or “modern”, “developed” or “undeveloped” posses such know-how”.<sup>8</sup>

Jacques Ellul, defines technology, especially modern and Western technology as “the totality of methods rationally arrived at and having absolute efficiency (for a given stage of development) in every field of human activity”.<sup>9</sup> When Ellul talks about modern or western technology, he means to contrast it from “necessary inventions” as describes by Alvin Tofler, which were used to amplify human or animal muscles.”<sup>10</sup> This traditional notion of technology in juxtaposition with today’s understanding of technology has become primitive. In this sense, it has gone wider to include other rang of things.

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<sup>6</sup> Langdon Winner, *Autonomous Technology: Technics-out-of Control as a Theme in Political Thought*, (London: The MIT Press, 1977), p 12.

<sup>7</sup> Stephen J. Kline, “What is Technology” in *Philosophy of Technology, The Technological Condition: an anthology*, ed. By Scharff and Dusek, (Oxford: Blackwell, 2003), pp.210-211.

<sup>8</sup> Jacques Ellul in Jortge Net, “Technology is About People: Some Basic Perspectives and Definitions” in *Ethics and Technology: Ethical Choices in the Age of Pervasure Technology*. ed. By Jorge Nef, Jokelee Vanderkop and Henry Wiseman, (Toronto: Wall and Thompson, 1989), p.4

<sup>9</sup> Ibid, p.4

<sup>10</sup> Alvin Tofler, *The Third Wave: The Calssical Study of tomorrow*, (New York: Bantam Books, 1980), P.26

In that regard, John Dewey writes:

“Technology” signifies all the intelligent technologies by which the energies of nature and man are directed and used in satisfaction of human needs; it cannot be limited to a few outer and comparatively mechanical forms. In the face of its possibilities, the traditional conception of experience is obsolete.<sup>11</sup>

In a nutshell, although the term technology primarily refers to artefacts, gadgets such as computers, cell phones, robots, auto-mobile and all forms of gadgetry inventions, its notion is not limited to artefacts, that is, non-physical elements are also inclusive in today’s understanding of technology. Processes and skills for accomplishing a certain task are parts of today’s understanding of technology. Martin Heidegger aptly captures this view by saying that “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”<sup>12</sup>.

At this juncture, it is imperative to clarify other concepts which form our topic of discussion. These remaining concepts include: philosophy of technology, the meaning of presupposition and what it takes for it to be philosophical.

## 2 Philosophy of Technology

This field of philosophy of technology is considered to be relatively new in philosophical discourse. In other words, while philosophy of science, which is a Siamese twin to technology, has long existed as one of the infrastructural disciplines of philosophy, philosophy of technology is a new entry in philosophical exercise. As such, many have queried why should philosophy entangle itself with technology? To this group of people, philosophical intrusion into technology would amount to a moribund pilgrimage. However, the point being missed by those who query the role of philosophy in technology is that, philosophy of technology does not claim to, or the aim of philosophy in technology is neither to equate itself with technologists, nor to begin the manufacture of technological artefacts or soft-wares per se but rather, to probe into the fundamental claims and assumptions about technology. It raises such questions as: does man really need technology? What is the nature of technology? Is there any difference between technology and science? Is technology value laden or value neutral as some would argue? What is the future and fate of a world constructed through technological innovation, and so on.? To this end, it suffices to state that philosophy of technology is a theoretical and critical interrogation into the nature, substance and implications of technology as human enterprise. It seeks to clarify the meaning and its basic assumptions. Mario Bunge writes that the key role of philosophy is the investigation of philosophy that is inherent in technology as well as of the philosophical ideas suggested by technological process.<sup>13</sup>

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<sup>11</sup> John Dewey in Hickman, op. cit., p.8

<sup>12</sup> Martin Heidegger, “The Question Concerning Technology,” *Philosophy of Technology, The Technological Condition: An Anthology*, ed. Robert C. Schaff and Val Dusek, (Berlin: Blackwell Publishing Limited, 2003), p.252

<sup>13</sup> Mario Bunge, “Philosophical Inputs and Outputs of Technology” in *Philosophy of Technology, The Technological Condition: An Anthology*, ed, Scharff and Dusek, (Oxford: Blackwell, 2003), p.172

### 3 Presuppositions

These are state of impressions tactly formed at the commencement of a course of action or a line of argument. In other words, presuppositions could be constructed as unconscious beliefs or assumptions inherent in the configuration of an utterance which constitute the basis of an action or belief. They are something accepted to be true forming the foundation for further reasoning or action. According to Robert Dilts, to presuppose means to “suppose beforehand” or “to require as an antecedent in logic or fact”. The term “suppose” comes from Latin, and literally means “to put under” from sub (“under”) *ponere* (“to put”).<sup>14</sup>

Again, as to what makes a presupposition philosophical, we can go on to say that philosophy as a search for truth has at least three fundamental components which are alternatively described as branches, namely: Metaphysics, Epistemology and Ethics, by extension, Logic-which serves as tool for philosophizing. Consequently, according to Mare J. De Vries, for the fact that philosophy is a scientific discipline which aims at systematic reflection on reality as a whole, equips us with the ability to gain insight into the essences through raising of fundamental questions <sup>14</sup> such as; What, How, To which end or purpose? Each of these questions belongs to each of the component parts of philosophy that is enunciated above. For instance, for a presupposition to be philosophical, it must contain a strong belief, usually unstated, which forms the starting point for further knowledge. As such, presuppositions are often presupposed and not proven. Indeed, they are fundamental assumptions, suppositions, upon which every other concept, ideas within the epistemological circle is erected. It could be recalled, Dilts writes, how Euclid erects his entire geometry upon what he calls the “point”.. A point in this sense, is defined as ‘an entry that has a position but not other properties’ it has no size, no mass, no color, no shape. It is of course impossible to prove that a point really has no size, no mass, no color, etc. however, if you accept his presupposition, along with a few others, you can build a whole system of geometry (i.e., “A line is the shortest distance between two points,” “A rectangle” is four lines connected together at equal angles” etc.). The conclusions of this system can then be proved with respect to their adherence to the fundamental but unproven concepts. It is important to realize that one does not have to accept Euclid’s assumptions about a point in order to create geometry. There are other geometries based on different presuppositions.<sup>15</sup>

To build on the points made, we shall therefore proceed to make some definite statements on each of those constituent parts as adumbrated.

#### **Presuppositions Underlying Technological Development**

The task in this segment is to identify, and make an attempt to discuss the epistemological, metaphysical and ethical assumptions in technology. These assumptions we believe, shape the direction and outlook of technology even in this contemporary period. To this end, we begin with epistemological presuppositions. In searching for these philosophical contents in technology, our focus is not on technological products per se, as in dissecting a technological component with a view to discovering philosophy among the panels and soft wares. Rather, we search for philosophy within the ideas and propositions that go into technology which form its

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<sup>14</sup> Robert Dilts, “Presupposition” , retrieved at <http://www.nlpu.com/Articles/artic20.htm> on19/4/15

<sup>15</sup> Dilts, op.cit.,

theoretical basis.

Mario Bunge is of the view that we do not need to concentrate only on the product of technology but as a matter of importance; we have to consider or search for philosophy among the notion or idea of technology itself. Hence, he queries:

Where are we to search for the philosophical components of technology? Clearly not among the products of technology –cars, drugs, healed patients, or victims of technological hardware-which are about the only technological items the anti-technological philosopher is acquainted with. We must search for philosophy among the ideas of technology in technological research and in the planning of research and development.<sup>16</sup>

### **Presuppositions about Knowledge and Reality in Technology**

The epistemological in-road into technology assumes a form of knowledge. To this end, the first epistemological presupposition of technology begins from the claims concerning the world. Epistemology by itself, is a theory about knowledge. In other words, to claim to know something presupposes epistemology at play. In this regard, like the Eulidean geometric assumption, technology presupposes that “there is an external world”<sup>17</sup> and that world cannot only be knowable but also, can be transformed by the perceiving subject. Put differently, technology does not just stop at asserting the existence of an external world; it equally proceeds further to state that, “the external world can be known, if only partially, every piece of knowledge of the external world can be improved upon if only we care to”.<sup>18</sup> The epistemological input here is the assertion that the world out there can be studied, worked upon and made to serve the needs of man. David Hume in his natural philosophy subscribes to this view. Accordingly, it is by so doing that technological inventions and innovations thrive through research and continuous research. It is in this sense that science plays an interlocking role with technology.

The allusion to science here is due to the fact that scientific investigation is equally an exercise in epistemology. The epistemological presupposition of science in this case is *truth*. Effort in science improves the lot of technology. In a mutually benefiting kind of relationship, technological inventions compel scientists for further research, and scientific discoveries lead to more technological explosions. To illustrate this claim, we begin with the instance of the telescope, which was one of the earliest technological tools used for scientific investigation. The use of the telescope was necessitated then because the focus then was on cosmology. This form of technology developed by Galileo then, was to enable him to investigate the skies. It was with this invention that science was able to transact its experiment and made further discoveries about the sun, moon and stars. With the aid of the telescope, scientists made ground breaking discoveries about the earth, moon and space, to the extent that today, we do not need to use the telescope to investigate what is happening in the cosmos. Rather, through the works of science, technology has been able to turn out computers, cameras, rockets, optical lenses, etc. Again, the scientific discovery of Benjamin Franklin, the great American scientist and statesman, showed that electrical charges in the atmosphere was responsible for thunder

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<sup>16</sup> Ibid, p 172

<sup>17</sup> Ibid, p.175

<sup>18</sup> Ibid, p.175

and lightening. Hence, he went ahead to invent what is known as “lightening conductors”, which today, makes tall buildings to avert the effects of lightening. Therefore, for technologists, knowledge is not an end in itself. “It is an intermediate goal, something to be achieved only in order to be used of as means for attaining a practical goal”.<sup>19</sup>

Moreso, when technologists make claims such as:

“Technology eliminates drudgery”, technology alleviates human suffering, technology aids man to subdue nature as discussed in the Christian book (Genesis 1:18).<sup>20</sup> These are epistemological assumptions about what technology can do, judging from our earlier statement that any claim to knowledge is by itself epistemological.

### **Presuppositions about the Nature of Reality**

First of, it is imperative to make some metaphysical clarifications concerning the status or character of natural things and man-made things. There are ontological distinctions between natural things and artifacts. While the natural things can be said to have their principles and motions generated from within, the artifacts have their causes located from outside, that is, artifacts are humanly influenced and directed. The movement, growth and change of natural things come from within, and have their reproducible principles in-built.

On the other hand, artifacts only reproduce through human inference and purposive efforts. When a work of art is seen, the notion of its creator immediately comes to mind. To that end, argument often ensues as to whether artifacts have designed purpose, or what is also known as *artifact function*. The difficulty which one may encounter in holding the view that artifacts have certain designer’s intention is: if one argues for certain functionality of artifacts, what about the possibility of malfunctionality or accidental function. This again will bring up another issue of actual function and unintended function, that is, an artifact being used for the purpose which is remarkably different from the one intended by its designer. If the latter be the case, we then say that artifacts are multi-dimensional. For instance, a knife is what it is because it has the character/functionality of cutting. However, this functionality is multi-dimensional, that is, while it is in the hands of a surgeon, it is an instrument for saving life; when a killer handles the knife, it assumes another character (a weapon). The essence of this clarification is to prepare a ground for the next section that examines the question of value.

But, for the time being, let us return to the main concern in this section, which is, the metaphysical presuppositions of technology.

Nicholas Maxwell identifies three metaphysical principles and empirical laws. These principles we believe also apply to technology as well since the concern of science dovetails into the concern of technology. According to him, they are “the principle of uniformity of nature, the principle of substance, and the principle of casualty”.<sup>21</sup> While explaining these categories, he takes the first point to mean that there is no division between space and time. The second principle he interprets to mean that substance is material and eternal. In this sense, the notion of change only signifies the alteration of substance. The third principle he conceives

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<sup>19</sup> Ibid, p.175

<sup>20</sup> Nicholas Maxwell, “Review of Metaphysics of Science in Terms of Principles, Laws and Theoris” available at <http://www.aber.ac.uk/media/Documents/tecdet08.html> on 24/4/15

<sup>21</sup> Ibid.

to mean that “change” is causal”. These three principles, when added together, we obtain the idea that causality acts regularly through the action of one portion of substance upon another and that change consists in the relocation of substance”<sup>22</sup> To this end, since technology inherits some scientific metaphysics, although has gone along to produce a couple of its own. As observed above by Nicholas Maxwell concerning the materiality and eternity of substance, so also, technology presupposes that the world is composed of things”.<sup>23</sup> This simply means that, it is not simple, and it is not made of ideas or of shades of ideas (were this not so, we would not get things done by cleverly manipulating things-people among them. Mere wishes or incantations would suffice).<sup>24</sup>

What this assumption means is that the materiality of world outlook, makes technological activity a successful endeavour. In other words, since the epistemological presuppositions assert that there is an external world (there is a world out there), the metaphysical assumption takes a step further to describe the nature of such world. It emphasizes the material supremacy of reality not that of idea, spirit or forms. To be exact, metaphysics in its ontological paradigm, inquires into the nature of technological artefacts, including other mechanical entities. It maintains that the world out-there, is a world of things or matter. If it were a world of ideas, it would be difficult to practically manipulate things this way.

Another metaphysical presupposition is the view that “there is everything in everything, with all inhabiting in more or less close circle form. That is why it is easy to dismantle and assemble without necessarily eroding the spatial location of another. This is a view argued by Bunge. He further argues that the metaphysical presuppositions of technology include that, things get together in systems... All things, all facts, all processes, whether in a nature or in society, fit into objective stable patterns (law)... nothing comes out of nothing and nothing goes over into nothingness (causality and antecedents). In this case, what is the cause leaves some trace or other... determinism is often multiple and probabilistic rather than simple or linear. (if it were not so, we would be unable to attain most goals through different means, and there would be no point in searching for optimal means, or in calculating probabilities of success).<sup>25</sup>

Consequent upon the foregoing, Maxwell argues that these metaphysical presuppositions influence technology in the sense that they determine what is ontologically necessary or possible within technology. They can also guide research for further technological innovations by providing methodological rules. For Maxwell therefore, the task of theories is to explain empirical laws by revealing in detail how they exemplify these principles.<sup>26</sup>

In a way of reiteration, what the metaphysical presupposition of technology stresses is that the world is strictly material connected in a causally determined relationship. The universe is materially comprehended. This material presupposition upholds that, there exists some kind of pattern running through all material phenomena, it is the duty of science to articulate this pattern as a comprehensive unified theory.

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<sup>22</sup> *ibid*

<sup>23</sup> Bunge, *op. Cit*; p.176

<sup>24</sup> *Ibid*, p.176

<sup>25</sup> *Ibid*, p.176

<sup>26</sup> *ibid*

## The Value-based Assumptions that shape Technology

### Value Neutrality

Ethics as a branch of philosophy is primarily concerned about theories of value. Every human activity is said to carry value judgment. Technology by belonging to one of man's activities automatically carries alongside with itself ethical questions/propositions most especially when the assumption that technology is to man what a slave is to his master is made. It is along this line of thinking that in development of the field of technology, Carl Mitcham according to De Vries, identifies four main approaches. For him, they are: "object, as knowledge, as actions and as volition".<sup>27</sup> In the first instance, it talks about ontological consideration of technology. Within this circle, philosophers look for the essence of technology. In this same field, technology is conceived as a "thing" with an essence, that is, viewing technological artifacts as having ontological status.

In the second classification, philosophers focus on epistemological approach. Thirdly, as action, technological methodology is examined, and as action and volition, philosophers begin to search for the ethical considerations. The latter is basically our concern in this segment, that is, the place of value in technology.

There are several propositions on the relation of value and technology. They are broadly classified into two; on the one hand, value plays significant roles in technology and on the other hand, value does not play significant roles in technology. For instance, "that humans have been designated *Homo faber* (man the maker, tool user) rather than *Homo Sapiens* (man the wise, thinker) indicates the centrality of technology"<sup>28</sup> hence, bringing out the presupposition that technology is existential not abstract. On the same note, it equally suggests that technological artifacts are human products, that:

Man is separate from and more valuable than nature. Man has a right... to subdue nature to his own benefit man has no responsibility toward nature: he may be the keeper of his brother, but he is not the nanny of nature. The ultimate task of technology is the fullest exploitation of natural and human resources at the lowest cost without regard to anything else. Technologists and technicians are morally irresponsible; they are to carry on their task without being directed by any ethical or aesthetic samples.<sup>29</sup>

The consequences of these presuppositions are that man is the master of nature and as such, he can even destroy it with no one to hold him responsible. It is noteworthy that this kind of maxim (as the latter shows), has cost the world so great a damage that today, the way and manner man goes about conquering nature has led to many environmental degradation. Corollary to this, is the depletion of the ozone layers via the activities of man. In addition to the latter is several eruptions of cases of earthquake and other natural disasters which confront man today. All of these we believe, have their roots in the master-slave presuppositions about technology.

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<sup>27</sup> Marc J, De Vries, op.cit;7

<sup>28</sup> Mary Tiles and Hans Oberdiek, *Living in a Technological Culture: Human Tools and Human Values*, (New York: Routledge, 1995), p.1

<sup>29</sup> Bunge, o. Cit; p. 180

Consequently, Unah, in an article titled *The Impact of Science and Technology on Man and Society*, unequivocally stated that the real source of the world's problem as it relates to the threat of global disaster arises from the essentially metaphysical character of the Western intellectual tradition which impacts on its scientific rationality and technocracy, The reign of technique is, the bye-product of the struggle to wrest objectivity from what is, the quest for certainty in our ways of knowing and the passion for totality or the total dominance of everything. Western science is nothing other than the struggle, through research and its implicit rigour, to wrest truth from what is, thereby giving rise to the reign of technique, that is, to the technocratic reduction of everything to planning, calculation and predictable laws<sup>30</sup>

From this ethical perspective, there are those who presuppose that artefacts, technological inventions have no value. In other words, they argue that artefacts are value neutral.<sup>31</sup> What this presupposition translates to is that technological inventions or artifact is just on their own as a tool, ready to be used for whatever purpose the user deems fit. It is out of this debate that two schools emerged, the Optimist and the Pessimist's schools. The Optimists interpret technology as fulfilling the biblical injunction to fill the earth and subdue it, and have dominion over all other creatures. According to Tiles and Oberdiek,

The optimists hold that technology and its products are value neutral: technologies are passive trolls which can be used for good or evil. If technology is sometimes used improperly and causes harm the fault lies with its human operators and developers, not with the technology.<sup>32</sup>

The most unrepentant defender of the foregoing view is James Carey. In his widely cited view, he says, "electronics is neither the arrival of apocalypse nor the dispensation of grace. Technology is technology; it is a means for communication and transportation over space, and nothing more."<sup>33</sup> Explaining this view further, Feenberg, classifies technological theories into two opposing parts: he talks about the *instrumental* theory and *substantive* theory. Lets discuss the former first. The instrumental he says, is predicated on the common notion that technologies are mere tools, standing in readiness waiting to serve the directives of their users. In this respect, technology is deemed neutral and devoid of "valuative content on its own"<sup>34</sup>

This instrumental view of technology by Carey, and as further elaborated by Feenberg is said to be value neutral. Value neutrality as popularly captured in their maxim means that for instance, *guns don't kill people, people kill people*. Succinctly captured by Tiles,

It is a poor carpenter who blames his tools. We recognize it is the carpenter's lack of skill which leads him or her to make a rickety chair: and that were he or she to attack someone with his or her

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<sup>30</sup> Jim I. Unah, "The Impact of Science and Technology on Man and the Society" , *Philosophy for all Disciplines*, vol 2, History and Philosophy of Science ed. By C. S. Momoh, pp. 361-362

<sup>31</sup> Pieter Vermaas, Peter Kroes, Ibova de Poel, Maarten Frenssen, and Wybo Houkes, *A Philosophy of Technology: from Technical Artefacts Sociotechnical System*, (Delft University of Technology: morgan and Clay pool Publishers, 2001), p.16

<sup>32</sup> Tiles and Obardiek, op. Cit; p. 11

<sup>33</sup> James Carey, *Commuinication as Culture*, (New York: Routeledge, 1992), p.139

<sup>34</sup> Andrew Feenberg, *Critical Theory of Technology*, (Oxford: Oxford University Press, 1991), p.5

hammer, we would blame the carpenter, not the hammer. Although modern technologies far removed from the simple tools of carpenter, the principle we can be readily persuaded, is the same. Disasters involving advanced technologies – nuclear power plant accidents, plane crashes and oil spill-result from faulty design or control, or from faulty operation, not anything inherent in the technology itself.<sup>35</sup>

### **Evaluation**

Although one can be tempted to grant credibility to the value neutrality argument, it must be pointed out that such neutrality only applies to simple tools like knife, hammer or partially in the case of nuclear power plants but not in the case of guns or the atomic bomb. Nor can we say so concerning the second level of technology which is a departure from the stone-tools kinds of technology. This new level of technology we can say, cannot be dissociated from value. Again, what we refer as new level of technology (a departure from simple and stone-age technology) is described by Toffler as an era when,

Industrial civilization gave technology sensory organs, creating machines that could hear, see, and touch with greater accuracy and precision than human beings. It gave technology a womb by inventing machines designed to give birth to new machines in infinite progression.<sup>36</sup>

It is on the degree of this second level of technology as described by Toffler above that makes the pessimist schools to insist that technology is value laden. For them, artefacts have values. Since technology is meant to further enhance life and alleviate human suffering, efforts must be made not to allow technological inventions to bring about the destruction of same life. This view is further strengthened by the substantive theory of technology as observed by Feenberg, Heidegger and Ellul.

The substantive theory states that technology constitutes a new type of cultural system that restructures the entire social worlds as object of control.<sup>37</sup> Consequent upon that, Ellul warns against treating or adopting an open-ended approach to technology. Accordingly, Heidegger warns that it appears we are engaged in the transformation of the world and ourselves into standing reserves raw materials waiting to be used up in the process<sup>38</sup>. Heidegger's point concerns the tendencies of modern technology to enslave man and make him mere dispensable tool. Furthermore, Heidegger and Ellul condemn the tendency to reduce human ethical and political existence to mere instrument for achieving political ends. He (Heidegger) notes that the root of the modern technology's nihilistic attitude is in will to power, quest to dominate and a subversion of man and Being to mere objects. Joining forces with Heidegger and Ellul against value-neutrality theory of technology, Jerry Mander, a staunch Critic of TV., dismissed what he called the illusion of neutral technology, that is, the absolutely erroneous assumption that technologies are neutral and benign instruments that may be used well or badly depending upon who controls them. He contends that many technologies determine their own use, their own

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<sup>35</sup> Titles, op.cit., p.12

<sup>36</sup> Toffler, op.cit.,p26

<sup>37</sup> Arnold Pacey, *Technology in World's Civilization A Thousand Year History*, (London: MIT Press, 1991), P.7

<sup>38</sup> Martin Heidegger, *The Question Concerning Technology and other Essays*, trans. By William Lovitt, (New York: Harper & Row, 1977), P.17.

effects, and even the kind of people who control them<sup>39</sup>

He further views that tools can never be neutral as their use often contributes to shaping our own purpose. It was in this spirit that William Churchhill declared that “we shape our buildings and afterward our buildings shape us... we shape our tools and thereafter they shape us.”<sup>40</sup> Upon critical analysis, we need to emphasise the point that no matter the weight of the neutrality theories, it is difficult to divorce value from artefacts on two grounds which are closely related. First, value neutrality can only come to play if such technology has never been used before, or if no one knows to which use a particular technology is meant. Put differently, an instrument such as gun for instance, can only be neutral if no one is aware of its existence and functionality. Second, even if one succeeds in divorcing value from technology (which is doubtful), one cannot do so on technological use –plan. That is to say that every artifact has already premeditated and designed purpose, and to that end, it is not the case (as the instrumental theorist would argue) that it is circumstance which determines what purpose technology is directed. Accordingly, Pieter Vermaas et al argues:

A Macabre example of a morally reprehensible use plan is that of the gas chambers of the second world war in which a vast number of Jews were killed. In such circumstances, it is hard to defend the argument that such purpose-designed gas chambers can be constructed as a neutral instrument that only become morally horrible in the hands of the Nazis.<sup>41</sup>

At this juncture, we submit that value neutrality presupposition in technology is nothing other than a wish and an alibi often put forward to evade moral judgment of the deterministic tendencies of modern technological innovations as observed by Heidegger. Technological order we believe is more than mere tools. It emframes the world in a deterministic fashion. To this end, when we chose certain technology, we recreates ourselves in this choice, and like Feenberg would say, it in turn constitutes our future choices.

### **Conclusion**

The central point of this study as revealed from our discussion, can be divided into subjective presuppositions and objective presuppositions. The subjective ones pertain to those that view man as the primal master of nature, the custodian and final determinant in regards to what becomes its fate. These kinds of presuppositions were identified and discussed in the work. We pointed out that such relationship with nature ends in lopsidedness and breeds danger to man. This is what Fred Knelman calls *the pervasive nature of technology*, a situation of technological environment where technology determines virtually all human needs, both basic and secondary. *The resultant effects are that* “food, clothing, buildings, cities and media become technologized and, in so doing, alienated from the natural world. Nature becomes the target of endless technological alienation and manipulation, coupled to a myopia of consequences, including the myopia of exponential growth.”<sup>42</sup>

It was implied in the discussion that in order to ensure environmental sustainability and ecological equilibrium, man must carry out his technological manipulation of nature in a mutually beneficial manner. On the other hand, at the objective level, we approached

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<sup>39</sup> Daniel Chandler, “Technological or Media Determinism: Technology as Neutral or Non-neutral” retrived at...

<sup>40</sup> Ibid

<sup>41</sup> Pieter Vermaas and Co., op.cit., p.17

<sup>42</sup> Fred H. Knelman, “Historical and Contemporary Perspectives of Science, Technology, and Ethics” in *Ethics and Technology*, ed. By Jorge Net. (Toronto: Wall & Thompson, 1989), p.20.

technology as a thing with an essence and value. All of these were embedded in our treatment of epistemological, metaphysical and ethical presuppositions. In the final analysis, we upheld that inasmuch as technology is founded in human society, it is shrouded in values since every human society is bonded and sustained by certain values..

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