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Veröffentlichungsversion / Published Version
Zeitschriftenartikel / journal article

**Empfohlene Zitierung / Suggested Citation:**
Mansueto, M. P. (2023). Critical Discourses on Technology in the Era of the Anthropocene. *Social Ethics Society : Journal of Applied Philosophy*, *9*, 84-113. https://nbn-resolving.org/urn:nbn:de:0168-ssoar-86742-5

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Leibniz-Institut
für Sozialwissenschaften

Mitglied der
Leibniz-Gemeinschaft

Social Ethics Society Journal of Applied Philosophy
Volume 9, 2023, pp. 84-113

# Critical Discourses on Technology in the Era of the Anthropocene

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**Abstract**

This paper attempts to unravel and explore the stark contradiction between the quest for technological advancement and the struggle for human welfare and well-being. In the frame of Hegel's master and slave dialectic, the author tries to present the notions of humanity and technology as thesis and antitheses by which the dawning synthesis of technological sensitivity to nature and an ecologically friendly human innovation and emancipation can be made possible. The paper draws heavily from the concepts introduced by notable philosophers, such as, Bernard Stiegler, Donna Haraway, N. Katherine Hayes, Andrew Feenberg, Douglas Kellner, Herbert Marcuse, George Lukacs, Georg Friedrich Wilhelm Hegel, Karl Marx, Martin Heidegger, Karl Popper, Aldo Leopold, and Enrique Dussel. Out from the brilliant concepts of these thinkers, altogether their ideas had served as the building blocks in tracing the origin, nature, history, development, and the future of both the humankind and technology, and its impact to the natural ecology. The author attempts to work out a coherent synthesis of these prevailing thinkers. Their ideas aimed to lead, support, enhance, or give way to the possibility of the notion of an ecologically, environmentally, nature and human-friendly technology.

**Keywords:** Nature and technology, human and environment, science and technological rationality, philosophy of technology, ecocentrism

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ISSN: 2546-1885

## Introduction[1]

This essay attempts to reconcile the enduring problems of technologization and humanization. In doing so, we need to ponder upon inevitable questions that comes to challenge humankind in the dawn of techno-civilization and the continuing 'homonization.' Which one should dominate in the struggle between technology and humankind? Should either one needs to single out the other? Will technology endure without humans? Can humans endure without technology? Or how can they meet halfway? And ultimately, what is technology's relationship with nature? The paper applies as its theme Marcuse's treatment of technology both as a tool for domination and as a tool for emancipation in the light of Hegel's master and slave dialectic. As an absolute idealist philosopher, Hegel believes that the world operates in a rational principle and that the true nature of reality is knowable. Marcuse notes that for Hegel the dialectic (*dialektik*) is the formal structure of reality, or that it is the "essence" and truth of all things.[2] In Hegel, the dialectic is the very mechanism by which humans and their civilization progress, both as an individual and as a collectivity, thru what seemed a triadic process of development (*entwicklung*). According to Hegel, it is conflict (or any contradictory logic) which generates progress in human history, as one entity confronts another entity, something else new will ultimately emerge.[3] This means that every development from the time of the early humans up to the present day is cause by an opposition which always results to something novel. Thus, within this logic or precept, every being that exists contains within itself a contradictory or negation of its present state. This negation, however, implies that being is always in the process of becoming, a transformation to what it is not (or not yet). In this process, being actualizes its potentialities by negating itself, that is, by turning itself into its opposite or contradictory.[4] In Hegel, the new emerging form is what he called "sublation" (*aufhebung*).

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[1] In this essay, Dussel's position regarding Western modernity is juxtaposed with dominant theories of technology, alongside with an analysis on the prevailing phenomenon of mining industries in the Philippines and its effects to the Filipino peoples and their communities.

[2] Herbert Marcuse, *Reason and Revolution: Hegel and the Rise of Social Theory* (London: Routledge and Kegan Paul, 1941), 147.

[3] See Karin de Boer, "Hegel's Account of Contradiction in the *Science of Logic* Reconsidered," *Journal of the History of Philosophy*, vol. 48, no. 3, (2010), 361-364.

[4] Marcuse, *Reason and Revolution*, 149.

Sublation is the synthesis of being and nonbeing, wherein being is the thesis and nonbeing is the antithesis. Hegel believes that sublation is a necessary step towards progress, a state of becoming. However, there is a subtle difference between Hegel and Marcuse. For Hegel, being and nonbeing are both retained in the synthesis as the two are combined to form a new thesis, while in Marcuse, being is perished, or destroyed as it gives way to a new reality, or a new identity, wherein the new form is an actualization of the potentialities already inherent in the old. As Marcuse writes:

> A given form of existence cannot unfold its content without perishing. The new must be the actual negation of the old and not a mere correction or revision. To be sure…the new must somehow have existed in the lap of the old. But existed there only as potentiality, and its material realization was excluded by the prevailing form of being.[5]

For Hegel, as well as for Marcuse, the emerging synthesis becomes a new existing thesis to another anti-thesis, thus recycling and continuing the development process. Some scholars suggest that Hegel's dialectic is in the form of a spiral structure, a model which traces back to the earlier philosophies of Giambattista Vico and Johann Gottlieb Fichte.[6]

To illustrate the dialectical process, Hegel uses as example the master and the slave relations. The master thinks of himself as the only independent being, while depriving to the slave the consciousness that he is an essentially independent being. However, the slave has an individual desire to be free from his master and enjoy the fruits of his own labor. But it is through labor that one realizes his freedom. As the slave produces through labor, he gradually gains mastery over things and appropriates his own powers, and he eventually asserts himself over his master. So, the slave eventually realizes to himself that it is he who is free and independent, and not his master. It is the master which is dependent upon his labor. Thus, there is a complete turn-around reversal, an overturn of relations between the master and the slave. The

[5] Marcuse, *Reason and Revolution*, 141.

[6] See Izabella Pruska Oldenhof and Robert K. Logan, "The Spiral Structure of Marshall McLuhan's Thinking," *Philosophies*, Vol. 2, No. 9 (2017), 4.

slave is now the new master as the latter is dependent upon him.[7] Similarly, the relationship between humans and technology is one of a dialectic. Humans created technology but eventually became dependent or enslaved of his creation as technology began to manipulate or subjugate humankind thru dependency. So, who will be the new master and the slave between humans and technology in the unfolding of future events? Or can they both merge to bring a brighter future for the natural ecology and the humankind?

This essay is divided into three sections. The first part looks at the origin of humanity's encounter with technology. We shall need the insight of Bernard Stiegler, a fellow Heideggerian like Marcuse, to properly situate mankind's relationship with technology, with regards to its origin, nature, as well as its contradictions and possibilities. On the second part, we inquire on the status of human beings as they collaborate with technology and science. We shall look upon Donna Haraway's description of the cyborg and N. Katherine Hayles's the 'posthuman.' In the third section, we follow Marcuse in his critique of the advance industrial society dominated by capitalism, consumerism, and imperialism. We shall also look at the media as it plays a vital role to bring a democratic redemption from the capitalist dominion made possible by modern technology. This essay attempts to bring a philosophical reflection relative to the natural ecology in the light of modern theories and scientific discoveries. And lastly, this paper takes a closer look on the industry of mining to provide an interesting insight on the importance of technological questions? Should technology be the emerging new master in the age of the Anthropocene?

## 1. Bernard Stiegler's Coevolution of Technology and Humans

In this first part, we are going to inquire how important is technology to human beings. Using Bernard Stiegler's concept, we shall look unto the relationship of technology and humans. We are going to situate technology in the process of human development, or if you prefer, in the evolution of humankind from the primitive to the pre-moderns, and to the advanced and late industrial society.

The idea of a half-human/half-machine, or of what we commonly refer to as a 'cyborg,' which was very much prevalent in the 90's movies, such as, Arnold Schwarzenegger's *Terminator* and the

[7] See Andrew Cole, "What Hegel's Master/Slave Dialectic Really Means," *Journal of Medieval and Early Modern Studies*, Vol. 34, No. 3 (Fall 2004), 578.

*RoboCop*, have fascinated our imagination of what it feels like to live a life of a man-machine existence. Three decades later, we may have not realized that most of us are in fact living the life very much similar of a cyborg. In some sense, we lived like cyborgs as most of us cannot go on living, or, at least, seemed unable to continue with life, in the absence of various technologies.

Technology seemingly becomes impossible to be detached from the human existence. Anywhere inside the house, it could be in the living room, kitchen, or bedroom, we are most likely be surrounded with different kinds of technologies, such as, either air-conditioning unit or heater, television set, electric fan, microwave oven, among many others. A cellular mobile phone seemed like already an extension of the hand. To add further concrete example, a terminally ill patient on a support machine is unquestionably a case of a man-machine interdependence. Techno-science have entered an era of what can be called as the "fourth, fifth, and the sixth industrial revolutions" in which digital information technology, automatic and electronic machines have crossed boundaries with the biological and physical sciences thru the development of robotics, biomedicine, genetic engineering, and nanotechnology. More so, the geological and anthropological sphere has described our current age as the era of the Anthropocene, signaling how the human presence in the Earth's biosphere have significantly altered to a large extent the planet's ecosystem. In short, the Earth is not only being threatened by outside factors such as meteors but by internal factors specifically caused by human forces.

Undoubtedly, technology generally play a vital and central role in the modern discourses of large-scale development. In fact, technological advancement also became an important measure and catalyst of modernization and is oftentimes mistaken as the basis for progress, most specifically on economic terms. Unarguably, technology has brought human race and their societies some beneficial convenience, such as, faster, and easier modes of transportation and communication, food production, and the invention of therapeutic medical devices, to name just a few. Technology has brought the humankind to new milestones they have never been to, to discoveries never yet seen before, and have allowed significant innovations to see the light of day. But, nonetheless, technology has also brought some unprecedented disaster, for example, irresponsible mining that desecrates the earth, modern nuclear warfare, global warming, or even simply for being the cause of prompting minor glitches in human

relationships, or of communications failure due to over-expectations of the technological intervention. On how concretely we have come to treat or regard 'technology,' its utmost significance somehow inwardly lies upon our own basic understanding of such term itself – that very notion of technology.

**What is technology?**

In the light of the current national issues concerning environmental destruction due to mining operations in many provinces of the Philippines, such as, in Surigao, Agusan, Davao, Negros, Cebu, Bohol, Mindoro, Palawan, Romblon and in some parts of Eastern Samar and Leyte, I attempt to investigate the conjectures and the connections between technological advancement and natural degradation vis-à-vis the human welfare and well-being. The destruction of the environment is deeply connected with human culture as it can be surmised in the extraction of mineral resources, such as, silver, gold, palladium, and copper, obtained through mining are being used in various technologies, such as, airplane, car, train, smartphone, laptop computer, microphone, cable wire and charger.

For instance, in the book, "*The Number You Have Dialed cannot be Reached: The Social Life of Retired Cell Phones*," anthropologist Eulalio R. Guieb III argues on the non-necessity of mining in lieu of the growing problem of electronic waste in the Philippines and around the world, taking the electronic scrap (e-scrap) as alternative sources of minerals that can be recovered from what he termed as "urban mining" of discarded electronic products, such as, cell phones, as found in hazardous garbage sites. Guieb contends that given with the proper technology and government attention, electronic waste from "urban mining" can be recycled and re-used to lessen the need for new mines.[8] According to Greenpeace, the estimated global amount of electronic waste that are thrown as residual waste in many countries, incinerated, or disposed in landfills is said to have approximately surpassed, let us say, the size of the Cebu-Cordova Link Expressway, Samar-Leyte San Juanico Bridge, or the Eiffel Tower in Paris, France. In Asia alone, the estimated amount of e-waste per year reaches up to 12 million metric

[8] See Eulalio R. Guieb III, *The Number You Have Dialed Cannot Be Reached: The Social Life of Retired Cellular Phones* (Manila: Philippine Misereor Partnership, Inc., 2019), 2-5.

tons.[9] The touch of human hands, culture, civilization, and innovations cannot be denied in the disastrous fate that planet Earth has become, in the sad current state of global warming and climate change.

To be able to determine certain measures for the future of technology and the human race, it is important to trace the origin of these entities in what can be viewed as the twin birth of mankind and technology, in the Heideggerian sense of "Dasein" and "Ge-stell."[10] Perhaps, the best question to start with in theorizing about technology is to ask: Since when did humans began employing technology? One thinker who attempts to answer the question was Bernard Stiegler. According to him, humans and technology are inextricably intertwined with each other. In other words, technology and humanity are coeval, or belonging to the same origin, and that it evolved together determining each other. In contrast to prior archeological findings which determined the complexity of thinking by looking at the size of the brain (skull), Stiegler theorized that at that very moment by which the earliest humans (or their ancestors, the homo erectus) learned to stand by their feet, it was the same moment that their hands were made available to carry and use tools, and thereby determined their thought processes. That by being able to stand with his feet was also the same moment the homo sapiens had clearly seen the horizon before him.

According to Stiegler: "Erect postures determine a new system of relations between these two poles: the freeing of hand during

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[9] See Greenpeace, "Green Electronics: Greening our gadgets for a sustainable future," *Greenpeace*. <https://www.greenpeace.org/usa/toxics/green-electronics/>

[10] Dasein is a term used by Martin Heidegger from the German *da* [there] + *sein* [to be], which literally means "there-being" or "being there." English translators would render the word as "presence" or "existence." Heidegger opposed the Cartesian view of the mind or consciousness which is distinguishable from the body or the physical reality. Heidegger meant to show in contrast to Descartes that the essence of human reality is in the world – a "being-in-the-world." In addition, Heidegger's concept of "ge-stell" pertains to the mode in which the human being relates to himself and to his surroundings (technology) and vice-versa in the process of uncovering worldly possibilities. The German term gestell is derived from *ge* [prefix, "gathering" or "collection"] + *stellen* [verb, "to place" or "to put"]. Translators in English used the word "enframing" and "revealing" for gestell in its twofold sense. "Enframing" which suggests on how Dasein looks at the world, and "revealing/unconcealment" referring to how the world/nature allows to be conceived or understood by Dasein. Gestell, referring to *techné*, means to "collect" or "gather together" the earth's resources to make sense of it. This implies that humans do not own the earth. The earth simply stood "there" as a "standing reserve." See Martin Heidegger, *The Question Concerning Technology and Other Essays*, trans. with an Introduction by William Lovitt (New York, N. Y.: Harper & Row Publishers, Inc., 1977), 19.

locomotion is also that of the face from its grasping functions. The hand will necessarily call for tools, movable organs; the tools of the hands will necessarily call for the language of the face."[11] At this point, Stiegler speaks about *technics* referring to human scale hand-making, hand-using, or hand crafting, as well as the artifacts it had created as products. More so, Stiegler applied Derrida's notion of "trace" into the material world. For Stiegler, the tools (*techné*) left significant traces in the historical development of society. The tools functions as meaningful material traces of certain collective and impersonal memory. "A tool, is, before anything else, memory" wrote Stiegler.[12]

In other words, technics shapes thought in the same way inversely that thought itself also continually shapes technics. Technics is inventive as well as invented. In short, technology has simultaneously determined the evolution of human rationality. The technologies that human beings have invented has, in turn, partly determined the direction of both the human and technological innovations.[13] So, going back to the question we posed at the beginning, what is technology? Technology is therefore both the creation and the creator of humans. In short, the humans of today were once a product of the technologies that have been utilized, since it was the tools that determined their subsistence and survival. Technology took part in the creation of what humankind has become. Technology is part of our identity, of who we are. We could not have become what we are today without the use of various technological innovations along the way. It can also be implied simply that part of such developments of human rationality was the

[11] See Bernard Stiegler. *Technics and Time 1: The Fault of Epimetheus* (California: Stanford University Press, 1998), 145.

[12] Stiegler, *Technics and Time 1,* 153-154.

[13] In the sense that, for example, the invention of the Internet and other forms of mobile technologies such as the smartphone, or any latest gadgets, could not have been made possible without the invention of its earlier forms or earlier technologies, since the later innovation was based or dependent upon the previously existing technologies. In other words, electricity would not have been possible without first the appearance of the steam engine. Or any electronic device or the artificial intelligence (AI) system could never have been invented without first the discovery of the electricity. Likewise, human beings could not reach this far in the human civilization in the absence of such technologies which has given way to the latest innovation. In short, we could not think of the latest advanced gadgets and technologies without its earlier forms which has given a possibility to the latest models as technology itself have also evolved to serve a more advanced purpose.

different tools or technologies that were forged and invented as part of the basic human survival.[14]

With such dynamic, or shall we say, "dialectic" of human beings or human rationality and technology, we can simply surmise that the human species could now have been extinct long time ago had it not because of the primitive tools it has discovered in the past. The mere fact that human beings have continued to tread in this planet up to now is a basic proof of our ancestors' superior primitive intelligence and knowledge of the earth as they hone their instincts for survival and have brought us this far.[15] Had they not been that smart, we humans could have already perished long time ago.

**Nature and Human Nature**

With that point of origin or reference, it becomes pointless now to argue whether man should be in favor of or against technology, since awkwardly to be against technology could also mean to become anti-human in the process. Inevitably, man must be in favor of technology to become even more creative or productive, but obviously certain caution must be strictly met or exercised. In this Heideggerian worldview, one thing is certain, that very long, long time ago, before there were both any human beings or technology in this planet, nature thrives and was there to give life to what used to be a dead planet. Technology made sense only upon the appearance of man (*Dasein*) as technology evolved from Mother Earth where nature is employed as tools by humankind. I think it is safe to conclude that technology itself is likewise dependent to nature. Or technology as "enframing," referring to the sense of Heidegger's 'ge-stell,' basically refers to how Dasien is going to treat Mother Nature.

In short, Mother Nature itself is the technology of Dasein, of the humankind. Nature/technology is not meant to exploit against the

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[14] This notion on the intermingling of technics with humans is termed as "originary technicity" which is a feature of Jacques Derrida's thoughts and reflections on technology. See Arthur Bradley, *Originary Technicity: The Theory of Technology from Marx to Derrida* (UK: Lancaster University, 2011), 22. See also Benjiemen A. Labastin, "A Search for a Model of Critical Engagement with Technology: Feenberg's Instrumentalization Theory or MASIPAG's Struggle against Corporate Control of Agricultural Technologies?" *KRITIKE* Vol. 13, No. 2 (December 2019), 94-95.

[15] See Liane Gabora and Anne Russon, "The Evolution of Human Intelligence," in Robert J. Stenberg and Scott Barry Kaufman, *The Cambridge Handbook of Intelligence* (Cambridge: Cambridge University Press, 2011), 334-335.

interest of men, but rather to be taken cared for by men. Nature is indeed "our common home," as both technology and human beings have evolved from nature.[16] In the realm of evolutionary biology, human beings as well, unfold from the Mother Earth. Both humankind and technology have some sense of rootedness from the soil, from nature. I argue that even in the theological sense, humankind is dramatically portrayed to have evolved from clay.[17] Thus, Nature prevails to rule the Earth. Hence, a technology that kills nature is also killing itself and humankind.[18] Inevitably and undeniably, mother nature transcendentally calls for ethics of care of the environment, as equally important with the ethical call for the search of human knowledge and the furtherance of techno-scientific development and biomedical innovations.[19] Nature has its own way to get back at man. The COVID-19 global pandemic is an example of a disaster brought by our neglect of the natural ecosystem.[20] The same is also true with the natural calamities like earthquakes, typhoons, and cyclones, which were intensified by global warming and climate change.

## What is Deep Ecology Movement?

Deep ecology emphasizes the biocentric view that human life is just one among the many co-equal components in the natural ecosystem. This approach originates from Aldo Leopold's "*A Sand County Almanac*," where he introduced the notion of "ecological holism."[21] Similarly, in deep ecology, all life forms have equal intrinsic

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[16] I am alluding here to the social encyclical *Laudato Si*. See Pope Francis, *Laudato Si* (Manila: Paulines Publishing, 2015), 61, 108.

[17] "And the Lord God formed man of the dust of the ground, and breathed into his nostrils the breath of life, and the man became a living being." The Book of Genesis 2:7, *New International Bible*.

[18] With consideration that Heidegger is not a moralist but rather an existential phenomenologist, he does not give us directives on how or which exact way we should handle or take care of nature, he simply gave us a phenomenological description of reality and the relation of Dasein to the world devoid of any ethical purview.

[19] See Fr. Dexter C. Veloso, "Caring for our Common Home: Examining Ethical Paradigms for the Environment," *Social Ethics Society Journal of Applied Philosophy*, Vol. 5 (2), October 2019, 18-19.

[20] See Menelito Mansueto, "Enrique Dussel's Philosophy of Liberation: Philosophical Reflections at the time of the COVID-19 Global Pandemic," *Social Ethics Society- Journal of Applied Philosophy*, Special Issue, July 2020.

[21] "All ethics so far evolved rest upon a single premise: that the individual is a member of a community of interdependent parts. His instincts prompt him to compete

value.[22] Deep ecology opposes the anthropocentric view that human life is superior to any other components in the natural habitat. Nature tends to be exploited for consumption to the benefit of human beings. The anthropocentric view could justify the destruction in the environment due to mining activities under the purview of human development and civilization. Hence, under deep ecology, the plants, animals, and the minerals do not exist for the mere consumption and exploitation by the human society. The Christian bible has held anthropocentric views in the Old Testament, particularly in Genesis in which human beings are created in the "image and likeness" of the Divine, and therefore have given the instruction to take dominion over the earth including every living creature besides human.[23] The idea that humans are distinct and special compared to other living creatures justifies the authority to "subdue" the rest of the ecosystem. God has therefore assigned to mankind the task to take care of the earth, but not to exploit it for the sole gain of humans. The social encyclical *Laudato Si* has emphasized that the planet Earth is "our common home."[24] Human beings are inextricably one with mother nature. We are co-equal with other members of the biotic community, or the other components in the entire biosphere or ecosphere.

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for his place in that community, but his ethics prompt him also to co-operate (perhaps in order that there may be a place to compete for). The land ethics simply enlarges the boundaries of the community to include soils, waters, plants, and animals, or collectively: the land." Aldo Leopold, *A Sand County Almanac and Sketches Here and There*," (New York: Oxford University Press, 1949), 203-204.

[22] For example, Arne Naess writes: "The term life is used here in a comprehensive, nontechnical way to refer also to what biologists classify as "nonliving": rivers (watersheds), landscapes, ecosystems. For supporters of deep ecology, slogans such as "Let the river live" illustrates this broader usage so common in most cultures." Arne Naess, "The Deep Ecology Movement: Some Philosophical Aspects," *Philosophical Inquiry*, Vol. 8, No. 1-2, 1986, 13-14.

[23] The Book of Genesis 1:26-28 states that: "God said 'Let us make humankind in our image, according to our likeness; and let them have dominion over the fish of the sea, and over the birds of the air, and over the cattle, and over the wild animals of the earth, and over every creeping thing that creeps upon the earth.' / God created humankind in his image, in the image of God he created them; male and female he created them. God blessed them, and God said to them, "Be fruitful and multiply, and fill the earth and subdue it; and have dominion over the fish of the sea and over the birds of the air and over every living thing that moves upon the earth."

[24] Pope Francis, *Laudato Si*, 61, 108.

## 2. Donna Haraway's the Dawn of the Cyborg

In this second part, we are going to inquire on the state of humanity as it is confronted with modern technologies. We are going to inquire on the evolution of humankind. Have humans reached its peak in the evolution? Or are we going to prepare for a new description of what it is to be humans? With the fusion of human knowledge and technology, what is in store for the humanity?

### What is human?

The question "what is human?" may sound very much odd or absurd as we knew that human beings (the homo sapiens) are the only ones capable to ask of such self-reflexive questions, to the same astonishment that we are also the only ones capable to feel of boredom of one's existence, and to consciously commit the act of suicide.[25] An asker of such question may at some point already understood the answer but could possibly be confused by the tricky question itself under certain new emerging conditions. Are cyborgs the new humans? We have mentioned about cyborgs above, and to what extent do they differ from humans? In her essay in as early as 1985, socialist-feminist Donna Haraway defined a cyborg as "a cybernetic organism, a hybrid of machine and organism, a creature of social reality as well as a creature of fiction."[26] Haraway further claims that "[by] the late twentieth century, our time, a mythic time" the cyborg became a reality. "[W]e are all chimeras, theorized and fabricated hybrids of machine and organism; in short, we are cyborgs."[27] As a feminist thinker, Haraway looked up to technology as the factor that could erase the distinction

[25] See Albert Camus, *The Myth of Sisyphus and Other Essays*, trans. from the French by Justin O'Brien (New York: Random House, 1955), 6-7. Recent studies suggest the correlation between technology use and anxiety/depression, see Bernadka Dubicka and Louise Theodosiou, *Technology use and the mental health of children and young people, College Report 225* (United Kingdom: Royal College of Psychiatrists, January 2020), 29.

[26] Haraway, Donna, "A Cyborg Manifesto: Science, Technology, and Socialist-Feminism in the Late Twentieth Century," Chap. 8 in *Simians, Cyborgs, and Women: The Reinvention of Nature* (New York: Routledge, 1991), 149.

[27] Haraway, *Simians, Cyborgs, and Women*, 150.

between a male and a female. To her, gender is only a fabricated social mental construct. A "cyborg," to her, has no such specific gender.[28]

But what is even more crucial or intriguing in Haraway's claim as she anticipated modern technological developments is that along with this modern fusion of human and technology, such fusion had turned into a "confusion" regarding what/who is human or machine, that accordingly what was previously regarded as plainly a human trait such as human intelligibility had slowly been taken over by the functions of the machine, obviously in the emergence of advanced computer programming technology, artificial intelligence and robotics.[29] Advanced modern technology has now seemed to dominate the planet. Likewise, human beings reciprocating for the first time ever, have so much reliance to emerging technologies that abides human beings in the performance of their tasks from sunrise to sunset and dusk till dawn, starting with alarm clocks to the Internet, ChatGPT, and GPS locative services. At some instances, computer calculation had surpassed human intelligibility. Computer machines have now utilized so-called Artificial Intelligence (AI) and robotics that are capable to replace the tasks previously assigned to humans. Take the case of Garry Kasparov, a reigning world chess champion in 1996, was defeated by Deep Blue, a chess-playing computer developed by IBM. It was said that Deep Blue does the analytical and mathematical calculation of about 200 chess moves and positions within a single second.[30]

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[28] Haraway writes: "This chapter is an argument for *pleasure in the confusion of boundaries and for responsibility in their construction.* It is an effort to contribute to socialist-feminist culture and theory in a postmodernist, non-naturalist mode and in the utopian tradition of imagining *a world without gender*, which is perhaps a world without genesis, but maybe also a world without end" [italics, mine], see Haraway, *Simians, Cyborgs, and Women*, 150. True enough, in the advanced technological world, the recent phenomenon and apparatus of sex change and transgenderism illustrates this point.

[29] Certainly, human beings are the creators-users of technology, but Haraway opines, "[t]he main trouble with cyborgs, of course, is that they are the illegitimate offspring of militarism and patriarchal capitalism, not to mention state socialism. But illegitimate offspring are often exceedingly unfaithful to their origins. Their fathers, after all, are inessential." See Haraway, *Simians, Cyborgs, and Women*, 151.

[30] The match between Gary Kasparov and Deep Blue was dubbed as "The Brain's Last Stand." See Christopher C. Bernido and Ma. Victoria Carpio-Bernido, "The Stuff of the Universe," *KINAADMAN: An Interdisciplinary Research Journal of Holy Name University*, Tagbilaran City, Vol. 17, No. 1, March 2006, 11.

## The Posthuman Body

Both in the strict technical and mythical sense, a cyborg is one whose human capabilities is enhanced with technology by directly attaching a machine to the human body, and/or the other way around, assuming this is possible, robots with downloaded human consciousness to its memory. Such cyborg body is what N. Katherine Hayles calls as "the posthuman body," which is a hybrid of human beings and technology.[31] For Hayles, the emergence of the posthuman certainly does not mean the end of what is human, but only "the end of a certain conception of the human" akin to what Michel Foucault proclaimed in *The Order of Things* that "man is only a recent invention, a figure not yet two centuries old, a new wrinkle in our knowledge, and that he will disappear again as soon as that knowledge has discovered a new form."[32] In fact, in the realm of sports, during the 2012 London Olympic Games, Oscar Pistorius (a Paralympics gold medalist, whom both legs are amputated) made a name by being allowed to compete in the 400m dash run and 4x400m relay using prosthetic legs, and successfully made his way to the Olympic finals. This gave way to a unique perception of the humankind, now one with the aid of human enhancer technologies.[33] The popular Japanese animated movie *Ghost in the Shell* (1995) portrays a unique genre of cyborg movie suggestive to the cooperative fusion of human consciousness with digital consciousness thru artificial intelligence, which is contrary to the typical cyborg movies wherein humans and machines fight to extinguish each other.[34] Scientists may now explore the outer space with cyborgs, robots, and drone technologies. With the merging, fusion, and cooperation of human beings and technology, are we approaching a new dawn of techno-human civilization?

What brings machines even closer to humans is the claim that machines – or robots, to be exact – are capable to have emotion, e.g., to

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[31] N. Katherine Hayles, *How we became posthuman: Virtual bodies in cybernetics, literature, and informatics* (Chicago: University of Chicago Press. 1999), 286.

[32] Hayles, *How we became posthuman*, 286. See Michel Foucault. *The Order of Things: An Archeology of the Human Sciences* (New York: Vintage Books, 1973) xxiii.

[33] Lagdameo, Federico Jose. "Cyborg identities and the posthuman body." *Mabini Review*, Vol. 2, No. 1 (Polytechnic University of the Philippines, 2013) 20.

[34] The title *Ghost in the Shell* is alluded from "ghost in the machine," a popular phrase from the analytic philosopher Gilbert Ryle and was also used as title of a 1967 book *Ghost in the Machine*.

appear angry if the robot is destroyed, and a high level of creativity and deep intelligence, such as, re-strategizing in a chess game.[35] More so, biological organisms now interact with electronic technology using nanotechnology. Technological evolution has occurred much faster than human evolution.[36]

## 3. The Future of Technology and the Humankind

In this third and final part of the essay, we shall look at the dynamics of the relationship between technology and human culture. We shall dwell into Herbert Marcuse's critique of technological rationality as prevalent in the advanced industrial society. We shall also look at the redeeming potential of media technologies to possibly bring forth the liberated society that Marcuse so desired.

### What is technological rationality?

Indeed, it has appeared that advanced technology is a brilliant innovation of mankind in the modern age. Technology has been regarded as strong, intelligible, precise, accurate, and efficient. While the human being as compared to technology has sometimes been regarded as frail, subject to error and fatigue, and with a very limited capacity. No wonder that in the academe itself, mathematics and science has been regarded with a higher value as compared with arts and humanities, as evident in the reduction of General Education courses, and much more in industries and politics where arts and humanities, including philosophy and the social sciences, are regarded as a critical adversary that only provide opposing and critical alternative against the exploitation and dehumanization of man which is geared towards industrialization resulting to the exploitation and alienation of man, akin to what Herbert Marcuse referred to as a "one-dimensionality," where human beings are seemingly reduced into mere

[35] See Christopher C. Bernido and Ma. Victoria Carpio-Bernido, "The Stuff of the Universe," *KINAADMAN: An Interdisciplinary Research Journal*, Holy Name University, Tagbilaran City, Vol. 17, No. 1, March 2006, 11-12.

[36] "The human being finds his partner of evolution in technology, a partner who doesn't remain outside his biological constitution but penetrates the inmost of its processes." Giorgio Tintino, "From Darwinian to Technological Evolution: Forgetting the Human Lottery," *Cuadernos de Bioetica*, Vol. 25, 2014, 388.

unthinking robots and diminished into a sexual object, a working machine, or a commodity.[37]

No doubt, there is indeed this human tendency to combat human frailties with scientific and arithmetic accuracies, or perhaps thru statistical convictions. Heidegger refers to this as "calculative thinking, as opposed to meditative thinking."[38] But the question that we need to ask, how accurate is scientific accuracy? Is there such a technology capable to replace the multi-tasking human brain? How can technology exactly mimic the human emotions and sensibilities? Can a sex doll equate and replicate the warmth and affection obtained in the experience of human relationships? Can a nonhuman robot feel empathy with humans? How can human beings gain back the empathy for nature and the ecology, such as the value for animals and the forests that had been lost thru technologization? Is it worth the sacrifice of the lives of ethnic minorities and indigenous peoples that were murdered and displaced? How can the ailing human beings find efficient and sustainable cure and meaningful co-existence with technology?

Andrew Feenberg, following Lukacs and Marcuse, characterized technology, in its very essence, as an efficient "rational control."[39] Already in the Marxist tradition, technology has been perceived as a tool for domination in the capitalist mode of production.[40] The modern worker is now being dominated through well-established mechanisms – surveillance of working activity, and replacement of worker's autonomy by the autonomy of the machine. Technology has been regarded as "autonomous," of course, not in the sense that it can generate itself, but because modern society has acquired the habit of resorting to the machines for the solution of their problems – i.e., automation. Douglas Kellner refers to this domination as "techno-capitalism," which is an alliance that "continues to attempt to monopolize new technologies in the interest of corporate domination

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[37] "The sexy office and salesgirls, the handsome, virile junior executive and floor walker are highly marketable commodities, and the possession of suitable mistresses—once the prerogative of kings, princes, and lords—facilitates the career of even the less exalted ranks in the business community." Herbert Marcuse, *One-Dimensional Man: Studies in the ideology of advanced industrial society* (London and New York: Routledge, 1964), 78.

[38] Martin Heidegger, "Memorial Address" in *Discourse on Thinking*, trans. John M. Anderson and E. Hans Freund (New York: Harper and Row, 1966), 44-46.

[39] Andrew Feenberg, *Questioning Technology* (New York: Routledge, 1999), i.

[40] See Karl Marx, "The Development of Machinery" in *Capital*, Vol. 1 (Moscow, USSR: Progress Publishers, 1887), 261.

and profitability, and thus continues to follow the imperatives of capitalist logic."[41] In the essay "Some Social Implications of Modern Technology," Marcuse defined technology primarily "as a mode of production, as the totality of instruments, devices and contrivances which characterize the machine age and is thus at the same time a mode of organizing and perpetuating (or changing) social relationships, a manifestation of prevalent thought and behavior patterns, an instrument for control and domination."[42] Marcuse thus highlights this social dimension of technology as already pointed out by Marx in his critique of the capitalistic mode of production.

Similarly, in his theory of reification, Georgy Lukacs described this humiliating reduction of the worker into a production machine in the capitalist system. Lukacs wrote, "The quantitative differences in exploitation which appear to the capitalist in the form of quantitative determinants of the objects of his calculation, must appear to the worker as the decisive, qualitative categories of his whole physical, mental and moral existence."[43] Reification, for Lukacs, refers to this entire capitalist logic, its systems, and procedures, as made possible by technology, that reduces the social human relations into becoming mere objects or commodities –of "thinghood," so to speak.[44] This is also akin to what Habermas termed the "objectivating attitude" with regards to the social dimension of human relationships, as human beings are given importance only as reference to their economic "function." The theory of reification is Lukacs's critique of rationality in the modern technological age.

Very clearly, for Marcuse, this systematic subjection of technology to capitalist-oriented politics and economics turned technology into an instrument of domination and subjugation.[45] At the outset, however, Marcuse believes technology is "value-neutral," that is, it could either be dominating or emancipating, since the value ascribed

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[41] Douglas Kellner, *Critical theory, Marxism, and modernity* (Baltimore: The Johns Hopkins University Press, 1989), 182.

[42] Herbert Marcuse, "Some social implications of modern technology," in *Technology, war, and fascism, collected papers of Herbert Marcuse*, Vol. 1, ed. Douglas Kellner (London and New York: Routledge, 1998), 41.

[43] George Lukacs, *History and class consciousness*, trans. R. Livingstone (Cambridge, Mass.: MIT Press, 1971), 166.

[44] Andrew Feenberg, *Between Reason and Experience: Essays in Technology and Modernity* (Cambridge, Mass.: MIT Press, 2010), 196.

[45] Herbert Marcuse, *One-dimensional man: Studies in the ideology of the advanced industrial society* (Boston: Beacon Press, 1964), 234.

to technology depends on whether it fulfils real human needs, or it remained a tool for perpetuating the capitalistic values.[46] But, in the advanced industrial society, for Marcuse, no doubt that technology has become an exploitative tool for domination as it fulfils the role of intensifying the extraction of surplus value and thereby creating "false needs" to subjugate the individuals.[47] Such for instance, the medical and genetic research that are going on are oftentimes highly funded by pharmaceutical companies in collaboration with capitalist countries with the aim for corporate profit at the hindsight, its real goal.[48]

**On Scientific Positivism**

Furthermore, there is this claim by astrophysicists that the Sun in our solar system is estimated to live up to 10 billion years, or if you prefer to be more exact, 100,000,000,000,000,000 seconds as its total life span.[49] As of this moment, in this present age of civilization, our Sun is about 4.7 billion years already. If we are going to infer or deduct it from the total life span of the Sun, we still have at least 5.3 billion years more to enjoy our sunset. Once the Sun fully runs out of its fuel, it will result into a supernova explosion, which will be the death of our Sun. When that happens, it only takes eight minutes for darkness and coldness to befall our lonely Earth.[50] This can take place if the Earth will not have a prior collision with any other planet or asteroid. What I find unacceptable rather is when I hear people saying that since the world is about to end anyway, like all those annoying prophetic predictions about the end of the world, it would then be futile to take care and be concerned about the global problem of the ecology and its changing climate, as if it justifies the neglect to the environment. I strongly abhor this rude and ridiculous logic which is surely a product of "calculative

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[46] See Andrew Feenberg, "Can Technology Incorporate Values? Marcuse's Answer to the Question of the Age," Delivered Talk (Conference on the Legacy of Herbert Marcuse, University of California, Berkeley, November 7, 1998), 4-5.

[47] See Herbert Marcuse, *One-Dimensional Man: Studies in the ideology of Advanced Industrial Society* (New York: Routledge, 1964), 246.

[48] See Maurice Cassier, "Value regimes and pricing in the pharmaceutical industry: financial capital inflation (hepatitis C) versus innovation, and production capital savings for malaria medicines" *BioSocieties*, Vol. 16, 2021, 325.

[49] See Christopher C. Bernido and Ma. Victoria Carpio-Bernido. "The Stuff of the Universe." *KINAADMAN: An Interdisciplinary Research Journal*, Holy Name University, Tagbilaran City, Vol. 17, No. 1, March 2006, 7. See also Martin Harwit, *Astrophysical Concepts*, 3rd edition (New York: Springer-Verlag, 1998), 290-293.

[50] Harwit, *Astrophysical Concepts*, 1998, 12-20.

thinking," of technological rationality leaned towards anxious hedonism – "Eat, drink, and be merry, for tomorrow you will die."[51]

While it is true that the solar system has a lifespan and that the sun will exhaust its helium, it does not mean that we no longer have the ethical responsibility to take care of our environment, and therefore we hasten the destruction of the human planet. As scientific positivism is combined with technological rationality, science is now powered by capitalistic interests and gains, so and so that the demand for more technology has become insatiable. The need for unscrupulous widescale mining and massive extraction of mineral resources shall then takes place, which also means the inevitable destruction of the natural ecosystem, and eventually, of the whole human planet.[52] I will argue that scientific positivism is how the Western modernity is so defined. It is ridiculous to keep on saying that we need not worry when that specific time comes, there is technology that can take care of the problem. Obviously, technology as marred with consumerism is itself the problem.

Enrique Dussel frowns upon the notion of globalization which is anchored upon the Western modernity.[53] Dussel argues that this idea of human culture and civilization is highly "Eurocentric" and imperialistic.[54] And Dussel skirmishes: "As for Europe—more wealthy and culturally elegant than ever, a glittering museum to a remarkable past, most immediately the past of modernism itself—I want also to suggest that its failure to generate its own forms of mass production is an ominous sign. Is it possible that the death of modernism also meant a certain end for a certain type of hegemonic European art and

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[51] Anthony J. Cleare and Simon C. Wessely, "Just what the doctor ordered—more alcohol and sex" in *BMJ Clinical Research*, Vol. 315, December 1997, 1637-1638.

[52] Speaking of mining, the argument on its contribution to the economy thru revenues and jobs is categorically false, Surigao and Agusan del Sur provinces where there is so much mining that occurred for years remained as two of the most underdeveloped provinces in the Philippines. Sustainable or responsible mining sounds like an oxymoron. See "Poverty Statistics Update First Semester 2021" in *Facts in Figures* (Congressional Policy and Budget Research Department, House of Representatives, Congress of the Philippines, February 2022).

[53] Enrique Dussel, "Beyond Eurocentrism: The World-System and the Limits of Modernity," in *The Cultures of Globalization*, edited by Fredric Jameson and Masao Miyoshi (Durham and London: Duke University Press, 1998), 4-5.

[54] See Enrique Dussel, *The Underside of Modernity: Apel, Ricoeur, Rorty, Taylor, and the Philosophy of Liberation*. Trans. and ed. by Eduardo Mendieta (New Jersey: Humanities Press, 1996), viii, 4-5.

culture?"[55] The latest gadgets and devices which was supposed to replace the primitive technologies only resulted to a broken, risky, and expensive promise. The basic technology in farming such as the carabao plough continually exists today, less destructive, and harmless to the environment. That beast of burden known as the water buffalo is always willing to take the sacrifices for the sake of mother nature.

**What is technological domination?**

The impact of technological rationality has produced an irresistible new form of environment or culture, which Marcuse refers as the "consumer society," akin to what Adorno calls as "culture industry." For Marcuse, the individual human being, that is, as consumer in the market, has lost her/his power to resist all forms of desirability and allure of the product as it has become for her/him a "false necessity," for it provides a seemingly satisfying fulfillment, when in fact it is only temporary and a never-ending desire (insatiable) due to a ceaselessly increasing demands of a continually high and higher standards of living as brought about by the newest and the latest technologies and gadgets. Adorno termed it as "fetishism" of the product.[56] This have rendered the individual uselessly complacent and "compliant" to the endlessly ever-increasing demands of a higher standard of modern living. And besides, the human being as consumer now enjoys the habit of arrogant and extravagant spending and does not anymore feel exploited by the system as she/he finds great pleasure even in such a temporary fulfillment of desire. Describing technological rationality, Marcuse writes:

> The idea of *compliant efficiency* perfectly illustrates the structure of technological rationality. Rationality is being transformed from critical force into one of adjustment and *compliance*. Autonomy of reason loses its meaning in the same measure as the thoughts, feelings and actions of men are shaped by the technical requirements of the apparatus which they themselves created. Reason has found its resting place in the

[55] Dussel, "Beyond Eurocentrism," 1998, 67.

[56] "Commodity fetishism" in Theodor Adorno and Walter Benjamin. See Donovan Mioyasaki, "The Confusion of Marxian and Freudian Fetishism in Adorno and Benjamin," in *Philosophy Today*, Winter 2002, 429.

> system of standardized control, production, and consumption. There it reigns through the laws and mechanisms which insure the efficiency, expediency, and coherence of this system [Italics, mine].[57]

In brief, man is now controlled by the machine which he controls. What we initially think as a greater freedom and a greater power that comes with technological innovation eventually becomes a nightmare and an alienating obsession, technology has usefully stretched the human being into the name of "efficiency," productivity and utility.

**Is emancipation possible with technology?**

It is very interesting that despite the perceived melancholy of what technology has become and of what it will still become, many thinkers including Marcuse, still look up to technology and to the machines as the possible weapon for liberation. This means that after the dark portrait of technology that Marcuse visualized, he found a glimmer of hope within technology itself that could possibly emancipate the advanced industrial society from the curse of the capitalistic/consumeristic world. In his later work, *An Essay on Liberation*, Marcuse poses a rhetorical question:

> Is it still necessary to state that not technology, not technique, not the machine are the engines of repression, but the presence, in them, of the masters who determine their number, their life span (planned obsolescence), their power, their place in life, and the need for them? Is it still necessary to repeat that science and technology are the great vehicles of liberation and that it is only their use and restriction in the repressive society which makes them into vehicle of domination?[58]

> Not the automobile is repressive, not the television is repressive, not the household gadgets are repressive, but the automobile, the television, the gadgets which, produced in

[57] Herbert Marcuse, "Some social implications of modern technology," in *Technology, war, and fascism, collected papers of Herbert Marcuse*, Vol. 1, ed. Douglas Kellner (London and New York: Routledge, 1998), 49.

[58] Herbert Marcuse, *An Essay on Liberation* (Boston: Beacon Press, 1969), 12.

> accordance with the requirements of profitable exchange, have become part and parcel of the people's own existence, own "actualization."[59]

For Marcuse, technology is an instrument of domination only when it is used for the maintenance of the capitalist system. It is technological rationality in the service of capitalism rather than technology in and of itself, that underlies the overwhelming power of technological domination. Technological rationality or the transformation of technology into a tool for domination is therefore a historical construct. Technology becomes a tool for domination when it is appropriated by the capitalist system. And so, if technological rationality is "only" a historical product, there is always a possibility that technology can be redirected toward a better end. It remains possible, for Marcuse, to envisage an organization of society, in which men are free to reshape society to the benefit of all and carry out the project of emancipation by redirecting the course of technology, that is, by switching from technological rationality to a kind of rationality that promotes freedom and happiness. This rationality is what Marcuse now termed "the Great Refusal."[60]

The Great Refusal is the way towards social emancipation. It is the kind of rationality that defies the absurd logic of the modern economic system which serves no other purpose but its own self-reproduction and corporate interests, and not of the fulfilment of real human needs. Douglas Kellner showed that, for Marcuse, the Great Refusal is also a political refusal and revolt against the system of domination and oppression exacted by the capitalistic system.[61] The Great Refusal, for Marcuse, is both an individual and a collective refusal, aimed at transforming the system of domination and oppression and the realization of a radical social change; it is the realization of a non-repressive, free, and happy society. It is collective since it can only be realized if it takes the shape of social movements; but it is also individualist since it requires the transformation of the individual's patterns of thought and of affectivity.

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[59] Marcuse, *An Essay on Liberation*, 12.

[60] See Christopher Ryan Maboloc, "Herbert Marcuse's Theory of Domination," *SABTON: Multidisciplinary Research Journal*, Vol. 1, No. 1, (June 2021), 8.

[61] Douglas Kellner, *Herbert Marcuse and the crisis of Marxism* (London and Berkley: MacMillan Press and University of California Press, 1984), 279.

Marcuse believes that the Great Refusal can only be made possible if the "New Left" will take its radical and revolutionary role. But who are these revolutionary agents of social change whom Marcuse addressed as the "New Left"? For Marcuse, this New Left is not a single organization or groups that have a common battle cry, but rather he puts his hope on the different minority groups with varied different outcries. These could include the labour unions, student movements, and other politically inclined groups that struggle for liberation, such as, the ethnic minorities, the women's movements, LGBTQIA+s, migrants, peasants and fisherfolks, among other marginalized sectors. Marcuse wrote in *Counterrevolution and Revolt*, "The only counterforce is the development of an effectively organized radical Left, assuming the vast task of *political education*, dispelling the false and mutilated consciousness of the people so that they themselves experience their condition, and its abolition, as vital need, and apprehend the ways and means of their liberation."[62]

Along with the technology that Marcuse criticized, the media, likewise, is heavily attacked with criticism for being the vehicle that gives way to a "positivistic thinking" or a "one-dimensional" rationality.[63] Positivistic thinking is the kind that lacks any critical element, it is conformist and affirmative. It affirms and legitimizes the structures and the dominant cultural values of the system of advanced industrial society. As Kellner remarks, positivistic thinking quells the potential tendencies of human subjects to aim for something different, to represent a state of society beyond the existing one.[64] In the light of the Hegelian dialectic, on the contrary, the logic of the Great Refusal is one that is capable of negation. It is critical, non-conformist, and dialectic, and which stand in direct contrast to positivistic thinking. In the advanced industrial society, the media binds people together and make them desire for a common ideal.[65] Hence, media, along with

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[62] Herbert Marcuse, *Counterrevolution and revolt* (Boston: Beacon Press, 1972), 28.

[63] See Christian Fuchs and Marisol Sandoval, "Positivism, Postmodernism, or Critical Theory? A Case Study of Communications Students' Understandings of Criticism," *Journal for Critical Education Policy Studies*, 6, (2), 116.

[64] Douglas Kellner, "Marcuse, art, and liberation," in *Art and liberation: Collected papers of Herbert Marcuse*, Vol. 4, ed. Douglas Kellner. London and New York: Routledge, 2007), 26.

[65] Christian Fuchs and Marisol Sandoval, "Positivism, Postmodernism, or Critical Theory?" 117-118.

various technologies, is also made culprit for the proliferation of "one-dimensional" society.

Commercial advertisements and the social media, for instance, in connivance with modern capitalism, intensifies our desires for the "false needs," such as, 3D cinemas, luxurious cars, elegant houses, and pleasant signature clothes, as we have come to measure our self-worth and social acceptance, as well as judge the worth of others, on such a very superficial basis. The online culture promotes an "oppressive" standard of beauty, one that can affect and degrade the confidence and self-esteem of a timid youth. As Christopher Ryan Maboloc opines, "Advanced technologies including social media, have continued to manipulate people and as such, diminish rather than deepen the authenticity of human life. For instance, two people in a café sometimes spend more time on their smartphones rather than valuing their face-to-face encounter; here, one can point out the lack of authenticity in human relations."[66] The lack of possession of such social media technology could also lead to alienation or being outcast from the latest trend or of the peer group.

However, the media's potential to be the vehicle for democratization and emancipation is immense. The social media, particularly, with its easy to share platform, likeable to "nodes" in networks, provides a wider audience reach of information.[67] Marcuse's New Left, for instance, must then learn to embrace this democratic potential of media to become the vehicle for emancipation. They must learn to combat and reverse the dominating process of technology with the powerful aid of media technologies. Political maturity is very much necessary for any society, much more for a technological one, thus a "rational discourse" in a Habermasian sense, is likewise very important to come up with politically conscious and educated masses, one that could possibly bring a liberating critical development to a technological society while maintaining opposition to the perils of imperialism, consumerism, and capitalism.[68]

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[66] Christopher Ryan Maboloc, "On technological rationality and the lack of authenticity in the modern age: A critique of Andrew Feenberg's notion of adaptability," in *Techne: Research in Philosophy and Technology*, 20:1 (Winter 2016), 34.

[67] Castells, Manuel, *The Rise of the Network Society: The Information Age, Economy, Society and Culture*, Vol. 1 (Oxford: Blackwell Publishing, 1996), 470.

[68] Jurgen Habermas, *Between Facts and Norms: Contributions to a Discourse Theory of Law and Democracy*. Translated by William Rehg (Cambridge: MIT Press, 1996), 107.

## The Synthesis with Mother Nature

The synthesis between human rationality and technology demands the return to nature pertaining to the restoration of the natural human and animal habitat. A technological advancement that is devoid of the natural ecosystem is like the scenario in dystopian futuristic movies such as "WALL-E" or "I Am Legend," wherein only robots or some mutant superhumans are left in the earth. To conclude that technology always has a solution to natural imbalance like the climate change is too assuming to believe. Technology cannot withstand without nature, fossil fuel, and non-renewable energy.

Ethics cannot possibly become irrelevant in the discussion of technological innovations. The quest for techno-scientific knowledge for modern development and advancement does not need to sacrifice morality in its pursuits. Science or technological development – (setting aside for a little while the Marxist undertone of technological domination, e.g., the exploitative nature of imperialist and capitalist endeavor) – in its pure sense and definition referring to the medical advance, AI, robotics, and planetary explorations, etc., it does not require the sacrifice of ethical principles as manifested in the destruction of the environment and the utter disregard of the basic land rights and human rights of the minorities.

The notion of "technology accompaniment" is very important which implies the role of ethics to continually question the assumptions of science.[69] Likewise, the "technological construction of sovereignty" is very important as it implies or refers to the impossibility of eradicating the human element of the quest for scientific knowledge, scientists should never go beyond his human paradigm.[70] At the end of the day, science should return to the value and respect of humanity which is supposedly the direct beneficiary of science. Science and morality should never become a dichotomy that can never be reconciled. Science should continually yield to the essence and value of human life. Science is futile outside of the human value and significance. Social ethics can

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[69] See Jia Lumeng and Hung Ching, "From Assessment to Design: What Is Really Needed in Technology Accompaniment to Achieve Subject Constitution?" *Frontiers of Philosophy in China*, Vol. 15, No. 1, 74-75.

[70] See Paul Timmers, "The Technological Construction of Sovereignty," *Perspectives on Digital Humanism*, edited by Hannes Werthner, Erich Prem, Edward A. Lee, and Carlo Ghezzi (Switzerland: SpringerLink, 2022), 215-216.

never be sacrificed.[71] The inviolability of the human life should be recognized by technologists and scientists.

## Conclusion

Having explored these multiple facets of technological rationality and its inevitable outcome of "domination" and consequence for a future technological society, I have arrived at a conclusion that technology should never oppose or harm the ecology and humanity. It is inherently self-contradictory for such technology. Killing the environment will eventually lead to the downfall of technology itself, in the Heideggerian sense of having nature and the world as tools for reconfiguration, as forms of *techné* that is itself derived from nature. Greentech or green technology should always be the way to go.[72]

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[71] There is a Tagalog proverb that says "Ang hindi marunong lumingon sa pinanggalingan ay hindi makakarating sa paroroonan" [Anyone who does not learn to look back at his origins cannot arrive at his destinations]. This proverb can also make sense when talking of technological venture, nature being our origin cannot possibly be neglected, neglecting the environment implies neglecting our own kind to its peril.

[72] My interest in this topic had sparked after my discussions with students from Mining Engineering, Metallurgical Engineering and Environmental Engineering of MSU-IIT in Iligan City. Interestingly, in their contrasting views, mining engineers push for a responsible and sustainable mining while environmental engineers vow to protect the environment at all costs. Thanks to our provocative discussions that contributed to this article. The same sense of gratitude goes to philosophy scholars who shared their suggestions during a pre-pandemic SES Conference in Davao City, especially to Noel Adalla (Philippine Science High School), Benjiemen Labastin (La Salle University-Ozamiz), Victor R. Aguilan (Silliman University), Jeffry Bartilet, Ph.D. (Polytechnic University of the Philippines), and Dr. Al Quillope (Notre Dame of Marbel University).

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