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Recasting Technological Determinism

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Abstract

With the emergence of new technologies, the relevance of the philosophy of technology's classic problem of *technological determinism* remains enduring. Roughly, the issue is whether or not technology determines social, cultural, political, economic, scientific, etc., changes in society. Technological determinists affirm that technology determines human affairs, while anti-technological determinists deny it. However, recent literature shows that the relationship between humans and technology is not as mutually exclusive as it was. Questions now pertain to what extent, scope, and degree technology determines humans, and *vice-versa,* and answers now come in the form of a continuum. Such a *continuum view,* questions the *mutually exclusivist view* of classical technological determinism. This paper shall attempt to show that the continuum view provides a more viable account of the human-technology relationship. Through the phenomenological concept of *intentionality*, this paper shall show that the continuum view has advantages that the mutually exclusivist view does not have. And through an analysis of recent Internet studies, this paper shall show that subscribing to the mutually exclusivist view has problematic consequences that the continuum view does not face.

Keywords: Technological Determinism, Philosophy of Technology, Intentionality, Internet, Internet Studies

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Introduction

Since its inception in the 20th century, philosophy of technology has been grappling with the problem of *technological determinism*. Roughly, the problem revolves around the idea that technology determines social, cultural, political, economic, scientific, etc., changes in society. The problem has two major aspects: the problem of *technology's agency* and the problem of *human agency*. The former deals with technology's capacities, namely: (1) its capacity for autonomy, (2) its capacity to have its own logic and "will," and (3) its capacity to determine, influence, or direct. Thus, for this major aspect, the questions asked are: "Is technology autonomous?" "Does technology constitute a power or force of its own, beyond the control of its human creators?" "Does technology possess a logic or (more metaphorically) a will of its own?" "Does technology determine rather than serve human intentions and purposes?"[1] Given those capacities, as a consequence, "Does technology bring about social and cultural changes?"[2]

On the other hand, the problem of human agency deals with the capacity of humans to shape technological products and processes, control technologies, and shape sociotechnical systems. Thus, it is important to note that the problem of human agency in this regard is not so much about the metaphysical problem of human free will *per se*. Questions asked do not deal with whether or not human beings are absolutely free. Rather, it asks the following questions: "Can humans shape technological products and processes?" "Do humans have control over technologies?" "Can particular groups of people shape their sociotechnical systems?"

To answer in the affirmative to the questions about technology's agency or capacity is to answer in the negative to the questions about human agency. In other words, to affirm that technology has the capacity to determine socio-cultural changes is to deny human beings of agency. The converse applies; to answer in the affirmative on the

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[1] Robert Scharff and Val Dusek, "Is Technology Autonomous?" in *Philosophy of Technology: The Technological Condition (An Anthology),* 2nd Edition, eds. Robert Scharff and Val Dusek (West Sussex: Wiley-Blackwell, 2014),426.

[2] Thomas Misa, "History of Technology," in *A Companion to the Philosophy of Technology,* eds. Jan Kyrre Berg Olsen Friis, Stig Andur Pedersen, and Vincent Hendricks (West Sussex: Wiley-Blackwell, 2013), 13.

questions about human agency is to answer in the negative on the questions about technology's agency and capacity. In other words, to affirm human beings' control and power over technologies is to deny technology its autonomy, logic, and capacity to determine.

For the problem of human agency in the face of technology, there are two major positions: *voluntarism* and *determinism*. Voluntarism argues that human beings freely create technologies, and in the process of developing such technologies, human beings still have the capacity to direct, modify, and manipulate such technologies.[3] In other words, technologies are free creations of humans and are completely malleable. On the other hand, determinism argues that technology and its development follow an internal logic.[4] Human beings only function as vehicles or instruments for the expression of technology. There is no human agency in the face of technology for determinists.

For the problem of technology shaping human decisions, actions, and perceptions, there are two major positions: *substantivism* and *instrumentalism*. Substantivism argues that technology shapes and influences the social, political, cultural, scientific, etc., affairs of humanity.[5] On the other hand, instrumentalism argues that technology is a tool "that can reflect and be used in many different ways by diverse human lifeworlds."[6] In addition, "people shape their lives and cultures, then as individuals or groups incorporate and adapt technologies in whatever ways they choose."[7]

Combining these prevailing positions with regard to the two aspects of the problem of technological determinism, Mitcham and Waelbers (2013, 371-372) note that we can yield four major positions: (1) *determinism-substantivism,* (2) *voluntarism-instrumentalism,* (3) *voluntarism-substantivism,* and (4) *determinism-instrumentalism.*[8] The first two positions are said to be the main contenders in the debate. They are most prevalent and are at the extremes. The determinist-substantivist position is said to be the staunch representative of

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[3] Carl Mitcham and Katinka Waelbers, "Technology and Ethics: Overview," in *A Companion to the Philosophy of Technology,* eds. Jan Kyrre Berg Olsen Friis, Stig Andur Pedersen, and Vincent Hendricks (West Sussex: Wiley-Blackwell, 2013), 371.

[4] *Ibid.*

[5] *Ibid.*

[6] *Ibid.*

[7] *Ibid.*

[8] *Ibid.,* 371-372.

technological determinism because it blatantly denies human agency and affirms technology's capacity to determine and direct changes in human affairs. The likes of philosopher Jacques Ellul are said to be a representative of this position.[9] On the other hand, the voluntarist-instrumentalist position is the best representative of anti-technological determinism, for it denies technology its autonomy and deterministic capacities and fully affirms human agency and creativity in the face of technology. The likes of Samuel Florman, most engineers, and historians of technology are subscribers to this position.[10]

However, voluntarism-substantivism, and determinism-instrumentalism are not without their contenders. The so-called "Collingridge Dilemma" by David Collingridge is a representative of the former. It shows how, in the initial design and stages of a technology, human beings have the capacity to determine and shape it; but once technology develops and progresses, technology becomes difficult to alter because it takes on a momentum of its own.[11] Lastly, the determinist-instrumentalist position is represented by the likes of Karl Jaspers, Donella Meadows, Julian Simon, and Nick Bostrom.[12] These philosophers argue that although technology works on a logic of

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[9] Jacques Ellul, "The 'Autonomy' of the Technological Phenomenon" in *Philosophy of Technology: The Technological Condition (An Anthology),* 2nd Edition, eds. Robert Scharff and Val Dusek (West Sussex: Wiley-Blackwell, 2014), 432.

[10] The *Social Construction of Technology* or *Constructivist Position* is said to be the best representative of the voluntarist-instrumentalist position, hence an anti-technological determinist position. Constructivism, which come in mild and radical versions, argues that technology is socially constructed. Constructivists criticize two major elements of technological determinism, namely: technology's autonomy and technology's capacity to determine social development. For a discussion on the origin and development of social construction of technology, see Wiebe Bijker, "Social Construction of Technology," in *A Companion to the Philosophy of Technology,* eds. Jan Kyrre Berg Olsen Friis, Stig Andur Pedersen, and Vincent Hendricks (West Sussex: Wiley-Blackwell, 2013), 88-94. For a discussion on the roots of social construction of technology in the history of philosophy from Thomas Hobbes, Giambattista Vico, Immanuel Kant, Johann Gottlieb Fichte, to Gyorgy Lukacs, see Val Dusek, "Introduction: Philosophy and Technology," in *A Companion to the Philosophy of Technology,* eds. Jan Kyrre Berg Olsen Friis, Stig Andur Pedersen, and Vincent Hendricks (West Sussex: Wiley-Blackwell, 2013), 131-140.

[11] Mitcham and Waelbers, "Technology and Ethics: Overview," 372.

[12] *Ibid.*

its own and determines socio-cultural changes, human beings have the capacity to use technology in many different ways.[13]

Now, recent literature on technological determinism shows that the classic questions and answers on technology's capacity and on human agency are not as mutually exclusive as they were. It is no longer a question of whether or not technology determines socio-cultural changes, nor whether or not human beings determine technology. Rather, questions and answers now come in a *continuum.* Allan Dafoe, for instance, refines the classical questions by arguing that both technology and human beings contribute to determining each other.[14] Thus, the questions now are focused on the extent and degree of such contribution. When it comes to technology's capacity, Dafoe asks: "To what extent are our technologies thrust upon us – by controlling elites, by path-dependent decisions from the past, or by some internal technological logic?" "To what extent, in what ways, and under what scope conditions are particular kinds of technology more

[13] It is important to note, however, that subscribing to the position of technological determinism does not necessitate a *pessimistic view of technology*, and *vice-versa*. By a pessimistic view of technology, we mean a position that views technology as bringing nothing but negative effects, hence a threat to humanity and the environment. Although the negative effects and threats brought by technology are part of what worries philosophers about technological determinism, the primary concern, however, is that technological determinism undermines human freedom and agency. It is because whether or not technology is nothing but a threat, if there is human freedom and agency in the face of technology, then humans have the capacity to do something about such negative effects and threats. But if there is no human agency and freedom at all, then whether or not technology is a threat, humans cannot do anything about it anymore. Hence, the concern of philosophers regarding technological determinism is more fundamental than merely looking at effects of technology. After all, when we talk about technology's effects, it has positive ones as well. Those who adopt an *optimistic view* argues that technology is a liberator because of the benefits that it brings such as higher living standards, opportunity for choice, more leisure, and improved communications. But then again, it is important to note that, in the same manner as the above, subscribing to an anti-determinist position does not necessarily make one an optimist about technology, and *vice-versa*. For it is possible to claim that these benefits of technology to humanity are part of technology determining our lives, only that the effects are positive rather than negative, and hence, technology determining our lives make it less of a concern pragmatically-existentially speaking. For a critical discussion on the pessimistic and optimistic views on technology, see Ian Barbour, *Ethics in an Age of Technology* (New York: Harper Collins, 1993), 3-25.

[14] Allan Dafoe, "On Technological Determinism: A Typology, Scope Conditions, and a Mechanism," *Science, Technology, & Human Values 40* (2015), 1047-1076.

autonomous and powerful in shaping society?"[15] Lastly, "in what ways do technological products or processes shape human action and perception?"[16] When it comes to human agency, Dafoe asks: "to what extent do we have control over the tools we use – and hence also our systems of production, social relations, and worldview?" "To what extent, in what ways, and under what scope conditions are particular groups of people able to shape their sociotechnical systems?"[17] Lastly, "to what extent do humans shape technological products and processes?"[18]

Dafoe attempts to point out the scope, extent, and degree of technology determining socio-cultural changes, and humans determining technology by initially commenting on how scholarship on technological determinism operates on two levels: (1) the *micro level*, and (2) the *macro level*.[19] In the debate, Dafoe notices that technological determinists work on macro levels of analysis, that is:

> The sociotechnical trends that are most suggestive of determinism are generally those that take place over longer time scales: five decades of exponentially increasing density of transistors; two centuries of technological progress and economic growth since the Industrial Revolution; and two millennia of the growth in the size, complexity, and energy intensity of civilizations.[20]

In other words, according to Dafoe, "many claims of technological determinists are macro-observations about patterns in history."[21] On the other hand, anti-technological determinists work on micro levels of analysis.[22] A number of claims of anti-technological determinists are

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[15] *Ibid.,* 1048-1050.

[16] Mitcham and Waelbers, "Technology and Ethics: Overview," 371.

[17] Dafoe, "On Technological Determinism: A Typology, Scope Conditions, and a Mechanism," 1048-1050.

[18] Mitcham and Waelbers, "Technology and Ethics: Overview," 371.

[19] Dafoe, "On Technological Determinism: A Typology, Scope Conditions, and a Mechanism," 1057-1058.

[20] *Ibid.,* 1057.

[21] *Ibid.,* 1058.

[22] Ian Barbour shares the same observation: "One survey of journal articles finds that philosophers and those historians who trace broad trends (in economic and urban history, for example) often claim that technology determines history, whereas the historians or sociologists who make detailed studies of particular technologies are

observations about very short periods of technological phenomena as well as very definite and contextualized instances.

Dafoe notices, however, that recent literature has, once again, the pattern of mutual exclusivity despite the recognition and distinction of two levels of analyses.[23] There is a tendency, according to Dafoe, of asserting the epistemological superiority of one over the other.[24] For instance, asserting that findings of micro and smaller scale scholarship are more valid than macro ones. Another instance is asserting that macro findings should be rejected because it is not clear how they could emerge from micro ones.[25] Thus, Dafoe endeavored to see how these two levels can be reconciled without compromising one over the other. Dafoe asks,

> When limited to their respective empirical domains, could it not be that the claims of both constructivists and the determinists are valid? Is it not possible that on certain scales of analysis technology is socially created, hacked, and interpreted, while on other scales of analysis technology exhibits trends, an internal logic of development, and profoundly shapes history in ways unforeseen by humans?[26]

There are certain gaps, however, in the recent literature above. First, although it has been established that the questions and answers regarding the problem of technological determinism are not in mutual exclusivity anymore but come in the form of a continuum, there is still a need to elaborate and clearly identify to what extent, scope, and conditions technology determines socio-cultural changes and human beings determining technology. Second, considering that the continuum view is gaining interest in recent literature, there is a need to philosophically ground the continuum view. There is a need to show that philosophically speaking such a view provides a more viable account than that of classical technological determinism. Third, most

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usually aware of the diversity of social, political, and economic interests that affect the design of a machine and its uses." See Ian Barbour, *Ethics in an Age of Technology* (New York: Harper Collins, 1993), 14-15.

[23] Dafoe, "On Technological Determinism: A Typology, Scope Conditions, and a Mechanism," 1057-1058.

[24] *Ibid.,* 1057.

[25] *Ibid.,* 1058.

[26] *Ibid.*

of the recent scholarship that attempts to defend such a continuum view are focused mostly on economic and military technologies. Thus, there is a need to consider recent technologies such as the Internet and digital technologies, for instance, which are more in touch with majority of people today. Fourth, although Dafoe has already initially answered the problem of macro and micro levels of analysis *via* an analysis of military-economic competition, there is a need to look into how such micro and macro dynamics work in other contemporary technologies. Fifth, there is a need to see how technological determinism can be of help in debates in other fields of technology, such as in Internet studies, by analyzing the implicit assumptions of these fields regarding technological determinism. In the same way there is a need to see how such technologies of today and people's use of it can question assumptions on the problem of technological determinism.

In light of the above, this paper shall attempt to address some of the foregoing identified gaps. In the interest of space, this paper shall focus on the second, third, and fifth gap only. To address the first and fourth gaps calls for another paper because it demands an extensive study of more, if not all, contemporary technologies whose nature and scope is beyond our present endeavor.

This paper shall argue that the *continuum view* of recent literature on technological determinism provides a more viable account of the relationship between humans and technology compared to the *mutually exclusivist view* of classical technological determinism. By a more viable account, we mean that such an account is able to address, if not dissolve, the problems faced by the mutually exclusivist view of classical technological determinism. The argumentation shall proceed as follows. First, this paper provides the continuum view with a philosophical grounding or foundation through the phenomenological concept of *intentionality*. It shall show that if the continuum view becomes grounded by intentionality, thus becoming an *intentionality-grounded continuum view*, such a view will have more philosophical advantage than the mutually exclusivist view of classical technological determinism. These advantages are: (1) being able to take into account all fundamental human-technology relations; (2) being able to retain the fundamental components of technological determinism which are the human and the technology without having to face the problems that entangled the mutually exclusivist view of

classical technological determinism, (3) because such a continuum view disentangles technological determinism from the subject-object paradigm which entangled the mutually exclusivist view of classical technological determinism in their problems.

After which, through an analysis of sample Internet studies research, this paper shall show how our intentionality-grounded continuum view can disentangle Internet studies from the malaise it currently faces. Such malaise is brought about by its subscription to the subject-object dichotomy of classical technological determinism. Thus, this section of the paper shall point out the presence of this subscription in some scholarly endeavors on Internet technology and show how such a subscription leads to the common problems confronting Internet studies today. This analysis of sample Internet studies research is done for the purpose of showing that, indeed, even in recent technologies today, the subject-object dichotomy of the mutually exclusivist view of classical technological determinism is, indeed, problematic.

Grounding the Continuum View through Intentionality

What follows shall show that the fundamental relationship between human beings and technology is that of intentionality. And that this relationship of intentionality grounds the continuum view of recent scholarship on technological determinism. In philosophy, *intentionality* has always been understood in relation to consciousness or mind. Simply put, intentionality speaks of the directedness or about-ness of consciousness. Consciousness is always consciousness of something. Hence, the directedness or about-ness of consciousness is one of its identifying features or marks. It is said to be one of the marks of the mental. It is "the property of mental states to be about or directed at some objects or states of affairs in the world."[27] Take, for instance, having a belief. To have a belief is to have a belief in something. One cannot have a belief without it being about something. The same is true with love. There is no love when one does not love something or someone. Belief and love are always directed at some object or states of affairs.

[27] Napoleon Mabaquiao Jr., *Mind, Science and Computation* (Quezon City: Vibal Publishing, Inc. and De La Salle University, 2012), 52.

Now, intentionality becomes interesting when we take a look at its features and the issues surrounding them. One of these controversies is whether all forms of mental states are intentional.[28] Franz Brentano argues that all forms of mental states are intentional, thus making intentionality *the* essential mark of the mental.[29] On the other hand, John Searle argues that not all mental states are intentional.[30] Examples of mental states that are intentional are beliefs, fears, hopes, and desires. But there are also those that are not intentional because it seems that they have no object or state of affairs to which they are directed to. Examples of these are forms of nervousness, worry, and anxiety. Thus, making intentionality only *a* mark of the mental and not a universal feature of mental states.

Another issue surrounding intentionality pertains to the intentionality of non-mental phenomena such as maps, charts, signs, words, etc.[31] The issue is how to differentiate the kind of intentionality that non-mental phenomena possess and the kind of intentionality that mental phenomena possess. Searle contends that the intentionality of mental states is *inherent* or original.[32] It is not something we just come up and recognize. It is not a matter of choice and convention that mental states are directed at something. On the other hand, the intentionality of non-mental phenomena is only *derived* or imposed.[33] We only decided that these phenomena are intentional. Aside from inherent and derived intentionality, there is another type that Searle adds. There is what he calls *as-if intentionality,* which is an intentionality attributed to an object or state of affairs that is meant to be metaphorical, such as when we say that we have to turn off our laptop because it is tired and it has to rest.[34] In this case, we are only attributing beliefs and desires to an object despite them not actually having them.

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[28] *Ibid.*

[29] Franz Brentano, *Psychology from an Empirical Standpoint*, trans. Antos Rancurello, D.B. Terell, and Linda McAlister (London: Routledge, 1973), 88.

[30] John Searle, *Intentionality: An Essay in the Philosophy of Mind* (Cambridge: Cambridge University Press, 1983),1.

[31] Mabaquiao, *Mind, Science and Computation*, 53.

[32] John Searle, *Mind, Language and Society: Doing Philosophy in the Real World* (London: Weidenfeld and Nicolson, 1999), 91-95.

[33] *Ibid.*

[34] *Ibid.*

Now, another interesting aspect of intentionality is the fact that "an intentional state remains to be intentional or directed at some object even if such an object happens not to exist."[35] Take, for instance, the belief of children in Santa Claus. We all know that Santa Claus does not exist; hence, the object of the belief of children does not exist. However, this does not mean that the belief also ceases to exist, nor does the directedness of such a belief cease to be. This is in contrast to physical relations, where the relation ceases to exist when one of the objects does not exist. For instance, we cannot say that Mary is sitting beside Joseph when Mary is not there and *vice versa*.

Lastly, another interesting feature of intentionality is that "from the truth of one intentional state we cannot infer the truth of another one, though these two intentional states are about the same object."[36] For instance, we can say that it is true that Lois Lane desires to marry Superman, but we cannot say that it is also true that Lois Lance desires to marry Clark Kent, despite Superman and Clark Kent referring to the same person. Contrast this to physical relations such as water and H_2O. We know that water and H_2O are one and the same entity. When we say that it is true that water is liquid and transparent, we can also say that it is true that H_2O is liquid and transparent.

It is important to note that although the concept of intentionality has been sporadically appearing in philosophy since the medieval period, it only gained an important status in philosophy during the late 19th century and early 20th century. Its importance lies in its debilitating impact on the *traditional subject-object dichotomy* in philosophy, specifically on the tendency of philosophers to overemphasize one over the other. With the use of the concept of intentionality by phenomenologists, the problems brought about by the subject-object dichotomy, such as problems surrounding Cartesian and Kantian epistemology, for instance, dissolve. The insistence of intentionality on the mutual constituted-ness of subject and object paved the way for new understandings in philosophy and in aspects of everyday life.

In language, for instance, intentionality paved the way for Searle to ground his *speech acts*. There is a connection, according to Searle, between speech acts and intentionality. The propositional content and illocutionary force of speech acts correlate with the

[35] Mabaquiao, *Mind, Science and Computation*, 54.
[36] *Ibid.*

representative/intentional content and psychological mode of intentional states, respectively.[37] In the same manner, the word-to-world direction of fit, world-to-word direction of fit, and null direction of fit of speech acts correlate to the mind-to-world direction of fit, world-to-mind direction of fit, and null direction of fit of intentional states, respectively.[38]

In terms of knowledge, intentionality provided Edmund Husserl a basis for his epistemology, concluding that knowledge is neither object-centered nor subject-centered alone but always involves the correlates of the objective (structures, laws, truths, ideality) and the subjective (realized knowledge in the subjective sense).[39] Intentionality served as the ground for his infamous "back to the things themselves!" dictum, which calls for a return to how objects of knowledge appear to consciousness.[40]

The same is true with Maurice Merleau-Ponty, who criticizes *empiricism/realism* as being world-biased, thereby making perception as only limited to sensations, qualities, and stimuli; and criticizes *intellectualism/idealism* as consciousness-biased, thereby making perception as only limited to attention and judgement.[41] Using intentionality, Merleau-Ponty provides a new paradigm of understanding perception as involving both consciousness and world. Seeing is always to see from somewhere.

In terms of the human being, intentionality provided Martin Heidegger a basis for *Dasein* as "being-in-the-world," claiming that there cannot be a self that is world-less, and a world that is self-less.[42] Both self and world constitute each other. And this insight spills over into understanding. As Dasein is "being-in-the-world," he or she always carries fore-havings, fore-conceptions, and fore-sights, which

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[37] Napoleon Mabaquiao Jr., "Searle on the Logic of Intentionality," *Augustinian: A Journal of Humanities, Social Sciences, Business and Education 19* (2018), 13.

[38] *Ibid.*

[39] David Cerbone, *Understanding Phenomenology* (Durham: Acumen, 2006), 13-21.

[40] *Ibid.,* 23-32.

[41] Maurice Merleau-Ponty, *Phenomenology of Perception*, trans. Donald Landes (London: Routledge, 2012), 3-65.

[42] Martin Heidegger, *Being and Time*, trans. Joan Stambaugh (New York: State University of New York Press, 1996), 49-58.

makes his or her understanding never pre-supposition-less and prejudice-less.[43]

Intentionality is also what paved the way for interpreting texts to be seen in a different light, as in Hans-Georg Gadamer arguing that there is no *distanciation* between a text (object of understanding) and a reader/interpreter (subject/being who wants to understand).[44] The horizon of the past brought by the text and the horizon of the present of the reader/interpreter are always fused.[45] The two always participate and partake with each other.

In terms of our relationship with other people, Jean-Paul Sartre, *via* intentionality, was able to resolve the problem brought about by accounts of the self-other relation, which operates on an *external relation of negation* (realism and idealism) as opposed to an *internal relation of negation*.[46] The former views the being of X as having nothing to do with the being of Y because of an external space or nothingness between them. The latter, on the other hand, claims that X by being X determines Y, and Y by being Y determines X. Thus, the infamous *Look of the Other* by Sartre – which claims that the Other by being an Other who looks at me determines my being and actions and objectifies my freedom[47] – is grounded by intentionality.

Lastly, the concept of *absurdity* by Albert Camus is also an heir to intentionality. Camus claims that absurdity does not arise from the rationality of the human being alone, nor from the irrationality of the world alone.[48] Absurdity only arises from the relation of the rationality of the person and the irrationality of the world. A state of affairs becomes absurd when a human being expects something rational from the world but yields something irrational.

Indeed, the concept of intentionality has a significant influence in various aspects of contemporary philosophy, especially in our understanding of everyday aspects of life, from language, knowledge, perception, and understanding. Technology is not exempt.

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[43] *Ibid.,* 139-144.

[44] Hans-Georg Gadamer, *Truth and Method* (New York: Continuum, 1999), 295-300.

[45] *Ibid.,* 302-306.

[46] Jean-Paul Sartre, *Being and Nothingness,* trans. Sarah Richmond (London: Routledge, 2018), 322-347.

[47] *Ibid.,* 347-408.

[48] Robert Solomon, *Existentialism* (New York: Oxford University Press, 2005), 183-184.

Intentionality can play a crucial role in understanding human-technology relations. Don Ihde provides insight by saying that just as preceding phenomenologists through intentionality shed light on our understanding of knowledge, perception, language, person, the Other, etc., intentionality can also recast traditional understandings of human-technology relations. Traditional accounts view the human subject as disparate from the technological object. Thus, paving the way for problems, such as technological determinism, for instance, which assumes a subject-object dichotomy. However, just as epistemological problems were dissolved or recast by taking intentionality into account, problems regarding human-technology relations can also be recast, if not dissolved, *via* intentionality.

Don Ihde fleshes out four modes of human-technology relations whose relationship is not of subject and object but actually precedes the subject-object relationship. The human-technology relationship that Ihde identifies is primordial in nature, meaning we are pre-reflectively in such a relationship even before we reflectively think about it. The four human-technology relations are as follows.

First, there are *embodiment relations* where technology is embodied by the human in the sense that technology forms a unity with the human, and such unity is directed to the world.[49] Ihde illustrates the relationship as *(Human-Technology) -> World*.[50] Examples of this relation are using a chalk to write on a board, a blind man using a cane to navigate his or her way, a biologist using a microscope, and an astronomer looking at a simple telescope.[51] Thus, in this relation, I experience the world through technology. The technology is "absorbed into my experiencing as an extension of myself."[52]

Second is *hermeneutic relations* wherein I understand or interpret the world through the technology. Ihde illustrates the relation as *Human -> (Technology-World).*[53] Thus, if in embodiment relation, technology is almost "fused" in me, in hermeneutic relation, technology is almost "fused" with the world. Examples of this are

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[49] Don Ihde, *Technics and Praxis* (Dordrecht: D. Reidel Publishing Company, 1979), 7.

[50] *Ibid.*

[51] *Ibid.,* 7-10.

[52] *Ibid.,* 7.

[53] *Ibid.,* 12.

reading maps, MRI scans, and X-Ray results. These technologies "carry" the world in them and "present" the world to me.

Third is *alterity relations* wherein the technology is an Other and the world is a background to such an Other. It is illustrated as *Human -> Technology (World).* An example of this is a human interacting with a robot.

Lastly, there is *background relations* wherein technology is a background or context in my experiencing of the world.[54] It is illustrated as *Human (Technology/World).*[55] Examples of this are the presence of lights, warmth provided by heating system in a room, sounds of air conditioners, etc. Thus, in this relation, it is as if we are "inside" a machine, or a "technosphere," just as we are enveloped by the literal atmosphere.[56]

Now, how does this view of human-technology relations ground the continuum view in technological determinism? What is the implication of Ihde's human-technology relations to technological determinism? First, as was mentioned earlier, technological determinism assumes a subject-object dichotomy between humans and technology. Technological determinism assumes that it is as if humans and technologies are totally disparate entities capable of determining either one of them. However, Ihde shows that such a strict dichotomy is just one of the fundamental relations of humans and technology. Classical technological determinism only operates on the alterity relations and have overlooked other primordial relations. The continuum view, in this regard, has more philosophical advantage because it is able to take into account not just alterity relations but also embodiment, hermeneutic, and background relations. The continuum view, while recognizing the delineation between humans and technology, allows determinism to be of degree and not of exclusivity which the background, hermeneutic, and embodiment relations manifest.

This brings us to the second advantage of the continuum view. While being grounded on Ihde's intentional stance on the human-technology relations, the continuum view does not altogether throw away the fundamental assumption of classical technological determinism which is the recognition of a subject and an object. The

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[54] *Ibid.,* 14.
[55] *Ibid.*
[56] *Ibid.*

continuum view still recognizes a subject and an object, only that they are mutually constituted, in the same way that Dasein and the world are mutually constituted (*ala* Heidegger), and text and reader are mutually constituted (*ala* Gadamer). And this mutual constitution allows for both humans and technology determining each other in certain degrees as opposed to mutually exclusively one determining the other, and *vice-versa* in classical technological determinism.

Lastly, since problems faced by technological determinism is brought about by its entanglement to a subject-object dichotomy, then a way for its problems to dissolve or at least for it to be released from such problems is to disentangle technological determinism from such subject-object paradigm. Hence, a need for another paradigm that will usher such disentanglement. And this paradigm is accounted for and provided by intentionality, which in turn is found in Ihde's view of the human-technology relations, which in turn grounds the continuum view in technological determinism. Therefore, considering such, we can say that intentionality as providing a new paradigm into questioning the subject-object dichotomy of classical technological determinism can serve as a reasonable grounding for the continuum view.

Technological Determinism and Internet Studies

Now, this subject-object dichotomy of classical technological determinism spills over in various endeavors to understand and analyze technologies. For instance, a number of Internet studies research assume a technologically deterministic view in their analysis and evaluation of Internet technology. This section of the paper shall point out the presence of this assumption in some scholarly endeavors on Internet technology and show how such an assumption leads to the common problems confronting Internet studies today. It shall end by showing how an intentionality-grounded continuum view can disentangle Internet studies from the malaise it currently faces because of their subscription to the subject-object dichotomy of classical technological determinism.

Two cases show the presence of technological determinism in Internet studies: (1) the current philosophical debate about online friendships, and (2) the worry about online deception. The issue of the debate is whether or not online friendships can achieve the sort of

virtue friendship that Aristotle is purporting in Books VIII and IX of the *Nicomachean Ethics* in order to achieve human flourishing *(Eudaimonia).*[57] Now, those who say that online friendships cannot achieve the Aristotelian virtue friendship provide three major reasons why such is the case.[58] First, online users can select the way they present themselves online, which in turn prevents us from fully knowing our friends' characters online. Second, there are "multiple filters in communication online that can lead to distortion and loss of important clues, as well as the inability to engage in many different activities with our online friends."[59] Third, skepticism regarding Internet technology and its social media shapes the way we interact online, which distorts online friendship. As one can notice, the first reason is dependent on the online user. The second reason is dependent on Internet technology. While the third reason is dependent on the Internet scholars. The second reason is what interests us for our purposes. For it seems that philosophers are blaming Internet technology alone for the malaise that online friendships experience. And this blaming carries some sense of technological determinism.

Let us take a quick look at the arguments of critics of online friendship and point out how technological determinism is present in them. The pioneers in philosophizing online friendship, Dean Cocking and Steve Matthews argue that "Internet technology imposes structural constraints on communicative interaction thus enabling and predisposing individuals to tailor their verbal behavior to the specific environment in which it is said."[60] They continue that the "internet not only affects the nature of this behavior, but also the nature of the 'friendships' that may develop in such an environment, and ultimately the nature of the persons engaged in these 'friendships'."[61] Thus, "the internet environment emasculates and distorts the institution of

[57] Aristotle, *Nicomachean Ethics,* trans. David Ross (Oxford: Oxford University Press, 2009), 142-182.

[58] Sofia Kaliarnta, "Using Aristotle's Theory of Friendship to Classify Online Friendships: A Critical Counterview," *Ethics and Information Technology 18* (2016), 66-67.

[59] *Ibid.,* 66.

[60] Dean Cocking and Steve Matthews, "Unreal Friends," *Ethics and Information Technology 2* (2000), 225-226.

[61] *Ibid.*

friendship."[62] The distortion happens through the following. The online world does not allow direct interaction between two friends. An important aspect of this interaction is that I am able to respond immediately and directly to the concerns and needs of my friend because I am able to interpret my friend's words, actions, and gestures more correctly and immediately compared if we only interact online. In face-to-face interactions, there are indicators from my friend that helps me to correctly interpret his or her words, actions, and gestures.[63] Many of these aspects are difficult to see, if not, impossible to attain, in the online set-up. And if that is the case, then mutual affection, desire for shared experience, and promotion of the interest of one's friends – all of which accompany my interpretation of my friend's actions and gestures –cannot also be present in my online friendship.[64] And if those are not present, then how can one expect one's online friendship to flourish?

Now, how is technological determinism present in their argument? While indeed it is true that Internet technology imposes some structural constraints in our online interactions, it is quite disturbing that Cocking and Matthews even went to the point of claiming that such constraints will enable and predispose individuals, in a sense that such constraints will affect the very "nature" of the friendship and the very "nature" of the persons involved in such friendship. It is apparent that Cocking and Matthews are for the position that technology determines and even "emasculates" and "distorts" human institutions, in this case the institution of friendship. Their foremost critic, Adam Briggle points that "Cocking and Matthews present an implausible deterministic thesis, because the fate of online friendships depends at least much on the people involved as it does on the tools used."[65] In other words, Cocking and Matthews, in being technology-centered and putting all the blame to technology, have forgotten the role humans play in this malaise. On the other hand, Barbro Froding and Martin Peterson, who follow Cocking and Matthews, argue that,

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[62] *Ibid.*

[63] *Ibid.,* 227.

[64] *Ibid.*

[65] Adam Briggle, "Real Friends: How the Internet can Foster Friendship," *Ethics and Information Technology 10* (2008), 73.

> …virtual friendship is analogous to certain questionable, forms of alternative medicine: social media sites are potentially harmful since what is described as a route to social success may in fact turn out to be a toxic substance leading to isolation, just as some alternative medical substances harm rather than cure the patient. Furthermore, by opting for the alternative 'medicine' the individual may forego proven and functioning methods for achieving meaningful social interaction.[66]

Indeed, one can again notice technological determinism working in their argument. Treating virtual friendship as a toxic substance, as an alternative medicine, as a sort of opium (*ala* Karl Marx[67]) shows how they view Internet technology as capable of undermining human agency. It is as if human beings cannot help but succumb to the "detrimental" effects of Internet use.

Now, one of the major worries of critics of online friendship is that deception is possible online. Hence, one of the reasons that led philosophers to downgrade online friendships is the possibility of deception among online friends. Michail Tsikerdekis and Sherali Zeadally defines deception as "a deliberate act intended to mislead others, while targets are not aware or do not expect such acts might be taking place where the deceiver aims to transfer a false belief to the deceived."[68] Various deception techniques include bluffs, mimicry, fakery, white lies, evasions, exaggeration, webpage redirections, and concealment.[69] Online deception usually comes in the form of either content deception, sender deception, communication-channel deception, or hybrid deception.[70] Given such pressing issue of online deception, Tskikerdekis and Zeadally enumerates three challenges that have to be addressed.[71] First is the "lack of a standard, unified

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[66] Barbro Froding and Martin Peterson, "Why Virtual Friendship is No Genuine Friendship," *Ethics and Information Technology 14* (2012), 201.

[67] Karl Marx, *A Contribution to the Critique of Hegel's 'Philosophy of Right'*, trans. Annette Jolin and Joseph O'Malley (Cambridge: Cambridge University Press, 1970), 131-132.

[68] Michail Tsikerdekis and Sherali Zeadally, "Online Deception in Social Media," *Communications of the ACM 57* (2014), 72.

[69] *Ibid.,* 76.

[70] *Ibid.,* 76-78.

[71] *Ibid.,* 78.

theory and methods for online deception detection."[72] Second is "lack of a universal or context-specific, computationally efficient method for deception detection in large online communities."[73] Last is the "lack of effort by social media developers in deception prevention."[74]

It is important to note that Tsikerdekis and Zeadally are not philosophers, hence the challenges that have to be addressed which they enumerated are not philosophical in inclination. However, despite that, it is quite disturbing that their proposed solutions are once again operating on a technologically deterministic stance. By focusing only on changing and modifying Internet technology, Tsikerdekis and Zeadally seems to imply that once technology is modified everything follows because after all technology is to blame and not human beings. Indeed, this only goes to show that technological determinism haunts Internet studies be it philosophically or non-philosophically oriented.

Now, one may ask, what is the matter if they subscribe to technological determinism? Is there any problem if they do so, or if their arguments in one way or another are technologically deterministic? To that, this paper maintains that their subscription to technological determinism, unfortunately has consequences and implications that are problematic, if not harmful and detrimental. And such consequences and implications, we can say serve also as a critique to classic technological determinisms' subject-object dichotomy.

These problematic consequences and implications are as follows. First, scholars of Internet studies, in assuming technological determinism with its accompanying subject-object dichotomy, are in danger of also committing the usual detrimental mistake of philosophers who subscribe to a subject-object dichotomy paradigm, and that is overemphasizing one aspect at the expense of the other, to the point of downgrading one over the other. One need not go so far and look at how philosophy throughout its history, in subscribing to the subject-object dichotomy, have downgraded matter/body over mind/rationality which led to numerous gender and environmental

[72] *Ibid.*
[73] *Ibid.*
[74] *Ibid.*

problems globally.[75] The same applies to Internet studies, there is a danger that scholars might look at the present malaise in a technology-centered paradigm while underestimating what the human can do and contribute. One just needs to look at the worries of the likes of Cocking and Mathews, and Froding and Peterson, and one will see that their worries are always about technology overpowering and dictating humans. William Bulow and Cathrine Felix, however, provides a counter-insight,

> A related claim that is sometimes suggested is that people interacting online are easy prey to manipulation and deception – implying that people are unaware of how online information about a person is less comprehensive than offline. This underestimates the users of social networking sites. Certain things on these sites are known by most users, while others require experience and Internet savvy. The Internet novice might indeed believe it when a pop-up window congratulates her on being the one millionth visitor and tells her she has won a car. She may even give out her bank account number and account passwords when requested to do so. By contrast, someone who knows how to navigate online understands the relevant social codes, avoids obvious pitfalls, and successfully identifies spam…. most people are not as naïve when they interact online as critical voices [such as Cocking and Matthews, and Froding and Peterson] often describe them. When online, most people are careful about how they reveal personal information and they do look out for viruses, unreliable internet users, biased systems, and the like.[76]

Aside from underestimating humans, the subscription of scholars of Internet studies to technological determinism also overlooks the participation of humans in the problem brought about by Internet technology use, as technological determinism takes away agency and hence responsibility from humans. Much of the contemporary problems, issues, and dangers with regard to the

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[75] Lynn White Jr., "The Historical Roots of Our Ecologic Crisis," *Science 155* (1967), 1203-1207.

[76] William Bullow and Cathrine Felix, "On Friendship Between Online Equals," *Philosophy and Technology 29* (2014), 9-10.

Internet spring from the view that the Internet is nothing but a technology that has the capacity to overpower, dictate, and control the way we live our lives. Hence, much of the research done in Internet studies attempts to see how the technology of the Internet *per se* can be modified and improved so that the dangers and problems that accompany such a technology can be minimized. However, viewing the Internet in such a way prevents us from realizing that human beings are participants in both the benefits and dangers of the Internet. It prevents us from admitting that the online world is not just composed of software, applications, social media, and the like, but is also a human world. Hence, the problems and dangers brought about by the Internet cannot be addressed if we only focus on modifying and improving such a technology without taking into consideration the role and participation of human beings in such malaise. Hence, there is a need to reassess the way we view the online world. If most of the problems and dangers online pertain to our human existence and relationships, then most likely these problems emerged from how human beings existed and related to one another online, and not just arising from the technology of the Internet *per se.*

It is disturbing that most of the solutions that scholars of Internet studies propose are focused on modifying or improving the technology of the Internet *per se.* One need not go so far and need only to look at how Tsikerdekis and Zeadally enumerated the challenges for future scholars. All of these challenges are focused on creating computational methods and tools for online deception detection. It seems that scholars of Internet studies have again forgotten that it is not only the technology of the Internet *per se* that contributes to these problems, but the participation of human beings in this technology. Scholars have failed to look into people's way of thinking about the online community and people's way of living *vis-à-vis* the technology of the Internet and its online community.[77]

[77] Ian Barbour similarly says that "Life is indeed impoverished if the technological attitudes of mastery and power dominate one's outlook. Calculation and control do exclude mutuality and receptivity in human relationships and prevent humility and reverence that religious awareness requires. But I would submit that the threat to these areas of human existence comes not from technology itself but from preoccupation with material progress and unqualified reliance on technology. We can make decisions about technology within a wider context of human and environmental values." See Ian Barbour, *Ethics in an Age of Technology* (New York: Harper Collins, 1993), 15.

Therefore, this again calls for a paradigm shift from the subject-object paradigm into the intentionality-grounded continuum view paradigm in addressing the concerns above. By looking at the human-technology relationship *via* intentionality, we are reminded of the interplay, or the correlation between humans and technology, thereby neither blaming nor praising humans alone, nor blaming or praising technology alone. Thus, seeing things not in mutual exclusivity as in the classic technological deterministic way, but in a continuum. And this continuum view also addresses another consequence of subscribing to technological determinism. Technological determinism gives one a disposition that it is as if technology exists in a vacuum and is not affected by other forces. And by existing in a vacuum, technology has the power to determine, in full capacity, human actions and values. As Barbour writes,

> Technological determinism underestimates the diversity of forces that contribute to technological change. Unrelieved pessimism undercuts human action and becomes a self-fulfilling prophecy. If we are convinced that nothing can be done to improve the system, we will indeed do nothing to try to improve it.[78]

The same is true in relation to Internet technology, its social media, and virtual friendship. Shannon Vallor says,

> We must also recognize that new social media do not exist in a vacuum, nor do they alone determine the uses to which they will be put; such media exist in a larger social context. The cultural and economic realities of modern life in the regions of the world where these media have emerged are not themselves entirely conducive to friendships of virtue, or to shared lives, nor were they so before the emergence of these new media.[79]

Such a view of technology as affected by various forces, as well as such a view that social media does not exist in a vacuum and exists in a wider context, is provided by our continuum view. It is because if we

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[78] Barbour, *Ethics in an Age of Technology,* 15.

[79] Shannon Vallor, "Flourishing on Facebook: Virtue Friendship and New Social Media," *Ethics and Information Technology 14* (2012), 197.

go back to the concept of intentionality, the directedness of consciousness to states of affairs in the world does not exist in a vacuum. The directedness and about-ness of consciousness always happen in a certain context, background, and horizon. Therefore, if that is the case, if human-technology relations are seen in light of intentionality, then it follows that technology always exists in a certain context, background, and horizon. This only goes to show that the continuum view of human-technology relations provides us with an avenue to address the problems and consequences brought about by subscribing to the mutually exclusivist view of classical technological determinism.[80]

Conclusion

From the foregoing, we have shown that indeed the continuum view of recent literature on technological determinism is a more viable view than that of the mutually exclusivist view of classical technological determinism. We have demonstrated such by first philosophically grounding the continuum view through the phenomenological concept of intentionality. We have elaborated on such concept by fleshing out its interesting features and some controversies surrounding such features. We have also shown how such a concept paved the way for new understandings in contemporary philosophy and everyday aspects of life. Such new understandings also shed light on our understanding of human-technology relations.

Understanding the human-technology relation in light of intentionality paved the way for us to flesh out the various advantages of subscribing to the continuum view rather than to the mutually exclusivist view of classical technological determinism. And then we attempted to elaborate further on the advantage of such a continuum

[80] Such a view of technology as existing in a certain background, context, and horizon guaranteed by our intentionality-grounded continuum view is also hinted at by Goubin Yang, only that his was more on cultural forms. Yang says that "the concept of cultural form helps to overcome the tendencies of technological determinism and 'determined technology' by taking into account (1) the influence of existing cultural forms, (2) the intentions and purposes of the human actors who use the technology, and (3) the social conditions which compel or inspire social actors to use the technology." See Goubin Yang, "The Internet as Cultural Form: Technology and the Human Condition in China," in *Knowledge, Technology & Policy, 22*(2009), 112.

view by looking into recent research in Internet studies. We have shown that recent research in Internet studies subscribes to the problematic assumptions of the mutually exclusivist view of classical technological determinism, and that subscribing to them leads to some detrimental consequences. These consequences, we have shown, could not have existed if only Internet studies recast their assumption in light of the continuum view.

Indeed, these analyses of ours have shown that the problem of technological determinism still haunts us even in our contemporary era and will continue to do so as more recent technologies emerge. The challenge for all of us is to continue to reflect on our relationship with technologies, all in the hope that, whether or not it determines us, our lives become better and worth living.

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