

Beyond Instrumentalism: Exploring the Affordance Construal of Technology in Heidegger

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Abstract: Current philosophies of technology derived from and inspired by Heidegger’s—exemplified by Postphenomenology and Critical Constructivism—have favored a focus on technological design issues, succumbing consequently, to an instrumental view of technology. This favored focus had contributed to an obliviousness to technology’s inherent dangers which are precisely immune from technological design modifications. Exploring the construal of technology as affordances, this paper offers a contrasting reading of Heidegger’s technology as embedded and embodied dispositions for specific possibilities for being and doing. Consequently, it argues for a more viable alternative to the often-implicit instrumentalist and artefactual view of technologies that frequently undergird prevalent empirical inquiries on how to design technologies and on how to improve our use of technology. Specifically, the paper argues for the employment of an affordance construal to explain technological phenomena. Opposed to instrumentalism, the affordance construal of technology has the advantage of adopting Heidegger’s relational ontology in viewing technology, hereby eschewing the prevalent reductionist view of technologies as artefacts and instruments. In addition, such an account objects to the uncritical and triumphalist reception of any and all technological innovation and invention, typified by many transhumanist/posthumanist positions.

Keywords: affordance, instrumentalism, postphenomenology, critical constructivism

The so-called “empirical turn” in the philosophy of technology has led to great strides in revealing the intricate complexity of the technoscientific condition we are embedded in. The emergence of this

“turn” in philosophy of technology during the 1970s was chronicled in the *American Philosophy of Technology: the Empirical Turn*, a book edited and partly written by the Dutch Hans Achterhuis in 1997. There, he introduced the division between “empirical” and “classical” philosophy of technology.¹

Directed towards examining particular *technologies*, as opposed to technology in general, “empirical” philosophies of technology have provided detailed, layered, and specific analyses that proved to be deeply insightful. And at the forefront of this empirical turn are arguably these two main strands: Postphenomenology which was initiated by Don Ihde, and Critical Constructivism, founded by Andrew Feenberg.²

In this paper, I argue that the above prevailing philosophies of technology which avowedly have taken the so-called “empirical turn” subscribed to—unwittingly, by all respects—a version of the instrumentalist view of technology. Moreover, I indicate that this instrumentalism resulted from the dismissal and discredit of the insight provided by Heideggerian phenomenology on the essence of technology. Thereafter, I assert that the above Heideggerian insight is crucial in understanding the affordance-construal of technology and avoiding the pitfalls of technological instrumentalism. I conclude with an exploration of the analytical rubric offered by an affordance-construal of technology derived from Heidegger’s thought.

Following the above argument structure, my paper has three sections, the first of which is a discussion of both Postphenomenology and Critical Constructivism as empirical philosophies of technology critical of classical philosophy of technology, particularly of Heidegger’s. The second section is a rehearsal of Heidegger’s phenomenology of technology drawn from his reflection on the equipment (*das Zeug*) found in *Being and Time*, and from *Basic Problems of Phenomenology*, as well as the works constitutive of the text “The Question Concerning Technology.” There, I tease out also the affordance-construal of technology. The last section contains the exploration of the fecundity such a construal in an increasingly technologized world.

¹ Hans Achterhuis, “Introduction: American Philosophers of Technology,” in *American Philosophy of Technology: The Empirical Turn*, ed. by Hans Achterhuis, trans. Robert P. Crease (Bloomington: Indiana University Press, 2001), 1-9.

² Lars Botin, Bas de Boer, and Tom Børsen, “Technology in Between the Individual and the Political: Postphenomenology and Critical Constructivism,” in *Techné: Research in Philosophy and Technology*, 24, no. 1 & 2 (2020), 2.

The Instrumentalism of Postphenomenology and Critical Constructivism

Initiated by the American philosopher Don Ihde, Postphenomenology directs itself to “a critical dialogue with the phenomenological tradition on the one hand and research in the empirical field of Science and Technology Studies on the other.”³ As its name suggests, it employs phenomenology in undertaking its investigations; however, these investigations are also very empirical and are of specific and concrete technologies.

Two features are characteristic of the postphenomenological approach: the starting point of human-technology relations, and the combination of “philosophical analysis with empirical investigation.”⁴ With regard to the first, it maintains the mediating character of technologies with our experience of and practices in the world. Ihde calls “inter-relational ontology” this mediation that shapes human subjectivities and world objectivity. This ontology is derived from notions found in “Husserl’s ‘intentionality’ and Heidegger’s ‘being-in-the-world,’”⁵ that is, the essential givenness and relatedness of both the subject and object together.

Notwithstanding its roots in Husserl and Heidegger, Postphenomenology opposes itself to what Achterhuis called the tradition of “first-generation or classical philosophies of technology”⁶ from which Heidegger’s insight arose: it contends that the said tradition inaccurately viewed technology as a monolithic whole, when in fact, what exists are *technologies*. Postphenomenology’s adherence to an empirical approach commits it to the materiality of technologies as the target of its analyses. It treats as illusory and chimerical the notion of a homologous “technology.”

Unsurprisingly, Postphenomenology is unsympathetic to what it perceives as Heidegger’s romanticism. Ihde, in particular, views Heidegger’s reference to the Pre-Socratics and the evocation of the simplicity and profundity of rural life in Todtnauberg as impractical anachronisms in the face of ongoing—and inevitable—technological developments, on the one hand; and as blindness to the politics of technologies, on the other.⁷

³ Robert Rosenberger and Peter-Paul Verbeek, “A Field Guide to Postphenomenology,” in *Postphenomenological Investigations: Essays on Human–Technology Relations*, ed. by Robert Rosenberger and Peter-Paul Verbeek (Maryland: Lexington Books, 2015), 10.

⁴ *Ibid.*, 9.

⁵ Don Ihde, “Preface: Positioning Postphenomenology” in *Postphenomenological Investigation*, xii.

⁶ Achterhuis, “Introduction,” 3.

⁷ See Don Ihde, *Heidegger’s Technologies: Postphenomenological Perspectives* (New York: Fordham University Press, 2010), 74-85.

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In a similar fashion, Postphenomenology is critical of the supposed remoteness of Heideggerian analysis to our actual experience of technologies.⁸ Postphenomenology argues that Heidegger's analysis is reductionist since the latter purportedly only indicates the effect of alienation obtaining in our relation with technologies. Put baldly, Postphenomenology—and in particular, Don Ihde—charges Heidegger of reducing everything to *Bestand* in the analysis of technology's essence, a "one size fits all" approach.⁹

Nonetheless, while Postphenomenology bemoans the abstractness of the Heideggerian phenomenology of the essence of technology, it also recognizes the inadequacy of the so-called empirical approach of Science and Technology Studies in providing a coherently philosophical answer to "how the role of technology in human existence and experience can be understood."¹⁰ As a result, Postphenomenology undertakes to analyze technologies using empirical data (à la Science and Technology Studies), but from the perspective of how these technologies mediate and constitute the world (instead of how technology discloses a scientific and less meaningful world).

Briefly, there are four mediations or human-technology relations, according to Ihde: embodiment, hermeneutic, alterity, and background relations. "With the notion of 'embodiment relations', Ihde points to the mediation of those technologies which transform a user's actional and perceptual engagement with the world. When a technology is 'embodied', a user's experience is reshaped through the device, with the device itself in some ways taken into the user's bodily awareness."¹¹ Eyeglasses are the emblematic example of a technological artefact for this type of relation.

In *hermeneutic relations*, the subject perceives and interprets a technological device's readout to understand the world. "Rather than experience the world through the device as in an embodiment relation, in a hermeneutic relation the user experiences a transformed encounter with the world via the direct experience and interpretation of the technology itself."¹² This relation is typified in our experience of time through the use of a wristwatch.

The third refers to the mediated relation enacted by interfaces of technological devices through which "we relate in a manner somewhat similar to how we interact with other human beings." Resembling human interactions, *alterity relations* between the subject and the device are enacted

⁸ Rosenberger and Verbeek, "A Field Guide to Postphenomenology," 10.

⁹ Ihde, *Heidegger's Technologies*, 118-120.

¹⁰ Rosenberger and Verbeek, "A Field Guide to Postphenomenology," 10.

¹¹ *Ibid.*, 14.

¹² *Ibid.*, 17.

in “computer interfaces, ATMs, smartphones, robots, artificial pets, smart homes and cars.”¹³

Finally, there are *background relations* wherein technologies constitute the environmental context of the human subject and other technological artefacts. For Ihde, certain technologies set up sites through which the subject’s very experience of the world is shaped by them, despite the lack of direct interaction with them. These technologies are exemplified by electricity, running water in our pipes, and ubiquitously nowadays, the internet.¹⁴

Postphenomenology adopts phenomenology’s ontology (in particular, Heidegger’s) of the “co-giveness” of the experiencing person and the world; as well as the mediative and constitutive functions of technology in the experience of the world. The Postphenomenological approach, however, does not construe technological artefacts and systems as belonging to the totality of the “coming to presence of the real” by *technology*, as Heidegger did. More importantly, Postphenomenology’s descriptive approach to technologies—that is, its focus on how technologies mediate human-world relations without proffering a clear normative stance—relegates technologies ultimately to being instruments or tools.¹⁵ This is because its lack of normativity treats technologies to be wholly determined by human subjectivity and use.

In the meantime, Feenberg’s Critical Constructivism is another philosophy of technology that many find cogent and compelling. It provides an account of the current technological condition; an assessment of the problems that emerge from and within it; and a proposal to resolve these, namely, the democratization of technology.

While Feenberg’s thought had undergone modifications, his essential project remains.¹⁶ The most recent comprehensive iteration of his project can

¹³ *Ibid.*, 18.

¹⁴ *Ibid.*, 18-19.

¹⁵ “While technologies are always multistable, every stability affects the human-world relation. Postphenomenology’s task is to find out how.” See Jesper Aagaard, Jan Kyrre Berg Friis, Jessica Sorenson, Oliver Tafdrup, and Cathrine Hasse, “An Introduction to Postphenomenological Methodologies” in *Postphenomenological Methodologies: New Ways in Mediating Techno-Human Relationships*, ed. by Jesper Aagaard, Jan Kyrre Berg Friis, Jessica Sorenson, Oliver Tafdrup, and Cathrine Hasse (Maryland: Lexington Books, 2018), xvi. The descriptive task that Postphenomenology takes upon itself, however, leads to that very position it is supposedly opposing, instrumentalism.

¹⁶ See Hans Achterhuis, “Andrew Feenberg: Farewell to Dystopia,” in *American Philosophy of Technology: The Empirical Turn*, ed. by Hans Achterhuis, trans. by Robert P. Crease (Bloomington, IN: Indiana University Press, 2001), 65-93; also, Larry Hickman, “From Critical Theory to Pragmatism: Feenberg’s Progress,” in *Democratizing Technology: Andrew Feenberg’s Critical Theory of Technology*, ed. by Tyler Veak (New York: SUNY Press, 2006), 71-81.

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be found in his *Transforming Technology: A Critical Theory Revisited* in 2002.¹⁷ Nonetheless, shorter versions of his “critical theory of technology” are rehearsed in Feenberg’s responses to his interlocutors whose critical essays on his work abound.¹⁸

Feenberg acknowledges the immense influence Heidegger has had on his thought. His “Critical Constructivism” (erstwhile termed “Critical Theory of Technology”) draws on Heidegger’s phenomenological analysis of how technology discloses the world of objects and later of resources. Feenberg turns polemical with Heidegger, however, for what he believes to be the latter’s essentialist, that is, substantivist, ahistorical, and unidimensional construal of technology.¹⁹ He thus parts ways with Heidegger and employs other thinkers and traditions (notably Marx, Marcuse, Foucault, and Critical Social Theory) in hewing his own response to the problem of technology.²⁰

Feenberg’s work finds its origin in the Frankfurt School Critical Theory, which for its part, is greatly indebted to Weberian theory of modernity. From Marcuse who was his teacher (who in turn was a student of Heidegger), Feenberg received the notion that technology is shaped by social forces, even as it shapes those same forces also. In such a context, technology is construed as “environment,” and one whose form is the result of political choice.²¹

Feenberg echoes Marcuse’s (and to a certain extent, Habermas’s) concern over how technology, pervasive as it is as environment or context, is not only an instrument of control and domination, but *is* control and

¹⁷ Andrew Feenberg, *Transforming Technology: A Critical Theory Revisited* (New York: Oxford University Press, 2002). See also Andrew Feenberg, *Critical Theory of Technology* (New York: Oxford University Press, 1991).

¹⁸ See Andrew Feenberg, “Critical Constructivism, Postphenomenology, and the Politics of Technology” in *Techné: Research in Philosophy and Technology*, 24, no. 1 & 2 (2020), 27-40; also, Andrew Feenberg, “Replies to Critics: Epistemology, Ontology, Methodology” in *Critical Theory and the Thought of Andrew Feenberg*, ed. by Darrel P. Arnold and Andreas Michel (Cham, Switzerland: Palgrave Macmillan, 2017), 285-318; also Andrew Feenberg, “Replies to Critics” in *Democratizing Technology*, 175-210.

¹⁹ See Iain Thomson, *Heidegger on Ontotheology: Technology and the Politics of Education* (Cambridge: Cambridge University Press, 2005), 44-77. In the same pages, Thomson rebuts these charges of Feenberg. See also Iain Thomson, “What’s Wrong with Being a Technological Essentialist? A Response to Feenberg,” in *Democratizing Technology*, 53-70.

²⁰ “Critical theory of technology draws on insights from Heidegger, Foucault, the Frankfurt School, and constructivist sociology of technology. Each source contributes elements toward a better understanding of the relation between reason and experience.” See Andrew Feenberg, *Between Reason and Experience: Essays in Technology and Modernity* (Cambridge, MA.: MIT Press, 2010), xxiii.

²¹ Andrew Feenberg, “Critical Theory of Technology” in *A Companion to the Philosophy of Technology*, ed. by Jan Kyrre Berg Olsen et al. (Malden, MA: Blackwell Publishing Ltd., 2009), 148.

domination. He says that “[m]odern societies are characterized by the ever expanding effectiveness of strategic control ... [in which there is] the freedom of management to make independent decisions about how to carry on the activities of the organization it supervises regardless of the views or interests of subordinate actors and the surrounding community.”²²

For Feenberg, this ongoing rationalization of modern societies is a technologization, that is, the constitution, governance, and permeation of the life-world by the technical codes embedded in our devices. He frames this condition along the lines of the intensification of control over the development of human capacities by technocratic authorities of society, instead of being left to individual human actors themselves.

Feenberg’s call to radically transform technical design towards more democratic ends comprises his project of democratizing technology through his distinct version of critical theory. Democratizing technology entails analysis afforded by Feenberg’s “instrumentalization theory” which recognizes a dual instrumentalization process taking place in technical activity. *Primary instrumentalization* pertains to “the ability to perceive the world in terms of functions and affordances,” i.e., the decontextualization of objects as tools.²³ *Secondary instrumentalization* refers to the social determination of technical objects or tools, or the enculturation of tools by their social contexts; meanwhile, two subsidiary processes constitute secondary instrumentalization, namely “systematizations” and “mediations.”²⁴

Feenberg advances that specific “technical codes” characterize this dual instrumentalization process, and the key to transforming the technological lifeworld is to tweak or reform these codes by designing them towards democratic goals. “In such a technical democracy, technical work would take on a different character. Design would be consciously oriented toward politically legitimated human values rather than subject to the whims of profit-making organizations and military bureaucracies.”²⁵

In particular, Critical Constructivism functions similarly as ideology critique wherein biases embedded in the technical codes by their designers (dominant actors who themselves carry their class, race, gender biases) are uncovered and subjected to critique. This critical juncture is a political moment through which all societal actors are welcome to participate in order to ensure democratic decision-making. More specifically, in neo-liberal societies governed by the technocapitalist rationality, this critique of technical

²² Feenberg, *Transforming Technology*, 16.

²³ Feenberg, “Critical Theory of Technology,” 150.

²⁴ *Ibid.*

²⁵ *Ibid.*, 149.

design uncovers from the veil of the value-neutrality of technical objects, the bias towards hegemony of centralized control in these societies. Thus, Feenberg gestures towards public review and participation in the designing of technical objects. “Identifying and changing formally biased technical codes,” he says, “is essential to democratic advance in modern societies.”²⁶

Succinctly therefore, what Feenberg’s Critical Constructivism espouses entails subjecting to public scrutiny and debate the instrumentalization process that goes into the production of technical objects, which in turn, constitute and govern the lifeworld. Through this critique, the redesigning of said objects can be undertaken towards more overtly democratic ideals. Through it, Feenberg hopes, the democratization of technology begins to be achieved in modern societies.

In retrospect, both Postphenomenology and Critical Constructivism as empirical approaches are highly alert to the contextual (historical) constitution of technologies. While they are painstaking with their detailed accounts of specific technologies, they eschew the subscription to a general notion of “technology.” This disinterest in examining technology as such, leaves it relatively unproblematic.

Joseph C. Pitt observes as much in signaling the priority of understanding the uses and functions of technologies in much of empirically-minded philosophies of technology:

[T]he empirical turn pushed us to know the technologies we were talking about, leaving abstract discussions of why Technology (with the capitol T) is evil, for instance, less and less interesting and irrelevant. Technologies have real world effects and knowing how that all works is crucial to knowing *what to do with our technologies* By taking the empirical turn we were forced to look at the things *we can do with our technologies*.²⁷

We can infer from the above that empirical approaches to the philosophy of technology which focus on “real world effects and knowing how that all works” are actually trained on a practical end, that of the *use* of technologies. With such an end in view, these approaches—implicitly at the very least—are committed to a construal of technologies *as* instruments.

²⁶ *Ibid.*, 152.

²⁷ Joseph C. Pitt, “The Future of Philosophy: A Manifesto,” in *Philosophy of Technology after the Empirical Turn*, ed. by Maarten Franssen, Pieter E. Vermaas, Peter Kroes, and Anthonie W.M. Meijers (Cham, Switzerland: Springer Nature, 2016), 86. Emphasis is mine.

Hence, their focal aim of discerning “what to do with our technologies,” and consequently, that of *correctly designing* technologies.

This disinterest in “abstract discussions” of technology, in granting a general characterization to what *it is* they are examining, fosters further an instrumentalist view of technology. To explain, empirical philosophies of technology concern themselves with the questions of correct usage and correct design of technologies according to human ends. The absence of consideration for the possibility that technologies exhibit autonomy, i.e., a logic of operation or function that is independent of the user’s or designer’s purpose, implies the said instrumentalist view of technologies.

Specifically, the above lack of a normative stance on “technology as such” abets an instrumentalism that is admittedly more sophisticated than the view “technology-as-tool” that characterized initial (and uncritical) approaches to the study of technology. Nevertheless, it is one that falls prey to the same problems of the latter, namely, those precisely raised by Heidegger’s critical analysis, e.g., the obfuscation of technology’s autonomy.

Arguably, philosophies of technology (or technologies) which are intent *primarily* on determining its (their) usage and design, but remiss in providing an adequate understanding of technology itself, run the risk of tripping from the jutting edge of an unacknowledged instrumentalism, and inevitably falling into the pit of the neutrality thesis which Heidegger has warned causes “blindness to the essence of technology.”²⁸

The crucial insight afforded by Heidegger’s phenomenological analysis of technology, however, does not consist in the caveat above. Rather, it lies in the ontological implication of his phenomenology: technology is a particular way of being, a specific mode of world disclosure through which entities show up.

Technological Mediation as Affordance

I now draw on the disclosive character of technology by Heidegger for the theoretical wherewithal by which an affordance construal of technology is elaborated. In particular, the theory of technological essence as the manner through which the world is given, when unpacked, presents an ontology of relations between us and *everything* else. In the endeavor to account for our technological condition, what this amounts to is the view that technology does not pertain primarily to artefacts per se, but instead to an

²⁸ Martin Heidegger, “The Question Concerning Technology,” in *The Question Concerning Technology and Other Essays*, trans. and with an Introduction by William Lovitt (New York: Harper Torchbooks, 1977), 4.

affordance that not only discloses the real, but structures subjectivities and agency as well.

In *Being and Time*, we find Heidegger's famous phenomenology of equipment (*das Zeug*), or tool-analysis, particularly of the hammer.²⁹ There Heidegger peels for us the supposed immediacy of encountering "a hammer" and instead illumines its transparency as a medium for achieving the "in-order-to" of the task solicited by the context. He then goes on to develop the concept of what has been translated in English as *readiness-to-hand* (*Zuhandenheit*). This analysis of Heidegger has been considered momentous for several reasons by varying commentators.³⁰ My interest here, however, is drawing from it the idea of "equipmental mediation" that can be carried over to technological mediation, and ultimately to affordance.

Toward this end, I call attention to Heidegger's claim that the hammer disappears, as it were, when it is most itself in mediating our experience of the world:

The peculiarity of what is proximally ready-to-hand is that, in its readiness-to-hand, it must, as it were, withdraw [*sich zurückziehen*] in order to be ready-to-hand quite authentically. That with which our everyday dealings proximally dwell is not the tools themselves [*die Werkzeuge selbst*]. On the contrary, that with which we concern ourselves primarily is the work—that which is to be produced at the time; and this is accordingly ready-to-hand too. The work bears with it that referential totality within which the equipment is encountered.³¹

Here, Heidegger alerts us to any equipment's (in the above case, a hammer) reality as given towards *our end*. He explains that the experience of

²⁹ Martin Heidegger, *Being and Time*, trans. by John Macquarrie and Edward Robinson (Oxford: Blackwell Publishers Ltd., 2001), 98-99.

³⁰ Perhaps none more so than by Graham Harman who provides an idiosyncratic reading in his *Tool-Being: Heidegger and the Metaphysics of Objects*. There, he argues that Heidegger, through the aforementioned analysis, initiated an object-centered ontology instead of a hermeneutical one in which reality is always a reality-for *Dasein*. See Graham Harman, *Tool-Being: Heidegger and the Metaphysics of Objects* (Chicago: Open Court Publishing Co., 2002).

Later, Harman will identify himself with Speculative Realism, a philosophical movement aimed against what it calls *correlationism*, the philosophy ushered in by Kant and developed by Post-Kantianism. Incidentally, Quentin Meillassoux joins Harman in this camp (albeit as a speculative *materialist*), and launches a strident attack specifically against Heidegger's phenomenology. See Quentin Meillassoux, *After Finitude: An Essay on the Necessity of Contingency*, trans. by Ray Brassier (New York: Bloomsbury, 2008), 17-19.

³¹ Heidegger, *Being and Time*, 99.

“being-in”³² in any given context is through the equipment that has nonetheless vanished *as* equipment. He thus points to how equipment is a means of experiencing the world, e.g., the world of carpentry, and not merely a tool to be used according to one’s practical purpose.

In the later essay that is “The Question Concerning Technology,” Heidegger rehearses this analysis but along the lines of an ontological dispensation. He writes of how the prevailing disclosure of the world is a challenging forth and that “[this] has already claimed man and has done so, so decisively that he *can only be* man at any given time as the one so claimed”³³ [emphasis mine]. This mode of disclosure that is the essence of modern technology, namely, *Ge-stell*, conditions man’s experience of the world so that “when man, investigating, observing, ensnares nature as an area of his own conceiving, he has already been claimed by a way of revealing that challenges him to approach nature as an object of research, until even the object disappears into the objectlessness of standing-reserve.”³⁴

To understand further the idea of technological mediation that arises out of Heidegger’s phenomenology, it bears considering again that for the German thinker the human being as *Dasein* is directly opposed to the disembodied, and hence, de-contextualized Cartesian ego. The fundamental character of *Dasein* is to be “caught up” or to be situated concretely, that is to say, to be radically finite. More precisely, the fundamental character of *Dasein* is to be constituted by its relations *to* and *in* the world. The epochal view afforded by Heidegger’s phenomenology discloses an interrelational reality where there are no ego-world or interior-exterior dualisms, problems which plague Cartesians. Heidegger’s phenomenological ontology, as was asserted earlier, is a relational one.³⁵

In Heidegger therefore, technology are no mere tools that we use according to our purpose; rather technology mediates our relation with the world. It mediates our experience of the world; it mediates the worlding of the world.

From this account of technological mediation present in Heidegger, I draw the construal of the technological as *affordance*. This construal coheres well with the relational ontology undergirding the thinker’s critique: an affordance is brought about by the fundamentally relational character of reality. In addition, the view that the technological is a type of affordance includes necessarily the understanding that technology has a mediating

³² Cf. *Ibid.*, 79-90.

³³ Heidegger, “The Question Concerning Technology,” 18.

³⁴ *Ibid.*, 19.

³⁵ This is plausibly also the reason why his analysis of technology remains at the ontological level, since focusing on technologies or technological artefacts/devices, has the effect—at least for him—of missing the forest for the trees.

function, one which affords a specific being in a situation or “being-in.” That is to say, technology affords to the world a certain meaningfulness.

An affordance-construal of technology presents it as a *disposition or causal propensity towards particular possibilities of being and doing* owing to a distinct ontological dispensation, and to an ontical structuring in a relational field. In this sense, the technological are to be understood as disclosures towards possibilities in the ontological and ontic levels: in the former where it orders the possibility of a particular manner of coming to presence through its simultaneous unconcealment and concealment; and in the ontic, where it structures possibilities of action—some enabling, some constraining—without determining a specific set of actions. In this two-fold disposition, moreover, the technological *affords* inherent dangers.

In Heidegger, this idea of affordance is precisely captured in his analysis of equipment as *ready-to-hand*. To wit, our specific coping with and comportment to (*Verhalten*) a context is afforded by our very embeddedness in that context. As described in the tool-analysis, the tool *is* a tool precisely because the context in which one *is*, affords it to *be*, to come to presence as such.

Every entity that we uncover as equipment has with it a specific functionality, *Bewandtnis* [an in-order-to-ness, a way of being functionally deployed]. The contexture of the what-for or in-order-to is a whole of functionality relations. This functionality which each entity carries with it within the whole functionality complex is not a property adhering to the thing, and it is also not a relation which the thing has only on account of the extant presence of another entity. **Rather, the functionality that goes with chair, blackboard, window is exactly that which makes the thing what it is** [emphasis mine]. The functionality contexture is not a relational whole in the sense of a product that emerges only from the conjoint occurrence of a number of things. The functionality whole, narrower or broader—room, house, neighborhood, town, city—is the prius, within which specific beings, as beings of this or that character, are as they are and exhibit themselves correspondingly.³⁶

³⁶ Martin Heidegger, *Basic Problems of Phenomenology*, trans. by Albert Hofstadter (Bloomington, IN: Indiana University Press, 1988), 164.

Dreyfus's gloss is helpful in indicating this affordance character: "At his best, Heidegger would, I think, deny that a hammer in a drawer has readiness-to-hand as its way of being. Rather, he sees that, *for the user*, equipment is a solicitation to act, not an entity with a function feature."³⁷

On the other hand, that modern technology as affordance is dispositional in the ontological level is evinced in Heidegger's reflection on the essence of technology. The essay "The Question Concerning Technology" is replete with characterizations of modern technology's ontological dispensation which affords the coming to presence of the real as object, and then finally, as standing reserve or resource:

What kind of unconcealment is it, then, that is peculiar to that which comes to stand forth through this setting-upon that challenges? Everywhere everything is ordered to stand by, to be immediately at hand, indeed to stand there just so that it may be on call for a further ordering.³⁸ Enframing [Positionality] means the gathering together of that setting-upon which sets upon man, i.e., challenges him forth, to reveal the real, in the mode of ordering, as standing-reserve. Enframing [Positionality] means that way of revealing which holds sway in the essence of modern technology and which is itself nothing technological.³⁹

It remains true, nonetheless, that man in the technological age is, in a particularly striking way, challenged forth into revealing. That revealing concerns nature, above all, as the chief storehouse of the standing energy reserve.⁴⁰

An Affordance Theory of Technology

I argue that against competing "*as* notions" of the technological, an affordance construal offers more explanatory power by providing an account of the dangers we intuit in technology and technologies even as their improvement of our capacities are taken on board. Precisely, the notion of

³⁷ Hubert Dreyfus, "Why Heideggerian AI Failed and How Fixing it Would Require Making it More Heideggerian," in *Philosophy of Technology: The Technological Condition – An Anthology* (Malden, MA: Blackwell Publishing, 2003), 600.

³⁸ Heidegger, "The Question Concerning Technology," 17.

³⁹ *Ibid.*, 20.

⁴⁰ *Ibid.*, 21.

affordance is a way of explaining how technology and technological artefacts, systems, practices, structure, respectively, the coming to presence of the real and action possibilities towards our transformation into resource.

For with this account of the technological as affordance, technology's problematic character is far from being ignored or dismissed; instead, it is an account mindful of the dangers technology holds for human subjectivity and agency. This account avoids the uncritical reception of any and all technological innovation and invention, typified by many transhumanist/posthumanist positions. At the same time, it avoids the Luddism that frequently accompanies dystopian views of technology. Neither does it lapse into an obdurate and seductive instrumentalist view that is nevertheless pernicious to any serious reckoning with technology.

The insight afforded by Heidegger, namely that *Ge-stell* is a specific mode of world disclosure through which entities show up, is crucial in this regard. For as *Ge-stell* discloses the world as *Bestand* (standing-reserve) or a reservoir of resources for exploitation, understanding the technological affordances of that mode of disclosure is both necessary and paramount.

Meanwhile, it is interesting to note that Diane Michelfelder remarks on how this insight of Heidegger, shunned by Postphenomenologists such as Ihde and Verbeek, is in fact a significant blind spot for Postphenomenology. Michelfelder indicated how this empirical philosophy of technology has failed to treat satisfactorily the third panel of its triptych of *I-technology-world* analytical matrix, and has largely confined itself to the first two, that is, *I-technology*. Taking aim precisely at Verbeek, Michelfelder notes how the latter "develop[s] the concept of mediating as co-shaping [between the individual and technology] ... [but] has not focused extensively on how technology discloses the world as a whole."⁴¹

Thus while she credits Postphenomenology in its current form and thrusts for being successful in showing how "technologies disclose patterns of behavior or practices of daily life," Michelfelder, nonetheless, stresses that is not enough given that "[this] is not the same as to say they disclose the world as a whole."⁴² She draws attention to emerging technologies whose operations are "hidden from the realm of the everyday phenomenal experience of the user ... [hence] 'off the grid' from the user experience ... [and thus] not directly the focus of a postphenomenological investigation."⁴³ Emerging technologies, such as tracking bio-sensors used to collect different

⁴¹ Diane P. Michelfelder, "Postphenomenology with an Eye to the Future," in *Postphenomenological Investigations*, 241.

⁴² *Ibid.*, 242.

⁴³ *Ibid.*, 243.

types of personal data of (read: spy on) specific targets, are notably resistant to Postphenomenological analysis.

For Michelfelder, the importance of the Heideggerian insight on “world” to the critical inquiry of technology is that it allows for an examination of such emerging technologies that precisely slip through the Postphenomenological mesh. Informed by this insight, an affordance construal of technology can reveal how technologies “could have the effect of making the lived connection between our experience and the world as a whole more fragile if not to some degree shattered.”⁴⁴

Meanwhile, Ihde’s analytic based on the “multistability” of technologies misses this finding. Claiming that “no technology is ‘one thing’ nor is it incapable of belonging to multiple contexts,” Ihde attacks Heidegger’s supposed essentialism which takes technology to be a “one-size-fits-all” affair.⁴⁵ In exploring perceptual cognition phenomenologically, Ihde uses “the term multistability to refer to perceptual variations that exceed the usually noted bivariational ambiguities.” When transferred to the study of technologies, the concept is useful in delineating the variational instantiations of appearance for human cognition a technology has owing to the context it is in.

Artifacts are understood to potentially support multiple embodiment relations or hermeneutic relations (or other relations). A technology that supports multiple stable embodiment relations is one which could offer multiple potential transformations of a user’s bodily-perceptual encounter with the world.

The concept of multistability, however, is silent when asked for a normative, moral stance towards the technological. “Which variation, which stability, is paramount, or should be given paramount concern by us?” is a question to which the theory of multistability in Postphenomenology stands mute. This is, in fact, Borgmann’s worry with Postphenomenology’s lack of stability in its multistability concept: “Without some stable and identifiable thing at the center, variants would be different independent entities, and the multistability of interpretations would turn into a multiplicity of objects.”⁴⁶ For Borgmann, this translates to a heterogeneity that disables focus in the social and moral realms, and perhaps, even ethical agency in the face of problems of “global warming and global justice—and one nebulously technological and cultural—cyberspace.”⁴⁷

⁴⁴ *Ibid.*

⁴⁵ Ihde, *Heidegger’s Technologies*, 118.

⁴⁶ Albert Borgmann, “Stability, Instability, and Phenomenology,” in *Postphenomenological Investigations*, 249.

⁴⁷ *Ibid.*, 250.

How does an affordance-construal of technology fare with such matters?

Offering an analysis similar to the one from a multistability-perspective, an affordance construal of technology takes into account the varying possibilities for being and doing that the technological carries within itself. An affordance perspective will notice possible capacities and obtaining constraints in a given technological system or artefact (which, of course, are systems in themselves). More importantly, however, it will direct itself to uncovering the possibilities for subjectivation towards *Bestand*. In this, the affordance construal of technology has a clear thrust in its inquiry.

For its part, Feenberg's Critical Constructivism does not lack such a thrust or normative bias. The direction of his version of critical theory is unequivocal: the democratization of technology through the widespread participation of the public in technological design and installation. The theory's resort to the analysis of dual instrumentalization processes of technological artefacts and systems directs our gaze towards the occurrence of the embedding of non-democratic biases in the technical codes of said artefacts and systems. Simultaneously, the same analysis indicates points wherein democratization interventions can be effected. Feenberg writes:

In a technical democracy, technical work would take on a different character. Design would be consciously oriented toward politically legitimated human values rather than subject to the whims of profit-making organizations and military bureaucracies. These values would be installed in the technical disciplines themselves, much as the value of healing presides over biological knowledge of the human body in medicine.⁴⁸

There is a troubling blind spot to Feenberg's project, however. It leaves aside the concern of whether the thrust and commitment towards democratization, towards democracy, are themselves effects and embodiments of a particular *technological structuring* of politics. In a manner of speaking, therefore, Feenberg's Critical Theory of Technology is *uncritical* of its advocacy of democratic ends.

In contrast, the affordance theory of technology espoused here instills alertness to such biases, democratic or otherwise. It looks upon these technologies as affording, on the one hand, forms and modes of political freedom (as opposed to, say, overt authoritarian and fascist political regimes);

⁴⁸ Andrew Feenberg, *Between Reason and Experience: Essays in Technology and Modernity* (Cambridge: The MIT Press, 2010), 81.

but at the same time, it will not be blind to how techno-democracies harbor in themselves the ordering of human subjects as *citizens* who fuel and man the institutions and systems which comprise such “democracies.”

Finally, and crucially perhaps, the advantage of an affordance construal of technology is that it can provide directions towards an ethical comportment to technology. For with this construal, one is enabled to critical engage the technological condition by instilling mindfulness to the dangers attendant to it, and more importantly, to inquire what sort of life in such a condition is more or less worth living.

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