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Enframing the Flesh: Heidegger, Transhumanism, and the Body as “Standing Reserve”

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Abstract

I argue that Heidegger’s account of technology as “enframing” is a helpful lens through which to understand the possible effects and dangers of transhumanism. Without resorting to nebulous concepts such as “dignity,” Heidegger’s analysis can help us understand how new technologies employed to modify the body, brain, and consciousness will enframe our own bodies and identities as something akin to “standing reserve.” Under transhumanism, the body is enframed as an *external*, technologically modifiable product. I indicate some of the problems that might arise when our own bodies no longer appear as central to our identity as embodied beings. Further, I argue that, by treating aspects of our own consciousness as technologically modifiable, we will be driven into a commodified and inauthentic relation to our identities. By examining the work of prominent transhumanists – including Brad Allenby, Daniel Sarewitz, and Andy Clark – I show how the threat that technology poses can be hidden when the essence of technology is not uncovered in a primordial way. I argue that by threatening to obscure *death* as a foundational possibility for Dasein, transhumanism poses the danger of hiding the need to develop a free and authentic relation to technology, Truth, and ultimately to Dasein itself.

In this paper, I argue that Heidegger’s account of enframing (*Gestell*) is a helpful lens through which to understand the possible effects and dangers of unbridled transhumanism with respect to innovations in Human Genetic Enhancement (HGE), cloning, and human cybernetic implementation of nanotechnology to enhance cognitive and biological functions. Without resorting to nebulous concepts such as “dignity,” Heidegger’s analysis can help us understand how biotech will enframe our own bodies as something akin to “standing reserve.”¹ The body thus becomes an object present-at-hand that is open to our manipulation. Heidegger’s analysis of

technology also allows us to speculate about some *specific* problems that might arise with regard to the modified frame in which our bodies will appear to us.

In this paper, I draw attention to one of these possible problems. *Death* and decay may begin to appear as events that occur to an enframed body; the *body*, figured by transhumanism as an *external* object open to mechanical alteration, will be what suffers decay and faces death, and thus these are not possibilities that the *self* must face. Transhumanists often make one of two claims: Either the body we inhabit now will be able to live for hundreds of years or our consciousness will be “downloadable” into multiple bodies. Either of these positions (in subtly, but importantly, different ways) alienates human experience from central aspects of *the finitude of embodiment*, and the proposed outcomes would radically alter our existence. Mark Coeckelbergh offers an excellent analysis of this aspect of transhumanism:

Transhumanists have articulated visions that seem to aim at invulnerability and immortality. Consider the writings of two well-known proponents of human enhancement: Nick Bostrom and Ray Kurzweil. Bostrom has written a tale about a dragon that terrorizes a kingdom and people who submit to the dragon rather than fighting it. According to Bostrom, the “moral” of the story is that we should fight the dragon, that is, extend the (healthy) human life span and not accept aging as a fact of life [Coeckelbergh cites Bostrom 2005b, 277]. And in *The Singularity is Near* (2006) Kurzweil has suggested that following the acceleration of information technology, we will become cyborgs, upload ourselves, have nanobots in our bloodstream, and enjoy nonbiological experience. Although not all transhumanist authors explicitly state it, these ideas seem to aim toward invulnerability and immortality: by means of human enhancement technologies, we can transcend our present limited existence and become strong, invulnerable cyborgs or immortal minds living in an eternal, virtual world. (2011, 1)

Aubrey de Grey, of course, is also famous for advocating such alterations to our temporal being (see de Grey 2008). In light of the importance of being-toward-death, I will argue that this would, viewed from a Heideggerian perspective, be a momentous change. Specifically, in *Being and Time* (and elsewhere), Heidegger locates being-toward-death as *central* to the call to authenticity, and away from lostness in the they-self (for whom technological enframing holds sway); by threatening our awareness of our own mortality, transhumanism thus threatens to occlude the *call* to authenticity, just as it occludes the *need* for it.

Further, in the hypothetical future depicted by transhumanist thinkers we might lose what I will call the “fleshiness of experience.” When we begin to see ourselves as technological products of our own rational calculative control and creation, we face a very real danger of being *consumers* of identity (to an even deeper extent than is already the case), and we stand to lose the orientation by which we discover the need to *wrestle* with our finite nature. This struggle plays an important role in human behavior, and the technologies advocated by transhumanists hold the promise of radically altering our relation to both our embodiment and our mortality.

Humans become what we are by struggling with a natural, physical world that does not immediately respond to our desires. The world resists us, and demands that we flow with it, and deal honestly with the organic. When we enframe the organic, transforming it into more mechanical technology to be readily manipulated, we lose that orientation. When our own bodies become enframed through a technology that defies even death, what will become, for example, of the desire for transcendence that has been one of the most historically powerful forces leading to the creation of art, philosophy, and drives the need for making interpersonal connections? What

happens when the development of identity is enframned within an economy of commodification in which we *buy* alterations of our identity?

By way of preface: I do not think anything I write is likely to have any effect on the evolution of technology or its incorporation into our culture, our lives, and our bodies. I am largely in agreement with Brad Allenby, co-author of *The Techno-Human Condition*, on this point. In a “conversation” on Slate.com, he states:

Nick is worried that I am assuming that it’s already “too late.” Well, yes and no. I think when that ape picked up the bone, and reconceptualized it as a weapon, and developed a culture in which bones and stones were used as weapons, it was in a meaningful sense already “too late,” if you wanted to avoid human technological enhancement... I’m just trying to understand what’s out there, and what it says to me is that a) rapid and accelerating technological evolution across the entire technological frontier is here, and it’s already created psychological, social, and cultural changes we haven’t begun to understand; b) because these systems are powerful, and grant personal and cultural authority, and have significant military and security implications, they are going to be hard to modify or stop; and c) even if we could modify them, they are sufficiently complex so at this point, with our existing institutions and worldviews, we are clueless as to whether we are doing something ethical and rational, or not. Tough world. But I’m not saying that it’s good or bad. Just that it’s already here... (Allenby 2011)

This paper, then, while clearly a call for exercising what I take to be reasonable *caution* in altering our bodies, is not primarily intended to work against the inevitable progress of technology in the direction of HGE or cybernetics. Further, I want to make it clear that I am aware of the very real practical benefits of such technologies, including prolonging the human healthspan and eradicating debilitating diseases. I intend this paper merely to serve as another entreaty that we might collectively begin to attend to the possible effects of these enormous changes. I am certainly not qualified to comment on the technological *feasibility* of any of these technological advances; further, while much has been written about the terrifying likely social and political effects of advanced technologies, I will focus on a few possible phenomenological consequences from a Heideggerian perspective.

Part I – Heidegger, enframing, and biotechnology

There is no way in the space available to give a full interpretation of Heidegger’s work on technology. Heidegger speaks of technology in far too many places for this paper to lay any claim to being comprehensive – from his discussion of tools in *Being and Time*, to his essay on art, his account of mathematics and science in *What is a Thing?*, his work on architecture in *Building, Dwelling, Thinking*, and most obviously, the essay I will be focusing on here, *The Question Concerning Technology*. In lieu of any such adequate interpretation, I will boldly make some general claims about Heidegger’s questioning concerning technology and then consider what insights his work has to offer a world facing such seemingly radically different forms of technology, such as HGE and nanotechnology – radically different, that is, from anything in Heidegger’s own time. After this too-brief look at the technology essay, I will return to *Being and Time* to argue that in his early work Heidegger was already concerned with the dangers of enframing and standing reserve (though not in those terms), and I will seek to articulate the relation between these concepts and that of lostness in the they-self, and an authentic relation to death.

Heidegger's central concern is stated clearly in the opening paragraph of *The Question Concerning Technology*. He advises us that this essay is a *questioning* concerning technology. He is not setting out to tell us "what technology is," nor to close the issue for posterity. His goal is plainly stated as opening "a way." He advises us to pay heed *to the way* as opposed to fixating "on isolated sentences and topics":

We shall be questioning concerning technology. And in so doing, we would like to prepare a free relationship to it. The relationship will be free if it opens our human existence to the essence of technology. When we can respond to this essence we shall be able to experience the technological within its own bounds. (Heidegger 1977, 287)

The way he marks out for us begins with calling attention to our *relation* to technology. Our question, then, is: In light of this way, what are the dangers to a *free* relation to technology posed by bio- and nanotechnology, and HGE?

It is crucial to understand that, for Heidegger, technology is not something we *make* or *do*. It is not primarily a set of instruments; it is not a "means" or a "human activity." Such a characterization would make technology seem to be "external" to us, to our lives – technology would be just a bunch of things that we use, and the techniques that some worker uses to produce them. It is tempting to think of technology as "other," as some activity "going on" out there somewhere, or as a bunch of *things* that one uses or not, based on free choice. Treating technology in this way – as "instrumental" – is a misunderstanding of it, according to Heidegger. Understanding that "technology is nothing technological," will help us understand that, despite radical advances in technology, its *essence* remains the same.

There has been a huge amount of work done on Heidegger's critique of technology. He has been, perhaps correctly, deemed a "technophobe," and even called a "philosophical redneck" by Richard Rorty (1988). However, it is too seldom emphasized that Heidegger's concern is not simply with technological objects, but with ontology. Iain Thomson puts it well: "... Heidegger's critique of technology is not primarily concerned with particular technological devices, but rather with ontological technologization, that is, with the disturbing and increasingly global phenomenon... by which entities are transformed into intrinsically meaningless resources standing by for optimization..." (2005, 45). It is thus a mistake to limit our ethical response to the dangers of technology to encouraging its "responsible use" (though such responsibility is, of course, necessary). If Heidegger is right, the phenomenological changes effected by technological developments cannot be addressed at the level of autonomous subjects choosing either to use or not use them.

Rather than being an "external" activity or collection of products or techniques of production, technology is "internal," so to speak; that is, technology is essential to the way "the real," the world, appears to us. Whether the state-of-the-art is a seemingly "external" hydroelectric plant, or a tiny chip *inside* our brain that alters the way we see, technology is internal to each of our lives and our worlds, and hence to our identities (Heidegger would not speak in terms of "internal" and "external," but using such imprecise terms will help us understand how use of technology to alter our bodies is significant). Thus, it is essential to understand how technology is a "global" phenomenon that alters Dasein's entire world: "Technology is therefore no mere means. Technology is a way of revealing" (Heidegger 1977, 294). In order to understand how our reality is revealed "through" technology, we must briefly address a few salient aspects of the much-discussed concepts of *enframing* and *standing reserve*.

For Heidegger, the essence of technology is revealed to be *enframing* (*Gestell*):

Enframing 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 means that way of revealing which holds sway in the essence of modern technology and which is itself nothing technological. (Heidegger 1977, 302)

Technology as enframing is the mode in which *everything* comes into the open, and makes *sense* for us. In ordinary German, *Gestell* means frame, framework, or skeleton. Technology, as *Gestell*, “frames” the beings we encounter in the world, and thus becomes the “backbone” of the appearing world.

As I will highlight below, when we turn to “standing-reserve,” under the holding-sway of enframing beings make sense only in terms of an ordered system of items, present-at-hand, that exist for our manipulation and control. The forest is there for us *as* lumber, the river is there for us *as* electric power. What, then, of our own bodies, and even our consciousness? I will argue that enframing naturally tends toward obliterating every boundary, and will fundamentally alter the way we understand our selves. Attending to Heidegger’s “way,” our goal is to regain a free relationship to technology, such that we can illuminate its proper bounds.

Why is understanding technology as enframing central to understanding how Dasein gathers the world into intelligibility? Dasein creates a world for itself; *however, it is important to hear this “creation” not as the “activity” of a subject.* Dasein *falls* into a world that is open, cleared, and in which beings come into their intelligibility. This is what it means to say that Dasein is essentially “in the truth.” Dasein, in its very being, opens the world for view; this opening in the being of Dasein is not to be understood as anything a subject “does” actively.

In fact, this very misunderstanding – i.e. thinking of Dasein as an active subject that “makes” or “fabricates” its world – is precisely a symptom of technological speech/thinking; it would be as if this creation of a world “by Dasein” were an act of *techne* on the part of a subject. This language of production is specifically the problem – when we treat the world, the earth as something for us to *use*, manipulate, produce, we see we are lost in the discourse of the they-self – we are not yet called to ourselves and to the nature of truth and of Dasein.² This is especially important for us on the verge of technological manipulation of our own bodies. When Dasein (mis)understands itself to be active “as a subject” in creating not only its world, but also its *own body* through *external* technological manipulation, when self-production becomes buying a new cybernetic addition, or even a buying a *new body*, then the enframing of everything as standing-reserve holds sway.

Whether “good” or “bad,” this shift in which the body becomes an external object, present-at-hand for our technological manipulation, will certainly be momentous. We have reason to worry about it, and I am quite sure Heidegger’s analysis of technology, if it was ever right, still has much to say about these new forms of technology.³

Another dimension of the danger of enframing can be seen in the way technology occludes its own danger, and the contingency of the mode in which it reveals the world. Heidegger warns: “Where this ordering holds sway, *it drives out every other possibility of revealing*” (1977, 309; emphasis added). Thus, not only will our bodies be enframed, but any other mode, any more authentic relation to our own embodiment, will become unthinkable. This danger is heightened, within the Heideggerian framework, when we attend to the way this particular technological advance will change our relation to our own *mortality*.

Where is there attested for us a demand that we, in our essence, resist the holding sway of everything revealed *as* standing reserve? That possibility – the call which allows us the possibility of breaking free of technology and the they-self – comes precisely from an awareness of our mortality. In threatening the anxiety of being-toward-death, transhumanism threatens any possibility that we might free ourselves from the enframing of technological *thinking*, and thus covers over the only possibility for letting ourselves and the world appear as it is, in its essence (*wesen*) and *phusis*.

Heidegger closes the essay on technology by quoting from Holderlin; the poet says: “But where the danger is, grows / the saving power also”. . . and “poetically dwells man upon this earth” (1977, 316). There *is* hope, but only by a turning away from technology, from enframing.⁴ How can we turn away from that of which we are completely unaware? If the nature of *finite* Dasein, as possibility, as the “There,” as “in the truth” (and thus simultaneously revealing and concealing beings) is concealed, from where will the call to authenticity come? Where the enframing of technology holds sway, all other modes of revealing – including the poetic – are concealed. Authentic awareness of our own finitude and mortality can call us away from this holding-sway; however, again, advances in biotech, cybernetics, and the possibility of “downloading” (or “uploading”) our consciousness into multiple bodies pose the threat of occluding even this saving power.

I am reminded of the second chorus of Sophocles’ *Antigone*. In this “Ode to Man,” Sophocles shows that humans are the naturally “homeless” animals, and we are defined by the need to harness the powers of animals and nature to build a place for ourselves. Hence, with “speech and wind-swift thought” we alter the world around us to fit our needs. Despite “man’s” great power, “Only against death has he at last no refuge.” What happens when, just as we once harnessed the power of animals to plow our fields, we begin to yoke our own nature to the whims of our desires, and find control even over death?

The concern I am trying to raise in this paper is that when even our own selves, facts about our cognitive *orientation*, our emotions (notably empathy), etc., are technologically manipulated, our deepest selves will give way to enframing; we will order ourselves and take an *inauthentic* relation to our identity. My concern is that when this enframing holds sway over the self, any possibility of what Heidegger calls a “free” relation to technology will be concealed. We are on the verge of forgetting, as a society, the proper bounds of technology. There is little we can do; these bounds cannot contain “progress.” But perhaps we can echo the call of our finitude into the future.

We can now turn to Heidegger’s concept of “standing reserve” to become more clear about *why* technology poses this threat. How are the world, the real, and ultimately *our own selves* revealed *as standing reserve*?

Heidegger shows that enframing reveals the world in a dangerous and problematic way – a situation that will be exacerbated by the advances in question. “The revealing that rules in modern technology is a challenging [Herausfordern], which puts to nature the unreasonable demand that it supply energy which can be extracted and stored as such.” Under technology, *everything* appears as a “resource” to be exploited. We become blinded to the *nature* of the world around us. Beings only come into the light, into the clearing, insofar as they answer to our perceived “needs.” Everything is expected to answer, in its very being, to our desires.

In order to bring this *mode* of revealing to light, Heidegger famously uses the example of the river Rhine as it appears against the horizon posed by the hydroelectric plant that converts the flow of

the river into electricity. Heidegger places this mode of revealing in contrast to the poetic (*poiesis*); while *poiesis* is a “bringing forth,” enframing is a “challenging.” While the windmill’s sails turn in the wind, seemingly “just as” the turbines in the plant turn in the flow of the Rhine, Heidegger claims that since the windmill does not “unlock energy from the air currents in order to store it,” there is a fundamental difference (1977, 296). The wind is allowed to flow on its own – we might add that the birds are allowed to continue in their flight. However, the hydroelectric plant changes the flow of the river – and the paths of the fish in it. Another example is mining vs. (traditional) farming: “... a tract of land is challenged in the hauling out of coal and ore. The earth now reveals itself as a coal mining district, the soil as a mineral deposit” (ibid.). In traditional methods of farming (as distinct from modern mechanized agriculture), the “peasant does not challenge the soil...” (ibid.). In each case, it is essential to remember that the issue is one of *revealing*; the land the peasant farmer cared for, and put in order, “appears different” under the cultivation of mechanistic agriculture, just as the Rhine appears in a different light passing under the old stone bridge than it does when obstructed by the power plant.

Following the work of Otto Spengler, Heidegger notes that technology has this global effect on how the world is revealed to us. In *Man and Technics: A Contribution to a Philosophy of Life*, Spengler writes:

... all things organic are dying in the grip of the vice of organization. An artificial world is permeating and poisoning the natural. The civilization itself has become a machine that does, or tries to do, everything in a mechanical fashion. We think only in horsepower now; we cannot look at a waterfall without mentally turning it into electrical power; we cannot survey a countryside full of pasturing cattle without thinking of its exploitation as a source of meat-supply; we cannot look at the beautiful old handwork of an unspoilt primitive people without wishing to replace it by a modern technical process. Our technical thinking must have its actualization, sensible or senseless. The luxury of the machine is the consequence of a necessity of thought. In last analysis, the machine is a symbol, like its secret ideal, perpetual motion – a spiritual and intellectual, but no vital necessity. (1932, 94)

In order to understand the importance of this transformation of our understanding of the world, and the effect that the enframing of the human body (and consciousness) will have on human self-understanding, i.e. on how we are *revealed* to ourselves, we will look briefly at the work of some prominent transhumanists. By looking at the claims from these thinkers *themselves*, we will be in a better position to understand the depths to which technological thinking will, and indeed *already has*, occluded itself as a contingent, and dangerous, mode of revealing. That is, by looking at the way these new technologies are being *championed* by the people who are dominating public discourse on the subject, we will be able to bring to light the extent to which Heidegger’s thoughts on technology are, in fact, incredibly timely. We will find a deep lack of awareness of the subtle dangers inherent in enframing – the revealing of nature, and our own selves, as standing reserve.

II. A lot of worry over “nothing new”?

Brad Allenby and Daniel Sarewitz, in their book *The Techno-Human Condition*, and Andy Clark, in *Natural-born Cyborgs: Minds, Technologies, and the Future of Human Intelligence*, argue persuasively that we have, in Clark’s phrase, “always been cyborgs.” Allenby and Sarewitz argue that technology is not something “new” that is present only in power plants or coal mines but absent in windmills or farming; for them, the human condition *is*, and *always has been*, what they call “The Techno-Human Condition.” We are all already “enhanced,” and “some would say

transhuman” (Allenby and Sarewitz 2011, 2). They argue that some have made the distinction between “inner” and “outer” transformation of the body – e.g. the difference between wearing eyeglasses to enhance vision, and some sort of HGE or “artificial body parts” that ensure perfect vision. But, they ask: “*is anything new really going on?*” They, of course, answer in the negative.

For Allenby and Sarewitz, the technological modification of the body is simply “fulfilling our biology.” The fact that we “never forget how to ride a bicycle, or how to read, shows that allegedly external technologies do in fact have an enhancing effect on our internal capabilities” (2011, 15). There would thus be no substantial difference between writing down facts we want to remember, or using Google to “enhance” our memory, or having a microchip implanted in the brain which has access to data that we can consciously and immediately control. “The history of our species is a history of redesigning ourselves, of fuzzing the boundaries between our inner and outer worlds” (2011, 16). So, they argue, it “isn’t clear to” them that HGE is “crossing some domain that humans have never entered before, a domain that demands a new kind of debate or raises new moral considerations and dilemmas” (2011, 17). We will see that Heidegger might agree, to some limited extent, with this assessment: While enframing is *certainly* not “fulfilling our biology,” it is true that the troubling alteration of human thought began long before HGE became a foreseeable possibility.

Drawing on what has come to be called the “extended mind hypothesis,” Andy Clark argues that as soon as humans began writing we began incorporating technologies into our consciousness (2004, 6). For Clark, this process is nothing new, and nothing to be feared. This is not to say, however, that he does not recognize how emerging technologies will increase exponentially the ways that human beings will become cyborgs:

New waves of user-sensitive technologies will bring the age-old process of cyborgization to a climax, as our minds and identities become ever more deeply enmeshed in a non-biological matrix of machines, tools, props, codes, and semi-intelligent daily objects. We humans have always been adept at dovetailing our minds and skills to the shape of our current tools and aids. But when those tools and aids start dovetailing back – when our technologies actively, automatically, and continually tailor themselves to us just as we do to them – then the line between tool and user becomes flimsy indeed. (2004, 7)

While this observation about the blurring of the line between humans and technological products could easily have been written by someone who would preach *caution* at such a merging with machines, Clark is a vocal optimist about the momentous transition that he describes.

Clark is correct to suggest that this change, marked by a situation in which the technological extensions of our powers begin to “dovetail back,” is fundamentally important, and requires attention. There is a subtle phenomenological difference between the situation of a blind person with a cane (as described, for example, by Merleau-Ponty) and a situation in which the enhancement is performed by a technological product, designed by other people and purchased by the “user.” In both situations there is a dimension in which there is a “flimsy” line between the hand and the tool; however, this facility is *developed* by the blind person through interaction and practice. All people develop organic relations with the world – relations that are more noticeable in people with disabilities – in which cane, pen, paper, eyeglasses, etc., are phenomenologically extensions of the hand, the mind, and the eye. These organic relations, however, are fundamentally different from a cybernetic attachment through which our relation to the world is designed, marketed, and then purchased according to the whim and will of the designers and the corporation that sells the cybernetic product.

In his book, Clark addresses several worries about these changes that he has encountered in being a vocal proponent of transhumanism. In particular, he discusses the concern that technology might come to “control” us: “Many feel, for example, that increased human-machine symbiosis directly implies increasing *control*. In an age of ubiquitous computing must we be slaves to the whims of the machines that surround us?” (2004, 175). Here, Clark addresses *what he takes to be* the concern that if we become merged with machines, the machines might “control” us; he is, however, operating on what I take to be an extremely mundane and even naïve conception of “control”; he does not seem to give any credence to the more subtle *negative* forms of influence that merging consciousness with technology might have. Thus, he responds: “... the kind of control we, both as individuals and as society, look likely to retain is *precisely the kind we always had: no more no less...* The fear of ‘loss of control,’ as we cede more and more to a web of technological innovations is simply misplaced” (2004, 175). Perhaps he is right to say that the kind of control we have over technology – and the control it has over us – is no different in *kind* from the influence *modern* technology has over us; but if Heidegger is correct, the extension of that control to our biology and to the direct alteration of our consciousness and our genetic code is reason enough for serious caution and reflection. In the *Parmenides*, Heidegger writes:

Perhaps the much discussed question of whether technology makes man its slave or whether man will be able to be the master of technology is already a superficial question, because no one remembers to ask what kind of man is alone capable of carrying out the “mastery” of technology. (1998, 86)

In any case, we see that Heidegger would, in a certain limited sense, agree with Allenby, Sarewitz, and Clark that there is “nothing new” in these emerging technologies (in contrast to the suggestions of Don Ihde, for example).⁵ Nano and biotech simply extend the reach of these technologies, without fundamentally altering the issue – that is, the *essence* of technology as enframing. As we have seen, however, the true danger of enframing lies in treating our technological relation to the world as our basic, definitive, and indeed *only* way of being: “Where this ordering holds sway, *it drives out every other possibility of revealing*” (Heidegger 1977, 309; emphasis added). Accordingly, this specific extension of the reach of enframing to our bodies and even our consciousness is momentous in that it extends enframing to our own embodied identity while simultaneously altering our relation to our own finitude and mortality.

Allenby argues that we are fulfilling our biology, our nature – and that we have always been cyborgs. Heidegger would *clearly* disagree, and argue that there is a specific historical origin and tradition through which this contingent mode of enframing has risen to prominence; he would never accept that enframing is “fulfilling our biology.”

However, insofar as they agree that there is “nothing new” in emerging technologies – and even if we *had* “always done this” – it is falling deeper into the danger of enframing to think that this is the *only* way to reveal the self. The work of these transhumanists helps us see the concrete reality of the danger; that is, transhumanists such as Allenby and Clarke seem incapable of thinking of any other way human beings might relate to themselves. They explicitly claim that there is no conflict or tension between our nature and technology, since our nature has always been cybernetic. Even if they are correct that eyeglasses make someone a cyborg as much as genetically altering our eyes or replacing our eyes with machines, and thus there is “nothing new here,” Heidegger warns that every “aspect” of ourselves that is subjected to enframing brings with it the familiar dangers of enframing as standing reserve. For Allenby and Clark this “nothing new” is not problematic because it is an extension of technology, *and technology appears unproblematic to them*. To someone attuned to the essential *dangers* of technology, “nothing new” is not sufficient cause for complacency, but rather the extension of an established concern

to new dimensions of life that might previously have served as valuable sites of resistance. Further, the inability of Allenby and Clark to *see* the contingency of this danger indicates the heights to which the danger has grown, obscuring any other mode of revealing.

Perhaps it is true that there is no substantial difference between getting liposuction, or taking a pill that causes weight loss, or reprogramming the nanobots in our blood to store fat or burn fat at a different rate; but, I argue, *each* of these is fundamentally different from an authentic relation to our own bodies and to our selves. These are “external” manipulations of the self, and thus fundamentally different from the self-relation that arises from developing self-discipline in the face of a world and a body that do not immediately behave the way we might want them to. Maybe there is nothing new in nanotech, as opposed to taking pills to solve what is wrong with us, but it is surely an extension of something about which people like Heidegger were already deeply concerned one hundred years ago – an extension of the process of enframing to *new* dimensions of ourselves.

III. Dasein and death

What will become of us when we no longer fear death? I argued above that, from a Heideggerian perspective, our understanding of our own bodies will be radically changed by technological modifications; our bodies will seem to be “external” objects answerable to our “needs” and desires. While this can have obvious benefits, about which the transhumanists have hypothesized widely, I argue that by turning the body into an external object, enframed as standing reserve, we fall into the danger of misunderstanding the essentially embodied nature of existence. Here, I will argue that the danger is extended to deeper aspects of our self-understanding when *death* becomes an event that occurs *not* to Dasein, not to the self, but merely to the body, with which we will no longer identify.

While it is true that Heidegger himself says nothing in *The Question Concerning Technology* about death calling us to a free relationship to technology, I believe that his earlier insights into how anxiety calls us from the they-self can be fruitfully applied. When a comparison is made between the ideas about technology and nature in *Being and Time* and those in the technology essay, we can begin to see the depth of the danger we face.

I am aware that, given Heidegger’s “turn,” it is dangerous to bring together the work of the much-later technology essay with the analysis of death in the early *Being and Time*. However, while caution is warranted, death continues to be a central theme for Heidegger’s work after the *kehre*, and I argue that Heidegger never abandoned the centrality of being-toward-death for the analysis of Dasein as the “There” in which beings are disclosed. Insofar as the essence of technology is a mode of disclosing, death and technology must be thought together, even if Heidegger does not explicitly make this connection in the essay. Sallis has an excellent analysis of this situation in *Echoes*:

... the words *death* and *mortal* never cease to reappear. Not that the later discourses on death replace, revise, or even reopen the analysis of death completed in *Being and Time*. On the contrary, all the later discourses serve constantly to confirm the earlier analysis by reinscribing it within contexts that otherwise decisively exceed that of *Being and Time*. (1990, 135)

Sallis then looks at this confirmation in the later Heidegger with reference to the *Beitrag zur Philosophie* (1936-1938), “The Thing” (1950), *The Principle of the Ground*, (1955-1956), and *The Essence of Language* (1957-1958). While death is not explicitly an issue in *The Question*

Concerning Technology, it was written in 1954, when being-toward-death was still explicitly a concern of Heidegger's; as Sallis argues, the analysis of the centrality of death to Dasein remains unchanged since the composition of *Being and Time*.

In his famous discussion of the hammer in *Being and Time*, Heidegger is calling our attention to worldly beings in order to make clear the "worldly character of the world"; he accomplishes this by looking at the "everydayness" of Dasein, who is always engaged with *things*. For the most part, these beings appear to us as handy, as "ready-to-hand." In that light, the being of beings appears as *for us* – everyday things appear as being *for* our use. It is important to note that this appearing is not simply limited to any particular object, but is indicative of a larger *sphere* of activity; i.e. the hammer is not simply a hammer, but it appears as handy within the project of building some structure for some human purpose. Beings come to light in their being in virtue of a larger *sphere* of concern – just as we saw above in the case of technology. Again, here we are concerned with the *effects* of the apparently unlimited character of technological holding-sway over the mode of appearance of beings – specifically, our own bodies.

In the context of that discussion, Heidegger makes a reference to the appearance of "nature" that is remarkably similar to his later work on technology. He explains how "*materials*" (and tools) are obscured in the process of work, in favor of the goals of this work. In that connection, he explains how "nature" comes to light *not* in its own *wesen*, but rather in virtue of how it can be manipulated and put to work for our purposes. "Nature" comes to light in the *work* as "steel, iron, metal, stone, wood":

But nature must not be understood here as what is merely objectively present, nor as the *power of nature*. The forest is a forest of timber, the mountain a quarry of rock, the river is water power, the wind is wind "in the sails." As the surrounding world is discovered, "nature" thus discovered is encountered along with it. We can abstract from nature's kind of being as handiness; we can discover and define it in its pure, objective presence. But in this kind of discovery of nature, nature as what "stirs and strives," what overcomes us, entrances us as landscape, remains hidden. The botanist's plants are not the flowers of the hedgerow, the river's "source" ascertained by the geographer is not the "source in the ground." (Heidegger 1996, 66, H70):

Here, we see not only that technology and work provide the horizon against which beings come into presence, but also that scientific observation of nature, by treating objects, including the human body, in their mere "objective presence," cannot stand as part of the "saving power." But if this is Dasein in its everydayness, how can we be called from lostness in the world of handy technological projects, in which the "nature" of beings appears ready-made as standing reserve and commodities for our concerned use?

For Heidegger the answer lies in *anxiety*: That mood in which we understand our finitude, and are called to an authentic relation to our mortal nature. For the most part, Dasein evades encountering death. When such an encounter appears, it is dismissed as something that happens "to someone else," or as an "event" that will happen "sometime in the distant future." Dasein thus hides from itself its ownmost truth as "being-toward-death." An *authentic* being-toward-death reveals to Dasein its lostness in the they-self, and calls us from our everydayness into an uncanny awareness of our own nature. For our purposes here, it is important to see how this authentic relation to death has the possibility of challenging enframing by calling us to realize the essence of Dasein (as the clearing); thus, we can see how these new technologies, in threatening to further hide from us our mortal nature, pose the threat of universalizing enframing.

How does awareness of death call us from the they-self, and thus from the idle talk that treats beings as standing reserve? It accomplishes this by calling Dasein to an awareness of its *own* uncanny nature. *Being and Time* is oriented, from the beginning, toward the attempt to get Dasein into view *in its wholeness*. The movement to Part II of the text marks this shift, and problematizes the issue of drawing this being which is always “ahead of itself” into view as a *whole*. How do we get such a being to come into view *as a whole*? In order to accomplish this, Heidegger must articulate how death as our “ownmost *possibility*” calls into the light our *nature as possibility*. “Possibility” is not to be confused with factual “possibilities” for Dasein – e.g. it is “possible” in this vulgar sense for me to get a different job, eat better, join the army, be a coward, etc. Rather, “possibility” must be understood as an existential, and as equiprimordial with *understanding*; that is, *possibility is always a mode in which beings come into the clearing in their being*: “We must remember that understanding does not primarily mean staring at a meaning, but *understanding oneself* in the potentiality-of-being that reveals itself in the project” (Heidegger 1996, 243, H263).

We can develop a free relationship to technology only when we see that it is itself “nothing technological”; that is, the free relationship to technology is possible only when we realize that the essence of technology is a *gathering* of beings in which beings are cleared, and understood, by virtue of a particular mode of the being that is Dasein. In *Being and Time* (and, I will argue, for the later Heidegger as well) being-toward-death is that through which we come to realize our nature as Dasein, and thus put ourselves in a position where it becomes possible to understand the essence of technology.

Anticipatory resoluteness – the mode in which Dasein is fully aware of its mortality – reveals to Dasein *both* its lostness in the they-self and their idle talk, *and* its own nature as *possibility*:

Being-toward-death is the anticipation of a potentiality-of-being of *that* being whose kind of being is anticipation itself. In the anticipatory revealing of this potentiality-of-being, Dasein discloses itself to itself with regard to its most extreme possibility. But to project oneself upon one’s ownmost potentiality of being means to be able to understand oneself in the being of the being thus revealed: to exist. Anticipation shows itself as the possibility of understanding one’s ownmost and extreme potentiality-of-being, that is, as the possibility of *authentic existence*. (1996, 242, H262)

Authentic existence appears as a possibility only when we understand ourselves as the being defined by *possibility*. As anticipatory, we are always ahead of ourselves – just as enframing is “ahead of us” in revealing beings as standing reserve. Until we understand this ontological structure of possibility, and its equiprimordial connection with language, understanding, concern, thrownness, etc., we cannot understand the essence of technology. In speaking of death here, Heidegger directs our attention back to Section 31, “Dasein as Understanding,” to help make clear the place of being-toward-death in revealing to Dasein the way its nature as *possibility* gathers the world into intelligibility, and allows beings to come to light (including the possible mode of enframing).

In order to produce a free relation to its own nature, and thus, possibly to the essence of technology, Dasein must “become what it is”: “Because of the kind of being which is constituted by the existential of projecting, Dasein is constantly ‘more’ than it actually is...” (Heidegger 1996, 136, H145). This aspect of self-understanding is central to understanding the being of the “there,” and thus the way beings are cleared in their being, including enframing:

[Dasein] is existentially that which it is *not yet* in its potentiality of being. And only because the being of the there gets its constitution through understanding and its

character of project, only because it *is* what it becomes or does not become, can it say understandingly to itself: “become what you are!” (Ibid.)

We fundamentally *are* what we become; what we *understand* ourselves as being in the mode of possibility – that is, what we see as possible modes of being – is circumscribed by our *projects* and our *understanding*. In the world in which technology holds sway, our projects and the mode in which we understand beings in their being has been taken over by enframing. That is: *Technology’s true power lies in delimiting how we understand ourselves*. “Project always concerns the complete disclosedness of being-in-the-world. As a potentiality of being, understanding itself has possibilities which are prefigured by the scope of what can be essentially disclosed to it” (Heidegger 1996, 137, H146). Thus, technology, by delimiting our projecting understanding of our own nature, prefigures its *own* appearance. It is thus not at all to be wondered at that transhumanists do not see technology as a threat to authenticity; it is written into the very nature of enframing as a totalizing disclosing of beings (as standing reserve) that it occlude its own essence as such.

Lostness in the they-self and idle talk, which speak always within the horizon of technological disclosure, covers over the truth of Dasein as possibility, and also hides the truth of our ownmost possibility from us; thus, by presenting the world as nothing to be *anxious* about, enframing and the concerns of the they hide the ground of the possibility for a free relation to technology. Transhumanists claim that nano and biotech, HGE, etc., will be able *either* to extend the life of *this* body indefinitely through mechanical manipulation of it as an object present-at-hand, *or* to re-frame death as an event that occurs to a body with which I will no longer be identified (since my consciousness can be downloaded). In subtly different ways, both of these approaches fall directly into the enframed conception of nature and the body characteristic of the they; both approaches threaten to disguise our ownmost possibility, and thus disguise our nature *as* possibility. In this world, enframing will hold total sway over my conception of my body and my identity.

IV. “Null ground of a nullity,” religion and humanity 2.0

Technological alterations of the body are, of course, not the only mode in which a person can hide their ownmost possibility from themselves. Heidegger tells us that the fact that most people live as if they are unaware of the significance of their mortality is no argument against the *fundamental* nature of this “fact”; rather, Dasein “fleeing from [being-toward-death], initially and for the most part covers over its ownmost being-toward-death” (Heidegger 1996, 233, H251). This is the result of existing primarily in the mode of “falling prey,” and the condition of being “always already absorbed in the ‘world’ taken care of” – a world that is increasingly revealed by technology (ibid.).

Traditionally, of course, the primary form in which people flee from this resolution (in addition to remaining immersed in worldly tasks and idle talk) has been *religion*. If God is there, and each of us has a *purpose*, there is no reason to face this ownmost possibility – death is just an event, however, momentous, that marks our journey into a greater set of possibilities.

But what of a technological world in which belief in God seems almost quaint? Ray Kurzweil reveals how the transhumanist relates himself to this situation by proclaiming that we will create God through technology! For the transhumanists, we will make *ourselves* gods; we create ourselves in our own image, from our own imagination. There is a sense in which the transhumanist becomes the *causa sui* – the one who erases and transcends her humanity, her mortality, her physicality, and creates herself.⁶ In so doing, the creator grants *meaning*, the

ultimate “existentialist” act of self-creation in the face of the void. There is no God, we will create God, we will create ourselves, etc. In the face of Dasein, revealed in anxiety as the “null ground of a nullity,” the transhumanists want to design and erect a present ground, and become their own creator.

What does this mean for our purposes? Heidegger characterizes Dasein, in its “thrownness,” as a “null ground of a nullity”: “as care, Dasein is the thrown (that is null) ground of its death” (1996, 263, H285). Our thrownness is finding ourselves always already caught up in a world with pre-established talk, stories, a horizon, a set of symbols into which we are thrown, and through which we are to understand ourselves, other people, our proper roles – what it means to *be* a man, *what is a “good woman,”* a good American, etc. Today, more and more, we are thrown into a world guided by the essence of technology. This thrown, “null” ground is the “other side” of our finitude, so to speak: We come into an always-already-established world, with the body we happen to be born “into,” in a specific time and socio-economic position, and a concomitantly limited set of possibilities.

Can the transhumanist escape the mortal nature of Dasein by “designing” the self, both body and consciousness? Can transhumanists escape the need for Dasein to recognize itself as the “null ground of a nullity” by technologically modifying the body and consciousness, and by willfully projecting the ground for their own existence? A transhumanist might claim that in erasing, or radically mitigating, the fear of death, we erase the inauthentic reasons for conforming to communities – without the fear of death, there is no reason to fall into the they-self in the first place, since there is no anxiety to escape! Thus, far from being the highest form of the total domination of the enframed they-self, the world the transhumanist promises will free us from this all-too-human situation altogether. As Kurzweil and de Grey, for example, argue, there is no reason to attach ourselves so strongly to the identity of a group to accomplish *symbolic* immortality – for the self can achieve *real* immortality!

Is this the case? In becoming the *causa sui*, will the very *situation* that causes anxiety and inauthenticity fall away in this utopia? I argue no. As much as Kurzweil might want to become immortal, he cannot become infinite (even though we hear him talking this way in moments that seem even more inspired by science fiction than usual). He cannot go back and raise himself, cannot go back and erase the struggles of puberty in his specific culture. Even if he changes bodies, becomes female or adopts some biologically-designed genderless or multi-gendered body, he still will have been raised a man in a specific time, with a specific set of roles, expectations, anxieties, etc.

The transhumanist might counter that in a thousand years – when gender and race are no more, when bodies are exchanged and mean as little as clothing, or the color of hair – we will achieve total freedom from finitude. Will we? No. Rather, it will mean, for the children of this dystopian future, a thrownness into a false *image* of freedom. The freedom to choose which body to inhabit, etc., might seem like a perfection of “freedom”; however, this “choice” is as false a sense of freedom as the freedom of a consumer to buy their identity at Hot Topic rather than the Gap. We must remember that *very* few people will actually be engaged in the process of designing these new technologies. The vast majority of people will simply be *consumers* of body and identity modifications. This is not the venue to perform a Marxist analysis of such a transhumanist situation, but it is easy to see how quickly corporations would take control of the market in the interests of profit rather than human freedom. Real freedom can only come with Truth, and enframing will hide the truth of Dasein.

What will become of the authentic call to action, the meaning and purpose that we create and feel, when we give ourselves over to the “real” as enframed by technology? That meaning will be taken over, fully, by technology. Technological enframing – life as standing reserve – will reign supreme. Instead of coming of age in a world in which we face the unrelenting resistance of the organic, in which we live in the fear and terror and anxiety of the flesh, we will seek to create our own ground. The transhumanist seeks to be the *causa sui*, to avoid anticipatory resoluteness (and the authenticity that comes only from facing this truth) by becoming the ground of their own existence. *But this existence, and the terms in which they understand “freedom” already come to them enframed by technology.* In seeking freedom from mortality by becoming cyborgs – through technologizing the biological, the self, and the soul (and, ultimately, the other, and our relation to them, as well!) – we become free of death by enslaving ourselves to the technological enframing of the world as standing reserve. Enframing becomes the mode through which the roles that we are expected to play in order to develop self-esteem appear to us.

Further, this supposed “freedom” from inauthentic conformity to the they-self, driven by aversion to the anxiety rising from an awareness of our mortality and finitude, will *not* lead to genuine diversity. Rather, “freedom” from death through technological modification of the body will lead to *radical* conformity, and toward homogenization. Rather than the erasure of the fear of death leading us away from clinging to the death-denying illusions of the they-self, this already-enframed concept of authenticity and “individuality” (as commodity to be traded) will throw us into radical conformity. For Heidegger, death “individualizes” Dasein. Death is our “ownmost” possibility; that is, transhumanism will cover over what is most our *own*. It will obscure that which makes us aware of ourselves as radically individualized: In facing death, “Dasein stands before itself, all relations to other Dasein are suspended.”⁷ It is death that pulls us from the they-self, and thus anticipatory resoluteness is the condition for the possibility of conceiving of oneself as an authentic, free individual; there is nothing that technology can do to alter this situation. Without authenticity, technology can allow us only more exciting and appealing chains.

One might reasonably object that, while this might be true of facing death, there are certainly many other experiences that will still be open to the undying (or, incredibly long-lived) post-human that will allow her to understand her own nature as Dasein, as possibility, and to become an authentic individual. Why give anticipatory resoluteness, facing our own death in a recognition of being-toward-death, such privilege? John Sallis explains:

Why the privilege? Why is Being-toward-death the most originary among those forms of disclosedness structured by projection? What can originary and origin (*ursprunglich*, *Ursprung*) mean here? One direction is clearly marked: because death is the possibility that suspends all others, thus suspending also Dasein’s relations with others in the everyday world, disclosure from this possibility serves to draw Dasein back before itself alone, to recall it from a dispersion in the world back to a certain unity with itself. A certain wholeness. (Sallis 1990, 129)

For Heidegger (as well as for other existentialists such as Kierkegaard, Beauvoir, and Sartre, not to mention the existential psychologists they inspired, including Ernest Becker, Erich Fromm, Otto Rank, etc.), true individuality does not come from anything “external.” True individuality and authenticity arise only in some form of anticipatory resoluteness. It is in coming to grips with our mortality that we become who we are as individuals, and develop a sense of independence and self-possession against the darker image of our nature (as meaningless, momentary aberrations) presented by our animality and physicality. I argue that in the world predicted by transhumanists we might lose the fleshiness of experience. When we begin to see ourselves as technological products of our own rational calculative control and creation, we lose the

orientation by which we discover the need to wrestle with our dual nature: we are both “spirit” and transcendence, and also a finite, eating, defecating, and decaying body.

It is this struggle that has always, according to these thinkers in the existentialist tradition, defined human endeavors. In a transhumanist future, the struggle *will continue* to define us, but it will always already be enframèd by HGE and nanotech – it will appear against the horizon of the holding sway of technological enframèd. We have always become what we are by struggling with a natural, physical world that does not immediately respond to our desires, but which strikes against us, resists us, and demands that we flow with it and deal honestly with the organic. Heidegger warns that the Rhine, enframèd by the power plant, “appears to be something at our command” (1977, 297). When we, through transhumanism, (attempt to) turn the organic into more mechanical technology, we lose that orientation – not just the world, but the self, our very identity, is given over to enframèd. When our own bodies become enframèd through a technology that defies even death, we are *not* freed for genuine individuality. Living in the truth of our finite, thrown, null, “guilty” (in Heidegger’s sense) nature is essential for authenticity; this nature is covered over, *not* eradicated or fundamentally changed. We cannot escape finitude or embodiment – but its nature can be obscured. In this concealment, we lose the ground upon which, in wrestling with our dual nature, we strive to become authentic individuals.

The world will come to reveal itself just as modern science represents it (under the originary influence of technology): “as a calculable coherence of forces” (Heidegger 1977, 303). We can already see the effects of this on empirical psychology. Hence, Don Ihde says:

... it then appears that the human response to the world seen as enframèd is the activity of calculatively ordering the disposition of resources. Thus, just as nature appears, within enframèd, as standing-reserve, so the human task appears as a kind of command of nature through technological means. (2010, 38)

In this situation, all *mystery* will fade from the world, as everything will seemingly lend itself immediately to the calculation and control of scientific technology.

Technology provides a semblance of *mastery* over objects, even over death:

... where beings are not very familiar to man and scarcely and only roughly known by science, the openness of beings as a whole can prevail more essentially than it can where the familiar and well known has become boundless, and nothing is any longer able to withstand the business of knowing, since technical mastery over things bears itself without limit. (Heidegger 1977, 131)

In untruth, we conceal *that* we are concealing truth, and conceal *that* we are distorting beings in their being. Untruth becomes obscured as well. This distortion (and with it the subsequent concealing of the distorting concealment) comes when we hold to what is readily available, when we hold to the frameworks in which things make *sense* (e.g. technology). From within these frameworks, the “mystery” that Heidegger claims is necessary for Truth appears only as momentary lapses, as obstacles soon to be overcome, since the framework itself is never in question, and expands itself to reveal all beings as standing reserve and answerable to our conceptions (cf. Heidegger 1977, 128-137).

To be human is to respond – in Alphonso Lingus’ terms – to “an Imperative” (1998). The world makes demands on us: the demand for objectivity, truth, etc., is precisely a response to a hugely diverse, non-reducible set of imperatives offered by every situation, every culture, every

individual, every piece of wood for the carpenter, or *this* piece of stone for the sculptor – that is the irreducible nature of the world, and more, *of our own selves*. To face nature is to face an *otherness* that resists our conceptions as well as our will. As indicated in the Second Chorus of the *Antigone*, we encounter the otherness in dealing with animals and in the wind and the stone and the ocean, and even in our own bodies in illness – but all these elements can now be overpowered. Only over death have we no such power; only in anticipation of death do we realize the absolute resistance of the world to our enframing. This resistance – again, the fleshiness of experience – is covered over in the technological conquest of death, and of the body. When even the flesh is enframed as standing reserve, everything will *seem* to dance to our tune. In this danger lies the danger of the absolute forgetting of nature, experience, and the self.

The seemingly limitless power of self-manipulation that will be frame and horizon for consciousness will occlude this truth, and with it, the truth of the world. As Heidegger says in *Being and Time*, nature as what “stirs and Strives,” as what “*overcomes* us,” is not apparent in enframing. The uncanny alterity of nature is obscured along with the “nothingness” at the heart of *our* being that is revealed in facing mortality. Everything appears as *familiar*, as controllable and answerable to our desires. We will overstep our bounds not because there is some “God” with a plan, or some trans-historical human “essence” to be violated, etc. – we will overstep our bounds because the frame will not allow us to see that we have limits at all.

Notes

1. My concerns here are also fundamentally different from the *practical* concerns about HGE expressed by thinkers such as Fukuyama, who writes:

There are good prudential reasons to defer to the natural order of things and not to think that human beings can easily improve on it through causal intervention. This has proven true with regard to the environment: ecosystems are interconnected wholes whose complexity we frequently don't understand, building a dam or introducing a plant monoculture into an area disrupts unseen relationships and destroys the system's balance in totally unanticipated ways. So too with human nature. . . (2003, 97–98)

Cf. Parens 1995.

2. Cf. *On The Origin of the Work of Art* for a discussion of this danger to the Earth.

3. Obviously, then, I am disagreeing with Don Ihde's claim that Heidegger's analysis of technology is outdated. In *Heidegger's Technologies: Postphenomenological Perspectives*, Ihde argues that Heidegger's “mythologized” and “romantic” understanding of technology is not able to deal with emerging technologies, specifically, in the fields of genetics, nanotechnology, and communications. He criticizes Heidegger for treating all forms of modern technology, from “the mechanized food industry” to “the death camps” and the “hydrogen bomb” as “in essence” the same (Ihde 2010, 114). “To attend to the ‘essence’ of technology, I argue, blinds Heidegger to the differing contexts and multidimensionalities of technologies that pragmatic-phenomenological account can better bring forth” (2010, 115).

While it is true that Heidegger's concern operates at a level in which the specificities of the effects of different forms of technology are not attended to, his concern is not intended to work at that level. Heidegger is interested in revealing the essence of technology, as Ihde recognizes; if this level of analysis “blinds” the reader, that is their own failing. If, on the other hand, a reader wants to show that forms of technology that have emerged after Heidegger's own time have

revealed that Heidegger was wrong about the essence of technology, or that no such essence exists, the burden of proof is on the reader. Ihde has attempted this, but has, in my opinion, failed. I will not be engaging his analyses directly here, but I argue in the text that Heidegger's analysis of the essence of technology has much to teach us about the momentous nature of the changes to human life that HGE and cybernetics will effect.

4. The "saving power" and poetic thought are central to understanding Heidegger's struggle with technology; I will, unfortunately, not be addressing those issues in this relatively short paper.

5. Feenberg accuses Heidegger of *ahistoricism* for looking for a seemingly ahistorical account of the *essence* of technology (1999). I entirely agree with Iain Thomson's replies to each of Feenberg's criticisms (Thomson 2005, 58–77).

6. Hannah Arendt writes, in the Prologue to *The Human Condition*:

This future man, whom the scientists tell us they will produce in no more than a hundred years, seems to be possessed by a rebellion against human existence as it has been given, a free gift from nowhere (secularly speaking), which he wishes to exchange, as it were, for something he has made himself. ... The question is only whether we wish to use our new scientific and technical knowledge in this direction, and this question cannot be decided by scientific means; it is a political question of the first order and therefore can hardly be left to the decision of professional scientists or professional politicians. (1958, 3)

7. Campbell notes a distinct *political* dimension to Heidegger's insistence that individuation is threatened by technology in his analysis of "proper" and "improper" writing in Heidegger's work – specifically, "proper" writing as with the hand, and "improper" as mediated by the technological apparatus of the typewriter: "The idolatrous nature of improper writing is that it awards a power to the collective capable of persuading men and women that they more properly belong to a collective" (2011, 6). Campbell goes on to show the deep connections between Heidegger's criticisms of technology and his attack on Leninism, in which both cause "the degradation of the relation to Being to man" and "where all [people] are made the same" (2011, 7).

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