A Note on the Notes

For those new to my work, allow me to repeat my standard warning: Some of us are footnote people, but many are not. For those who find detailed footnotes too distracting from the flow of the text, my perhaps obvious suggestion is: *Please do not feel compelled to read every note as you go*. If you have an unanswered question about a sentence, paragraph, or section that includes a note (or simply want to consult the secondary references), then you should read the surrounding notes. With any luck your question will be answered there (and if it is not, then you will see that in fact I do not have *enough* notes). Otherwise, I invite you to read through the remaining notes at your leisure. Supplemental and specialized argument often gets conducted in the notes, and some *Holzwege* – other paths and views – can be found there as well. (The received view that by *Holzweg* Heidegger means "dead-end" is mistaken. In the prefatory epigraph to the collection of essays he titled *Holzwege*, Heidegger explains these as forest paths made by backwoods loggers and known to backcountry hikers, meaning that a *Holzweg* is a path that leads to a place in the forest from which trees have been removed – in other words, to a *clearing*, a place where we can see the light through which we ordinarily see.)[1]

Heidegger on Technology's Danger and Promise in the Age of AI

"Bedding Taylor Swift
Every night inside the Oculus Rift,
After mister and the missus
Finish dinner and the dishes
And now the future's definition is so much higher than it was last year
It's like the images have all become real
And someone's living my life for me out in the mirror.
No, can you believe how far we've come
In the new age?"

Father John Misty, "Total Entertainment Forever," *Pure Comedy*

1 Technology: Pure Comedy or Disturbing Dystopia?

As the album title *Pure Comedy* suggests, those opening lyrics from Father John Misty's darkly satirical song, "Total Entertainment Forever," present a bitterly sardonic vision of the dystopian technological future he sees *swiftly* coming into focus (as Josh Tillman found himself having to explain to some outraged, tone-deaf

[1] On the full meaning of "*Holzwege*" (a crucial later Heideggerian term of art), see my *Heidegger, Art, and Postmodernity* (Cambridge: Cambridge University Press, 2011), 83–84.

listeners back in 2017).[2] But, however one might feel about the dark prognostications of some misty father figure (with a penchant for "Heidegger and Sartre"), who today has never wondered about the way technology is transforming our world?[3]

Technologies increasingly permeate our lives, shaping and reshaping our relationship to the world, to others, and even to ourselves. These changes have already been so dramatic as to be virtually undeniable, but our technologies continue to alter our lives in ways both subtle and profound.[4] And yet, is there anyone today who clearly understands the nature of this ongoing technological transformation in which we find ourselves? Who can chart its historical trajectory, explaining where it comes from, how it is reshaping us, and where it is leading us now? The answer, I shall suggest later, is the later Heidegger, once critically reconstructed and understood in the full depth and complexity of his mature thinking. But our strange predicament is what Heidegger himself calls "the mystery [*das Geheimnis*]" of technology's "ontohistorical [*Seinsgeschichtlich*]" unfolding: It pervasively transforms humanity and yet does so in ways we seem largely unable to comprehend – at least until we learn how to think about technology in a manner that is deeper and more free (to anticipate our eventual

[2] Father John Misty, *Pure Comedy* (Seattle, WA: Sub Pop Records, 2017). Unmistakable in the context of the album, the satirical nature of this short song should be clear enough even on its own, given that its concluding lyrics include: "When the historians find us we'll be in our homes / Plugged into our hubs / Skin and bones / A frozen smile on every face." (Of course, shock and outrage have never been the best hermeneutic lenses through which to *understand* something – which is not the same as agreeing with it but, rather, a necessary first step to critiquing it meaningfully – hence the widespread ideal of the "hermeneutic of charity" [from *Caritas*, the Biblical injunction to "love thy neighbor as thyself" (*Leviticus* 19:18; *Matthew* 22:37–39)], i.e.: *Read others the way you would like to be read yourself*.) Indeed, the dramatic persona of Father John Misty began as Tillman's ironic parody of the rock guru figure, but he soon found he appreciated the way this Father Misty persona, like a true mask, helped him to voice the tragic truth about the dark human comedy as he saw it, a bit like Nietzsche's Zarathustra or Kierkegaard's Anti-Climacus. (The song "Leaving LA" mentions his need for this "mask of tragedy," and suggests he is becoming a "little less human with each release / Closing the gap between the mask and me." He also anticipates his listeners missing all the irony: "So why is it I'm so distraught / That what I'm selling is getting bought? / At some point you just can't control / What people use your fake name for.") See Stephan Carlick, "Father John Misty Addresses Taylor Swift Lyric from 'Total Entertainment Forever': 'That Is the Worst Thing I Can Think Of,'" *Exclaim!* (5 March 2017). https://exclaim.ca/music/article/father_john_misty_addresses_taylor_swift_lyric_from_total_entertainment_that_is_the_worst_thing_i_can_think_of (accessed October 4, 2024).

[3] Misty amusingly imagines "Heidegger and Sartre, drinking poppy tea" together; Father John Misty, "Writing a Novel," *Fear Fun* (Seattle, WA: Sub Pop Records, 2012).

[4] Indeed, as we will see, technologies have come to inform the very shape of our intelligible worlds, restructuring the living worlds that we human beings *are*, and the pace of technological transformation shows few signs of deceleration.

destination).[5] In the meantime, however, the question is only becoming more insistent: *How exactly is technology transforming us and our worlds, and what (if anything) can and should we do about it?*

Heidegger already felt this philosophical *question concerning technology* pressing in on him in 1951, as the murderous eugenic delusions of the Second World War gave way to the blinding light of the nuclear age.[6] His thought-full and deliberately provocative response is still worth pondering (and not only because it contains one of those quotations that has become so famous that it risks sinking into empty banality before ever having been understood). Imagine hearing for the first time the jarring words Heidegger told his students (on his first day back in the classroom in six years, after his political banishment for "corruption of the youth" and more serious charges was lifted).[7] As he intoned in his slow and careful manner:

> What is most thought-provoking . . . in our thought-provoking time? *Most thought-provoking is that we are still not thinking* [Das Bedenklichste ist, daß wir noch nicht denken] – still not [*immer noch nicht*], even though the state of the world is becoming ever more thought-provoking [*bedenklicher*].[8] (WCT 4/GA8 6)

[5] Understanding technology's deepest "mystery" turns out to be pivotal for Heidegger, i.e., crucial to the turn from technology's "danger" to its "promise" (as I showed in *Heidegger, Art, and Postmodernity*, ch. 6, and we will see in a different way in Section 4).

[6] The Nazis' exterminationist eugenics were partly motivated by their terribly confused, *biologistic* reduction of human beings to genetics, an empirically ignorant and ontologically reductive "biologism" which Heidegger consistently opposed (as even his most serious critics acknowledge). Publicly rejecting that murderous eugenic vision at the heart of mainstream Nazism, Heidegger hoped (vainly, and even megalomaniacally) to reshape "the revolution" in his own philosophical image (by leading it philosophically to a "second" and more profound "awakening"). See Thomson, "Heidegger's Nazism in the Light of his Early *Black Notebooks*: A View from America," in Alfred Denker and Holger Zaborowski, eds., *Zur Hermeneutik der 'Schwarzen Hefte': Heidegger Jahrbuch* 11 (Freiburg: Karl Alber, 2017), 184–209.

[7] The Socratic charge of corrupting the youth comes directly from Karl Jaspers' 1945 letter to the Freiburg denazification committee; four years later, Jaspers rescinded that charge in a 1949 letter to the Rector of Freiburg (Q&A 239–240). For the details, see my *Heidegger on Ontotheology: Technology and the Politics of Education* (Cambridge: Cambridge University Press, 2005), ch. 3.

[8] The repetition of this now almost clichéd line obscures the fact that many who quote it seem never to have come to terms with the full measure of its intended provocation (as we will see when we return to it in Section 3). To wit, we are subtly given something extra to think by Heidegger's second, immediately repeated "still not [*immer noch nicht*]." This colloquial "still not" adds an "*immer*" as it emphasizes the "not yet [*noch nicht*]" of thinking, thereby literally suggesting "*always* still not" and so hinting that what Heidegger calls thinking remains necessarily *futural* or *always* still to-come [*Zu-kunft*], i.e., not indefinitely postponed or deferred but, instead, perpetually *arriving* rather than ever having simply arrived (and so constitutively open to the *futurity* of the future). In English, the "still" of "still not" is potentially problematic, however, since for Heidegger (rather notoriously) "the nothing" does *not* stand still but rather *does* not (as it were), actively "noth-ing" ("*das Nichts selbst nichtet*," as Heidegger notoriously said in 1929, "the nothing itself noths"). What Heidegger means by that rather infamous line is that the nothing

As we today find ourselves entering what many have already taken to calling *the age of artificial intelligence*, the question concerning technology has indeed become ever more "questionable, worrisome, serious, alarming, grave, and disturbing" – the ordinary meanings of the German *bedenklich*, rather heavy-handedly translated by J. Glenn Gray (in WCT) as "thought-provoking."[9] Gray's often-quoted translation makes explicit and so steps on Heidegger's punch line: that these *alarming* developments also give us something profoundly important to *think* about – but something we can recognize only by at least briefly stepping back from the intensifying demand to act and *act swiftly*, to do something now to stop or gain control over these technologies before it is too late. As Heidegger predicted (and we shall go on to see in the next section), this sense that we are living in an intensifying state of emergency is leaving a growing number of would-be futurists feeling "anxious and apprehensive" (*bedenklich* again) about the direction our world seems to be taking under the influence of all our technologies. Viewed in the light of such an *alarming* situation, the anxieties and apprehensions of even a sardonic folk-rock balladeer like Father John Misty – worried, like Jean Baudrillard before him, that we will

(or that which is just beyond our current intelligible world or understanding of what is) inchoately beckons us into (and from) "futurity" by calling for us to respond to the phenomenological hints of what *is not yet a thing* (i.e., to what is partly but not clearly intelligible) in ways that creatively and responsively disclose this active "noth-ing" and so help bring what was not yet a distinct thing (hence a *no-thing*) into being. (For the details, see Thomson, "Nothing [*Nichts*]," in Mark Wrathall, ed., *The Heidegger Lexicon* [Cambridge: Cambridge University Press, 2021], 520–528.) In a rather poetic English, it might be tempting to hear the critique that we are "still not thinking" in contrast with "dynamic not thinking," as suggesting that we fail to recognize the active persistence of that verbal nothing whereby futurity beckons to arrive. Yet, the "still" of Heidegger's "still not thinking" is not the absence of movement but, on the contrary, the active *persistence* of the question, an *insistent* persistence to which what Heidegger calls *thinking* (thereby designating what remains of philosophy after or beyond ontotheology) strives to remain vigilantly responsive. His "*immer noch nicht*" might thus better be conveyed not as "always still not" but as *ever not yet*, that is, as perpetually *coming* into being, thereby designating the ongoing arriving of futurity (or the "to-come," *Zukunft*, of being) in which the creative disclosure of later Heideggerian thinking seeks maieutically to participate (as we will see). But that remains true, in good *phenomenological* fashion, only insofar as our *thinking* avoids the temptations of precipitous and prejudicial ready-made answers (which would foreclose the questionable with the secure answers of common sense) and instead attends to the stubborn and often inconspicuous persistence of the questionable. That, for Heidegger, *calls* for us to learn to vigilantly practice that "piety" of thinking which *presses ahead* into the future as thought's own ontohistorical avant-garde. Such *called thinking* (to disclose one of the polysemic senses of his famous lecture title) endeavors to stay faithful to the ever-expanding horizon of finite time and history, which can never be closed so long as any Dasein continue to exist (or stand out into an open future). (I address that last point at length in *Rethinking Death in and after Heidegger* [Cambridge: Cambridge University Press, 2024]).

[9] For one among many examples (notable primarily for its first author, the recently deceased former national security advisor and secretary of state for both US presidents Nixon and Ford), see Henry A. Kissinger, Eric Schmidt, and Daniel Huttenlocher, *The Age of AI and our Human Future* (New York: Back Bay Books, 2022).

soon find ourselves living in *the triumph of the simulacra*, a virtual reality taken to be "even better than the real thing" (because it is allegedly cheaper, more convenient, safer, and universally accessible) – might yet come to look like another canary in the coal mine, a kind of poetic early warning system of technological danger.[10]

2 From Atomic Weapons to Genetic Engineering and Artificial Intelligence

Even if we can only begin to address this question here, let us thus take at least a little time to ask: What is all this technological anxiety about? Is the surging wave of foreboding we will go on to explore merely negative, or might it be positively disclosive as well – and if so, of what exactly? For Heidegger, "anxiety" (*Angst*) is different from fear in that fear has an object. One might be afraid of being mauled by an approaching bear, for example, but anxiety is properly speaking directed at *nothing*. Although anxiety can attach itself to many objects, it is ultimately objectless, testifying instead to the "uncanniness" (*Unheimlichkeit*) of existence. Such existential anxiety typically reflects our sense of *no longer* feeling quite at home in a world in which we used to feel more at home, even if that former feeling was actually misleading.[11]

Indeed, when we look back without nostalgia over the nuclear age, we can see that the horror unleashed in 1945 by America's infamous decision to try to force Japan to surrender by dropping two successive atomic bombs on Hiroshima and Nagasaki (a mere three days apart, thereby emptying our nuclear arsenal and killing more than 200,000 Japanese civilians) also triggered a mushrooming anxiety about humanity's growing potential to extinguish life on earth with the proverbial push of a button. This anxiety grew to Godzilla-sized proportions along with the seemingly endless escalation of nuclear weapons technology (in pursuit of the strategic Cold War doctrine aptly titled "MAD," the acronym for *mutually assured destruction* – basically, a policy based on an implicit understanding between the nuclear powers that "if you nuke us, then we will nuke you back, and *all of us will die*"). Fortunately, humanity's dawning recognition that the madness of the nuclear arms race enforcing that "cold war" détente had

[10] See Jean Baudrillard, *Simulacra and Simulation* (Ann Arbor: University of Michigan Press, 1994); Thomson, "Even Better than the Real Thing? Postmodernity, the Triumph of the Simulacra, and U2" (*Heidegger, Art, and Postmodernity*, ch. 4).

[11] Heidegger thought we could never simply be at home in the world but, at best, could learn to become at home in our not being at home, an insight he later developed into a vision of a positive, *ontological indigeny* he thought capable of replacing the former geographical indigeny rendered increasingly problematic by the last few centuries. (I explain and defend the former view in Thomson, *Rethinking Death in and after Heidegger* and the latter in Thomson, *Heidegger, Art, and Postmodernity*.)

placed us on the precipice of literal extinction helped prod the international community toward a rather straightforward solution: *Just do not employ nuclear weapons . . . ever again*.

Unfortunately, the relentless advance of nuclear weapon technology still continues unabated.[12] In my home state of New Mexico – where atomic weapons were first created, tested, and stored (mostly on Navajo land, and with terrible consequences) – the ten billion dollars in annual federal 'defense' spending allocated for nuclear weapons research and development in New Mexico alone now exceeds the state's entire operating budget (which is supposed to help cover all the needs of public education, health, and safety for over two million people, and which never proves sufficient to adequately address those real needs).[13] Many today seem to have become inured and desensitized to living under the shadow of the mushroom cloud, but as long as the terrible decision to unleash these potentially apocalyptic weapons remains voluntary and so depends, in the end, on the good will or self-interest of various parties who disagree (and sometimes profoundly, even about the very nature of their interests, secular and other-worldly), our nuclear anxieties neither can nor should fade away entirely.

As of yet, however, there is no similarly widespread agreement about *how* we should respond to the cutting-edge technological innovations that characterize our contemporary world. Among the most controversial of these technologies are *genome engineering* and *synthetic biology*. "Gene editing" biotechnologies (such as CRISPR, the so-called genetic scissors) are already being widely used to experimentally redesign an organism's genetic code for both therapeutic and enhancement purposes. The overlapping field of "synthetic biology" pursues the creation of new organisms (reengineering bacteria or algae to produce biofuels more efficiently, for example) or deliberately redesigns organisms for new purposes (like creating synthetic biosensors designed to glow in the presence of certain contaminants). The intended purposes of biotechnologies like gene editing and synthetic biology range from restoring or prolonging an organism's health and functioning to deliberately bestowing organisms with new strengths and abilities, as already seen in the widespread use of genetically modified crops with improved pest and drought resistance, faster growth, and more bountiful harvests, for example, as well as in ongoing efforts to genetically

[12] As Heidegger recognized, the USA and USSR beat Germany at its own technological game of "total mobilization," then continued the relentless escalation which had won WWII afterward (and, indeed, even after the alleged end of the cold war). On this point, see also Thomson, *Heidegger, Art, and Postmodernity*, 200–207.

[13] See "Nuclear Watch NM Fact Sheet" Nuclear Watch https://nukewatch.org/fact-sheets/ (accessed September 27, 2023).

synthesize bacteria that will be able to metabolize toxic chemicals from industrial waste, oil spills, and excessive alcohol consumption (with that last one already on the market in competing forms), or to synthesize plants that can absorb more carbon dioxide from the atmosphere (to ameliorate global warming) or glow in the dark (in hopes of lighting rooms and even cities without the need to use as much electricity).[14] While proponents tout the obvious upsides of such technologies (as well as the massive profits they can bring those who own them), their real and potential dangers are also far from inconsequential, and include all the known risks associated with the introduction of new organisms into established ecosystems, such as the elimination of biodiversity, the disruption of ecosystemic balance, and so on, as well as newer dangers like the accidental hybridization or genetic contamination of existing species. In the long term, such unintended health risks and other deleterious consequences can potentially disrupt and damage the holistic networks of interdependent ecosystems in which even humanity remains partly nested – albeit rather destructively at present.[15]

There are not only complex scientific problems but also profound ethical issues raised by humanity's rapidly increasing capacity to transform the genetic code of all organisms, human beings included. Genome editing technology was first demonstrated successfully in 1984 on mice, but in 2000, early attempts to use gene therapy to treat twenty young French children who had been diagnosed with severe combined immunodeficiency (or SCID) inadvertently killed five of them (when the "viral vector for gene insertion into T cells activated proto-oncogene and led to leukemia"). That same year in the USA, an eighteen-year-old with a rare metabolic disorder died from an experimental gene editing treatment when "the viral vector [that delivered the gene therapy] induced a lethal immune response," causing "multiple organ failure and brain death."

[14] See, e.g., Martin Jinek, Krzysztof Chylinski, Ines Fonfara, Michael Hauer, Jennifer A. Doudna, and Emmanuelle Charpentier, "A Programmable Dual-RNA–Guided DNA Endonuclease in Adaptive Bacterial Immunity," *Science* 337:6096 (2012): 816–821; Patrick Hsu, Eric Lander, and Feng Zhang, "Development and Applications of CRISPR-Cas9 for Genome Engineering," *Cell* 157:6 (2014), 1262–1278. (CRISPR is an acronym for "Clustered Regularly Interspaced Short Palindromic Repeats.")

[15] Roughly 80–90 percent of the corn varieties in the USA are genetically engineered to resist insects and herbicides, and the transgenic contamination of organic corn stock provides the most famous illustration of unintended hybridization problems (owing to how far and easily corn pollen spreads), though such genetic contamination also frequently occurs with rice, rape seed (i.e., canola), etc., with farmers already having to go to extreme lengths to try to prevent such contamination and often failing. See, e.g., Jing Li, Hui Yu, Fengzhen Zhang F, et al., "A Built-In Strategy to Mitigate Transgene Spreading from Genetically Modified Corn," *PLoS ONE* 8:12 (2013) https://doi.org/10.1371/journal.pone.0081645 (accessed December 19, 2023). For more on the larger environmental and philosophical issues at stake here, see Thomson, "Ontology and Ethics at the Intersection of Phenomenology and Environmental Philosophy," *Inquiry* 47:4 (2004), 380–412.