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Publication Date

2023-03-13

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"Does AI Have a Future?"

Rita Raley and Russell Samolsky

We are beginning to build levers equipped with simulations of our nervous system (artificial intelligence).

—Vilém Flusser, "Backlash" (unpublished essay)[1]

Introduction

We begin where Vilém Flusser, in a characteristically strong pronouncement, advises we should and that is with the "hectic character of what is under consideration"—in this case, the field of artificial intelligence (AI).[2] What could be more hectic now, as we enter the third decade of the new millennium, than a field marked by frenetic research activity with unpredictable consequences? What about this moment was Flusser able to foresee, and how might we understand his thinking about AI from the vantage point of our present? In opening with this double gesture, reading Flusser in his moment as well as our own, we follow another of his rhetorical moves: the invocation of the future critic.

In a chapter devoted to "the digital" that appears toward the end of *Does Writing Have a Future?*, Flusser delineates the contours of the new paradigm that has begun to "reshape our lives from the ground up": "One has only to recite the words *atomic power station, thermonuclear armaments, artificial intelligence, automation,* and *electronic information revolution*."[3] The ground-shaking consequence of this emergent paradigm, he goes on to say, is that "we have to grapple existentially with the new formulations daily and hourly. They have a practical orientation and open horizons of freedom and creative potential we had never suspected; on the other hand, they put our mental and physical endurance at risk."[4] For Flusser, the apparatus of the moment of his late writings (the 1980s) continually pitches us on the fraught existential double edge of undreamt creativity and risk. If the immense destructive potential of the apparatus is represented by thermonuclear armaments, the great creative potential is surely represented by the information revolution and the development of AI. Looking beyond the antipodes of this paradigm, however, we notice that he distinguishes between AI and automation as different elements of the new apparatus. While some scholars have taken up the

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problem of the automaton and automation in Flusser's corpus, the complicated and vital role of AI in his writings has not to our knowledge been sufficiently addressed.[5] This chapter offers one contribution to this larger critical project.

We propose, then, to begin to examine the "hectic" role of AI as it pertains to Flusser's oracular claims for the end of writing. And it is here that the meaning of our play on Flusser's title begins to emerge for, to adumbrate briefly, it will be an open question as to whether AI ushers in or destroys the historical future in his peculiar sense. Apart from our analysis of the place of AI in Flusser's writings, we shall as future critics—future critics, that is, not only from the perspective of Flusser but also as the categorical future critics he invokes—attempt to assess his prognostications in terms of the extraordinarily rapid development of unsupervised machine learning in our moment and the significance this might have for his thought in both our present and future. Our examination will include Flusser's articulation not only of the future critic, and, indeed, of the future reader, but also of computers as aliens, even as "Martians come to earth."[6] Such an analysis needs to grapple not only with his claim for the ending of one technical paradigm or code and the emergence of another but also with AI, social alienation, and the abyss.

AI in Flusser's Corpus

One of the more notable qualities of Flusser's writing is his oracular tone. He is not shy about prophesying the end of the alphabetic code and with it the end of history, nor does he shy away from pronouncing the rise of the wholly new paradigm of the technical image. However, he is not so much a prophet or modern-day Nostradamus as he is an archaeologist or analyst of codes. It is, for Flusser, because apparatuses or codes carry with them a consequent temporality that he is able to offer his pronouncements. Consider how he derives his analysis of the alphabetic code and the consequence of its development: first, by an etymological tracing of the myriad roots and cognates of "writing"; then by analysis of writing as a concrete object (engravings in clay tablets); and, last, by an archaeological unfolding of the mechanism and temporality immanent to the writing code. He speaks of writing as engraving or digging and his writing on writing is archaeological in the sense that it is also a digging of sorts. In his digging, he not only draws out the material elements of writing but also makes the alphabetic code itself a concrete entity that is imbued with a performative linear time. It is precisely because alphabetic writing unfolds in an orderly and linear fashion that it ushers the writing of history and historical consciousness into being. As he puts it, "History is a function of writing and the consciousness that expresses itself in writing."[7]

If the oracular quality of Flusser's writing derives from his historical analysis of codes leading to a certain future that itself can be marked in relation to those codes (mythic-alphabetic, traditional-technical), so too can his prescient vision of digital media be understood in the same terms.[8] That is, his work in the technical image trilogy in particular is to analyze codes of information that are determined by inevitable, scientific development and are still to run their course. While his analysis

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of the consequences of digital media is somewhat prognostic, then, what he is truly doing is tracing the unfolding of a teleological structure: just as writing inaugurated an historical consciousness, supplanting the mythic consciousness ("only one who writes lines can think logically, calculate, criticize, pursue knowledge, philosophize"[9]), so the rise of the technical image and AI will supersede the historical consciousness brought into being by writing and the alphabetic code. In this regard Flusser's analysis completes an evident pattern, and he is less prophetic than he is attentive and attuned to the immanent temporality or atemporality of emergent paradigms.

It is here, however, that we find a peculiar tension with regard to the function and potential of AI in Flusser's thinking. For, if on the one hand, it belongs to the paradigm of the alphabetic code and performs its writing-of-history duties with consummate dispatch, on the other hand, AI is precisely the exemplary programming machine that is not only illustrative of the rise of technical images but also performs a creative role in post-history. In what follows, then, we shall examine what lies behind this paradox and how it plays out in his late work.

The paradox is that AI straddles—belongs to and is exemplary of—both paradigms that Flusser articulates, the alphabetic code and the technical image. The same entity, the same apparatus, in other words, is at once a super-writing machine that will outperform and exceed the human, as well as the most advanced instrument of the regime of the technical image. AI is paradoxically exemplary, then, of two warring paradigms in a moment in which the technical image begins to supervene upon the alphabetic code. This tension can partly be worked through by tracing a fluctuation in his thinking on the question of whether AI is indeed intelligent and capable of creative activity or merely an accelerated automation of prescribed programs.

A core theme that runs throughout the texts that Flusser produced in the last decade of his life is the inevitable replacement of humans by AIs, whether named as apparatus, instrument, automata, or robot. The process may be protracted but as he suggests it is almost as if one can witness the dominoes falling in real time while humans stand by, helpless to stop the revolutionary forces that have been unleashed upon the world. "The computer appears to be slowly (and inexorably) taking over one human intellectual function after another," he observes, and in no short order computational devices will proceed from numerical computation to criticality and then to prediction, from past to future, running the gamut from "calculation, logical thinking, decision making, forecasting."[10] Humans are too slow to compete, particularly in the realm of numerical calculation, so while "these intelligences are stupider," they are nonetheless "far faster," capable of adding "with a speed that approaches that of light."[11] In his schema, calculation and forecasting are both to some degree stupid operations because they now belong to the "primitive and methodical" world of digital code, the "infantile binary system" that robs numbers of their mystique and renders them as "heaps that can be picked at."[12] The alphabetic code will not escape such debasement for letters too can be heaped and sorted, combined and permutated, by word processors. Writing, in short, can be made available for symbolic computation and writers, mere functionaries, "can be replaced by automatic apparatuses in the foreseeable future."[13] Thus does AI ("automatic apparatuses") promise to dislodge humans from their command post

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atop the heap of alphanumeric figures. The arc of history bends, incrementally yet inexorably, toward supersession: "we will in fact be replaced, step by step, by automata as producers and critics of information."[14]

We have seen where this replacement narrative leads: toward AI freeing humans from the work of writing history, taking over from the linear regime of alphabetic scripts that inaugurated and then sustained historical consciousness. The question is whether these AIs will only ever be able to write automatically and stupidly, rather than intentionally like humans—whether, that is, they are to be regarded as "supermen" or "subhuman, obdurate automata."[15] Flusser goes one step further to project that "these mechanical and automated things" will "all make better history than we do."[16] These artificially intelligent things will thus produce something like a supra-human historical consciousness: "They will possess a historical consciousness far superior to ours. They will make better, faster, and more varied history than we ever did."[17] At this point, humans will be free to "concentrate on something else"—"something else" here left undefined but pointing toward "open horizons of freedom and creative potential."[18] These automata, Flusser speculates, will themselves not lack generative and creative capacity. Indeed, some day we can expect "artificial intelligences that speak, presenting a continuous program of new poems."[19] These poems, like the technical images that will also be produced by AIs, will exceed the author and historical consciousness. AI, then, is both that which takes over the writing of history and the force that propels humans into the paradigm of the technical image, which in a temporal sense invokes a simultaneity, what Mark Poster terms "an all-at-onceness," that is also the destruction of the future in that it is outside of linear time and movement.[20]

AI and Alienation

We have thus far examined the paradox in Flusser's thought of the AI apparatus that straddles two contrary epistemic paradigms, but we might further explore this paradox with regard to alienation, another of his crucial themes. Indeed, fleeing Prague after the Nazi invasion, and suffering the loss of all he had known, including the murder of his family in the concentration camps, alienation became his essential, and existential, theme. Commenting on this utter privation, Andreas Ströhl remarks: "Flusser experienced the collapse of his world as if it were a catastrophe that tore him out of history. This feeling of vertigo and of a complete loss of orientation was not only the key experience of his life, but also the starting point of all his future thoughts and feelings. It became his essence."[21] To this over-arching alienation of the self or soul, there are two further aspects of alienation that we can trace in Flusser's work particularly as it relates to the phenomenon of AI. The first is the alienation that results as machines displace humans from the field of labor and the second is alienation from the alphabetic apparatus itself. In his essay *Exile and Creativity*, he refers to the *expelled*, those that we commonly call refugees, but he extends his notion of expulsion to include "even the expulsion of humanists from the world of apparatuses. We find

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ourselves in a period of expulsion. If one values this situation positively, the future will appear a little less dark."[22]

By the time of *Post-History*, the apparatus, both its programs and its programming, conjures up the threat of automatic processes at work in the realms of culture, politics, science, and everyday life. In his sketch of a paradigmatic postindustrial society, Flusser imagines homes, garages, and shops, all completely equipped with "intelligent instruments . . . that execute specific tasks" such as "cook dinners, cut grass, write letters, and assemble cars."[23] These autonomous robots, defined as "miniature" because of the specificity and singularity of their functions, are not only themselves apparatuses, but they operate within, and in service to, a "gigantic apparatus"—the specter of which, he implies, must necessarily cast doubt on the claim that these miniaturized instruments serve a "de-alienating" purpose.[24] "Wherever they install themselves," he notes, these instruments "transform the environment into an apparatus" within which the space of human decision is itself miniaturized.[25]

If intelligent machines are doing the work of preparing meals and tending gardens, if they are in the kitchen and on the automobile factory assembly line, if, as Flusser foresees, "robots can act and exchange," then it must necessarily be the case that "human beings will be shut out of the economy" as it had been constituted.[26] Anticipating the mechanical arms to come, those that today sort objects on the conveyer belt, pack boxes, and screw bolts, he describes the inevitable impact of automation on the industrial workplace: "Whatever can still be grasped and produced is done automatically by non-things, by programs: by 'artificial intelligences' and robotic machines. In such a situation, the human being has been emancipated from grasping and productive work; he has become unemployed."[27] While robots will deliver humans from the servitude of mechanical or industrial labor, they will not simply deliver us into the realm of a telematic utopia. And this is not, as might be supposed, because, if in the past workers were alienated from their labor, they will in the future be alienated from the absence of work itself, but rather because as Flusser, wryly playing on Heidegger, states, "robots cannot do our suffering for us."[28] The rise of the universe of telematic images will afford humans great leisure: "People will neither work nor make works, and in this sense, society will approach a Platonic utopia."[29] However, as the etymology of "utopia" (Greek: *ou topos*, not place) suggests, such a Platonic utopia, as ideal form, can only ever be Platonic. For what Flusser means by "robots cannot do our suffering for us" is not that robots cannot take on our suffering (they can) or that AI cannot do our thinking for us (it can), but that a contradiction lies at the very heart of a telematic utopia itself. As Flusser asserts: "Consciousness, to be consciousness at all, is an unhappy consciousness. If all pain were relieved, all suffering numbed, the economy would be superseded….The Platonic social model, applied to telematics, shows that the Platonic utopia… hides an internal contradiction: there can be no happiness without suffering. Utopia is impossible."[30]

If a certain suffering ineluctably subtends the very being of consciousness itself, and if the telematic future will, happily, by means of unhappiness, not anesthetize us to this, the dangers of "robotization" and the rise of the telematic universe need still to be underscored.[31] For the threat remains that we may well succumb, if not

wholly, then largely, to the utopia of the telematic by becoming in a sense robots, instruments and functionaries of "programs that are alien to [us]."[32] The danger is that we will simply be programmed by post-history and become scheduled and habituated beings. But if the program poses the risk of our becoming alienated from ourselves, it is also possessed of de-alienating or defamiliarizing powers. It is with regard to this capacity for defamiliarization that Flusser conjures up an image of computers as "Martians come to earth" so as to imagine a position outside the code of writing.[33] (How better to communicate the experience of not being at home inside of language than to summon the Martian, as he does elsewhere when describing the "*un-settling*" of habituated, automated perspective, the seeing of one's hand as "an octopus-like monstrosity" through the eyes of an alien being?[34]) The regime of the technical image and the computational apparatus threatens to unground humans from all that has been implanted, even programmed, within us by the code of writing—not just historical consciousness but critical capacity and indeed written culture. Flusser's prescient fear about what the loss of writing would entail is nowhere as succinctly expressed than in his evocative, dystopic vision of humans as unthinking receptacles of all the communicative detritus to come, everything from advertising and political slogans to academic arguments: "We fear that in the future, all messages, especially models of perception and experience, will be taken in uncritically, that the informatic revolution could turn people into receivers who remix messages uncritically, that is, into robots."[35] (Ströhl's translation of these future humans as "uncritical mutant addressees" is more biting, particularly when read in terms of our present moment of disinformation.[36])

AI and the Future Reader

For all its great stores of data and its capacity for memory, it is AI that for Flusser bestows the Nietzschean lesson that some forgetting is necessary. "One advantage of artificial intelligences," he claims, "is that they have no difficulty forgetting. From them, we are learning the importance of forgetting."[37] What is crucial in this context about forgetting is that it clears a path for humans to more fully embrace an already emergent posthistory, the receding of the alphabetic code, and the history of culture it carried with it. Flusser is not without sadness for this loss—his was, after all, a life suffused with loss—but it is neither a nothingness nor a darkness, he thinks, on which one should dwell. He does not embrace the Enlightenment myth of unimpeded progress, but he does embrace the freedom, creativity, and ethical dialogue with others that posthistory promises.

As we have seen, Flusser was prescient with regard to the automation of writing, but so too did he anticipate advances in machine reading. Although he observed that AIs were as yet "too stupid (perhaps only for the time being)" to be able to decode letters, nonetheless, we can see in his notion of a "programmable" literature, one that takes "all literature back to instructions so as then to be computed by artificial intelligences," the seeds of what would become text analysis, topic modeling, and other digital humanities practices of reading.[38] At the end of *Does Writing Have a Future?* Flusser

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imagines the future reader sitting before a screen, accessing networks of information from something like what we now call the Internet: "It is the reader himself who actually produces the intended information from the stored information elements. To produce the information, the reader has various methods of access available, which are suggested to him by artificial intelligence . . . but he can also apply his own criteria."[39] What is crucially retained, even emphasized, in this scene is the capacity of humans to make their own decisions, to use their "own criteria." This future reader will be able to exercise the freedom to access some "bits" of historical information rather than others but, Flusser notes,

> the history that comes from such a reading is precisely not what we mean by "history." Historical consciousness—this awareness of being immersed in a dramatic and irreversible flow of time—has vanished from the future reader. He is above it, able to access his own flow of time. He doesn't read along a line but rather spins his own nets.[40]

We had left open the question of whether AI destroys the historical future and here Flusser offers us a partial answer: the future reader, in concert with AIs, draws upon a different temporality, not the linear order of history, but one that is networked and has itself been made possible by the apparatuses of the technical image. There is though a second register to our title, the future of AI itself. What is clearly of importance for Flusser is the creative, ethical dialogue between humans, a dialogue that becomes all the more possible in the space and time opened up by AIs. In this regard, he points toward a complicated reckoning (OE: *(ge)recenian*, recount; German: *rechnen*, to count up) with that which is already upon us and that which is to come. Particularly in his later writings, he takes account of an AI modeled after human cognition. What remains to be more fully thought out in his schema, however, is the possibility of a creative, ethical dialogue between humans and AIs. What then will our future readers have to say about this moment? Will unsupervised machine learning become a sinister instrument of biopolitical control, or will its future be more affirmative and its story one of contribution to the species and the planet itself? As Flusser writes of "Our School," "both virtualities are in the program," and it remains to be seen which is realized.[41]

Notes

1 Flusser, *Artforum // Essays*, ed. Martha Schwendener (São Paulo: Metaflux, 2017), 286.
2 Flusser, *Does Writing Have a Future?*, trans. Nancy Ann Roth (Minneapolis: University of Minnesota Press, 2011), 19.
3 Ibid., 141.
4 Ibid., 141–2.
5 See Vasileio Galanos, "Floridi/Flusser: Parallel Lives in Hyper/Posthistory," in *Computing and Philosophy: Selected Papers from IACAP*, ed. V. C. Müller (Cham: Springer International Publishing, 2014), 229–43; Baruch Gottlieb, "To Save

Philosophy in a Universe of Technical Images," *Flusser Studies* 22, no. 2 (December 2016), http://www.flusserstudies.net/node/616; and Roland Meyer, "Automaton," in *Flusseriana: An Intellectual Toolbox*, ed. Siegfried Zielinski, Peter Weibel, and Daniel Irrgang (Minneapolis: Univocal, 2015), 72–3.

6 Flusser, *Does Writing Have a Future?*, 88.
7 Ibid., 8.
8 Mark Poster makes the case for Flusser as a vanguard media theorist in his introduction to *Into the Universe of Technical Images*, trans. Nancy Ann Roth (Minneapolis: University of Minnesota Press, 2011), and *Does Writing Have a Future?*
9 Flusser, *Does Writing Have a Future?*, 7.
10 Ibid., 26.
11 Ibid., 27.
12 Ibid., 26, 27.
13 Ibid., 42.
14 Flusser, *Into the Universe of Technical Images*, 122.
15 Ibid., 75.
16 Flusser, *Does Writing Have a Future?*, 8.
17 Ibid.
18 Ibid., 9, 141–2.
19 Ibid., 76.
20 Ibid., xvi.
21 Andreas Ströhl, "Introduction," in Flusser, *Writings*, trans. Erik Eisel (Minneapolis: University of Minnesota Press, 2002), xix.
22 Ibid., 105.
23 Flusser, *Post-History*, trans. Rodrigo Maltez Novaes (Minneapolis: University of Minnesota Press, 2013), 76.
24 Ibid., 77.
25 Ibid.
26 Flusser, *Into the Universe of Technical Images*, 145.
27 Flusser, *The Shape of Things*: *A Philosophy of Design*, trans. Anthony Mathews (London: Reaktion Books, 1999), 91.
28 Flusser, *Into the Universe of Technical Images*, 145.
29 Ibid., 148.
30 Ibid., 145.
31 Flusser, *Post-History*, 10, 127, 149.
32 Flusser, "On Program," quoted in *Post-History*, ix.
33 Flusser, *Does Writing Have a Future?*, 88.
34 Flusser, *Writings*, 105.
35 Flusser, *Does Writing Have a Future?*, 77.
36 Flusser, *Writings*, xxviii.
37 Flusser, *Does Writing Have a Future?*, 149.
38 Ibid., 55, 60.
39 Ibid., 153.
40 Ibid., 154.
41 Flusser, *Post-History*, 149.

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