Creative Rage Against the Computing Machine: Necessary and Sufficient Conditions for Authentic Human Creativity

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"Butlerian Jihad" (Dune Wiki, 2023)

There's a strikingly prescient and profound line of thought expressed in Frank Herbert's *Dune* (Herbert, 1965/1990), which is that at some future time, humankind will violently push back against the universal oppression of humankind by means of what I've called *the myth of artificial intelligence*—aka the myth of AI—that's being imposed on us by what I've called *the military-industrial-digital complex*. According to Herbert's fictional vision, humankind then carries out a "Butlerian Jihad"—under the 11th commandment, "Thou shalt not make a machine in the likeness of a human mind"—that not only destroys all digital technology that threatens to equal or exceed the actual or really possible achievements of rational human intelligence, but also slaughters all the computer scientists and digital technology technocrats. Then, in the wake of the Butlerian Jihad, humankind concentrates instead on systematically developing its own innate mental capacities or powers through self-disciplined practices that amplify and strengthen those

capacities and powers, and also by systematic critical reflection on the nature, scope, and limits of those capacities and powers. There's also another complex plot element intertwined with Herbert's account of humankind after the Butlerian Jihad, whereby they become collectively addicted to a drug that greatly extends human lifespans but also produces prescient visions in some people ("the spice"), produced only on the desert planet Dune, a state of affairs that becomes the basis of new coercive authoritarian religions, religious wars, and so-on—none of which I'm interested in for my purposes here. What interests me for the purposes of this essay is just the prescient and profound thought that we can engage in *creative rage against the computing machine*[1] by systematically critically reflecting on the nature, scope, and limits of our own innate mental capacities and powers *specifically in their relation to* AI, other digital computing systems, and digital technology more generally. Moreover, sharply unlike the Butlerian Jihadists in Herbert's fictional brave new world, my conception of this creative rage is that it's wholly *nonviolent*.

Correspondingly, what I call *the critical philosophy of digital technology* investigates the nature, scope, and limits—whether metaphysical, logico-semantic, cognitive or epistemic, moral, or sociopolitical—of AI, other digital computing systems, and digital technology more generally, and leads to a philosophical doctrine I call *dignitarian neo-Luddism with respect to digital technology* (Hanna, 2023a, 2023b, 2023c, 2023d, 2023f, 2023g, 2023h, 2023i, 2023j, 2023k, 2023l, 2023m). An extremely important but unexpected (at least by me) positive result of this critical philosophy of digital technology, is that it can fruitfully and even radically clarify and sharpen our conception of *authentic human creativity* (AHC). Indeed, it enables us to formulate a precise account, analysis, or explanation of AHC in terms of its individually necessary and jointly sufficient conditions. It has often been said that AHC is a mystery or mystical. But if I'm right, then AHC can be philosophically de-mystified *without* reducing it to something that's merely mechanical, trivial, or trite.

What, then, are the necessary and sufficient conditions for AHC?

First, AHC must be an inferential or non-inferential process that unfolds in actual spacetime (condition 1: *the processual condition*).

Second, AHC must generate an *output*, *conclusion* (in the case of inferential acts or processes), or other *product*, from some informational inputs, premises, or materials that are given or supplied to that process (condition 2: *the process-product condition*).

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[1] Of course, I'm creatively riffing here on the name of the famous politically-conscious rock band *Rage Against the Machine* (Wikipedia, 2023).

This output, conclusion, or other product is *what is created by that process*, and the informational inputs, premises, or other materials given or supplied to that process must be provided to that process *independently of* and *outside of* that process.

Third, AHC must be an organic—hence self-organizing or naturally purposive, negentropic, thermodynamically non-equilibrium, and temporally asymmetric or irreversible—process (condition 3: *the organicity condition*).

It should be noted that the term "organic," as I'm using it, doesn't mean exactly the same thing as "organismic." All organisms are organic processes, but not all organic processes are organisms. For example, if I'm right, then the natural universe itself is fundamentally organic, from the Big Bang forward, but it's also *not* the case that everything in the natural universe is an organism—or minded, for that matter (see, e.g., Hanna, 2023n).

Fourth, as a consequence of the third condition, AHC *cannot* be performed by a machine, and in particular it cannot be performed by an AI system, any other digital computing system, or by digital technology more generally (condition 4: *the anti-mechanism condition*).

Fifth, as a consequence of the fourth condition, if AHC performs *a function in the logico-mathematical sense*, then that function must be an *uncomputable function* (condition 5: *the uncomputability condition*; see also Hanna, 2023d).

It should be noted that, as a consequence of conditions 3, 4, and 5, AHC *cannot* be performed by means of decidable or computable deductive logical arguments or inductive (say, probabilistic or statistical) arguments, although AHC *can* be performed by means of *abductive* arguments (see, e.g., Douven, 2017), which are *not* decidable or computable, and also *non*-monotonic.[2] Moreover, some logical and/or mathematical deductive systems are consistent, sound, and complete, but *not* decidable or computable, and therefore discovering and writing down proofs in those systems *can* be AHC. It's also really possible, via AHC, to discover and write down sound proofs in formal systems that are consistent and sound, but incomplete. Indeed, this has happened many times in the history of the formal sciences and especially mathematics, including, paradigmatically, Kurt Gödel's proofs of his two incompleteness theorems (Gödel, 1931/1967). It's also

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[2] An argument or inference is *monotonic* if and only if adding new premises to the original set of premises of that argument or inference does *not* change the set of logical consequences of those premises; and an argument or inference is *non*-monotonic if and only if adding new premises to the original set of premises of that argument or inference *does* change the set of logical consequences of those premises.

ironically philosophically satisfying to note that Alan Turing's famous discoveries and provable results *about* decidability and computability (Turing, 1936/1937) are *not* themselves decidable or computable, and therefore are also paradigm cases of AHC in the history of the formal sciences.

More generally, AHC *can* occur inferentially and even deductively or inductively, but only *beyond* the limits of decidability and computability.

Sixth, AHC must guarantee—in the strong modal sense of *necessitate*—a categorical improvement or upgrade in the intrinsic specific character of the informational inputs, premises, or other materials that are given or supplied to that process, an improvement or upgrade that is manifestly real in all the informational outputs, conclusions, or other products of that process (condition 6: *the transformation condition*). Correspondingly, I call this essential feature of AHC *creative transformation* (Hanna, 2023h). In turn, creative transformation can happen in any one of the following ten basic ways:

(i) AHC can creatively transform *uninteresting*, *un-beautiful*, or otherwise *inferior*, informational inputs, premises, or other materials into *interesting*, *beautiful*, or (in the case of fine art) *great* informational outputs, conclusions, or other products,

(ii) AHC can creatively transform *ethically or morally bad or wrong* informational inputs, premises, or other materials into *ethically or morally good or right* informational outputs, conclusions, or other products,

(iii) AHC can creatively transform *ethically or morally merely instrumental* informational inputs premises, or other materials into *ethically or morally non-instrumental* informational outputs, conclusions, or other products,

(iv) AHC can creatively transform *meaningless* or *nonsensical* informational inputs, premises, or other materials into *meaningful* informational outputs, conclusions, and other products (see, e.g., Hanna, 2023c),

(v) AHC can creatively transform *logically inconsistent* informational inputs, premises, or other materials into *logically consistent* informational outputs, conclusions, or other products,

(vi) AHC can creatively transform *false* informational inputs, premises, or other materials into *true* informational outputs, conclusions, or other products,

(vii) AHC can creatively transform *contingent* or *merely factual* informational inputs, premises, or other materials into *necessary* (including morally necessary or *obligatory*) informational outputs, conclusions, or other products,

(viii) AHC can creatively transform *merely finite* informational inputs, premises, or other materials into *infinite* informational outputs, conclusions, or other products,

(ix) AHC can creatively transform *merely denumerably infinite* informational inputs, premises, or other materials into *non-denumerably infinite* informational outputs, conclusions, or other products, and finally,

(x) AHC can creatively transform *philosophically false, meaningless, trivial, or uninsightful* informational inputs, premises, or other materials into *philosophically true, meaningful, important, or insightful* informational output, conclusions, or other products.

The history of aesthetics and art, the history of ethics or morality (including the history of sociopolitics), the history of the formal sciences, the history of the natural sciences, and the history of philosophy, are all replete with real-world examples of AHC in these ten distinct modes. Moreover, the fact that these ten modes really *are* importantly distinct from one another, shows us that AHC can and does occur often in a morally neutral way and sometimes in a morally bad and wrong way. To take a notorious example of the latter, D.W. Griffith's *Birth of a Nation* is great cinematic art that richly exemplifies AHC, but it's also morally (and sociopolitically) bad and wrong.

Seventh, AHC necessarily requires the activation of all the members of a unified set of innate cognitive, caring-based, and practical mental capacities or powers that are present in all and only the minded animals possessing the essentially embodied, living organismic basis of those mental capacities or powers (condition 7: *the mental capacities condition*; see, e.g., Hanna, 2006, 2011, 2015; Hanna and Maiese, 2009). These organic and also organismic innate mental capacities or powers are: (i) *consciousness*, (i.e., subjective experience), (ii) *self-consciousness* (i.e., consciousness of one's own consciousness, or second-order consciousness), (iii) *caring* (i.e., desiring, emoting, or feeling), (iv) *sensible cognition* (i.e., sense-perceiving, remembering, or imagining), (v) *intellectual cognition* (i.e., conceptualizing, believing, judging, or inferring), (vi) *volition* (i.e., deciding, choosing, or willing), and (vii) *free agency* (i.e., free will and practical agency). Because AHC is a process that necessarily requires, in particular, the activation of the mental capacity or power of *free agency*, then all AHC must (i) be *spontaneous* and *unique*, (ii) have *ultimate sourcehood*, and also (iii) entail *deep responsibility* (whether moral or non-

moral) for the existence of its products (Hanna, 2018: chs. 1-5).

Eighth, AHC must *also* flow from the activation of a *special non-basic or composite innate mental capacity or power*, drawing on all of the ten basic capacities or powers, whereby there's a *meta-cognitive acknowledgment* of how that particular creative transformation radically restructures some or another determinate and inherently limited domain of informational inputs, premises, or other materials, thereby revealing new rich structures in that domain, as represented from a higher-order perspective, and producing correspondingly creatively transformed human thoughts that are original insights with respect to that domain; moreover, (i) these new rich structures cannot be represented in any way *other than* from this higher-order perspective, and (ii) acknowledging them results in a *Gestalt*-shift with powerful theoretical, caring-based, moral-practical, existential, and/or sociopolitical implications and resonances (condition 8). Otto Paans and I have called this special composite non-basic innate mental capacity or power, *creative piety* (Hanna and Paans, 2021, 2022); therefore, I'll call condition 8 *the creative piety condition*. But in light of how the term "imagination," especially in relation to the notion of *genius*, has been used in Immanuel Kant's *Critique of the Power of Judgment* in particular and in the post-Kantian Romantic tradition more generally, one can also very plausibly call the non-basic or composite innate capacity or power for creative piety, "big-I imagination" or "IMAGINATION." Hence we can also very plausibly call condition 8, *the big-I imagination or IMAGINATION condition*.

Ninth, as a consequence of conditions 7 and 8, AHC must be performed by a *rational animal*, whether that animal is *human* or *non-human* (condition 9: *the rational animality condition*). Therefore, up through this ninth condition, my account, analysis, or explanation of authentic creativity is *not* in any way species-specific, and therefore it's also *not* speciesist because it *doesn't* in any way favor humankind over any other animal species. Nevertheless, insofar as the unified set of mental capacities or powers that I've described *does* in fact occur in specifically *human* rational animals, then it constitutes what I call *rational human mindedness*, which is the same as our *human real personhood* (Hanna, 2018: chs. 6-7). Then holding fixed the non-species-specific and non-speciesist implications of my overall account, analysis, or explanation up through the ninth condition, this argumentative move thereby converts my account, analysis, or explanation of authentic creativity so far, into an account, analysis, or explanation of authentic *human* creativity or AHC.

Now, moreover, I'm in a position to unpack a little more the specific semantic role of the term "authentic" in the composite term "authentic human creativity." "Authentic," in general, of course, means the same as *bona fide* or *genuine*. But in this context, "authentic human creativity" is also specifically intended to convey a sharp contrast with other

meanings or uses of the word "creativity" that are in various ways inauthentic, cheesy, degraded, opportunistically stretched, pedestrian, phony, or downright bullshit. For example, as William Deresiewicz cogently and insightfully points out,

> [p]art of the confusion in discussions of AI and art undoubtedly arises from the degraded conception of creativity that has taken hold, in recent years, in tech. Nothing is original, techno-pundits like to say; "everything is a remix." This is a banality that grew up to become a stupidity. That new creations build upon existing ones has long been a cliché, but the techies have stretched it to mean that nothing is ever original: that creativity involves, and only involves, the rearrangement of existing parts. Which makes you wonder how we ever managed to progress from the first painting in the first cave. Assisting these arguments is the concept of the meme, the idea that elements of culture propagate themselves from mind to mind, just as genes do from body to body. But the meme hypothesis (and it is only a hypothesis) fails to recognize that minds are capable of altering their contents. We don't just passively transmit ideas and images, nor do we simply recombine them. Somehow, we manage to generate new ones: manage to create—through processes we do not understand and, I do not think, will ever replicate outside the human brain—the elements of culture to begin with. Or, at least, some of us do. (Deresiewicz, 2023)

Of course, I'm arguing in this essay that we *can* philosophically understand the process of AHC; but that's perfectly consistent with what Deresiewicz wrote on 8 May 2023 ("manage to create… through processes we do not understand") *before* I finished this essay in early June 2023.

Tenth, and finally, although, as per condition 4, AHC *cannot* be performed by any machine, and in particular AHC cannot be performed by any AI system, any other digital computing system, or by digital technology more generally, nevertheless, in the course of this performance, *machines of any kind*—including AI, digital computing systems, and digital technology more generally—*can be used as tools*, provided that these machines do not *themselves* perform this process (condition 10: *the tool-using condition*). For example, in AHC that is specifically artistic, a novelist or a poet can use a laptop computer to write a great novel or great poem; but that great novel or great poem *cannot* be written by a Large Language Model (LLM), i.e., a chatbot, for example ChatGPT-4, and still remain AHC. As Deresiewicz also cogently and insightfully points out,

> AI operates by making high-probability choices: the most likely next word, in the case of written texts. Artists—painters and sculptors, novelists and poets, filmmakers, composers, choreographers—do the opposite. They make low-probability choices. They make choices that are unexpected, strange, that look like mistakes. Sometimes they *are* mistakes, recognized, in retrospect, as happy accidents. That is what originality is, by

definition: a low-probability choice, a choice that has never been made. (Deresiewicz, 2023)

Of course, if a novelist or poet were to look up some factual information on Wikipedia, or ask a chatbot some factual questions, and then use that information or those answers as background information in writing a great novel or great poem, then that would still perfectly consistent with condition 10 and with AHC.

To conclude in a nutshell, I'm claiming that *necessarily, something X is authentic human creativity if and only if X satisfies conditions 1-10*. So now we can philosophically understand AHC, as the direct result of our creative rage against the computing machine.

Moreover, because as I noted under condition 7, AHC necessarily requires the activation of the organismic innate mental capacity or power of *free agency*, which makes it spontaneous and unique, and a matter of a free agent's ultimate sourcehood and deep responsibility, then in order for me, you, or anyone else to be authentically humanly creative, *we'll simply have to choose and do it for ourselves*, and let the chips fall where they may. There is not, and cannot ever be, a risk-avoiding, freedom-avoiding, computable algorithm for AHC; and to look for one, to yearn for one, or seek to develop one by means of AI research, is a fundamental and indeed tragic mistake. For this would be to surrender the activation, control, and guidance of our own capacities or powers for authentic human creativity to the myth of artificial intelligence and to the military-industrial-digital complex. Instead, we should all engage in nonviolent creative rage against the computing machine.[3]

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