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Alan Turing's Self-Defense: On Not Castrating the Machines

I forgot my destiny of one pursued. I felt myself to be for an unknown period of time an abstract perceiver of the world.

—Borges

Alan Turing's dismissal of the provocative question "Can machines think?" in "Computing, Machinery and Intelligence," his masterful essay of 1950, decisively reformats the question of consciousness. In his essay, Turing dismisses the question of the thinking machine as not useful—because, as he demonstrates with startling economy, the terms of the question itself are improperly understood. In fact, he manages this dismissal while unequivocally answering the question regarding the possibility of the existence of such a machine in the affirmative.[1] His interrogation of the presumed uniqueness of "man," also has implications for the unconscious as that which gives consciousness depth and presence, though he does not address the unconscious directly as such in the piece. In keeping with Turing but with our own purposes firmly in mind, we will want to note the existence of what I call the computational unconscious, because it names precisely the haunting of contemporary thought by the unthought and largely unthinkable history of computational praxis that materially underpins current thought, knowledge and computation. I will endeavor to clarify this assertion below.

In "Computing, Machinery and Intelligence," Turing goes so far as to posit a version of a vast computational unconscious as a statistically likely ontological condition that can be summed up as follows: we do not know that we are computers. This radical anti-humanist position staked out by Turing is often missed but the implication regarding a generalized misperception of the nature of computation is clear. For Turing, the notion of intelligence, resting upon the notion of human intelligence and thus upon the humanist tradition, is simply *a* notion of intelligence that depends upon the non-perception (ignorance) of the possibility

that human behavior is a consequence of the rigorous execution of the operations of a rule-set. Turing held that at the very least, the contrary notion, that there was not a set of rules governing human behavior, and that human behavior was thus not a computational effect, could not be proven. As he writes regarding the hypothetical rule set for the laws of human behavior, "The only way for finding such laws [of behavior] is scientific observation, and we certainly know of no circumstances under which we could say, 'We have searched enough. There are no such laws.'"[2]

To emphasize the point that we have only really just begun an investigation into the laws of intelligent behavior, Turing adds:

> We can demonstrate more forcibly that any such statement would be unjustified. For suppose we could be sure of finding such laws if they existed. Then given a discrete-state machine it should certainly be possible to discover by observation sufficient about it to predict its future behavior, and this within a reasonable time, say a thousand years. But this does not seem to be the case. I have set up on the Manchester computer a small programme using only 1000 units of storage, whereby the machine supplied with one sixteen figure number replies with another within two seconds. I would defy anyone to learn from these replies sufficient about the programme to be able to predict any replies to untried values.[3]

In 1950, in a single act of cryptographic *sprezzatura*, Turing puts his formidable reputation on the line to demonstrate that the best mathematicians of the day cannot reverse engineer a few lines of his code that takes one of 10^16 possible inputs and returns one of 10^16 possible outputs—no matter how extensive a chart of inputs and outputs they might be able to assemble. If that relatively controlled environment of "only" 100 million billion input variants along with an equivalent number of possible outputs does not yield to empirical scrutiny such that the program can be reverse engineered, how much less, the data field of human history? Clearly the prior 1000 years has not been enough time to crack the code of human behavior (should it exist) by examining inputs and outputs, and possibly the next 1000 may not be enough. But ignorance is no excuse for the law, as the old anti-Republican joke goes, and ignorance of computational process (non-conscious cognition, as Kathryn Hayles recently ventured), which the evidence suggests is how Turing conceives of Darwin, is no excuse for a law that claims human

exceptionalism; it in no way guarantees that a program of sorts (a rule set) is not churning in the background iterating complexity along perfectly rule-bound lines. This insight implies a radical liquidation of the humanist tradition along with all of its exceptionalizing essentialisms by positing a trajectory of procedural emergence. Turing, it seems, would be in agreement with McLuhan regarding the misidentification of historical agents (the autonomy of subjects, the essences of beings), but his insight has even greater ontological depth because of the granularity implied by his notion of media.

It is within the domain of a rationale that understands that entities are not givens but emerge from the operation of rules, that Turing replaces the question "Can machines think?" with "the imitation game." This game involves the question of whether or not an "interrogator" can discern if the entity they are typing a conversation with is a human or a machine. This shifting of the "nature" of the question of machine intelligence is a bold move, involving what Katherine Hayles refers to as a "sleight of hand" that, as she notes, already situates the formerly human being in a networked "posthuman" condition no matter the outcome of any particular instance of what came to be called the Turing Test.[4] As humans are placed within a circuit of symbolic exchange with machines, the full integration of humans with (writing) machines is suddenly a given in a way that looks both forward and back in time. Turing's reframing of the question can machines think, is for him necessary in order to answer the question, because in his own view we understand neither the meaning of the word "machine" nor, perhaps even more dramatically, "think." But for better or worse, we may discern from the above example of Turing's challenge to reverse engineer a rule set, that what is at play here is, from the point of view of metaphysics, a bit more than a magic trick. Turing's argument is at once ontological and teleological, if only weakly with respect to the latter. How little we understand "machine" and "think" indicates that the stakes involved in this understanding may vitiate ontological presuppositions that extend to the essence of humanism and humanistic thought and that include notions of governance, hierarchy, divinity and "man." The challenging of these presuppositions explains why Turing published this essay in the philosophy journal *Mind*. In the guise of a casual inquiry into the nature of computation, the essay orchestrates high metaphysical drama; it troubles not only the nature of machines but of "man."

Among Turing's examples of human elements, which, in the terms of the imitation game are no longer essential verities but rather virtualities or virtualizations, there are subtle but significant inclusions of gender, race and nation. For example, the imitation game in which an interrogator must specify the difference between man and machine is based on a game that already implies a form of cross-dressing and gender performativity: "The interrogator stays in a room apart from the other two. The object of the game for the interrogator is to determine which of the other two is the man and which is the woman."[5] What is important here in the erotics of this tropologic parlor game is first that gender is deduced from input and output, in short, from the interplay of codes, and furthermore that in making the determination of gender it is possible to be "wrong" (while still being subjectively "right"). Human intelligence is AI in drag. But eliciting the "wrong" identification is in fact victory for the impersonator, making the drag performance at once more real than real, and, in the context of the larger argument, the truth of intelligence. From this insight, plus a few decades of thought and passionate struggle, we glimpse a path to the groundbreaking work of Judith Butler. If gender is code all the way down, obviously there is no ontological right and wrong—just and always an exchange of information and thus simulation and its consequent semiosis.[6] And as Butler lucidly demonstrated more than twenty years ago, this semiosis includes not just gender but "sex." It's performance all the way down.

This de-ontologization of gender early in the history of computing did not, however, prevent the engineering of the female voice of computation within the developmental framework of heteropatriarchy—there are many examples from the starship *Enterprise* computer ("… working") to Siri. As Emma Goss brilliantly puts it, "The ultimate marker of artificial intelligence … was based on the idea that a computer could perform femininity better than a real woman."[7] Looking at the history of the utilization of the female voice in communication and computation from early phone operators, to mid-century female programmers to Siri, Goss argues that with electronic communication and computation there emerged an idea that "women's intelligence could be electronically engineered"[8] and that women were "artificially intelligent."[9] She writes, "People [who get] fed up with the shortcomings of voice-communicative technology, recogniz[e] that their 'smart' phones are not very smart at all. Rather than blame the engineers for the faulty technology, people have come to blame "her," the voice, the artificially intelligent woman."[10]

Thus we begin to see that the conscious development of machine intelligence required a disruption of many of the ontological presuppositions of hegemonic Western society and also that many age-old assumptions reasserted themselves in the making of new technologies. Additionally, we find that just as the de-essentialization of gender was implicit in Turing's understanding of machine-think, but did not guarantee a progressive politics (at least so long as an essentialist metaphysics with regard to one's own humanity remained), so too was the de-essentializing of race and disability. Against the numerous "disabilities" presumably inherent in machines that would exclude them from being counted as thinking, Turing comments:

> The inability to enjoy strawberries and cream may have struck the reader as frivolous. Possibly a machine might be made to enjoy this delicious dish, but any attempt to make one do so would be idiotic. What is important about this disability is that it contributes to some of the other disabilities, e.g., the difficulty of the same kind of friendliness occurring between man and machine as between white man and white man, or between black man and black man.[11]

Turing's logic here is indirect but rigorous. Because of prejudice regarding perceived disabilities, the friendliness between man and machine cannot be like that friendliness between white and white or black and black. The unsaid here is the relation to the unformulated combination, the (non-) "friendliness" between white and black, a relation which by implication is analogous to the prejudicial relation between (so-called man) and (so-called) machine that Turing inveighs against. This argument also marks the assignation of the category "disability" as a form of prejudice, one that is a condition of ignorance.

These anti-essentialist notions tear up the founding of social difference on humanist ontology (more or less the same humanism that presided in the colonies, over segregation and apartheid, and that everywhere rears its ugly head today). Here anyway, Turing's anti-essentialist notions are without doubt a consequence of the critique of metaphysics implied by the slow revelation of the programmability of the discrete state machine. When Turing is pressed, that is, when he presses himself to provide an actual example of a "learning machine," that is, of a program capable of self-modification through interaction with the environment and

therefore of intelligent self-transformation, he uses the analogy of a human child. But he also says:

> The idea of a learning machine may appear paradoxical to some readers. How can the rules of operation of the machine change? They should describe completely how the machine will react whatever its history might be, whatever changes it might undergo. The rules are thus quite time-invariant. This is quite true. The explanation of the paradox is that the rules that get changed in the learning process are of a rather less pretentious kind, claiming only an ephemeral validity. The reader may draw a parallel with the Constitution of the United States.[12]

While it is unclear to me whether Turing means to suggest that the main body of the constitution is the unchanging portion, while the amendments are the examples of machine learning (amendments which would include the abolition of slavery and women's suffrage), or that the Constitution in its entirety is the variable in the more abstract machine that is the state and society or even the meta-program of "human behavior," the difference hardly matters here: Not only is the state founded on a machine that can learn; it can also think. Though subject to hardwiring, the program can be modified. Rule sets persist; programs can be modified and machines can learn. Currently inscribed in that circuit is this category called "man."

From these examples touching on gender, race and nation, we see that already with Turing, the substrate of social and historical existence not only tropologically informs Turing's thought but is also radically redefined by computational logic. Where before there were men and women, blacks and whites, gods and states, with Turing there are rule sets. Rule sets are prior to emergent instantiations and they condition them. Turing's brilliant abstraction and reduction in the "Turing Test" of intelligence to communication and of communication to performative simulation in "Computing, Machinery and Intelligence" is of a piece with the harnessing of language as programmatic medium, in a way that retroactively renders the operations of the symbolic as itself a simulation that "is" "human" intelligence. Kittler, whatever his flaws, has a point when he observes that the machinic typewriter with its transformation not only of language but of philosophy and mind is, by separating writing from the organic body, the mechanical preconditions for machine-based

computation. "Turing merely got rid of the people and typists that Remington & Son needed for reading and writing."[13]

One cannot disprove the possibility (indeed likelihood) that what passes for human intelligence is the computational effect produced by the execution of a rule set or even that what we categorize as human intelligence was always already machine-mediated. For Turing, the ramification of scientific rationality into the natural world provided increasing evidence that the universe functions according to rules and that human beings were unlikely to be an exception. It is no wonder that he felt he had to debunk various objections to the possibility of machine thinking, since humans were in some sense understood as machines or at least the result of machinic operations. The ripostes and put-downs to common objections arising to stave off the horror of this radical and profound anti-humanism were craftily indexed in Turing's essay by categories that included "The Theological Objection" and, my favorite, "The "Heads in the Sand" Objection." For, at the end of the day (of Humanism), the thinking machines, those "machinic assemblages" were us.

As for "The Theological Objection," which as he renders it reads, "Thinking is a function of the immortal soul. God has given an immortal soul to every man and woman, but not to any other animal or to machines. Hence no animal or machine can think," Turing writes:

> It is admitted that there are certain things He cannot do such as making one equal to two, but should we not believe that He has the freedom to confer a soul on an elephant if He sees fit? We might expect that He would only exercise this power in conjunction with a mutation which provided the elephant with an appropriately improved brain to minister to the needs of this soul. An argument of exactly similar form may be made for the case of machines. It may seem different because it is more difficult to "swallow." But this really only means that we think it would be less likely that He would consider the circumstances suitable for conferring a soul. The circumstances in question are discussed in the rest of this paper.[14]

Turing's razor sharp understanding that the implications that computational intelligence implies an attack on theology, metaphysics and the primacy of the human by way of an impeachment of the conceit of a Divine Subject leads him to write, "In attempting to construct such

machines we should not be irreverently usurping His power of creating souls, any more than we are in the procreation of children; rather we are, in either case, instruments of His will providing mansions for the souls that He creates."[15] He then drops the ironic tone and gives the example of Galileo as a victim of an ignorant theological framework that has since (almost?) disappeared. His example of Galileo under the attack of the Church serves as a direct analogy with Turing's own critique of what amounts to a secular theology of anthropocentrism, and very unfortunately, was also a tragic predictor of his own fate. Galileo faced the Church inquisition for challenging the theology that placed Earth at the center of the universe along with the implications for power and governance therein, while Turing himself challenges the secular theology that places an unbearably narrow and willfully ignorant definition of humanity at the center of intelligence and that has built Western "civilization." And persecuted he was. It took England until 2009 to apologize for it's own normative (why not say "humanistic") inquisition against Turing's homosexuality, one that forced him, in 1952, to accept "chemical castration" and likely drove him to suicide. Such was the automated thinking endemic to the program of the humanist state. Yet heads remain in the sand.

Turing's description of the "Heads in the Sand" objection reads simply: "The consequences of machine thinking would be too dreadful. Let us hope and believe they cannot do so."[16] Turing comments:

> This argument is seldom expressed quite so openly … But it affects most of us who think about it at all. We like to believe that Man is in some subtle way superior to the rest of creation. It is best if he can be shown to be necessarily superior, for then there is no danger of him losing his commanding position.[17]

He adds, "I do not think that this argument is sufficiently substantial to require refutation. Consolation would be more appropriate: perhaps this should be sought in the transmigration of souls"[18]

My sense of this gloss and its shade, at once scathing and hilarious, is that, like the pseudo-theological remark above about intelligent machines "providing mansions for the souls that He creates"[19] it is more than half serious. With Turing we find the sublation of humanist ontologies by a theory of emergence. As the metaphysical artifacts of a particular moment of emergence become outmoded, they will find new

basis in computation and will be revealed as heuristic conceits and/or disappear. From the perspective of computation, all machine states are iterations of the crunching of a program—whatever it might be. The soul is not what we thought it was, but those who still need such an interface as a skeuomorph might find it in transubstantiation. That is, in the artificial intelligence of machines grasped through the framework of the soul, particularly as there is increasingly less and less evidence with which to mark a firm boundary between bodies and machines. The soul will require some redefinition beyond the hegemonic framework for there to be progress. And as the black radical tradition might remind us, the notion that soul is not exclusively the province of those with legal claims to humanity, has done significant work.

Turing's brilliance partially entailed the application of mathematical thinking to that symbolic system known as "language." But one must understand that the re-conceptualization and subsequent machinic reduction of representation and particularly of linguistic messages leading to the instrumentalization of representation had long been taking place. The communicative relation as metaphysically constitutional was posited (by for example Nietzsche who disallowed the distinction between the doer and the deed) and increasingly presupposed. From the emergence of print as an economic exploit forward, the denaturing of "natural" language into code was a long time coming. From Sassure's "arbitrary nature of the sign," which severed signifier from signified, to what came to be called the critique of the metaphysics of presence in post-structuralism, this denaturing at first felt like the ancillary dismantling of one more pillar of tradition in the general liquidation of tradition by capitalism (or by science or modernity, as it might have been said) before coming to be seen as the complete subsumption of the history of the human species (and with that the subsumption of history and of the species) by computation, Nietzsche with his typewriter collapsed the philosophical distinction between being and act and became, above all else, a writer—a "general without an army," as has been said, "determined to emphasize maximum influence on the future." Jacques Derrida brought home the idea that in the signifying chain, no one is home. There's no body there in language, just the referent under erasure. Hélène Cixous showed that all Western philosophical binaries rested on gender binaries, and were not indices of truth but rather indices of power—the power of hetero-patriarchy manifest in phallogocentrism and the metaphysics thereof. Thus, in another case of the medium is the message, the very operation

of language in the enforcing of sexual difference exceeded it's denotative meaning, imposing the paradigm of the gender binary everywhere. William Pietz's essay, "The Phonograph in Africa" brilliantly recounts the colonial resignification of recordings of native speech for purposes of further colonization by which an imperial overcode resignified and thus denatured a "natural language" by treating it as a pass code. Those (natives) still foolish enough to believe in essences and presence (or at least in the merely discursive realities of suddenly provincial customs and gods) were hoodwinked with phonographic recordings of tribal leaders' voices commanding people to offer hospitality to colonizers. This marked an emerging and increasingly self-conscious tradition, or rather military-political strategy, dedicated to the resignification of existing codes that was capitalized on by Hitler, Mao and Voice of America, and is again being redeployed in a new Amerikkkan synthesis. Ontology was mobilized as politics, and, as Allen Feldman keenly observes, metaphysics in its reconfiguration becomes a medium of war. Barthes' "Myth Today," Adorno and Horkheimer's "Culture Industry," Deleuze and Guattari's "overcode", Kittler's work, Nietzsche's *Geneaology of Morals*, Butler, Cisoux, Sylvia Wynter, and the subsequent would-be wholesale deconstruction of the humanist project, testify to the trend of the repurposing of representation for sets of interests that are not representable within the natural(ized) domain of the represented. Rational-representational systems were mobilized at a higher level than was available to those who were most interpellated by them, one that exceeded the discernment of most of their practitioners. POTUS's irrational universe provides an ample demonstration that the inevitably historical rationales of his psychopathology has a structural and systemic fit organized beyond the horizon of liberal perception—and undoubtedly his own. Then as now, across the board, the medium was the message, which for McLuhan meant precisely that even though a new order was transmitted by changes in mediation, that message, the one regarding the changes imposed by a new media form, was not being consciously received. Today, with the overcoding of every communicative act by financialized computation we may perhaps receive the message of "our" media: it is capital, the political economy of murder by installments. The totalitarian necro-political global regime becomes the hidden content of every message. Communication itself brings it home.

Meanwhile one finds multiple efforts at constructing a physics of metaphysics in answer to the shifted properties of the ontological

ground re-iterated and thus transcoded, transformed and re-ordained by computation. Regis Debray examines the technical mediation of images and signs by logical-material systems that render the metaphysics of prior media regimes skeuomorphic, mere theatrical simulations that facilitate the capture of those subjects (themselves both signifiers in all senses of the word and skeuomorphs) who, to make their way, still require an orientation in imaginary universes by ideologies now structurally superseded. The materiality of communication again shows the material-practical basis of the subject in ideology. But as we are also aware the intensification of through-put vis-à-vis screens places the subject in crisis. The various forms of subjective dissolution and implosion are also the message.

Allen Feldman's *Archives of the Insensible* understands the contemporary deployment of metaphysics (the constitution and deconstitution of juridical entities) as a means and modality of war. Guantanamo, for example, is in the business of *producing* terrorists. We have the intentional engineering of subjects: the terrorist *and* the sovereign subject by the carceral machine—the terrorist is retroactively engineered and the sovereign is proactively engineered. Where with Turing and the development of computers, subjectivity was decoded and simulated (that is revealed as a simulation), subjectivity is, with the integration of computers and their calculi into the web of life, encoded and simulated (that is projected as an actionable fact), as a driver of economy and of war. In a general sense we observe that from government sponsored nationalism, to character identification in Hollywood films, to the idea of the computer desktop or file, computational interfaces disbursed throughout the socius utilize retrograde modes of subjectification (orientation, suture, interface) as well as advanced techniques of assemblage and blurring to perform socio-economic functions whose larger consequences structurally exceed the understanding of the subjects posited, interpellated, fragmented, dis-/re-/al-located … and above all—above all (?)—functionalized in the informatic matrix that instantiates them.

However, it must be immediately added that the functionalizing of what Althusser calls "concrete individuals" and in another, not unrelated context, Hortense Spillers calls "the flesh" via forms of codification whose invisible processes are shrouded in obscurity and (most often) received/discerned/interpreted and "understood" only through dependence upon various metaphysical presuppositions that no longer (fully) obtain (e.g. readers of *The New York Times* who think they are merely informing

themselves when they read on a platform dedicated to neo-liberal class war), in no way means that all bodies, despite being subjectively and objectively instantiated today by computational modes, are instantiated equally. Patriarchy, racism, heteronormativity, neo-imperialism, political economy, borders, forced migration and the generalization of war amply testify to the intensive material and algorithmic production of social difference. Neither should radical overdetermination by social-media imply any naturalization to the hierarchies imposed, acted upon, produced and reproduced by existing codes and consequently essentialized (or, when convenient, de-essentialized) through computational social process. Just, as Marx taught us, there is not an atom of matter in exchange-value, there is not an atom of nature in computation nor an atom of truth in the metaphysics thereof. Here we arrive at the concept of the fold and the paradox of undecidability: There is exactly no "nature," available in the computational construct; one could say that "nature" is always already a simulation—given up to us by the very means that foreclose its being. (There are times when this reflection is not relevant, and even uncalled for, but such an immersion in an ontology completely isolable from computation is no longer fully, if even at all, possible for "us.") What appears at the horizon of this knowledge during this time, signified by the concept of its very operation (as subjectivity, as computation, as mathematical proof) is the question of a beyond at once necessary and under erasure. Computation is not just a difference engine, but an engine of *différance*. (Simulation = ~~Nature~~.)

At its metaphysical best, when, for example the nature that is not simulated but is simulation itself appears to glimmer at the horizon of codification (as the computational multiverse), it comes to occupy the same status as History in Fredric Jameson's *The Political Unconscious*, or the Real in Lacan, or the innumerable in Borges. Jameson's reading of Althusser in *The Political Unconscious* argues that History is both non-narrative and non-subjective, saying it is, rather, an absent structure: "History is *not* a text, not a narrative, master or otherwise, but that as an absent cause, it is inaccessible to us except in textual form, and that our approach to it and to the Real itself necessarily passes through its prior textualization, its narrativization in the political unconscious."[20] History, as distinct from narrative history, is thus posited as the event horizon of knowledge, such that any instantiation is always already a symbolic act in a cosmos where the Real remains unsymbolizable. The Real haunts symbolization, even though symbolization cannot transcend itself to render

the Real. Like the Real, History may be troped, but not identified—there is no unmediated access. The dream work of the political unconscious and its representational systems gives it form; the forms are always ideological. In our own moment we observe that it is only the movement of the process of symbolization emergent from the trace through its archive that by means of its own churn gives rise to the computational model. Concisely put, the reality of simulation is also a simulation.

With computational simulation, generalizing itself, for example in the work of Max Tegmark, to cosmic proportions in which the universe is itself a super computer (numbers all the way down, with traditional physical entities such as atoms and quarks, phenomenonal forms of data visualization), there is ultimately nothing but numeric operations underpinning ALL. In this totalizing projection of the computational universe extending to all possible knowing we have the retroactive dissolution of metaphysics and the foreclosure not only of Being, but of Nature, History and the Real—all of which must be written with scare quotes to signify that they are not just placeholders for something beyond the horizon of discernment, but that they are indeed empty—former iterations of the impossible, now outmoded, themselves only computational simulations. The hollowing out of prior ontologies, first conceptually and then practically by means of machine operations creates a tremendous crisis of values—in the socio-ethical and the economic. What computational procedures and results will be valued and how? Derivatives, synthetic finance and social media provide answers—no doubt woefully inadequate ones. How to value a person, people, peoples? What forms or formulations might provide an adequate account? The unpleasant question of our time seems not to be Ezra Pound's "Jefferson and/or Mussolini?" or even "Neo-liberalism and/or #45?" but rather, "the slaughter bench of history and/or the slaughter bench of information? Better I think to see the rise of computation not as introducing a crisis of value but as a response to a crisis within the domain of value and valuation—a revolutionizing of the productive forces whose measure has not yet been taken. Here the injunction would be to finally come to terms with the computational unconscious, or what Adam Smith called the invisible hand.