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Posthuman Mimesis: A Dialogic Prelude with Katherine Hayles

N. Katherine Hayles and Nidesh Lawtoo

Posthuman mimesis composes a Janus-faced picture.[1] If the posthuman looks ahead to technological innovations that are increasingly blurring the boundaries between the human animal and technical devices, mimesis looks back to a distinctly human ability to represent the world via aesthetic techniques that have long painted a picture of *Homo sapiens* as "the most imitative animal." Not unlike the Roman god Janus, posthuman mimesis, then, appears to look in radically opposed directions: one is turned back to a past-oriented humanistic view of aesthetic representation that finds in mimetic realism its culmination; the other is turned toward future-oriented transformations that already entangle humans with computational machines generating a picture of disembodied consciousness that may not always be realistic, yet is constitutive of the genealogy of the posthuman, nonetheless.

And yet, we may still wonder: what principles render humans so strikingly adaptable, relational, and plastic in the first place, so impressionable and protean that, over less than a century, we have already been formed, conformed, and transformed by the intelligent machines we ourselves created? While idealizing phantasies of disembodiment that reduce the complexity of human bodies to the simplicity of abstract forms are constitutive of posthuman and, even more so, transhuman aspirations, it is useful to recall that these abstract phantoms have a much longer genealogy. They can in fact be traced back to the dawn of philosophy, to a Platonic metaphysics that has a dominant conception of mimesis framed as a mirror as the main medium of reflection between the origin and the copy, ideal forms and material phenomena. This dominant conception of mimesis continues to in-*form* (give form to) contemporary posthuman ideals of disembodiment as well. And yet, at the same time, a minor tradition in mimetic theory has long been attentive to embodied, relational, and immanent mirroring principles that, after a period of neglect, are now returning to the theoretical forefront via discoveries in the neurosciences,

1 This dialogue first appeared in a special issue on "Posthuman Mimesis" in *Journal of Posthumanism* 2, no.2 (2022).

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biology and evolutionary anthropology that are already transforming disembodied conceptions of the posthuman as well.[2]

Could it be, then, that a posthuman, all too human ability to imitate human and nonhuman others, often unconsciously, with our bodies, and thus also with our brains, minds, and perhaps souls too, is constitutive of an eminently plastic, relational, and adaptable chameleon species—or *homo mimeticus*—that already underwent significant transformations in the course of human history and is now part of our ongoing process of becoming posthuman as well? This is the overarching question this dialogue aims to address. We might in fact be entering a new phase of intensified posthuman metamorphoses that are not simply mimetic or hyperreal but hypermimetic in the sense that they blur the distinction between disembodied simulations that are nonhuman and an embodied mimetic faculty that is still all too human—without setting up a binary between the two. These hypermimetic transformations tend to escape the volitional control of consciousness but operate in unconscious or nonconscious ways that have both cognitive and debilitating consequences. Perhaps hypermimesis is even at play in spiralling feedback loops that blur the distinction between the human original and the technological copy, generating recursive movements of repetition and difference in which we are both subject and object, active and passive, giving form to digitized simulations which, in turn, are also forming and transforming the experience of becoming posthuman in the twenty-first century.

In this dialogue, I am delighted to join forces with Katherine Hayles in view of establishing new genealogical connections between the old concept of mimesis and the new concept of the posthuman. A continuation of a dialogue started during the *Posthuman Mimesis* conference,[3] our goal is to further what this special issue started to call, a mimetic turn in posthuman studies. Arguably the most influential theorist of the posthuman writing today, whose landmark study, *How We Became Posthuman* (1999) brought this emerging transdisciplinary field onto the international scene, Hayles is the perfect interlocutor to discuss the protean subject of "posthuman mimesis," and for a number of reasons. In her ground-breaking work, in fact, she provides genealogical foundations that trace the emergence of discourses on the "posthuman" out of different waves of cybernetic theories that, starting in the 1950s, tended to

2 See, for instance, the special issue on "The Mimetic Condition" in *CounterText 8*, no. 1 (2022).

3 Katherine Hayles' keynote was titled "Survival as mimesis: Microbiomimesis and the production of human bodies." For a printed version of this talk, see N. Katherine Hayles, "Microbiomimesis: Bacteria, Our Cognitive Collaborators," *Critical Inquiry* 47, no. 4 (2021): 777–787.

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downplay or, as she puts it, "forget" the importance of "embodiment" in favour of an abstract idea of information that led to dreams of "downloading human consciousness into a computer" (Hayles, 1999, xii)—idealist dreams that reach back to the origins of metaphysics and continue to spread hypermimetically in the digital age.

Author of numerous influential books located at the crossroads of literature, science, and technology, Hayles' most recent titles include, *My Mother Was a Computer* (2005), *Electronic Literature: New Horizons for the Literary* (2008), *How We Think: Digital Media and Contemporary Technogenesis* (2012), *Unthought: The Power of the Cognitive Nonconscious* (2017), and *Postprint: Books and Becoming Computational* (2021). Hayles' double training in chemistry and literary criticism, her attention to the materiality of the flesh, digital media, and nonconscious processes, supplemented by an acute sense of the importance of genealogies to account for the emergence of new forms of consciousness and subjectivity, will help us trace the emergence of posthuman mimesis as a productive concept located at the juncture of the posthuman turn and the mimetic turn, or *re*-turn. Who knows? Perhaps the "terror" and "pleasure" the posthuman continues to evoke as we become increasingly entangled with hypermimetic simulations in the digital age, might reload all too human feelings first experienced via mimetic phantoms that still haunt our ongoing processes of becoming posthuman.

We shall take as a starting point a protean conception of "mimesis" that is not limited to anthropocentric concerns with aesthetic realism that, for a long time, restricted it to the passive logic of representation of reality. Rather, mimesis operates on the side of life as well. Hence it is constitutive of embodied processes of imitation that challenge autonomous, self-enclosed, and purely rational conceptions of *Homo sapiens*, animates what I call homo mimeticus, and plays a key role in the metamorphoses of posthuman subjectivity as well. This shift of perspective entails paying close attention to the affective, embodied, and relational qualities that already inform the genealogy of the concept of *mimēsis* (from *mimos*, actor and performance) since classical antiquity. Under different masks (identification, contagion, influence, simulation, mirror neurons, plasticity, among others) we are currently witnessing a mimetic turn, or *re*-turn of attention to mimesis in different areas of inquiry—including posthuman inquiries.[4] In the processes, we aim to reinscribe this minor, but increasingly ramified understanding of homo mimeticus in the genealogical

4 The mimetic turn is transdisciplinary in scope and includes contributions by major representatives in literary theory (J. Hillis Miller). continental philosophy (Jean-Luc Nancy), political theory (William Connolly), new materialism (Jane Bennett), feminist philosophy (Adriana

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emergence of posthuman studies: from cybernetic ideals of disembodiment that mimetically reproduce metaphysical ideas to feedback loops between humans and avatar simulations that have both life-enhancing and life-negating potentials to the algorithmic spreading of disinformation with real, all too real effects in the age of rapid climate change, viral pandemics, and species extinction in the epoch of the Anthropocene. In short, mimesis not as realistic representation, then, but rather, mimesis as an embodied and contagious power, or mimetic *pathos,* that troubles the boundaries of individuation, often in unconscious ways, via mirroring human and nonhuman connections that require increasing attention.

But let us proceed in order by embarking in a dialogue with Katherine Hayles to reconstruct the role mimesis might have played in her influential genealogy of how we became posthuman.

NIDESH LAWTOO*:* How We Became Posthuman *is already a classic in posthuman studies, but it is rarely noticed that it starts by foregrounding a manifestation of mimesis that is already double. In fact, it begins with your dramatization of Alan Turing's famous "imitation game" in the 1950s. At the dawn of the computer age, he placed the problematic of mimesis, or imitation, at the core of the mirroring relation between humans and machines, which you locate right at the beginning of your genealogy of how we became posthuman. I say "dramatization" because you address the reader directly, as you set the scene as follows:*

> You are alone in the room, except for two computer terminals flickering in the dim light. You use the terminals to communicate with two entities in another room, whom you cannot see. Relying solely on their responses to your questions, you must decide which is the man, which is the woman. Or … you use the responses to decide which is the human, which is the machine.[5]

Redoubling this experience in language you rely on a mimetic, rather than diegetic, narrative in the sense that you use a first person, direct speech to account for the "erasure of embodiment" you consider constitutive of the emergence of the posthuman, opening up a double question concerning content and form with which we can perhaps start. On the side of content, why is Turing's conception

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Cavarero), among others. For outputs on the mimetic turn see, http://www.homomimeticus.eu/publications/.

5 N. Katherine Hayles, *How We Became Posthuman: Virtual Bodies in Cybernetics, Literature, and Informatics* (Chicago: University of Chicago Press, 1999), xi.

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of "imitation" insufficient to account for the difference between humans and machines? And what would be needed to supplement his imitation game? On the side of form, why do you adopt a mimetic narrative discourse in order to frame this mimetic problem that opens your book, informs your genealogy of how we became posthuman, and perhaps, even gives birth to the problematic of the posthuman—out of an imitation game?

N. KATHERINE HAYLES*:* Turing's inspired strategy for answering the question posed by his title, "Can Machines Think?" was to interpret the question in operational terms. He proposed the famous Turing test to established human-equivalence if an entity passed it successfully. The idea was to create a very narrow bandwidth of communication through a typing terminal. The person taking the test could not see the entities, hear their voices, judge stress indicators, or assess any other bodily response, other than the type that appeared on the screen. The assumption was that the machine could lie in its answers, whereas the human was advised to answer honestly, for the human presumably had no need to prevaricate. In setting up the test in this way, Turing in effect subjected *both* the computer and human to becoming disembodied entities, thus anticipating the trajectory toward disembodiment that I underscored in my book through the theme "how information lost its body." This version of "imitation" is thus set up precisely to ignore all the embodied aspects of mimesis that has (re)-emerged in recent discourses.

In introducing Turing's test to a reader in a mimetic (rather than diegetic) mode, as you point out, I hoped to engage her or his bodily senses of proprioception, muscle tension, and other body sensing systems so that she or he entered my text as embodied individuals rather than as a disembodied eye reading a disembodied voice—ironically, a similarly narrow communication channel to the one that Turing envisioned, albeit one that can be enlivened and embodied through the rhetorical tricks that writers know and love. In several places in the book, I turn to the evocation of embodied sensations to underscore the theoretical point, for example at the end of the chapter on the Macy conferences when I refer to the aching back of Janet Fried, the secretary who was responsible for transcribing the noisy voice tapes into orderly transcripts.

As he was introducing the test, Turing also suggested it could be used to determine whether the subject being interrogated was a man or a woman. The questions that Turing gave as examples referred to physical qualities typically seen in gendered terms, such as hair length, musculature, etc. The close connection between gender identity and species identity was there at the dawn of the computer age, and has since proliferated into literally thousands of novels, films, games, and other media that interrogate the connection. To mention

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only a couple, we might think of the Alex Garland film *Ex Machina* featuring a conscious female robot Ava who seduces Caleb, her interrogator; and Spike Jonze's movie *Her*, about Theo falling in love with an OS. Here a particularly subtle aspect of Turing's test is relevant. It challenges the test subject to correctly categorize the machine and human as such, but if the subject makes a mistake, that mistake is immediately converted into a truth, for the machine is then declared human-equivalent. To make a mistake is to change the nature of who counts as human, as Caleb learns to his sorrow in *Ex Machina* and Theo to his delight and eventual devastation.

A couple of years after his famous article, Turing published another much-less-known article on morphogenesis, the area within developmental biology that explores how cells, tissues or organisms develop their characteristic forms. At the time Turing himself was undergoing mandated hormone therapy as a putative "cure" for his homosexuality and was growing breasts and undergoing other physical changes. Although his article is highly technical with mathematical formulae and focused on nonhuman organisms such as the hydra, he remarks that the wave of changes he predicts for ring structures "could arise in a tissue of any anatomical form" that was leaving a homogenous state and beginning to undergo morphological changes. It is tempting to speculate, as some scholars have, that the article had a personal significance for Turing, perhaps as a means to intellectualize (and mathematicise) his own situation. In an odd way, he was modifying the Turing test by another kind of analysis that emphasized not the sorting of entities into traditional categories of male/female or human/machine, but rather the ability of organisms to change form and become something other than what they were. In this sense the article is very much in line with the strain of mimetic theory that emphasizes plasticity and transformation.

Interesting to see both disembodied and embodied sides of mimesis already embryonically and agonistically at play at the very birth of posthuman studies. Plasticity and transformation are indeed central to our understanding of bodily mimesis. But to linger on the traditionally dominant, disembodied side, your book starts by tracing a forgetting of the body that gives rise to posthuman phantasies of a disembodied consciousness that can be "downloaded in a computer." Constitutive of first wave cybernetics in the 1950s, such ideals are rooted in a liberal or neoliberal conception of autonomous subjectivity that reaches into the present and continues to shape the collective imagination. Among other means, it does so via a futuristic genre such as sf literature and, increasingly, film, as you

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note, which have recently attracted me as well to start my genealogy of posthuman mimesis.[6]

To step back a little, as you narrate, with scientific rigor and conceptual precision, the story of how we became posthuman—how information lost its body, how the cyborg emerged from post-war culture, and how the human gave way to the posthuman—you are also careful to place this forgetting in a longer genealogy that goes back to what you call, the "Platonic backhand" and "forehand." That is, an intellectual mirroring game that in-forms the articulation between the phenomenal world (the many) and the ideal world (the One) in double ways that effectively erase materiality but, as your embodied image already implies, cannot fully make abstraction of the body. Let us recall that in the backhand, mimesis is centre stage for Plato, under the mask of Socrates, at the end of the Republic *relies on the trope of the "mirror" to articulate different layers of reality that privilege disembodied cognition over embodied experience; if only because the backhand sets up a metaphysical hierarchy that goes from abstract ideal Forms to material phenomena or phantoms, to artistic copies of phenomena, or phantoms of phantoms. This definition of mimesis as mirroring representation is well-known, traverses the entire history of metaphysics, and even spills over to the antagonistic literary front, as it continues to inform classics of realism like Auerbach's* Mimesis *that once defined the age of printed literature. The forehand, on the other hand, is less known and evolving as we speak. Can you explain how a related but alternative manifestation of mimesis as computer "simulation" plays a mirroring role in what you call the "Platonic forehand"? Where do you see this move at play in recent manifestations of the posthuman that were not present yet when you first wrote the book? And if realistic mimesis still informed the age of print literature, what is the role of simulation, algorithmic memes, and other avatars of mimesis in what you call, in your most recent book, the "postprint era" in which new computational media not only partially share the plastic adaptability of homo mimeticus but also contribute to transforming it?*

When I wrote about the Platonic forehand, I was thinking of simulations that start from an algorithmic seed and then exfoliate into increasingly complex patterns, visually dramatized in Karl Sims' wonderful video *Panspermia,* where the starting algorithms are imaged as literal seeds that sprout into amazingly complex fractal plants and forests. The kind of contemporary simulations that create deep fakes are quite different, for their basic strategy is not to unfold

6 See Nidesh Lawtoo, "*Avatar* Simulation in 3Ts: Techne, Trance, Transformation," *Science Fiction Studies* 125, no. 42.1 (2015): 132–50; and "'This is no simulation!': Hypermimesis from *Being John Malkovich* to *Her*," *Quarterly Review of Film and Video* 37, no. 2 (2020): 116–44.

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complexity from a simple starting algorithm but rather to use recursive dynamics that continually feedback output into input, each time coming closer to duplicating the original image or person. In Generative Antagonistic Networks, for example, the generator creates an image (or voice pattern, posture, etc.), and the discriminator criticizes the output as bit patterns where deviation from the original appears, whereupon the generator uses these results to refine its output, which is fed again into the discriminator, and so on for hundreds or thousands of iterations. It's like being in a painting class where the beginner produces an image that the instructor savagely attacks, then paints another based on that criticism, over and over and over again. Few if any humans could last through thousands of such classes, for no one's ego could stand that kind of relentless criticism without rebelling or breaking down. Algorithms, lacking emotions and egos, have no such limits and can produce images in seconds (or microseconds) instead of hours or days. To convey the process through the metaphor of a mirror, we might think of the facing mirrors at Versailles, reflecting the image back and forth, over and over to infinity—except that here with each reflection, the image gets closer to the original.

The dynamics of deep fakes exactly inverts the Platonic story about an ideal reality that exists as an abstraction, which is then imitated through a copy that is inferior precisely because it is material rather than abstract. Now the material entity is taken as the original, which is copied by an algorithmic abstraction, over and over, until the copy is virtually undetectable as such and can convincingly pose as the original—or even supplant it. At issue is what we might call, with a nod to Walter Benjamin, the human aura in the age of technological reproducibility. Whereas Benjamin posited that it was the aura of the artwork that was being subverted—that is, the artwork as an original that acquired an aura because it was uniquely located in time and space and authorship—now it is the sovereignty of the human subject that is at issue, the belief that each human is unique and uniquely valuable. In his famous essay, Benjamin hinted that the subversion of an artwork's aura might have liberatory as well as pernicious aspects. One of the urgent questions of our time is whether the subversion of the human aura might similarly have salutary aspects, as well as alarming ones. Here again materiality is crucial, because the algorithmic deep fake exists only as an image, not as an embodied person able to move freely in an unpredictable three-dimensional environment.

Benjamin was indeed already concerned with the dangerous political implications of mimetic phantoms that cast a shadow on the present as well and to which we shall return. For the moment, let us make clear that you are critical of posthuman phantasies of disembodiment, but you are far from dismissive

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of technological innovations. On the contrary, you take science and technology very seriously and urge new generations of critics and theorists to interrogate the porous boundaries that mediate the relation between humans and nonhumans—for better and worse. Within the Homo Mimeticus *project we tend to think of mimesis as a* pharmakon, *both poison and cure. On one side, mimesis is generative of cultural pathologies that can go from the hypnotic capitulation to conspiracy theories to* (*new*) *fascist insurrections that are planned online before generating outbreaks offline on. And yet, on the other side, it also allows for the emergence of what I call "patho-*logies" *that lead a subject vulnerable to contagious affect, or* pathos, *to draw reflexively on this embodied experience of vulnerability to mimesis in order to develop a "critical account, or* logos, *on mimetic* pathos"[7]*—a mimetic observer who is part of the mimetic system they study, so to speak.*

There seems to be a feedback loop at play in these patho(-)*logies* (*now both sickness and diagnostic*) *that resonates with your attention to feedback loops in both their productive and debilitating manifestations. What is your take on this all too human tendency to imitate via bodily repetitions that become incorporated over time, for better and ill? And as you rely on the cybernetic concept of "feedback loop" to trace spiralling processes between human and non-human computational systems that can have both positive and damaging effects depending on the nature of the loop, how do you see embodied forms of mimesis, or hypermimesis, circulate in loops that may start in hyperreal simulations online, yet retroact on all too mimetic subjects who are by definition porous to external influences offline*?

Here you have identified a phenomenon that concerns me greatly, the proliferation of misinformation on the internet and the tendency of people to create "echo chambers" that insulate them from anything that would contest their views. It is stunning to me to see people reject scientifically-based research in favour of some whacko theory circulating with no factual basis whatever. Certainly, these resonate physically and not only virtually—in shouting matches at town meetings, protests over mask mandates, etc. It is obvious from people's reactions that whole-body emotions are involved that go far beyond, and far deeper, than intellectual arguments by themselves. Contagion is a good word to describe these phenomena, not only because it is most apparent, and most vehement, with regard to the COVID-19 virus, but also because it is a kind

7 Nidesh Lawtoo, *The Phantom of the Ego: Modernism and the Mimetic Unconscious* (East Lansing: Michigan State University Press, 2013), 6–8.

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of mimetic replication that occurs in chat rooms and far right websites and talk radio. The name of the underlying game here, surely, is money: enrage enough people often enough, infect them with the idea that their freedoms and even their families are threatened, and you can milk a great deal of cash out of them.

Yes, the documentary The Social Dilemma (*2020*) *strongly confirms this point. Former engineers at major companies like Facebook, Google, Twitter et al. express their deep concern that engineers intentionally target the mimetic faculty to turn posthumans* (*or their data*) *into a product to sell to advertising companies for profit. The hypermimetic paradox being that engineers are themselves affected and infected by the technologies they create—and unconsciously so.*

To continue along these unmaking line of inquiry by taking some genealogical distance, on the philosophical front, Friedrich Nietzsche is often acknowledged as a key precursor of posthuman and transhuman studies given his emphasis on the Übermensch *as a bridge toward the future, but Nietzsche also urged genealogists to remain faithful to the body and to the Earth—he liked to go for long walks and used his body as a medium for his thought, be it conscious or, more often, unconscious. Like a long genealogy of thinkers of the unconscious before Sigmund Freud, Nietzsche, writing contra dominant rationalist/idealist tendencies in philosophy that limited their attention to consciousness, plays a key role in my understanding of the "mimetic unconscious." I call this pre/post-Freudian unconscious "mimetic" because it is not based on a repressive hypothesis that has* (*Oedipal/linguistic*) *desires as a* via regia. *Rather, it is at play in everyday life as it has in involuntary forms of mimicry, habits, hypnotic influences, emotional contagion, and mirroring affects* (*or mimetic* pathos) *its main trigger—something now confirmed by the* (*re*)*discovery of mirror neurons, first in monkeys and then in humans.*

In your recent book, Unthought (*2017*), *you also rely on contemporary neurosciences to stress that most of cognition takes place below conscious awareness. In the process, you take some critical distance from psychoanalytical approaches to the unconscious as well as from advocates of the "'new' unconscious." I fully agree with you that it's not a felicitous phrase as its genealogy is rather old. Your aim is to articulate what you call "nonconscious cognition," which is not accessible to consciousness, is pervasive in humans and, you argue, also in animals and technical system generating "assemblages" in which we are constantly entangled with—as I type my question on my keyboard, with my computer, for instance. Would unconscious mimesis, this time perhaps under the mask of mirror neurons or brain plasticity, play a role in nonconscious forms of communication that are*

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not necessarily verbal but embodied, not only inscribed in language but incorporated in bodily actions that are automatic and habitual, not conscious, and in this sense un- *or* non-*conscious in our respective senses?* (*I am aware that you distinguish between the nonconscious and the unconscious but what I group under the mimetic unconscious seems to me to overlap significantly and productively with what you call the cognitive nonconscious*). *And if so, can you give some examples of how nonconscious mimesis could entangle human, technological, and animal processes in ways that are future oriented and thus, remain true to the fragility of embodiment of human and nonhuman life on Earth?*

Certainly, nonconscious cognitive processes take forms that are embodied rather than verbal. In fact, nonconscious processes primarily rely on synaptical and neuronal-chemical patterns coming from the body's internal and external sensory systems rather than verbal communications.

One of the best examples of a cognitive assemblage that is future oriented is the one that I presented at the conference you organized, in which humans, bacteria and computers collaborate to create the CRISPR-Cas9 gene editing technology. As I explained, this system relies on a strategy that bacteria developed to combat invading viruses. The bacteria copy part of the virus's genome into their own genetic structures in the form of palindromic clusters that repeat over and over—hence the acronym "CRISPR," standing for Clustered Regularly InterSpaced Palindromic Repeats. These clusters perform as a cell's memory of the invading virus. When the virus attacks again, the cell copies the clusters into an enzyme, Cas9, which enables it to recognize the virus and cut its genome at the point of the recognized sequence, an action that kills the virus. I argue that this constitutes a mimetic act on the part of the bacteria; as the concept of mimesis traditionally requires, it is an imitation rather than merely a copy. First, the bacteria recontextualize the CRISPR segments by incorporating them into the bacteria's genome, and second, the bacteria create a completely different function for the CRISPR segments, using it to kill the virus rather than replicating it. Accordingly, I call this bacterial strategy *micromimesis* (Hayles, 2021) a term that stresses it is a *cognitive* act for the bacteria, involving the interpretation of information in contexts that connect it to meaning.

When Emmanuelle Charpentier and Jennifer Doudna and their collaborators figured out how to take advantage of this bacterial micromimesis to create the CRISPR-Cas9 gene editing tool, they revolutionized the entire field by greatly decreasing the cost while at the same time increasing the precision, flexibility, and ease of use. Whereas editing a single gene with the older

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technologies cost as much as twenty-five thousand dollars, with CRISPR several genes can be edited at once for a hundred or so dollars. Labs specializing in the CRISPR technique can receive an order for a specific RNA sequence online and mail it out a couple of days later, making it easily accessible to qualified professionals. Since the gene sequencing and editing involve a lot of calculations and mathematics, computers are usually used to create the simulations on which the editing will be based. The entire technique, then, involves humans, nonhuman lifeforms, and computational media, which I call a cognitive assemblage, that is, a collectivity through which information, interpretations, and meanings circulate.

I cannot imagine a more future-oriented technology than gene editing, for it bestows a power unprecedented in human history: the power to direct our own evolution as well as the evolution of every other species on earth. This indeed is a pharmakon, for such power can be used for great good, and in the wrong hands or for the wrong goals, bring about unprecedented catastrophe. It transforms the plasticity that one strain of mimetic thought celebrates as a preexisting biological capacity into a technologically-captured result that can alter genomes virtually instantaneously rather than over eons of evolution. Although we cannot know at this point how the new micromimetic capacity will play out, the one thing we do know with certainty is that it will change the future of humans (and nonhumans) in unforeseen and unpredictable ways.

We are caught in metamorphic processes, for good and ill, for sure. As posthumans are increasingly entangled with nonhuman biological and technological forces it seems imperative to go beyond anthropocentric conceptions of consciousness to include un-or non-conscious processes that distribute agency across a network of human/nonhuman spectrum. It is well known that this view is now foregrounded by new materialist perspectives that provide a correction to linguistic or discursive approaches to the human; perhaps less known is that on the question of the decentring of consciousness in particular both the new materialist and mimetic turn share an important predecessor. Let me quote Nietzsche one last time, who, you will have guessed, serves as a bridge in my genealogy of mimesis. In The Gay Science *(1882), he relied on an evolutionary perspective to argue that both at the level of the ontogenesis and phylogenesis, it is out of an unconscious "need for communication" via gestures and mimicry characteristic of a dependent species striving for survival that consciousness and language first emerged. The unconscious, for Nietzsche, developed first; he also insisted that*

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to this day "the thinking that rises to consciousness is only the smallest part of all this."[8] *Interestingly, he considered that this relational un/non-consciousness does not belong to autonomous individuals but, rather, to what he calls a "net of communication* [Verbindungsnetz]."[9] *That is, a connecting, embodied, mimetic network between human animals which, for him, extend to include nonhuman animals and natural processes as well.*

As this network—or as you'd prefer to say, "assemblage"—is no longer based on small physical communities but on virtual communities in which agency is increasingly distributed across the human/nonhuman binary, a rethinking of what you call "the power of the cognitive nonconscious" and I call the "unconscious power of mimesis" seems urgently in order. This is especially true since posthumans are increasingly driven by algorithmic simulations that generate hypermimetic representations that, despite their realism, as in the deep fakes you discussed, are far removed indeed from reality; and yet, deep fakes but also drones or other war machines have material effects, nonetheless.

So here are my last questions: what are the main unthought (hyper)mimetic dangers—but also life-affirmative possibilities—you see at play in ongoing posthuman process of becoming computational? If increasingly affective simulations generate pity and pleasure, human/nonhuman assemblages also seem to trigger material processes like viral pandemics, catastrophic climate change, and species extinction that generate fear and terror. Could you bring some unthought connections on the mirroring relation between humans and machines on the stage of what you call, drawing on a mimetic scene, "the theatre of consciousness?"[10] *And last but not least, what dangers do they entail for posthumans and what possibilities do they open up for the humanities?*

The book I am finishing is entitled *Technosymbiosis: Futures of the Human*. It takes the position that in our present situation, it is not enough simply to critique. Criticism is valuable and necessary, of course, but in the face of the urgent and multiple anthropogenic environmental crises that we are facing, we are ethically obligated, in my view, to offer constructive suggestions as well. The STEM disciplines have already identified a number of Grand Challenges, including Global Energy, Global Hunger and Thirst, Global Pollution and so forth, as a way to attract resources and funding and also to focus research efforts to solve some of our most pressing problems. None of these problems,

8 Friedrich Nietzsche, *The Gay Science,* trans. Walter Kaufman (New York: Vintage Books, 1974), 299.

9 Nietzsche, *The Gay Science*, 298.

10 Hayles, *How We Became*, 221.

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however, can be solved through science, technology, and engineering alone. They involve issues of justice, ethics, law, history, genealogy, and other aspects that are traditionally the province of the humanities. As humanists, we need to reach out to our scientific and technical colleagues and offer the resources of thought, criticism, insight and analyses that centuries of humanistic inquiry have provided. Much depends, of course, on the spirit in which these resources are offered. The optimal results, in my experience, emerge from collaborations based on mutual respect, genuine curiosity about the other's field, and a willingness to listen and engage constructively. In this respect, I think the mimetic traditions, in all their richness and complexity, would be an excellent place from which to begin.

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