

Is Artificial Intelligence “Artificial?”

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Recently I was asked to participate on a panel organized by undergraduate students on the pros and cons of artificial intelligence. I was asked to speak on the pro side of AI but was not quite prepared for the con side of the argument. One colleague in particular argued vociferously against AI as a capitalistic takeover. AI will eliminate jobs and obliterate human dignity, he lamented, reducing the human community to a nameless mass. The emotional response from the students who agreed with his interpretation was astounding. The heightened fear in the room around an AI “takeover” was palpable. Yet, such a response is reflective of a wider cultural sentiment, namely, AI is threatening to eradicate the human species: we are on the verge of extinction. It is as if we are waking up in the middle of the night and finding an ogre named AI staring us in the face. Paralyzed in our fright we have no other choice but to succumb to the power of this ogre (although we are lured by its presence). Is Mary Shelly’s Frankenstein in our midst, on our desks and in our cars as we constantly engage with talking computers and friendly robots? Is AI a dark power threatening to annihilate us? Alan Turing, the father of the “imitation game” was not looking to build a superintelligent computer but seeking a way to overcome the boundaries of bias. He was a white, male mathematician and a homosexual who struggled with his gender identity in a culture that punished homosexuality as a criminal act. He symbolizes the tension in which artificial intelligence emerged: on one hand the new science of cybernetics, information and systems biology, and on the other hand, the fatality of modernity’s utopia and the need to transcend human boundaries in the midst of war and destruction. Can a computer think without bias? Karl MacDorman, an associate professor of human-computer interaction at Indiana University said that “Turing proposed an imitation game in which a man and a computer

compete in pretending to be a woman.”¹ In his 1950 paper, “Computing Machinery and Intelligence,” Turing begins by describing a scenario where a man and a woman both try to convince the remote, unseen interrogator that they are female, using type-written responses or by speaking through an intermediary. Turing’s first sample question for the Imitation Game reads, “Will X please tell me the length of his or her hair?”² The Turing game is more about trans-gendering and less about super-intelligence. Can the boundaries which define human personhood be erased or transcended?

The media and Hollywood would like us to believe that Artificial intelligence (AI) is aiming to extinguish the human person. Robots will be invented to replace us, take away our jobs, drive our cars, marry our children. We will be slaves of technology and eventually the robots will become smarter than us and eliminate the human race. This type of Shallow AI can be found to a certain extent in radical forms of Transhumanism, a philosophical movement which began in England and has since grown into a cultural and futurist association. Philosopher Nick Bostrom seized upon transhumanism as the technological salvation of modernity’s failure to achieve social change: “In the postwar era, many optimistic futurists who had become suspicious of collectively orchestrated social change found a new home for their hopes in scientific and technological progress.”³ He began the World Transhumanist Association in 1998 with David Pearce as a cultural and philosophical center of human betterment through technology. A corollary group known as Extropy (a philosophy devoted to the transcendence of human limits) was founded by Max More, who immigrated to California from Britain and changed his name from Max O’Connor to Max More. More founded the Extropy Institute to catalyze the transhuman ideal of betterment: “I was going to get better at everything, become smarter, fitter, and healthier. . . a constant reminder to keep moving forward.”⁴ Following the closure of the

Extropy Institute in 2006, *Humanity+* emerged as an outgrowth of the World Transhumanist Association and has since become the principal representative of the transhumanism movement.

We aim to deeply influence a new generation of thinkers who dare to envision humanity's next steps. Our programs combine unique insights into the developments of emerging and speculative technologies that focus on the well-being of our species and the changes that we are and will be facing. Our programs are designed to produce outcomes that can be helpful to individuals and institutions.⁵

Since its inception, the World Transhumanist Association, along with the pioneering work of Extropy Institute, has contributed to advancing the public knowledge of how science and technology can and will affect our human future. Hence “transhumanism” now refers to those technologies which can improve mental and physical aspects of the human condition such as suffering, disease, aging and death, “the belief that humans must wrest their biological destiny from evolution's blind process of random variation. . . favoring the use of science and technology to overcome biological limitations.”⁶ But transhumanism does nothing more than advance the problems of the Enlightenment. It is a male-dominated, narrow-minded, binary way of thinking about personhood that ultimately can widen the economic, political and social gaps in which we are already immersed. Transhumanism, therefore, is the legacy of the liberal subject whose Kantian motto “*sapere aude*,” dare to know, hangs like a banner over the dream of postbiological life.⁷

If we return to Turing's dilemma, however, betterment was not in the forefront of his mathematical mind; rather deep relationality that could override stereotypes and labels seem to

be his motive to test whether or not a machine could think like a human. This “testing” of nature is more true to the way nature works as a whole. For one, there really is no such *thing* as “nature.” Rather the word “nature” is an umbrella term for everything that exists in the physical world but it tells us nothing about what actually exists or how things exist. However, I can experience nature as a phenomenon, as something whole and organic, such as the nature of a tree or a cat. Since I cannot experience a carbon atom or an action potential I must resign to the fact that nature is an elusive wholeness, which I can experience on various levels.

In his essay on “The Question Concerning Technology” Martin Heidegger described nature as a “standing reserve,” that is, the pluripotentiality of being itself. The prefix “techne” is the act [or art] of “bringing forth” from “nature.”⁸ Heidegger suggested that technology is a “revealing that rules. . . a *challenging* which puts to nature the unreasonable demand that it supplies energy which can be extracted and stored as such.”⁹ This kind of unconcealment orders everything to stand by, to be ready at hand, to be rendered as a “standing-reserve.” Nature does not exist as a “thing” but everything that exists is a standing-reserve to be set-upon. Through technology, for example, the Rhine river can be seen in one way—as a source for a hydroelectric plant. However, the Rhine is also a beautiful river, a magnificent feature of the landscape that can be captured in poetry. In either case, it ceases to be simply a river. Techne is the intrinsic ability of “nature” to become “something” through principles of “toolmaking” or connections that enhance informational flow. Techne undergirds nature’s “plasticity” and speaks to the fact that nature is more flow than fixed and more dynamic than mechanistic.

Three aspects of nature lead me to suggest that what we call “artificial intelligence” is actually rooted in “nature,” expressing the evolution of nature on a new level of mind: 1) information is part of “nature” on levels of physics, chemistry and biology; 2) quantum physics

suggests that mind is fundamental to matter, and 3) nature is *techne* that is, porous, permeable and pluripotential. Let's begin with the first point. Scientists today are realizing that nature is as much defined by computations and algorithms as it is by physics, chemistry and biology. The word information derives from the Latin *informare* (*in* + *formare*), which means "to give form, shape, or character to" something. Etymologically, it is understood to be the formative principle of something, or to imbue that something with a specific character or quality. Information can be generally defined as a code that undergirds "a correspondence between two independent worlds." While computer technology processes information as quantified "bits," the biological world is replete with examples of information. The neurons in the brain, for example, are natural processors that work concurrently and without any centralized, global control. The immune system also operates as a highly evolved complex adaptive system that functions by means of highly distributed computations without any central control structure. Cell signaling works on elaborate pathways of information, as does the genetic code, which establishes a correspondence between DNA (the symbolic genes which store information) and proteins, the basic stuff of earth life. We can also think of animal communication mechanisms, such as the ant pheromone trails, and bird signals as information systems. Some scientists postulate that the physical universe itself is based on the continuous process of information.¹⁰ Information, therefore, is not a specifically human phenomenon but a physical phenomenon of nature. Christopher Langton suggests that nature is computational whereby large numbers of simple processors are locally connected.¹¹ Hence "coded" information is embedded in physical reality and is integral to many natural processes.

The term "artificial intelligence" evokes a sense of something constructed and inert, made by human power and ingenuity, as if human beings invented something called

“information” and built devices that could store information. Yet the sciences today are indicating that nature has been running on systems of information since day one of the Big Bang; nature has always had a certain level of “intelligence,” some level of mind in matter. Harold Bloom claims that “networked intelligence forecast by computer scientists and physicists as a product of emerging technology has been around a very long time.”¹² We humans are at the service of nature; nature is not at the service of humans. While such ideas can rub against the scientific materialist like fingernails on a chalkboard, nature is proving to be more fragile and strange than previously conceived. Nature’s amazing capacity to harness information and evolve toward more complex levels of consciousness (accompanied by more complex biological structures) suggests that technology and nature have always been two sides of the same coin. Lynn Margulis, a renowned microbiologist who died in 2011, argued that the blurring of technology and biology isn’t really all that new. She observed that the shells of clams and snails are a kind of technology dressed in biological clothing. Chip Walter asks: “Is there really that much difference between the vast skyscrapers we build or the malls in which we shop, even the cars we drive around, and the hull of a seed? Seeds and clam shells, which are not alive, hold in them a little bit of water and carbon and DNA, ready to replicate when the time is right, yet we don’t distinguish them from the life they hold. Why should it be any different with office buildings, hospitals and space shuttles? Put another way, *we* may make a distinction between living things and the tools those things happen to create, but nature does not.”¹³ Nature does not distinguish between the clamshell and the clam, or the first flint knife and the human that made it. Rather nature is a social construct of multiple meanings so that neither the artifice (the knife) nor the organism (the human) alone is adequate by itself as a cultural root symbol. John Johnston suggests that artificial life is necessarily positioned in the space it opens between molecular

biology—as the most contemporary form of the science of life—and the history of technical objects or *techne*.¹⁴ We humans did not so much invent AI as we discovered that information drives nature and can be extended to exobiological machines. Nature is intelligent and not artificial and it is precisely the intelligence of nature that drives evolution toward increasing complexity and consciousness.

But if information and mind are fundamental to nature, to what end? Aristotle said that living organisms and their creations must be judged by their degree of resilience. He thought that biological life is oriented toward *eudaimonia*, which can be defined as “flourishing life.” Structures, once stably formed, do not necessarily stay that way. Robust resilience, which in large measure is a function of connectivity and interdependence, plays a significant role in the dynamic integrity and flourishing of communities and associations. If nature is oriented toward flourishing, it is also oriented toward wholeness. Nature is an “unbearable wholeness of beings” as Steven Talbott writes.¹⁵ Organisms show a meaningful coordination of activities whereby a functioning and self-sustaining unity engages in flexible responses to the myriad stimuli of the environment. Nature is a choreographed ballet, a symphony, whereby an organism is dynamically engaged in its own self-organization, pursuing its own ends amid an ever-shifting context of relationships. Nature is oriented toward the wholeness of life because living entities work better together than apart, and it is precisely the communal nature of life that makes wholeness foundational for flourishing life.

Which brings me back to a new type of person emerging with AI. In his book *The Allure of Machinic Life* John Johnston argues that in the early era of cybernetics and information theory following the Second World War, two distinctively new types of machine appeared. The first, the computer, was initially associated with war and death—breaking secret codes and calculating

artillery trajectories and the forces required to trigger atomic bombs. But the second type, a new kind of liminal machine, was associated with life, inasmuch as it exhibited many of the behaviors that characterize living entities—homeostasis, self-directed action, adaptability, and reproduction. Neither fully alive nor at all inanimate, these liminal machines (thinking machines) exhibited what he calls “machinic life,” mirroring in purposeful action the behavior associated with organic life while also suggesting an altogether different form of “life,” an “artificial” alternative, or parallel, not fully answerable to the ontological priority and sovereign prerogatives of the organic, biological realm. These forms of machinic life are characterized not by any exact imitation of natural life but by complexity of behavior.

Johnston questions if the new biological-electronic hybridization or machinic life is an extension of “nature” life. He states, “our human capacity as toolmakers (*homo faber*) has also made us the vehicle and means of realization for new forms of machinic life.”¹⁶ He continues by saying that artificial life is actually producing a new kind of entity or being which is at once technical object and simulated collective subject. He writes:

Constituted of elements or agents that operate collectively as an emergent, self-organizing system, this new entity is not simply a prime instance of the theory of emergence, as its strictly scientific context suggests. It is also a form of artificial life that raises the possibility that terms like subject and object, *physis* and *techne*, the natural and the artificial, are now obsolete. What counts instead is the mechanism of emergence itself, whatever the provenance of its constitutive agents.¹⁷

A good deal of the literature on AI and religion, Johnston states, treats AI as representational and mimetic, thus posing a significant threat to the uniqueness of the human person (for ex. the robot as image of God). However, bioengineers and computer scientists are realizing that nature itself is computational so that even cellular life may operate according to internal rules of computational assemblages. The neurons in the brain, for example, are natural processors that work concurrently and without any centralized, global control. The immune system similarly operates as a highly evolved complex adaptive system that functions by means of highly distributed computations without any central control structure.¹⁸

The two narratives that Johnston highlights reflects the two trajectories of AI that I am exploring here: Shallow AI or radical Transhumanism and Deep AI or Posthumanism. Each posits a different philosophical perspective of the human person. While they are not exactly conflicting positions, since aspects of transhumanism are also found in posthumanism, they differ philosophically. Shallow Transhumanism is “shallow” because it fails to recognize the integral relationship between mind and matter, which evolve together as conscious-complex whole. Transhumanism induces an “artificial” into intelligence by aiming to separate mind from body and transplanting mind into an artificial medium. Such an attempt at artificially separating mind and matter not only enhances fragmentation and disorder (which is itself a form of war and destruction) but this trajectory contradicts the evolutionary trend of convergence, whereby mind and matter complexify together. If mind and matter evolve as an integral unity, and mind is extended electronically through AI, then the human continues to evolve as “minded matter” through electronic extension. In this respect, Johnston suggests, the term “human” may come “to be understood less as the defining property of a species or individual and more as a value distributed throughout human-constructed environments, technologies, institutions and social

collectivities.”¹⁹ It is this type of electronically extended human evolution that is missing from the social critiques of technology and from a shallow type of transhumanism. The human person must be considered as a creative process—a whole--in evolution. The values we cherish must be reconsidered and realigned with the fact that we humans are in evolution; we are on the cusp of a new reality.

Critical Feminism

To contextualize AI within evolution and second axial period consciousness can help relieve the stress of reducing AI to the binary categories of transhumanism (such as life/death, intelligence/superintelligence) with the impending fear of reducing human personhood to disposable parts that can be replaced, upload or deleted. AI properly conceived belongs to the emergence of complexifying life and consciousness. Deep AI or Posthumanism regards the person as a complex entity of embodied mind embedded in a matrix of cultural information. N. Katherine Hayles is a professor at Duke University and the author of *How We Became Posthuman*, a highly sophisticated treatment of technology, embodiment and personhood. She writes:

Historically the idea of the liberal humanist subject, which was accompanied by notions of free will, autonomy, rationality, and consciousness as the seedbed of identity was deeply bound up with causal explanations in science. It was a science that was equipped to deal with a world in which there were weak or negligible interactions between different bodies and particles. These notions translated into the idea of an autonomous self, possessed of rationality and free will.²⁰

To put this another way, the white male scientist fit nicely within the modern world of empiricism and linear thinking. However, women resisted the constraints of gender identity and began to think deeply about boundaries and ontologies in a way that correlated with cybernetics and complex dynamical systems.²¹ Critical feminism emerged in the postmodern milieu in response to the oppression of women and the failure of the modern project. In the 20th century, a new turn to the subject emerged through a deconstruction of ontologies and a new consideration of boundaries, not as fixed boundaries but as negotiated relationships.

We are beginning to realize that there is no autonomous liberal subject to defend or preserve. A person is a conscious subject in relation to everything that affects the subject and to which the subject contributes; that is, one in whom the create matrix of relational life is expressed in a particular way and contributes to the unfolding of world in a particular way. Personhood is neither a given nor defined process but a constant engagement of self and world. Because human personhood is ongoing in relation to the environment, personhood is always a response to the world. In post-human and new materialist thinking, matter is regarded as always already entangled with discourse in the enactment of phenomena. The complex interaction among multiple forces spawns and reconfigures in the new materialist and posthuman thinking. This reconfiguration occurs via conceptualizations of assemblages where the intra-activity and entangling agencies in and through material-discursive apparatuses point to comprehensive open-ended processes that undergird human identity and action. The posthuman signals a new type of relational person emerging in and through electronic embeddedness.

The term “posthuman” describes a material-informational entity whose boundaries undergo continuous construction and reconstruction. The posthuman signifies a dynamic

partnership between humans and intelligent machines, replacing the liberal humanist subject's manifest destiny to dominate and control nature. Hayles writes:

The posthuman is likely to be seen as antihuman because it envisions the conscious mind as a small subsystem running its program of self-construction and self-assurance while remaining ignorant of the actual dynamics of complex systems. But the posthuman does not really mean the end of humanity. It signals instead the end of a certain conception of the human, a conception that may have applied at best to that fraction of humanity who had the wealth, power and leisure to conceptualize themselves as autonomous beings exercising their will through individual agency and choice.²²

In the posthuman the distributed cognition of the emergent human subject correlates with the distributed cognitive system as a whole in which "thinking" is done by both human and nonhuman actors. Hence the posthuman ability to conceptualize oneself as autonomous being exercising one's will through individual agency and choice gives way to distributed personhood where conscious agency is never fully in control.

The emergence of the posthuman follows on the heels of a reconception of agency and person in an electronic environment. Cybernetics shifted towards "reflexivity" in the 1960s, according to Hayles, who attributes the origin of "second-order cybernetics" to Austrian physicist Heinz von Foerster's idea that "a brain is required to write a theory of a brain; and to Gregory Bateson, who organized a conference in 1968 centered on the notion that the observer cannot be left out of the theory. Second-order cybernetics focused on what information *does* not what information *is*.

Hayles frames the discourse on posthumanism in terms of cognitive assemblages. Continuous interaction with electronic devices do not delete the human person as agent; however agency is now reconfigured as distributed, interactive agential realism. Hayles ventures into a discussion on how information technologies fundamentally alter the relation of signified to signifier. She maintains that within informatics "a signifier on one level becomes a signified on the next-higher level."²³ She characterizes the bodily world as a world in which one can contrast presence and absence, and the virtual world of information technologies as a world in which one contrasts pattern and randomness. "Information, like humanity, cannot exist apart from the embodiment that brings it into being as a material entity in the world; and embodiment is always instantiated, local, and specific."²⁴ She explains the posthuman as an emergent "reflexivity," that is, when something becomes part of the system it generated.

Hayles masterfully argues for the significance of embodiment (in contrast to the shallow binary dualism of transhumanism) for the formation of thought and knowledge. The body that "exists in space and time ... defines the parameters within which the cogitating mind can arrive at 'certainties.'"²⁵ She reminds the reader that the body writes discourse as much as discourse writes the body. Briefly stated, embodied experience generates the deep and pervasive networks of metaphors and analogies by which we elaborate our understanding of the world. Hayles goes on to add that "when people begin using their bodies in significantly different ways, either because of technological innovations or other cultural shifts, experiences of embodiment bubble up into language, affecting the metaphoric networks at play within culture."²⁶ In this respect, *electronic literature* can be understood as part of an ongoing attempt to direct posthumanism toward embodiment. Electronic language provides a type of embodiment, a

distributed embodiment (my term) that rattles the liberal autonomous subject, drawing away from the idea of the disembodied person.

Johnston identifies “becoming machinic” as the process of cyborgization, increasing levels of hybridity between human and non-human life forms. AI is giving rise to a new type of person who is *both* technical object and simulated subject, a symbiotic hybrid of biology and machine; not a loss of humanity but changes in our understanding of nature itself, including the scope of computation in relation to dynamical systems and evolutionary processes. Cyborgization means that human personhood must shift to a broader conceptualization of the person as a “life system.” To consider the human person as a life-system is to connote personhood as open, emergent and capable of hybridization, aspects of personhood that are subsumed or lost in the more substantial notion of personhood (for example, the Boethian definition of person as “an incommunicable substance of rational nature.”) Personhood is not only an emergent process but is itself a process of emergence. Beatrice Bruteau writes that a person is “. . . the creative activity of life as it projects itself to the next instant.”²⁷ If personhood is defined in and through relationships, the posthuman is the epitome of relationality. Johnston suggests that the term “human” may come “to be understood less as the defining property of a species or individual and more as a value distributed throughout human-constructed environments, technologies, institutions and social collectivities.”²⁸

The fragility of boundaries and the recursive loop of identity construction means that no category can ontologically define personhood; rather self is an ongoing dynamical process. Biology belongs to a larger emergent property of living systems which now includes technology. Hayles writes:

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Hayles refuses received interpretations of the liberal human subject in favor of drawing the truly radical lessons to be learned from the regime of computation. What is significant in posthuman compared to shallow aspects of transhumanism is that embodiment is important to the human-electronic cyborg while not neglecting the effect on subjectivities of this disembodied notion of information.

Hayles sees that the traditional relationship of human subjectivity *to* technology is undergoing a historic, perhaps cosmological, revision. She rejects the perspective of technological determinism (which evokes a humanist perspective) and celebrates technology as a new singularity. Ray Kurzweil also predicts a singularity by 2045, a point where human intelligence and machines will be welded in a seamless flow of mind, a transition point where machines will become smarter than people. For Kurzweil, the singularity is an opportunity for humankind to improve. “We’re going to get more neocortex, we’re going to be funnier, we’re going to be better at music. We’re going to be sexier,” Kurzweil said during an interview. “We’re really going to exemplify all the things that we value in humans to a greater degree.”³⁰ Here is a fundamental difference, however, between the male transhumanist and the feminist posthuman:

transhumanism emphasizes betterment anticipating a “super-life.” Posthumanism emphasizes deep relationality and a more connected life. While betterment is not excluded in posthumanism, neither is it the object of hyperconnectivity. For Hayles, the singularity is a seamless flow of deep relationality.

Feminists such as Hayles and Donna Haraway suggest that the human species is a “co-evolving” partner in the cyborgizing techno-relationship, which has enormous social and political potential for change. Commenting on Hayles’ embodied extended posthuman, Roker writes:

Hayles grasped deeply and immediately the political significance of code studies, specifically, that the arrival of posthuman subjectivity is accompanied by the complex arrival of all other things beyond the “post”: postgender, postsexuality, postidentity, and postconsciousness. A champion of neither violent apocalypse nor quiet capitulation, Hayles suggests the possibility of a new humanism developed directly at the borderline of simulation and materiality. In her perspective, the scientific language of complexity theory—dissipative structures, fluidities, porous boundaries, and bifurcations—is projected beyond the boundaries of scientific debate to become the constitutive principles of a form of humanism enabled by the regime of computation. Here the grammar of the body is shifted from exclusive concern with questions of sexual normativity and gendered identity to a creative interrogation of what happens to questions of consciousness, sexuality, power, and culture in a computational culture in which the code moves aggressively from the visible to the invisible, from a history of prosthetics external to the body to a language of simulation fully internal to identity formation.³¹

Complexity theory is bound up with the social world and much of the biological world as well. The replacement of the liberal human subject by the recursive loops of complexity theory in which code replaces logos, has serious implications for understanding the body in society. The politics of the body are now interpolated by the language of software and the traditional relationship of human subjectivity to technology undergoes a historic, perhaps cosmological, revision. As we move from the liberal subject to the posthuman, individual constraints are yielding to a new set of constraints across local boundaries of personal identity.

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Living from the Splice

Hayles' cultural achievement lies in suggesting a critical perspective on technology, in which the human species limits itself to that of a "co-evolving" partner in the relationship and against the technical will to disembodiment and immateriality. Her writings point to the body's deep participation in the question of technology. Since the person as embodied mind is now extended electronically, personal identity finds a new locus. When the human is seen as part of a

distributed system, the full expression of human capability is seen to *depend on the splice* rather than being imperiled by it. This is an extremely important point and relates to an insight by von Neumann, namely, complex dynamical systems demand a new type of logic, essentially different from the formal, combinatorial logic of mathematics.³²

The posthuman is no longer the liberal subject of modernity living from a will to power but the person who now *lives from the splice*, that is, the interbiological space between biology and machine/device. This new subjectivity is an embodied embedded personhood which evokes a new logic. The logic of human personhood can no longer be a simple binary logic but a complexified logic of relationships that provides a creative space of engagement. One lives not in a binary mode (*me and you*) but in the creative space of interrelatedness (*me and you.*) The narrative of becoming is consonant with an ontology of relationship whereby the movement of being itself is a decentering and reforming one that leads to novel form. What is posited here is the appearance of a becoming that is symbiotic, a hybridity of entities, a *tertium quid* that gives way to complexified being. The French philosopher Emmanuel Levinas employs triadic logic in his book *Otherwise Than Being* where he writes:

It (triadic logic) is a relationship with a surplus always exterior to the totality, as though the objective totality did not fill out the true measure of being, as though another concept, the concept of infinity, were needed to express this transcendence with regard to the totality, non-encompassable within a totality and as primordial as totality.³³

In triadic logic a limit is where Infinity overflows itself towards another and the limit must be included as part of the logic. Of course, taken at face value this seems absurd. But

perhaps it seems absurd because we think of logic as binary logic and therefore as a synchronized, totalized structure of relationality that cannot tolerate the ambiguity of the excluded middle.

Triadic Logic

Triadic logic is a progressive evolutionary process of learning—it is about *the narrative* of thinking. The limit in triadic logic is like a transcendental moment of *aufheben* in which a new particular pattern or thought is recognized as potentially iconic for a new general pattern or idea. The word *aufheben* in Hegelian philosophy means “the process by which the conflict between two opposed or contrasting things or ideas is resolved by the emergence of a new idea, which both preserves and transcends them.”³⁴ In triadic logic, the intermediate complex mediates the relationship between the Same and the Other. The intermediate complex makes possible a process of return through which we can synchronize our interiorities and enter into mutuality. Through the intermediate complex, I and other become proximate. But this proximity is different from the relationship of contiguity that defines neighboring elements or “selves” in the classical worldview (ex. the ‘tool model’); it is different from the (non) relationship that defines spatiality through the null point (binary logic.) This intermediate complex is not a synthesis but a mediating principle between the other two relational entities. Triadic logic posits that instead of paired opposites, we have the interplay of three energies that in turn creates a whole new realm of possibility.

The logic of posthuman relationships follows a different trajectory from the modern liberal subject because the parameters of the cognitive system it inhabits expands and is multidimensional. Personhood is an open system of distributed subjectivity so that categories of

gender, race and religion are less defining and more negotiated ones. The human person is no longer the source from which emanates the mastery necessary to dominate and control the environment. The distributed cognition of the human person correlates with the distributed cognitive system as a whole, in which “thinking” is done by both human and nonhuman actors. “Only if one thinks of the subject as an autonomous self, independent of the environment, is one likely to experience panic,” Hayles claims.³⁵ Our challenge today is to recognize the threshold of transition from subject to embedded personhood and to realize that all systems must be rewired to accommodate the new emerging person as a complexified whole. Michael Burdett and Victoria Lorimar write:

Human beings are malleable but it is precisely this malleability that allows us to recognize we are not our own and not the sole shapers of our existences. Whereas certain transhumanists might lament the fact that we aren’t solely in charge of our own destiny, critical posthumanists celebrate it and indeed argue we will never flourish if we don’t first recognize that our relations with others are endemic to who we are. Hence, critical posthumanists argue for a deep and abiding relationality.³⁶

Relationality, not betterment, is the operative word of posthuman life. Humans are part of a deep relational wholeness that is characteristic of nature itself because humans belong to nature; nature does not belong to humans. Hence humans must be in relationship to the surrounding world including culture, other creatures, plant life, animal life, solar life and elemental life if they are to survive, or better yet, flourish. Complex dynamical thinking impels us to think of humans as integrated into wider systems of relationality. Burdett and Lorimar

state: “What might make them distinctive is the extent to which other species and entities are implicated in this relationality and the way our formation and identities depend on them. It is not just other human beings that we ‘become-with’, to use the phrase of Haraway, but other creatures and artefacts, too.”³⁷ Posthuman life as hyperconnected life undergirds deep relationality so that cybernetic loops of recursive information extend down to the simplest levels of life on earth.

The Posthuman Religious Imaginary

Charles Taylor describes this redirection of the human as the emergence of new “social imaginaries,” new operative matrices of social and cultural engagement marked by a conversion from the hierarchical norms of pre-modern social imaginaries to the egalitarian, horizontal, direct access social imaginary of (post)modernity.³⁸ We are living through a significant epochal shift in consciousness, from First Axial consciousness which marked the rise of the individual and world religions to Second Axial Consciousness which is characterized by community, global awareness, ecology and connectivity. The axial period defined by Karl Jaspers as that period between 800 BCE and 200 BCE is when the human person as autonomous free person emerged, marking the culmination of a long process of human complexification and differentiation, an increasing expansion of “worlds,” from “the immediate and mythical world of the pre-axial person to the conventional and increasingly rationalized world of the great civilizations, to the post-conventional world of the axial person marked by individuation.”³⁹ With the awakening of reflective subjectivity, the individual could take a stand against the collectivity, become a distinct moral and spiritual self, and embark on an individual spiritual journey.⁴⁰

A new axis of consciousness dawned in the 20th century with the rise of Big Bang cosmology, evolution and quantum physics. Ewert Cousins called this new axis of consciousness the “Second Axial period.”⁴¹ Like the first period, this new axial age has been developing for

several centuries, beginning with the rise of modern science. And like the first, it is effecting a radical transformation of consciousness. While the first axial period produced the self-reflective individual, the second axial period is giving rise to the hyperpersonal or hyperconnected person. Technology has fundamentally altered our view of the world and ourselves in the world. The tribe is no longer the local community but the global community which can now be accessed immediately via television, internet, satellite communication and travel. This newly defined social and cultural landscape signifies the transition from first to second axial periods. While the first axial person was marked by a sense of autonomy and freedom, the second axial person is marked by a sense of deep relationality.

The human person today knows oneself as part of an integrated map of connections that include sociality, politics, environment, economics and sexuality in connection with others. Boomers are largely First Axial persons; Gen Y and Gen Z are Second Axial Persons; the Boomers and Gen Zers still look the same but their brains have different maps. The First Axial brain is wired for left brain dominance and narrow, vertical thinking. The Second Axial person is wired for broad horizontal thinking (thanks to the lines of communication and information sharing). The Second Axial person represents the next stage of human evolution. However, since first Axial consciousness is the only one we have ever known we tend to think we have always been this way. It is so hard for us to get our heads around the fact that as the universe expands, consciousness is complexifying.

AI properly conceived belongs to the emergence of complexifying matter and consciousness and marks the advent of the Second Axial person. John Johnston indicates that artificial intelligence reveals a new physical and conceptual space between realms, usually assumed to be separate but now which appear to reciprocally codetermine each other. He writes:

“By abstracting and reinscribing the logic of life in a medium other than the organic medium of carbon-chain chemistry, the new “sciences of the artificial” have been able to produce. . .a new kind of entity.”⁴² This new entity signals the end of the autonomous liberal subject and the rise of the posthuman, an “embodied embedded subjectivity” emerging through cybernetic loops of information giving rise to complexified systems of consciousness. The rejection of the white Eurocentric male human ideal is not only a political turn of power; rather it is an evolution of consciousness, from the axial individual to the cybernetically embedded posthuman. A new axial person is emerging in the 21st century and the whole structural landscape of human interactions must also change.

Notes

¹ Erik Sofge, “Lie Like a Lady: The Profoundly Weird Gender Specific Roots of the Turing Test,” *Popular Science* (June 13 2014) <https://www.popsci.com/blog-network/zero-moment/lie-lady-profoundly-weird-gender-specific-roots-turing-test>

² A. M. Turing, “Computing Machinery and Intelligence,” *Mind* LIX (October 1950): 433.

³ Nick Bostrom, “A History of Transhumanist Thought” *Journal of Evolution and Technology* 14.1 (April 2005): 7.

⁴ E. Regis, “Meet the Extropians,” *Wired* 2 (1994): 10.

⁵ Transhumanist Technology, “About Humanity+” <https://humanityplus.org/about/>

⁶ Bostrom, “History of Transhumanist Thought,” 13-4; Archimedes Carag Articulo, “Towards an Ethics of Technology: Re-Exploring Teilhard de Chardin’s Theory of Technology and Evolution,” <http://www.scribd.com/doc/16038038/Paper2-Technology>.

⁷ Bostrom, “History of Transhumanist Thought,” 4

⁸ Heidegger, Martin, “The Question Concerning Technology.” In *Basic Writings*. Edited by David Krell (New York: HarperCollins, 1993), 383.

⁹ Ibid.

¹⁰ Whitworth, Brian. 2010, “The Physical Universe as Information Processing.” https://www.researchgate.net/publication/220483801_The_emergence_of_the_physical_world_from_information_processing.

¹¹ Christopher Langton (ed.) *Artificial Life: The Proceedings of an Interdisciplinary Workshop on the Synthesis and Simulation of Living Systems*. (Boston: Addison-Wesley, 1989), 2.

¹² Harold Bloom, *The Global Brain: The Evolution of Mass Mind From the Big Bang to the 21st Century* (New York: John Wiley & Sons, 2000), 54-5.

¹³ Chip Walter, “Cyber Sapiens (Oct. 26, 2006). <http://www.kurzweilai.net/cyber-sapiens>.

¹⁴ John Johnston, *The Allure of Machinic Life* (Cambridge: MIT Press, 2003), 3.

¹⁵ Steve Talbott, “The Unbearable Wholeness of Beings,” *The New Atlantis: A Journal of Technology and Society* (2010). <https://www.thenewatlantis.com/publications/the-unbearable-wholeness-of-beings>.

¹⁶ John Johnston, *The Allure of Machinic Life: Cybernetics, Artificial Life, and the New AI* (Cambridge: MIT Press, 2008), 12.

¹⁷ Johnston, *Machinic Life*, 13.

¹⁸ Johnston, *Machinic Life*, 6.

¹⁹ Johnston, *Machinic Life*, 7

²⁰ Arthur Kroker, *Body Drift: Butler, Hayles, Haraway* (Minneapolis: University of Minnesota Press, 2012), 11; N. Katherine Hayles, “Unfinished Work: From Cyborg to Cognisphere,” *Theory, Culture and Society* 23.7-8 (2006): 159-166 at p. 160.

²¹ Both Katherine Hayles and Donna Haraway were trained in science. Hayles received her B.S. in Chemistry from the Rochester Institute of Technology in 1966, and her M.S. in Chemistry from the [California Institute of Technology](#) in 1969. She worked as a research chemist in 1966 at [Xerox Corporation](#) and as a chemical research consultant [Beckman](#)

[Instrument Company](#) from 1968-1970. Hayles then switched fields and received her [M.A.](#) in [English Literature](#) from [Michigan State University](#) in 1970, and her [Ph.D.](#) in English Literature from the [University of Rochester](#) in 1977. Donna Haraway majored in zoology, with minors in philosophy and english at the [Colorado College](#), on the full-tuition [Boettcher Scholarship](#).^[16] After college, Haraway moved to [Paris](#) and studied evolutionary philosophy and theology at the Fondation Teilhard de Chardin on a [Fulbright scholarship](#).^[17] She completed her Ph.D. in [biology](#) at [Yale](#) in 1970 writing a dissertation about the use of metaphor in shaping experiments in experimental biology titled *The Search for Organizing Relations: An Organismic Paradigm in Twentieth-Century Developmental Biology*,^[18] later edited into a book and published under the title *Crystals, Fabrics, and Fields: Metaphors of Organicism in Twentieth-Century Developmental Biology*.

²² N. Katherine Hayles, *How I Became Posthuman: Virtual Bodies in Cybernetics, Literature, and Informatics* (Chicago: University of Chicago Press, 1999), 286.

²³ Hayles, *How I Became Posthuman*, 31.

²⁴ Hayles, *How I Became Posthuman*, 48.

²⁵ Hayles, *How I Became Posthuman*, 203.

²⁶ Hayles, *How I Became Posthuman*,” 206-207.

²⁷ Beatrice Bruteau, “The Living One” in *The Grand Option: Personal Transformation and a New Creation* (Notre Dame, IN: University of Notre Dame Press, 2001), 142; Ilia Delio, “Evolution Toward Personhood,” in *Personal Transformation and a New Creation*, ed. Ilia Delio, (Maryknoll, NY: Orbis, 2016), 141.

²⁸ Johnston, *Allure of Machinic Life*, 7.

²⁹ Hayles, *How I Became Posthuman*, 286.

³⁰ Kurzweil predicts that the Singularity Will Happen by 2045.
<https://futurism.com/kurzweil-claims-that-the-singularity-will-happen-by-2045>

³¹ Kroker, *Body Drift*, 10.

³² Johnston, *Allure of Machinic Life*, 37.

³³ Emmanuel Levinas, *Otherwise Than Being*. Trans. by Alphonso Lingis (Boston: Kluwer Academic, 1991), 23.

³⁴ Timothy Rogers, “On the Embodiment of Space and Time: Triadic logic, quantum indeterminacy and the metaphysics of relativity.” Trinity College, University of Toronto, Sept. 29, 2016, p. 22.

https://www.academia.edu/28820566/On_the_Embodiment_of_Space_and_Time_Triadic_logic_quantum_indeterminacy_and_the_metaphysics_of_relativity.

³⁵ Hayles, *How I Became Posthuman*, 290.

³⁶ Michael Burdett and Victoria Lordimer, “Creatures Bound for Glory: Biotechnological Enhancement and Visions of Human Flourishing,” *Studies in Christian Ethics* 32.3 (2019): 241 – 53 at p. 249.

³⁷ Burdett and Lordimer, “Creatures Bound for Glory,” 249.

³⁸ Charles Taylor, *A Secular Age* (New York: Belknap Press, 2018 reprint), 164 - 5, 209.

³⁹ Thompson, *Christ and Consciousness*, 39.

⁴⁰ Cousins, “Teilhard’s Concept of Religion,” 11.

⁴¹ Cousins, *Christ of the 21st Century*, 7- 8.

⁴² Johnston, *Allure of Machinic Life*, 3.