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AI in This World and the Next

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Abstract

As the symptoms of our self-inflicted planetary emergency become ever more alarming, hope seems to be growing that AI technologies can make our capitalist way of life more sustainable. Some even believe that machine intelligence will avert impending catastrophe more or less by itself. But the evidence of history should caution us against such heady Promethean optimism. Millennia of human experience suggest that only radical systemic change can halt our perilous trajectory. AI interventions and other such modern techno-fixes will simply not be enough.

An exciting new theoretical paradigm in the humanities and social sciences can help us grasp the full urgency of this message from history. Briefly stated, it recasts reality itself as a variable relational effect, one that humans co-produce with non-humans in the course of their everyday life practices. And just as practices have varied widely over time and space, so life has come to be experienced in a "pluriverse" of many different worlds, not in a universe of just one. An alternative pluriversal vision of history then allows us to identify striking correspondences between the sustainability of communities and their particular ways of "worlding".

Most immediately, one can correlate the consistent sustainability of non-modern communities, past and present, with their commitment to living by a common set of metaphysical principles or "laws of being." In stark contrast, the technoscientifc capitalist world of our own modernity, a world that current AI practices are hard-wired to perpetuate, directly violates all of these same tried-and-tested laws. The dire ecological consequences for the planet are now all too plain to see. It is vital that we learn lessons from the vast inventory of non-modern experiences and commit to re-engineering our way of worlding along more ecologically reponsible lines. Modified forms of AI can absolutely help us to realize a more livable future world in practice. But they cannot save us all by themselves.

Keywords: AI, Anthropocene, polycrisis, pluriverse, worlding, laws of being

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> We are on the brink of an irreversible climate disaster. This is a global emergency beyond any doubt. Much of the very fabric of life on Earth is imperiled. We are stepping into a critical and unpredictable new phase of the climate crisis. … We find ourselves amid an abrupt climate upheaval, a dire situation never before encountered in the annals of human existence. (Ripple *et al.* 2024, p. 1)

1. Cometh the Hour, Cometh the Techno-fix?

On October 8, 2024, an international team of experts published the latest "state of the climate report" (Ripple *et al.* 2024). It opens with the chilling passage quoted above, echoing other recent assessments (Milman 2023; Jaynes 2024). No thoughtful person can ignore the existential threats we face in this time many now call the Anthropocene. In these dire circumstances, the most urgent question we can ask about the nature and value of AI is surely: Can intelligent machines save us? As icecaps melt, sea levels rise, storms intensify, and biodiversity continues its alarming decline, can AI somehow help us resolve our planetary polycrisis?

Predictably, tech industry titans are bullish about AI's heroic potential. Kenneth Schmidt, the former Google CEO, is willing to bet that it will eventually "solve the problem" of climate change altogether, despite its own escalating environmental costs (Niemeyer & Varanasi 2024). And in wider industrial, policymaking, and academic circles, there seems to be a growing hope that AI applications can help set us on a path towards sustainability. Apparently, sophisticated imaging and mapping tools can now be used to track environmental degradation processes, like deforestation, the shrinking of glaciers, and the pollution of airs, waters, and soils. Emerging new platforms can detect carbon emissions, identify recyclable items in landfills, and increase energy grid efficiency. At the same time, drones and data management programs can help agribusiness to predict the weather, monitor soil conditions, and optimize the use of water, seeds, herbicides, and other resources (Flanagan 2024; Masterson 2024).

But what if such techno-fixes are not enough? What if genuine sustainability requires us to do more than curb the excesses of our modern way of life, maximize its efficiencies, and mitigate its more catastrophic effects? What if, after all the damage already inflicted upon them over the past few hundred years, Earth's fabrics just cannot take too much more of our modernity, however tempered in form?

The authors of the 2024 "state of the climate" report are not alone in believing that more radical change is urgently needed, not least because capitalism's core commitment to "unlimited growth" is self-evidently a "perilous illusion" (Ripple *et al.* 2024, p. 10). But what might a more ecologically responsible way of life actually look like in practice? And how might AI help us to negotiate the transition to this more sustainable order?

These are the questions I wish to explore in the rest of the paper. My ultimate aim is to broaden the horizons of current discussions around AI and the polycrisis by drawing on the ample resources of history, with some help from anthropology, critical theory, and "traditional ecological knowledge" along the way.

For the historical record offers a forceful corrective to any faith in the power of modern technologies to resolve our planetary predicament by themselves. As it reveals, there is a remarkably strong consensus among non-modern peoples, from prehistory to the present, about the basic kinds of truths that humans must abide by if they are to live with Earth, not against her. And these non-modern truths are diametrically opposed to those which anchor our whole modern technoscientific capitalist way of life.

Of course, taking this tried-and-tested wisdom of the ages seriously requires us to suspend our own modern common sense, which would tend to dismiss non-modern ways of knowing as "primitive" and "unscientific". But if we are prepared to make this effort, our whole way of thinking about planetary life in the past, present, and future will be duly transformed. We shall see why growing numbers of influential authorities now believe that humans have always lived in a "pluriverse" of many worlds, not in a universe of just one. And from this alternative pluriversal perspective, we can begin to view both AI and the polycrisis in productive new ways.

2. Alone Together in a Pointless Universe

Before we can traverse history's pluriverse, we need to reconsider the modern universalist common sense that would prevent us from getting there in the first

place. The following account summarizes the one-world reality that is baked into the political, social, economic, legal, educational, and other core mechanisms of our modern way of life, AI included (Mignolo 2011; Descola 2013; Anderson 2018).

In the modern West, we are socialized to think of reality as a more-or-less boundless universal space, a cosmos without axial center or fixed limits. Simultaneously everywhere at once and nowhere in particular, it is just a vast container of multitudes of discrete individuated entities, all defined by their own innate properties and existing ultimately for themselves. Indeed, this modern universe seems to have no larger animating purpose or meaning beyond its own all-inclusive universality. It may be governed by machine-like physical "laws" which produce recurring patterns among its contents. But it is not at all clear where these impersonal laws come from, why they do what they do, or what ultimate ends they serve. Our cosmos just arbitrarily exists for itself. Devoid of animating aim or intentional design, it is just a pointless play of things and forces in otherwise empty space.

To qualify as real in this clockwork universe, things must be reducible to materialities that are observable to humans, whether they be directly visible material things, like sand grains, persons, and planets, or things that are detectable through their perceived material effects, like atoms, gravity, and wind. Our reality thus excludes unobservable things that seem to defy nature's physical laws, like gods, demons, and other "supernatural" phenomena. In the end, such things depend for their existence on the human mind, as subjective products of personal beliefs. To qualify as real, a thing must exist objectively, as a materially self-evident mind-independent entity.

So which things in this objectively knowable world are the most important? The short answer is human beings. Humans in our reality are always exceptional. Like other things, we humans are programmed to function as free-standing self-realizing entities, to stand for ourselves as individuals. But *unlike* other things, we are also born with personhood, which gives us special properties like consciousness, reason, language, agency, and rights to life, liberty, and property. In other words, we humans are the only true subjects in a universe full of objects. We are not accountable to any other-than-human persons, since no such beings truly exist. And we alone can judge what is real, since we alone can know the world objectively, viewing it as if from outside, like gods.

As a result, our reality inevitably resolves itself into two distinct orders: a higher order of "culture" that contains exclusively human things, like persons and cities, societies and economies, arts and sciences; and a lower non-human order of "nature", which is merely an "environment" of impersonal automata and mechanical processes. With our property rights and our freedom from accountability to non-humans, we humans can thus exploit the natural order however we want.

This vision of a secular material world dominated by free human individuals duly shapes our preferred modern way of life, with its democracies, its capitalist economies, and its rights-based notions of citizenship. If we humans are programmed to live ultimately for ourselves as rational, acquisitive, self-actualizing beings, it makes sense to order our lives in ways that will allow such beings to thrive and prosper. It makes sense to separate off a "sacred" sphere of irrational belief in gods from a "secular" sphere, where all the real business of life can be rationally transacted. It makes sense to use forms of government that grant all human subjects their right to self-determination. Yet it also makes sense to confine this government within its own realm of "public" power, sealing it off from the "private" realms of society and economy, where individuals can be free to act on their natural instincts to manage and enrich themselves.

We tend to take this account of a materialist, anthropocentrist, secularist, and individualist reality for granted, not least because it is hard-wired into all the structures that govern and define our whole modern way of life. And one might suppose that the objective truth of this account has been "proved" by the success of that way of life over recent centuries, with all its technological innovations, complex societal systems, and vast accumulations of aggregate wealth. But history suggests otherwise.

For it is undeniable that countless non-modern peoples across time and space have successfully staked their lives on accounts of reality that are profoundly different from our own, flourishing on their own terms for hundreds, sometimes even thousands of years. Moreover, unlike ourselves, they have consistently managed to thrive in ways that seem to have been sustainable, without imperiling the whole future of the planet in just a few hundred years.

So how is it possible for humans to live successfully by dramatically different accounts of "the real world"? Could it be that reality itself is somehow plural and variable, not singular and fixed? To answer these questions, we now turn to "material semiotics", a recent current in critical theory that can help us to re-visualize the human story in pluriversal terms.

3. Relational Being

Just as linguistic semiotics maintains that words derive their meaning from the assemblages (sentences, paragraphs, etc.) in which they are embedded, material semiotics proposes that entities derive their being from their relations with other entities. Whenever networks or "webs" of persons and things are collated by our life-sustaining practices, their human and non-human components "enact each other" into reality as "actors", as things that can "make a difference" (Law & Mol 2008, p. 58). In other words, contrary to our objectivist common sense, there is no such thing as a materially self-evident thing-in-itself. Things are effectively made of their relations with the other things that make their existence possible in the first place.

To illustrate, a well-known case study shows how a sheep could be enacted as multiple different realities during a 2001 epidemic of foot and mouth disease in Cumbria, UK (Law & Mol 2008). One such sheep reality was the "veterinary sheep", a living organism that was an object of clinical examination as a site of possible disease symptoms. Another was the "epidemiological sheep", a statistical calculation based on models of infection probabilities. A third was the "economic sheep", a market-based accounting of the epidemic's impact on meat exports and on compensation claims made by farmers to the EU. And the fourth was the "farming sheep", a named member of a particular flock that stirred feelings of care and affection in its owners.

Common sense may tell us that this is just four different ways of looking at one single sheep reality. But as the authors of the case study stress, these are four different realities that are being enacted through four different webs of practice. The four sheep are ontologically distinct from one another and not always mutually reinforcing.

> You cannot learn what a sheep is by staring at a picture. It helps more to unravel the practices in which sheep figure, in which they are enacted in one way or another. If we do this then we do not discover a sheep that is unitary and coherent. Instead, we find a "sheep multiple". [T]he stories of different versions of the Cumbria sheep in 2001 both exclude and include each other. The farming sheep was invaluable, outside value, whereas the economic sheep had a price on its head. The farm flock deserved protection, whereas the economic sheep was more valuable dead than alive. And the epidemiological and the veterinary sheep clashed with and depended on one another (Law & Mol 2008, pp. 65-66)

When more generally applied, this rigorously relational way of accounting for the contents of experience can thus liberate us from the black-and-white rigidity of modernity's objective world. It enables us to tell stories about reality's ongoing constitution that are dynamic and fine-grained, without reducing the complex messiness of lived experience to, say, an abstract microphysics of invisible particles. Instead, by focusing on the patterned world-making interplay of persons and things, it allows us to convey a richer, more vibrant sense of the entangled abundance of being. It helps us to see reality as something fluid and elastic, as something continually in formation, not something predetermined or fixed.

In the process, material semiotics effectively rules out the possibility of a mind-independent objectively knowable world. Instead, it gives us a precise and relatively concrete way to understand how human knowledge is unavoidably implicated in the process of reality formation. If we are all necessarily embedded in a world of enacted actors, as both participants therein and products thereof, our ways of knowing that world will always be historically situated. What we know and how we know it will inescapably be conditioned by all of those beings and things which enact us as knowledgeable actors in the first place. And reality will then be the complex ongoing *effect* which is generated whenever that knowledge and the world appear to be in alignment. Which is to say, reality is the enacted effect of a mind-independent world, not its literal actuality.

If so, there can be no single absolutely or universally "true" or "right" way of knowing what's really there, because everything is potential multiplicity and what counts as knowledge will always be historically

mediated. What matters, then, is not that our knowledge conforms to some timeless abstract truth standard, objective or otherwise. What matters is that the world which our knowledge predisposes us to enact is actually realizable and hopefully sustainable in practice, whether we are, say, ancient Egyptians, Indigenous Amazonians, or modern Europeans.

4. Enacting Worlds

To describe the process of realizing the effect of a self-evident world, some now use the term "worlding". Here is way to think about it.

Every human community stakes its life on certain truths about the essential contents of experience, on shared certainties about, say, the nature of personhood and humanity, about how to relate to non-human others, about the fabrics of the lived environment and how they came to be there, and about the sources, means, and ends of life itself. As these truths become tried and tested in practice, they harden into common sense laws of being, a kind of metaphysical "model" of the world to live by. This model duly becomes embedded in the minds and bodies of community members, in all their life-sustaining norms and practices, and in their built environment, shaping their relations with one another and with all the non-humans on whom their existence depends, from animals and plants to soils and weather systems. So long as those non-humans continue to cooperate in more or less stable, predictable ways, then the community will be able to reproduce itself successfully across the generations. And the model will thus come to be continually enacted in everyday experience by humans and non-humans. In short, a worlding process produces the ongoing effect of a materially self-evident reality, a world that already seems to be there all by itself.

Hence, when the planet's non-human constituents collaborate with radically different ways of worlding, ontologically different realities are produced, as the following examples illustrate.

In classical Athens (480–320 BC), the supreme force that governed annual yields of grain and other crops was an immortal female person. The Athenians called her Demeter. Though Demeter herself was not literally visible "in the flesh" *per se*, no-one doubted her real existence in immediate experience. From childhood on, all Athenians were socialized to trust in her miraculous powers. The built environment was full of references to her significance, in poems, paintings, statues, shrines, and, above all, her sanctuary home at Eleusis. And the rhythms of each year were punctuated by gift offerings to her at great festivals like the Thesmophoria and the Eleusinian Mysteries, whereby the Athenians hoped to induce her to act favorably towards them. In return, more often than not, the goddess caused crops to grow and humans to thrive, thereby continually confirming the self-evident truth of her management of life itself.

In the modern United States, the supreme force that governs the material well-being of all humans is an impersonal machine-like system. The Americans call it "the economy". Though the economy itself is not literally visible "in the flesh" *per se*, no-one doubts its real existence in immediate experience. From childhood on, all Americans are socialized to trust in its miraculous powers. The built environment is full of references to its significance, in books, journals, news media, factories, banks, and, above all, its special home in Wall Street. The rhythms of each year are punctuated by adjustments to taxes, budgets, and interest rates, whereby the Americans hope to induce the economy to act favorably towards them. And in return, more often than not, it causes fortunes to grow and at least some humans to thrive, thereby continually confirming the self-evident truth of its management of life itself.

In these examples, Demeter and the economy are not pure constructs of the imagination. Nor are they real in any universal or absolute sense as materially self-evident things-in-themselves. A machine-like economy would be unthinkable in classical Athens, just as a superhuman goddess would be unreal in modern America. But through certain specific worlding practices, both can be enacted into existence as actors, as entities that make real differences to life itself. And once we can see reality in these relational terms as an ongoing enacted effect, history's extraordinary pluriverse of worlds can start to materialize before our eyes.

One might add a few further remarks to help us visualize this world of many worlds with a little more clarity and precision.

First and most general, one should not think of the worlds of a pluriverse as fixed, closed systems, all hermetically sealed off from one another, like a multitude of planets scattered across a firmament. As enacted effects of inherently variable life-sustaining practices, worlds themselves are inherently mutable. They can

evolve, expand, contract, interact, and influence one another, The boundaries between them will always be potentially porous and plastic in principle.

Second, while worlds will almost always be anchored in particular life-nurturing terrains or habitats, the spaces they occupy need not be physically continuous or mutually exclusive. One thinks, for example, of the one thousand or so *polis* microcosms of the classical Greek cosmos, which were dispersed across vast distances between Spain and the Black Sea. At the same time, a given portion of, say, the Amazon rainforest could simultaneously be two different things in two different worlds. It could be enacted both as a parent-like home by local Indigenous communities and as an inert bundle of economic resources by capitalist corporations.

Third, the worlds of a pluriverse need not be internally monolithic. While the overall metaphysical temper of a world will be established by the laws of being that are baked into the routine practices of the majority or dominant group, there may still be room within for alternative ways of worlding by minority or subordinate constituencies, thereby complicating the fabrics of the whole.

For instance, both the Roman and Chinese empires at certain times accepted that some subjects would maintain relations with alien gods, divinities whose presence in the worlds in question was not officially recognized. But such internal variations are perhaps most readily visible in the world of modernity itself. Yes, lives may now be almost universally staked on political, economic, legal, educational, and other mechanisms that enact a modern materialist, anthropocentrist, secularist, and individualist cosmos into being. But during the Cold War era, for example, one could still identify ontological differences between "capitalist" and "communist" versions of modernity, not least in their respective enactments of the "free market economy" and the "Communist Party" as the supreme world-making agencies. And even today, to a point, it seems reasonable to speak of different national microcosmic modernities across the globe, especially where vestiges of non-modern worlding practices remain. But while these counter-worldings may give the fabrics of everyday being a certain distinctively local or regional coloring, they do not fundamentally change those same essential fabrics.

Fourth, worlds will change and evolve as the laws of being embedded in worlding practices change and evolve, whether the causes are internal or external. Such changes were triggered, for example, by the processes we call the "Christianization" of the Roman empire and the British "colonization" of South Asia. In both of these cases, a counter-worlding project ultimately prevailed because it was imposed from above and backed by force, fundamentally altering what would count as reality and the very meaning of life itself. And external pressure for such change continues to this day to disrupt what survives of Indigenous ancestral worlds, almost all of which have been complicated to some degree by modern ways of worlding, inevitably rendering them somewhat "hybrid" in nature as a result (Halbmayer 2018).

5. The Wider Stakes

Radical as it may seem, this alternative many-worlds vision of reality is no longer an eccentric or fringe proposition. Though attempts to theorize the worlding process may vary slightly in their particulars, a general commitment to pluriversal thinking has been embraced by growing numbers of authorities in a range of different fields, including anthropology, history, international relations (IR), decolonial theory, and science and technology studies (STS). There are several mutually reinforcing reasons for making this commitment.

As prominent STS authors have shown, one can make a robust case for a pluriversal alternative on purely theoretical grounds, using material semiotics and/or other related critical currents (Law 2015). Then again, as specialists in anthropology, history, and IR have demonstrated, a case can also be made on the grounds of analytical utility, since one can only make meaningful sense of history's many ways of being human if one understands each one on its own ontological terms, in its own local world of experience (Holbraad & Pedersen 2017; Anderson 2018; Schaarsberg 2023). Nor should we overlook the ethical case for pluriversal thinking, which would insist that all peoples across time and space, especially today's Indigenous communities, should have the power to determine the ultimate truths of their own existence (Escobar 2017; Anderson 2018). But perhaps the most fundamental reasons for embracing a many-worlds vision of reality are not philosophical or academic at all. They are ecological, even existential. After all, the potential stakes could hardly be higher.

To begin with, a pluriversal perspective allows us

to see that the human causes of our current polycrisis are not just to be found in particular modern practices, like those associated with carbon emissions, industrial pollution, and the loss of biodiversity. They are ultimately to be found in particular laws of being which have rendered those same practices normal, acceptable, even natural over time. In other words, these causes are endemic to an entire way of worlding, to a historically unprecedented way of being human that people of European descent have exported around the globe over the past few hundred years, often destroying other more sustainable worlds in the process. Among the many thousands of different worlds in history's wondrous pluriverse, only this modern kind has metaphysically prioritized the material over the ideational, the human over the non-human and the superhuman, ultimate knowability over ultimate mystery, and the life of the individual over that of the social body. The net results of this way of worlding are now all too clear to see.

At the same time, a many-worlds vision of the human story can also exponentially enrich our quest for more sustainable alternatives, inviting us to learn from a vast horizon of worlds which have been far more ecologically balanced than our own.

6. Five Historical Laws of Being

Non-Indigenous biologists and ecologists have long been demonstrating the practical utility of "traditional ecological knowledge" (TEK) through case studies in various parts of the globe (Johnson 1992; Berkes *et al.* 2000). But latterly, this subject area has been reclaimed by Indigenous authorities, who are far better placed to explain why bodies of TEK are consistently effective in practice (Cajete 2000; Nelson & Shilling 2018). To this large inventory of evidence, one can add all the life-sustaining wisdom that has been recovered by historians and others who study peoples of the past. When we then survey all this non-modern know-how, some significant patterns emerge. The following five common laws of being help to explain the consistent sustainability of non-modern worlds.

a. Being is belonging

All being is local. Every known non-modern world is a concrete somewhere not a universal everywhere. It is always defined and conditioned by a specific habitat, a nurturing parent-like cradle of life to which it is congenitally attached. And across history's pluriverse, these home environments have taken many different forms.

For example, forests have been the world-defining providers of all life's needs for peoples like the Mbuti of the Democratic Republic of Congo, the Kajang of Indonesia, the Nayaka of southern India, the Yanomami, and numerous other Indigenous Amazonians (Kopenawa & Albert 2013). People of Quechua descent in the Peruvian Andes may relate to mountains like Ausangate as apus, the fatherly counterparts to *pachamamas*, the life-giving mothers of the earth (Carreño 2016). Maori *iwi* likewise relate to great rivers like the Waikato and Whanganui as parental sources of vitality (Salmond *et al.* 2019). And for the boat-dwelling Badjao people, a similarly nurturing role is performed by the seas around the Philippines and Indonesia (Macalandag 2023).

But of all the diverse habitats with which humans have maintained kin-like relations over the centuries, land itself is of course by far the most common. In some worlds, like those of the classical Athenians, the Hopi, Zuni, and other Native peoples of the United States, the first humans literally emerged from a womb-like Mother Earth (Anderson 2018; Homburg *et al.* 2023). In other creation stories, the original humans are partly or wholly made from earthy materials, as we see in the Book of Genesis, the Qu'ran, the Mesopotamian *Atra-Hasis* epic, and the ancestral traditions of the Dayak of Borneo, the Vietnamese, the Malagasy, and the Inka.

What is common to all these instances is a profoundly un-modern sense of consubstuntiality or continuity of being between humans and their habitats. Whether they know themselves as offspring of an earth mother or as creatures made directly from home terrains, most if not all non-modern peoples have experienced a sense of environmentally embedded belonging that rules out any possible nature/culture divide.

Also unthinkable would be the idea of a universal world without center or limits. Non-modern worlds almost invariably gravitate around a fixed focal point, an *axis mundi* from which vital energies radiate out across the cosmos, unifying the whole. These axial points may be "trees of life", like the Norse Yggdrasil and the Mayan Yaxche. They may be "holy mountains", points of contact between terrestrial and celestial realms, like the Daoist Kunlun and the Black Hills of the Lakota. They can be centripetal sites of ritual activity, like the Javan Borobudur and the Hebrew temple in Jerusalem.

And in imperial worlds, cities can perform this role, like Rome and Constantinople, Babylon and Mecca, Nanjing and Beijing, Cusco and Tenochtitlán.

Furthermore, non-modern worlds are always finite in practice, with habitats defining both their physical and metaphysical limits. This means there is a constant sense of insecurity among non-modern humans, because life's sources are inevitably exhaustible. As a result, some of the most inviolable rules which non-modern peoples live by are those which limit the use of vital resources, preserving them for all generations to come. Under such conditions, the idea of staking one's well-being on a vision of "unlimited growth" would be wholly self-defeating.

b. A world is a symbiotic ecology

Non-modern worlds are never mere containers of disaggregated subjects and objects. On the contrary, they tend to be self-reproducing symbiotic ecologies. All their component parts, both human and non-human, are thus effects of their mutually dependent relations with others.

For example, the ancient Athenian *polis* was a cosmic ecology, where life was sustained by ongoing collaborations between the Athenian people, their divine motherland of Attica, and the two hundred gods who furnished all their other conditions of existence, from sunshine and rainfall to human health and battle outcomes (Anderson 2018). In the medieval European Great Chain of Being, all the contents of Creation, from stones and waters to plants, humans, and angels, were expressly designed by God to perform assigned roles in the world's perpetuation (Lovejoy 1976). In the cosmos of Ming China, the emperor, as "Son of Heaven", had a divine mandate to align all things in the earthly realm with the timeless "Way" of the celestial realm (Jiang 2011). Elsewhere, all components of the ancestral Andean world of Abya Yala, from the smallest pebbles to *pachamamas*, are active beings who contribute to the healthy balanced life of the whole (Amawtay Wasi 2004). And in the microcosmic worlds of Maori *iwi*, humans and non-humans are kindred descendants of the same *whakapapa*, an all-inclusive multi-species genealogy (Harmsworth & Awatere 2013).

Hence, in these and other non-modern realities, the human person itself is always in some sense a relational being. There is no such thing as a modern-style self-actualizing individual.

In some worlds, interdependent community members can routinely act with the mind, will, and interest of a single indivisible person, like the *demos* of the Athenians, the Roman *populus*, or a medieval "body politic". A unitary corporate person of this kind always precedes and outlives all the living breathing humans who embody it at any given time. Likewise, the Ming empire's vast body of government officials served as extensions of the mind and body of the emperor himself when furthering his work of mediation between heavenly and earthly realms (Jiang 2011). Elsewhere, the divine king of the precolonial Hawai'ians could "encompass the people in his own person, as a projection of of his own being" (Sahlins 1985, pp. 207, 214).

More common are worlds where each human is enacted as a "dividual" person, a composite of life-defining elements that derive from relations with others. Among the Dogon of Mali, each person is composed of three elements from different sources: a physical body (*goju*) from the father; a character (*hakile*) from the mother or father; and an inner vitality (*kikine*) from the creator god Ama (van Beek 1992). In a traditional Hindu world, a person is a more permeable and fluid being, an ongoing coalescence of substances that are exchanged in one's relations with others, like blood, cooked food, money, words, and knowledge (Marriott 1976). And for the Hagen of Papua New Guinea, every person is a "social microcosm", a "plural and composite site of the relations that produced them" (Strathern 1988, p. 13).

c. Humans are not alone

Humans are never alone in non-modern realities. They always share life's experiences and responsibilities with communities of other-than-human persons.

In many cases, like those of ancient Greece, Rome, Egypt, Persia, China, and Hindu South Asia, the most important of these non-human persons are gods and other immortal beings. Though usually invisible, these numinous agencies are actively present in immediate experience. They do not inhabit some otherworldly elsewhere, leaving Creation to run itself. They continually manage the infrastructure of the cosmos, being immanent in its celestial bodies, soils, rivers, and other fabrics. Their personal wills thus control all of life's conditions, sources, processes, and outcomes. And humans continually seek their favor, socializing with them in their sanctuaries and other special haunts.

In numerous other non-modern worlds, a more

diverse array of other-than-humans share a human-like consciousness, agency, and subjectivity. In the ancestral world of the Sámi in Fenno-Scandia, things like land, forests, lakes, rivers, fish, and reindeer all have their own personalities (Helander-Renvall 2010). In the cosmos of the Chewong of Malaysia, "our people" (*bi he*) includes all things, from spirits to animals and plants, that possess *ruwai* or "reflexive consciousness" (Descola 2013, pp. 26-27). For the precolonial Lakota, the world teemed with "all my relatives" (*mitakuye oyasin*), including animals who lived in their own human-like "nations" (*oyate*), "lodges" (*tiyospaye*), and households (Posthumous 2017). And in the worlds of Amazonians like the Makuna, each animal species enacts the human role in its own microcosmic reality, complete with its own shamans, rituals, houses, fermented drinks, and so on (Viveiros de Castro 1999).

d. Life demands accountability to others

Life in non-modern worlds therefore depends on collaborations with a host of other-than-human persons. It thus brings with it duties of care, respect, gratitude, and accountability towards those others, if the symbiotic ecology is to remain in equilibrium.

In worlds governed by pantheons of divinities, the human obligation to show care, respect and accountability to those others may be discharged through, say, prayers, sacrifices, votives, and invitations to gods to participate in rituals. Of course, conventional academic wisdom tends to see all such activities as mere exercises in "religion", as expressions of an ultimately irrational, subjective belief in the existence of unreal "supernatural" beings. But in worlds where gods control all the material conditions of existence, such practices are not just entirely rational. They are life-sustaining ecological mechanisms. Only by maintaining positive relations with the managers of the cosmos through ritual actions can communities hope to flourish.

In worlds where personhood is more widely dispersed among the contents of Creation, the practice of accountability to others assumes an even wider range of different forms. For example, when engaging in lake fishing, Sámi should abide by an ethic of *jávrediksun*, a sense of responsibility for the long-term well-being of both the lake and its fish (Østmo & Law 2018). To ensure that caribou willingly give themselves to sustain human lives, the Innu of Labrador commit to sharing their meat appropriately, treating their other body parts with respect, and maintaining good relations with Kanipinikassikueu, the caribou spirit master (Blaser 2016). Similarly, shamans of the Amazonian Makuna must engage in ongoing negotiations with the spirit masters of other species over the animals and fish they hunt, making offerings to ensure that lost lives are replaced (Arhem 1996).

e. Experience is ultimately mysterious

If all non-modern peoples thus accept humanity's relatively humble place in the cosmic order, they also accept limits on human abilities to know that order. They all must coexist with other-than-human persons who know things that humans could never know. And they all must live among invisible beings and forces that are, by definition, beyond human understanding.

To be sure, the mysterious wills of the cosmos may be divined by humans with extraordinary aptitudes or special ancestries, like Egyptian temple astrologers, the Pythia at Delphi, Amazonian shamans, and the *babalawos* of Afro-Cuban Ifá. And many peoples have learned things from visible other-than-humans, like trees, plants, animals, birds, and waters. For them, as Lakota Chief Luther Standing Bear once said, Creation is an inexhaustible "library" of knowledge (Standing Bear 1976, p. 194). But in all these cases, there are also things that are just not for humans to know. In all these cases, the idea of an objectively knowable universe would be arrogantly presumptuous if not utterly delusional.

In short, the evidence of a pluriversal history offers an implicit critique of our whole modern way of worlding. Modernity's materialist, anthropocentrist, secularist, and individualist laws of being have not just departed from all historical norms. They consistently violate the principles that have allowed humans to thrive sustainably across the millennia. The basic lessons that non-modern peoples teach us are thus clear enough. Instead of forcing planetary life to align with human priorities, we need to force our priorities to align with planetary life. We need to recommit to ways of worlding that are more locally grounded, more symbiotically relational, and more humbly sensitive to all the other-than-human conditions of our existence.

7. Worlding Against the Modern Grain

Daunting a challenge as this may seem, it is important to know that many communities around the globe

are already pursuing ways of life along these more ecologically balanced and sensitive lines. Some of these counter-worldings are happening in remote locations, like jungles and tundras, continuing ancestral practices of yore . But others are newer projects, evolving even in the heart of major cities in the Global North.

For a start, there are still many surviving "territories of life", where local communities are actively working to maintain time-tested non-modern ways of worlding, sometimes with financial and other support from organizations like the UN Equator Initiative, the ICCA Consortium, and La Via Campesina (Borrini-Feyerabend 2024). These communities range from "foragers", like the Wampís Nation of Amazonian Peru, to "mobile pastoralists", like the Sarikeçili Yörüks of Turkey, to "shifting cultivators", like the Kavet of Cambodia. And they include western European groups, like the female shellfishers-on-foot (*mariscadoras*) on Spain's Galician coast and the guardians of the Regole d'Ampezzo in Italy, who manage their alpine ecological enclave according to original medieval prescriptions.

Nor can we ignore the ongoing resistance to settler colonialism by many Indigenous communities, who have been struggling to reclaim their ancestral lands and their right to determine for themselves what counts as a world. Such decolonial struggles have become increasingly prevalent since the later 1960s, seeking liberation from a modern way of worlding that casts Indigenous peoples as a perennial "problem" for capitalist "development" (Clifford 2013). In recent decades, countless groups and communities have pursued decolonial causes: from the Mapuche in Chile and Zapatistas in Mexico to the Innu and Inuit in northern Canada; from the Sámi of Fenno-Scandia to the Yakuts of Siberia and Itelmen of Kamchatka; and from the Noongar and other First Nations in Australia to dozens of Maori *iwi* in Aotearoa New Zealand (Bauer 2021; Dewar 2009; Sulyandziga & Berezhkov 2023; De Villiers 2020).

To all this, one should add the proliferation of new efforts to pursue alternative ecological pathways around the globe, even in Europe and the United States. For example, the "social solidarity economy" in Catalunya, Spain, now involves some 140,000 workers in over 7,000 organizations, including co-ops, mutual aid societies, and exchange networks (Lees 2022). Among many rurally-oriented "degrowth" initiatives in Europe is Cargonomia in Hungary, which uses a fleet of cargo bicycles to deliver local organic produce directly to customers (Lorenzen & Moore 2022, p. 48). In Mississippi, the African-American-led Cooperation Jackson seeks "sustainable community development" through various worker-owned ventures, treating land as an active "partner", not as inert "property" (Akuno & Meyer 2023). And such projects are now supported by a host of national and international organizations, like the Black Land and Liberation Initiative in the United States, the Chantier de l'Économie Sociale in Canada, and the International Network for the Promotion of Social Solidarity Economy.

More generally, there seems to be an increasing willingness in the wider environment to question some of the common sense that underpins our modern way of worlding. One sees a growing interest in locally embedded, "bioregional" alternatives to globalizing capitalism (Bove 2021). The "rights of nature" cause, which seeks to establish legal personhood for a range of different non-humans, has become ever more mainstream across the planet since the 1970s (Stone 1972; Surma 2021; Bosselmann & Williams 2025). Meanwhile, scientists now commonly subvert the nature/culture divide by attributing forms of cognition, intelligence, subjectivity, and sociality to all manner of other-than-humans, including animals, micro-organisms, fungi, plants, trees, and rivers (Bouteau *et al.* 2021; Simard 2021; Calvo 2023). And it is no less commonplace to recognize that collaboration, mutualism, and symbiosis are essential to vitality at all scales, from the cellular to the planetary (Margulis 1998; Weiss & Buchanan 2009; Bronstein 2015). Why should human vitality be any different?

Needless to say, these various forms of counter-worlding are not yet sufficiently prevalent or influential to remake the fabrics of modern being from within. By themselves, they cannot secure a transition towards the more relationally grounded, more ecologically responsible, more pluriversal world of the future that our planetary crisis seems to be demanding. Nonetheless, these diverse oppositional causes and projects do at least help us to visualize such a shift, giving us a more concrete sense of what more sustainable ways of worlding might actually involve in practice. Formidable as the obstacles to radical change may still be, movement in this direction is already happening, if we are only willing to see it.

8. AI in This World and the Next

What then might this alternative pluriversal perspective reveal about the nature of AI and its capacity to support more relational, more sustainable ways of worlding? Here are three closing thoughts.

First, while AI as we know it surely can help to mitigate some of the more overt symptoms of the polycrisis, it would be folly to bet on the faint hope that it might somehow reverse our catastrophic trajectory altogether. Right now, one could argue, it is more part of the problem than the solution. As even the most ardent supporters of AI acknowledge, its potential ecological benefits are already compromised by its troubling environmental costs (Ren & Wierman 2024; Winston 2024). But more alarming from a pluriversal perspective are the environmental *consequences* of the practices that its routine operations make possible.

By now, AI is thoroughly enmeshed as an enacted actor in myriad webs of practice. It is already making differences in almost every field of modern endeavor, from commerce and industry to communication and education. The problem is that most of these differences are reenergizing a manifestly unsustainable way of life, thereby perpetuating the delusional dream of unlimited growth. Our personal computers are bombarded with algorithm-driven advertisements that create yet more demand for all manner of goods, regardless of the planetary costs required to produce those goods and ship them to consumers. AI now commonly helps the fossil fuel and other extractivist industries to refashion ever more of Earth's fabrics into profitable commodities. Meanwhile, plagues of online bots are corrupting elections with misinformation, almost always to favour forces that are hostile to environmental controls. So even as certain AI applications may be inching us towards a more sustainable future, the ever growing complicity of other applications with capitalist "business as usual" is taking us yet further away from that goal.

Second, when we recontextualize AI in a many-worlds scheme of history, we become more acutely aware of its epistemic limitations. Today, the prospect of an all-knowing artifical general intelligence or superintelligence stirs both excitement and alarm (Kurzweil 2004; 2024; Bostrom 2014). But when viewed through a pluriversal lens, this prospect all but evaporates. Remarkable as the powers of AI may already be, it has so far internalized the knowledge of just one kind of world. In history's many other worlds, we not only see thousands of other tried-and-tested ways of knowing the grains of experience. We find profoundly different ways of determining what counts as knowledge in the first place.

As we have seen, bodies of non-modern wisdom are not just accumulations of data about, say, ancestral traditions, ritual procedures, or harvesting techniques. They are fundamentally relational ways of knowing experience. They include commitments to show care, respect, and accountability to the other existents on whom one's life depends. They include a sense of being a component part of things larger than oneself, an innate feeling of belonging to a particular habitat and its symbiotically entangled communions of humans and other-than-humans. And they fundamentally include an experience of insecurity and ontological humility, of being continually subject to higher powers, to forces and exigencies that humans can scarcely comprehend, never mind control.

None of these are things that can readily be measured, quantified, or simulated through discrete data bytes, algorithms, or computer codes. Could a machine ever truly know what it is to live in a more fluid, more open-ended world, where things are made of relations, where being is always becoming? Could a machine ever truly *care*? Many today speculate about the possibility of a "sentient" AI (Long *et al.* 2024). But the kind of machine sentience they envisage is always a facsimile of a modern human subjectivity, mechanically reproducing what it is like to be a free-standing self-actualizing individual. It is thus very hard to imagine that AI will ever acquire the oracular powers that might guide us toward the other ways of worlding that we so urgently need. Unlike the actual oracles in many non-modern worlds, a machine will never possess the kind of transcendental relational wisdom that can see what's best for the cosmos as a whole.

Third, AI applications could nonetheless play important auxiliary roles in a transition to a more sustainable future. It is not hard to see how they might be productively woven into networks of practice that are already driving counter-worlding processes, serving the needs of, say, Catalunya's solidarity economy, Hungary's Cargonomia, or Cooperation Jackson. Like their capitalist counterparts, such alternative bioregional projects would clearly benefit from advanced technological assistance with things like weather

prediction, efficiency maximization, waste recycling, and the distribution of vital resources. And it is not impossible to imagine how species of machine intelligence could be used by the ever-growing host of organizations that support ancestral ways of worlding across the globe, helping them to keep track of community fortunes and dispense aid in the forms required.

In sum, AI may not be the heroic change agent that some wish for. It cannot save us all by itself. But if repurposed to serve the greater ecological good, it could still make significant differences, helping us forge our necessary passage from this world to the next.

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