

Fuck the Anthropocene!

What is to be done? Re-founding our relationship to the Earth on scientific grounds

Anthropocene, or not. Capitalocene, Plantationocene, Chthulucene? I don't give a damn. I don't give a damn about the "-cenes" of the twenty-first century that drag us into an excessively long, geological time and prevent us from thinking and acting now.

These concepts and these nuances are useful once one has already understood. They are useless for understanding — and even more so for acting.

"Fuck the Anthropocene" may sound blunt, that's true. But Isabelle Stengers paved the way in 2021 when she pointed out that saying that "humanity has reached the same kind of power as the great geological forces that shaped our planet and our climate [...] [is] plain bullshit." And one may even add that ecological "-cenes" are also, in this sense, plain bullshit.

The geological Anthropocene is supposed to be a geological epoch — that is, a scientific concept based on scientific consensus. But the latest geological consensus is that the geological Anthropocene does not exist. It is therefore clear that, for the humanities and social sciences, the Anthropocene means something very different from what it means for geologists.

So what is this "other thing"? Quite simply, it is the historical period during which humanity transforms the metabolism of the global ecosystem to such an extent that it compromises its own existence. It begins with the modern era (around 1800, with the steam engine, the Industrial Revolution, post-Kantian philosophy, Romanticism, and the rise of atmospheric CO₂ — Crutzen's general intuition was right). It is still ongoing today, even though it obviously cannot last, since no one can indefinitely compromise their own conditions of existence.

So, fuck the Anthropocene because — and I write this with a master's degree in geophysics and geochemistry — when it comes to geological labeling, we really don't care.

Fuck the Anthropocene because the Anthropocene is precisely what we need to get out of, in our own interest.

Fuck the Anthropocene because too many environmentalists and postmodern political activists get lost in counterproductive worldviews; or put their faith in science as it currently operates, even though that very science is part of the problem; or settle for an individual morality — always easily recuperated by productivist systems — which condemns them to political impotence.

Fuck the Anthropocene because it has already been evaporated, dissolved, and dismantled by climate deniers of all kinds, and because today the task is not to revive the word, but to take charge of what it was pointing to in reality (a period of human history that has become natural history) — and to get ourselves out of this historical period.

The Earth Reacts

The situation is in fact quite simple and had already been formulated by Michel Serres as early as 1990 in *The Natural Contract*: “The Earth reacts globally to our local actions.” And he concluded: “Death or symbiosis.” As a good epistemologist in love with words, he offered a literary synthesis: “We cry out, like Galileo [...] the Earth is moved!” It was a play on Galileo’s famous *Eppur si muove!*, usually translated as “and yet it moves,” but which literally means “and yet, it is in motion” — in other words, it moves. Bruno Latour would later develop this wordplay in *Facing Gaia* (2015).

Let us be precise: the “Earth” for Michel Serres refers to that thin surface layer — a little below ground, a little above it — within which life unfolds and on which it depends. There is no widely shared word to designate this. One may call it the “global ecosystem,” the “Earth system,” “*Terra*,” the “critical zone,” the “ecosphere,” or even “Gaia.” “Global ecosystem” may sound cold and technical, but it is the most neutral and universal formulation: it carries neither conceptual confusion, nor centrism, nor *Schwärmerei*. The Earth that reacts therefore designates the global ecosystem, not the astronomical body of Galileo’s solar system.

To move forward, we must attempt a definition of the global ecosystem. A global ecosystem concerns a celestial body (for example, the Earth). It is the totality of what allows the metabolism of life to be maintained on a planet — in other words, everything that makes life possible.

The boundaries of this ecosystem are indeterminate (neither finite nor infinite). They extend, for instance, beneath the Earth’s crust, several kilometers underground, where bacteria still survive. But they also extend into the dynamics of the Earth’s outer core (between 3,000 and 5,000 kilometers deep), from which emerges the magnetic field without which the atmosphere would slowly be stripped away by solar winds.

This is a first difficulty for thinking contemporary ecology: which Earth are we talking about? In everyday language, Earth refers to Galileo’s Earth — the cosmic body, relatively simple, roughly spherical, and clearly delimited. In ecological language, Earth refers to the global ecosystem: radically complex, without stable form, and without assignable or mathematically definable boundaries (nothing to do with fractals).

The Case of Gaia

The second major difficulty concerns Gaia. Bruno Latour re-legitimized the concept of Gaia in 2015 in his book *Facing Gaia*. James Lovelock, who introduced the concept, wrote in *A New Look at Life on Earth* (1979) : “the Earth is a living organism — Gaia.” In the third lecture of *Facing Gaia*, Latour presents Lovelock as a new Galileo. This is somewhat excessive (we will return to this), but it is probably made necessary, in Latour’s view, by his vital objective: to make us grasp the radical paradigm shift represented by the emergence of the object “global ecosystem.”

Serres was probably closer to the truth. The Earth is not really a living organism: it has a metabolism, like living beings in general, and it is nourished and transformed by internal and external fluxes affecting the planet. But it is not animated in the way living beings are. It has neither emotions, nor consciousness, nor reproduction. And it constitutes a singular, if not

unique, object, not multiplied into numerous copies by a reproductive mechanism, as living beings generally are. Perhaps other living planets exist. But this is not a scientific proposition in Popper's sense (one cannot prove the contrary): it is a legitimate hypothesis — or belief. And in any case, the global ecosystems of different planets do not interact with one another, which further weakens the plausibility of the Gaia hypothesis as a living organism.

Let us look more closely. The main argument of Lovelock's Gaia hypothesis is that the Earth possesses a metabolism. This metabolism, like that of any living being, locally counteracts the second law of thermodynamics (the natural increase of entropy, that is, the tendency toward the disappearance of organization). In other words, this metabolism "naturally" works to maintain the organization of the Earth as a global ecosystem, and thus as a living environment.

However, this finalistic hypothesis — plausible when applied to living beings — does not hold up well when applied to the Earth as a global ecosystem, in light of the event known as the Great Oxygenation Event, which occurred when cyanobacteria massively oxygenated the atmosphere about two billion years ago. This oxygenation caused the disappearance of around 99% of existing life — an event explicitly termed the "oxygen holocaust" in the French translation of *Microcosmos* (Lynn Margulis and Dorion Sagan, 1986; French translation 2022). This episode — a microbial "suicide" by planetary asphyxiation — demonstrates the power of life to resist, adapt, and redeploy itself in a radically transformed environment. But it in no way proves that a global metabolism works to preserve the conditions of its own survival. The same is true of the five major mass extinctions (Ordovician, Devonian, Permian, Triassic, Cretaceous), each of which eliminated between 70% and 95% of living species.

What we now call "Gaia" is the contingent product of four billion years of crises and adaptations. It is a system capable of destroying life — massively, and perhaps definitively. To speak of Gaia and its metabolism as if it were a living being is to forget that no living being exists alone: it lives with others, of its own species and of other species. Its individual metabolism is also a statistical metabolism of multiplicity — a metabolism of "being-with" (Heidegger) and "becoming-with" (Haraway). This does not correspond at all to the situation of Gaia.

Nevertheless, the Gaia hypothesis has the merit of highlighting the importance of the metabolism of the global ecosystem, both for life in general and for humanity in particular. Lovelock's Gaia remains a seductive — and fertile — hypothesis, even if false, insofar as it may have helped bring forth the very concept of the "global ecosystem."

This global metabolism seems, through complex feedback loops, to favor conditions compatible with life. This is what Lynn Margulis and Dorion Sagan show in *Microcosmos*, noting for example that the level of oxygen in the atmosphere is both a product of life and a condition of its survival. The fragile equilibrium produced by this metabolism may appear miraculous or unsettling. In reality, it is the result of a long evolutionary history. It is this long evolution that ensures the stability and robustness of each essential component, and thus the strong resilience of life itself — without preventing, however, the possibility of rapid transformations, or even radical destruction.

A global ecosystem is therefore, first and foremost, a complex system capable of reacting to the behavior of its components. This means that some components respond to the actions of others, favoring certain configurations and certain components at the expense of others. This is what we mean by the metabolism of the Earth.

The word “Gaia” emphasizes this metabolism, the process, the movement — but also a symbolic register, involving enchantment, belief, or imagination in the broad sense. By contrast, the expression “global ecosystem” is colder and initially suggests an object that is thinkable, modelable, and calculable.

Each culture, each tradition, names it differently (Dreamtime, Pachamama, etc.). The differences matter. But all these formulations refer, each in their own way, to the same metabolism of biogeophysical interactions.

The Lovelock Case

It should be emphasized that Latour titles his book *Facing Gaia*, thereby granting Gaia a central, almost heroic status. He even goes so far as to present Lovelock as a figure comparable to Galileo. Such valorization may nevertheless seem excessive. Lovelock’s work does in fact present serious epistemological and scientific weaknesses, especially when the Gaia hypothesis is understood as that of a unified super-organism (a conception whose limits have already been highlighted here).

It is also worth recalling that Michel Serres, in *The Natural Contract*, makes no reference whatsoever to either Gaia or Lovelock, whose work he nevertheless must have known. And one should note that Serres, attentive to the symbolic resources of language, opens his book with Goya, through a description of the painting *Duel with Cudgels*, as a metaphor for our politico-ecological situation. The message is clear and full of irony: Serres prefers Goya to Gaia.

The second section of *The Natural Contract* in fact returns to Achilles and the *Iliad*, for Greek mythology is something Serres knew from the inside — he devoted an entire series of works to it, including *Hermes*. By contrast, the very name “Gaia” in Lovelock’s work stems less from any genuine mythological grounding than from a contingent borrowing, suggested in a friendly conversation. In other words, the word “Gaia” has in his case only a superficial metaphorical value, whereas in Serres’s work mythological references fully participate in the elaboration of concepts.

Finally, it must be recalled that, long after Serres’s work, the Gaia hypothesis led Lovelock, around 2005–2006, to adopt openly Malthusian positions, going so far as to envisage the disappearance of nearly six billion human beings — more than 90% of the world population at the time, in other words a genuine mass extinction — as a condition for a “viable” Earth, while unsurprisingly placing himself, his family, and his community among the survivors.

Beyond the disgust such a proposal may inspire, what must above all be noted is that, despite a holistic vocabulary, Lovelock in fact reproduces a modern dualism between Nature and Culture: for him, as for modernity, Gaia remains a space over which humans conceive themselves as masters and possessors, destined to be explored, exploited, and conquered, rather than a historical co-construction of all living beings.

In short, from this point of view, it was not reasonable to dig up Gaia.

Gaia, Nevertheless

Bruno Latour knew all this. But Michel Serres's formulas — “the Earth reacts” and “the Earth is moved” — though accurate, were not theoretically productive. It therefore became necessary to “dig up” Lovelock in order to bring Gaia, understood as the global ecosystem, to the very center of the debate. For this is the central scientific object of our time, probably the only one capable of enabling the ontological and epistemological — and thus political — revolutions to come.

It is the object required for finally becoming modern, to speak in Latour's terms (that is, genuinely scientific).

It is Gaia that will make it possible to demonstrate the reality of relational ontology, and to abandon the modern ontology of objects conceived as separate from their historical relations with one another.

It is again Gaia that will make it possible to found a relational and systemic rationality of the living and of matter in general — a rationality often rendered indeterminate by the multiplicity of interactions and feedback loops.

Finally, it is this figure of Gaia, whatever the formulation or representation one gives of it, that will reenchant the world by dismantling the hegemony of the Nature–Culture dualism, opening Western societies to all the other Gaias, without any one of them dominating the others.

Bertrand Liaudet