LOVE YOUR MONSTERS

WHY WE MUST CARE FOR OUR TECHNOLOGIES AS WE DO OUR CHILDREN

BY BRUNO LATOUR

In the summer of 1816, a young British woman by the name of Mary Godwin and her boyfriend Percy Shelley went to visit Lord Byron in Lake Geneva, Switzerland. The three had planned to spend much of the summer outdoors, but the eruption of Mount Tambora in Indonesia the previous year had changed the climate of Europe. The weather was so awful that the three spent most of their time indoors, discussing the latest popular writings on science and the supernatural.

After reading a book of German ghost stories, somebody suggested they each write their own. Byron's physician, John Polidori, came up with the idea for *The Vampyre*, published in 1819, which was the first of the "vampire-as-seducer" novels. Godwin's story came to her in a dream, during which she saw "the pale student of unhallowed arts kneeling beside the thing he had put together." Soon after that fateful summer, Godwin and Shelley married, and in 1818, Mary Shelley's horror story was published under the title, *Frankenstein, Or, the Modern Prometheus*.

Frankenstein lives on in the popular imagination as a cautionary tale against technology. The monster serves as an all-purpose modifier to denote technological crimes against nature: for example, when we fear genetically modified foods we call them "frankenfoods." But the convenient trope mistakes the monster, who had no name, for its creator, Dr. Frankenstein. And just as we confuse Frankenstein for the monster, we also misunderstand Dr. Frankenstein's real sin.

For Dr. Frankenstein's crime was not that he invented a creature through some combination of hubris and high technology, but rather that he *abandoned the creature to itself*. When Dr. Frankenstein meets his creation on a glacier in the Alps, the monster claims that it was not *born* a monster, but that it became a criminal only *after* being left alone by his horrified creator, who fled the laboratory once the horrible thing twitched to life. "Remember, I am thy creature," the monster beseeches his creator, "I ought to be thy Adam; but I am rather the

fallen angel, whom thou drivest from joy for no misdeed… I was benevolent and good; misery made me a fiend. Make me happy, and I shall again be virtuous."

Written at the dawn of the great technological revolutions that would define the 19th and 20th centuries, *Frankenstein* foresees that the gigantic sins that were to be committed would hide a much greater sin. It is not the case that we have failed to care for Creation, but that we have failed to care for *our own* creations. We blame the monster, not the creator, and ascribe our sins against Nature to our technologies. But our iniquity is not that we created our technologies, but that we have failed to love and care for them. It is as if we decided that we were unable to follow through with the education of our children.

Let Dr. Frankenstein's sin serve as a parable for political ecology. At a time when science, technology, and demography make clear that we can never separate ourselves from the nonhuman world — that we, our technologies, and nature can no more be disentangled than we can remember the distinction between Dr. Frankenstein and his monster — this is the moment chosen by millions of well-meaning souls to flagellate themselves for their earlier aspiration to dominion, to repent for their past hubris, to look for ways of diminishing the numbers of their fellow humans, and to swear to make their footprints invisible?

The goal of political ecology must not be to stop innovating, inventing, creating, and intervening. The real goal must be to have the same type of patience and commitment to our creations as God the Creator, Himself. And the comparison is not blasphemous: we have taken the whole of Creation on our shoulders and now have become coextensive with the Earth.

What, then, should be the work of political ecology? It is, I believe, to *modernize modernization,* to borrow an expression proposed by Ulrich Beck. This challenge demands more of us than simply embracing technology and innovation. It requires exchanging the modernist notion of modernity for what I have called a "compositionist" one that sees the process of human development as neither liberation from Nature nor as a fall from it, but rather as a process of becoming ever-more attached to, and intimate with, a panoply of nonhuman natures.

1.

At the time of the plough we could only scratch the surface of the soil. Three centuries back, we could only dream, like Cyrano de Bergerac, of traveling to the moon. In the past, my Gallic ancestors were afraid of nothing except that the "sky will fall on their heads."

Today we can fold ourselves into the molecular machinery of soil bacteria through our sciences and technologies. We now run robots on Mars, and we photograph and dream of further galaxies. And yet we fear that the climate could destroy us.

Everyday in our newspapers we read about more entanglements of all those things that were once imagined to be separable — science, morality, religion, law, technology, finance, and politics. But these things are tangled up together everywhere: in the Intergovernmental Panel on Climate Change, in the space shuttle, and in the Fukushima nuclear power plant.

If you envision a future in which there will be less and less of these entanglements thanks to Science (capital S), you are a modernist. But if you brace yourself for a future in which there will always be more of these imbroglios, mixing many more heterogeneous actors, at a greater and greater scale and at an ever-tinier level of intimacy requiring even more detailed care, then you are… what? A compositionist!

The dominant, peculiar story of modernity is of humankind's *emancipation* from Nature. Modernity is the thrusting-forward arrow of time — Progress — characterized by its juvenile enthusiasm, risk taking, frontier spirit, optimism, and indifference to the past. The spirit can be summarized in a single sentence: "Tomorrow, we will be able to separate more accurately what the world is really like from the subjective illusions we used to entertain about it."

The very forward movement of the arrow of time and the frontier spirit associated with it (the modernizing front) is due to a certain conception of knowledge: "Tomorrow, we will be able to differentiate clearly what in the past was still mixed up, namely facts and values, and this because of our confidence in Science."

Science (capital S) is the shibboleth that defines the right direction of the arrow of time because it, and only it, is able to cut into two well-separated parts what had, in the past, remained hopelessly confused: a morass of ideology, emotions, and values on the one hand, and, on the other, stark and naked matters of fact.

The notion of the past as an archaic and dangerous confusion arises directly from giving Science this role. A modernist, in this great narrative, is the one who expects from Science the revelation that Nature will finally be visible through the veils of subjectivity — and subjection — that hid it from our ancestors.

And here has been the great failure of political ecology. Just when all of the human and nonhuman associations are finally coming to the center of our consciousness, when science and nature and technology and politics become so confused and mixed up as to be impossible to untangle, just as these associations

are beginning to be shaped in our political arenas and are triggering our most personal and deepest emotions, this is when a new apartheid is declared: leave Nature alone and let the humans *retreat* — as the English did on the beaches of Dunkirk in the 1940s.

Just at the moment when this fabulous dissonance inherent in the modernist project between what modernists say (*emancipation from all attachments!*) and what they do (*create ever-more attachments!*) is becoming apparent to all, along come those alleging to speak for Nature to say the problem lies in the violations and imbroglios — *the attachments!*

Instead of deciding that the great narrative of modernism (Emancipation) has always resulted in another history altogether (Attachments), the spirit of the age has interpreted the dissonance in quasi-apocalyptic terms: "We were wrong all along, let's turn our back to progress, limit ourselves, and return to our narrow human confines, leaving the nonhumans alone in as pristine a Nature as possible, *mea culpa, mea maxima culpa…*"

Nature, this great shortcut of due political process, is now used to forbid humans to encroach. Instead of realizing at last that the emancipation narrative is bunk and that modernism was always about attachments, modernist greens have suddenly shifted gears and have begun to oppose the promises of modernization.

But why do we feel so frightened at the moment that our dreams of modernization finally come true? Why do we suddenly turn pale and wish to fall back on the other side of Hercules's columns, thinking we are being punished for having transgressed the sign: "Thou shall not transgress?" Was not our slogan until now, as Ted Nordhaus and Michael Shellenberger note in *Break Through*, "We shall overcome!"?

In the name of indisputable facts portraying a bleak future for the human race, green politics has succeeded in leaving citizens nothing but gloomy asceticism, a terror for trespassing Nature, and diffidence toward industry, innovation, technology, and science. No wonder that, while political ecology claims to embody the political power of the future, it is reduced everywhere to a tiny portion of electoral strap-hangers. Even in countries where political ecology is a little more powerful, it contributes only a supporting force.

Set in contrast to the modernist narrative, this idea of political ecology could not possibly succeed. There is beauty and strength in the modernist story of emancipation. Its picture of the future is so attractive, especially when put against such a repellent past, that it makes one wish to run forward to break all the shackles of ancient existence.

Political ecology has remained marginal because it has not grasped either its own politics or its own ecology. It thinks it is speaking of Nature, System, a

hierarchical totality, a world without man, an assured Science, but it is precisely these overly ordered pronouncements that marginalize it. Between the environment and the ecological struggle, one has to choose. Nature, no matter grey or green, does not mix well with politics. Only "out of Nature" may politics start again and anew.

To succeed, an ecological politics must manage to be at least as powerful as the modernizing story of emancipation without imagining that we are emancipating ourselves from Nature. What the emancipation narrative points to as proof of increasing human mastery *over* and freedom *from* Nature — agriculture, fossil energy, technology — can be redescribed as the increasing *attachments* between things and people at an ever-expanding scale. If the older narratives imagined humans either fell from Nature or freed themselves from it, the compositionist narrative describes our ever-increasing degree of *intimacy* with the new natures we are constantly creating.

2.

The paradox of "the environment" is that it emerged in public parlance just when it was starting to disappear. During the heyday of modernism, no one seemed to care about "the environment" because there existed a huge unknown reserve on which to discharge all bad consequences of collective modernizing actions. The environment is what appeared when unwanted consequences came back to haunt the originators of such actions.

But if the originators are true modernists, they will see the return of "the environment" as incomprehensible since they believed they were finally free of it. The return of consequences, like global warming, is taken as a contradiction, or even as a monstrosity, which it is, of course, but *only according* to the modernist's narrative of emancipation. In the compositionist's narrative of attachments, unintended consequences are quite *normal* — indeed, the most expected things on earth!

Environmentalists, in the American sense of the word, never managed to extract themselves from the contradiction that the environment is precisely *not* "what lies beyond and should be left alone" — this was the contrary, the view of their worst enemies! The environment is exactly what should be even more managed, taken up, cared for, stewarded, in brief, integrated and internalized in the very fabric of their polity.

France, for its part, has never believed in the notion of a pristine Nature that has so confused the "defense of the environment" in other countries. What we call a "national park" is a rural ecosystem complete with post offices, well-tended roads, highly subsidized cows, and handsome villages.

Those who wish to protect natural ecosystems learn, to their stupefaction, that they have to work harder and harder — that is, to intervene even more, at always greater levels of detail, with ever more subtle care — to keep it "natural enough" for Nature-intoxicated tourists to remain happy.

Like France's parks, all of Nature needs our constant care, our undivided attention, our costly instruments, our hundreds of thousands of scientists, our huge institutions, our careful funding. But though we have Nature, and we have nurture, we don't know what it would mean for Nature itself to be nurtured.

The word "environmentalism" thus designates this turning point of history when the unwanted consequences are suddenly considered to be such a monstrosity that the only logical step appears to be to abstain and repent: "We should not have committed so many crimes; now we should be good and limit ourselves." Or at least this is what people felt and thought *before the breakthrough,* at the time when there was still an "environment."

But what is *the breakthrough* itself then? If I am right, the breakthrough involves no longer seeing a contradiction between the spirit of emancipation and its catastrophic outcomes, but accepting it as the normal duty of *continuing* to take care for the unwanted consequences all the way, even if this means going ever further and further down into the imbroglios. Environmentalists say: "From now on we should limit ourselves." Postenvironmentalists exclaim: "From now on, we should stop flagellating ourselves and take up explicitly and seriously what we have been doing all along at an ever-increasing scale, namely, intervening, acting, wanting, caring." In one case, the return of unexpected consequences appears as a scandal (which it is for the modernist myth of mastery); in the other, they are part and parcel of any action.

3.

One way to seize upon the breakthrough from environmentalism to postenvironmentalism is to reshape the very definition of the "precautionary principle." This strange moral, legal, epistemological monster has appeared in European and especially French politics, after many scandals due to the misplaced belief by state authority in the certainties provided by Science (capital S).

When action is supposed to be nothing but the logical consequence of reason and facts (which the French, of all people, still believe), it is quite normal to wait for the certainty of science before administrators and politicians spring to action. The problem begins when experts *fail to agree* on the reasons and facts that have been taken as the necessary premises of any action. Then the machinery of decision is stuck until experts come to an agreement. It was in such a situation that the great tainted blood catastrophe of the 1980s ensued:

before agreement was produced, hundreds of patients were transfused with blood contaminated by the AIDS virus.

The precautionary principle was introduced to break this odd connection between scientific certainty and political action, stating that even in the absence of certainty, decisions could be made. But of course, as soon as it was introduced, fierce debates began on its meaning. Is it an environmentalist notion that precludes action or a postenvironmentalist notion that finally follows action throughout its consequences?

Not surprisingly, the enemies of the precautionary principle — which President Chirac enshrined in the French Constitution as if the French, having indulged so much in rationalism, had to be protected against it by the highest legal pronouncements — took it as proof that no action was possible any more. As good modernists, they claimed that if you had to take so many precautions in advance, to anticipate so many risks, to include the unexpected consequences even before they arrived, and worse, to be responsible for them, then it was a plea for impotence, despondency, and despair. The only way to innovate, they claimed, is to bounce forward, blissfully ignorant of the consequences or at least unconcerned by what lies outside your range of action. Their opponents largely agreed. Modernist environmentalists argued that the principle of precaution dictated no action, no new technology, no interventions unless it could be proven with certainty that no harm would result. Modernists we were, modernists we shall be!

But for its postenvironmental supporters (of which I am one) the principle of precaution, properly understood, is exactly the change of *zeitgeist* needed: not a principle of abstention — as many have come to see it — but a change in the way *any action* is considered, a deep tidal change in the linkage modernism established between science and politics. From now on, thanks to this principle, unexpected consequences are *attached* to their initiators and have to be followed through all the way.

4.

The link between technology and theology hinges on the notion of *mastery*. Descartes exclaimed that we should be "*maîtres et possesseurs de la nature.*" But what does it mean to be a master? In the modernist narrative, mastery was supposed to require such total dominance by the master that he was emancipated entirely from any care and worry. This is the myth about mastery that was used to describe the technical, scientific, and economic dominion of Man over Nature.

But if you think about it according to the compositionist narrative, this

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myth is quite odd: where have we ever seen a master freed from any dependence on his dependents? The Christian God, at least, is not a master who is freed from dependents, but who, on the contrary, gets folded into, involved with, implicated with, and incarnated into His Creation. God is so attached and dependent upon His Creation that he is continually forced (convinced? willing?) to save it. Once again, the sin is not to wish to have dominion over Nature, but to believe that this dominion means emancipation and not attachment.

If God has not abandoned His Creation and has sent His Son to redeem it, why do you, a human, a creature, believe that you can invent, innovate, and proliferate — and then flee away in horror from what you have committed? Oh, you the hypocrite who confesses of one sin to hide a much graver and mortal one! Has God fled in horror after what humans made of His Creation? Then have at least the same forbearance as He has.

The dream of emancipation has not turned into a nightmare. It was simply too limited: it excluded nonhumans. It did not care about unexpected consequences; it was unable to follow through with its responsibilities; it entertained a wholly unrealistic notion of what science and technology had to offer; it relied on a rather impious definition of God, and a totally absurd notion of what creation, innovation, and mastery could provide.

Which God and which Creation should we be for, knowing that, contrary to Dr. Frankenstein, we cannot suddenly stop being involved and "go home?" Incarnated we are, incarnated we will be. In spite of a centuries-old misdirected metaphor, we should, without any blasphemy, reverse the Scripture and exclaim: "What good is it for a man to gain his soul, yet forfeit the whole world?" /

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