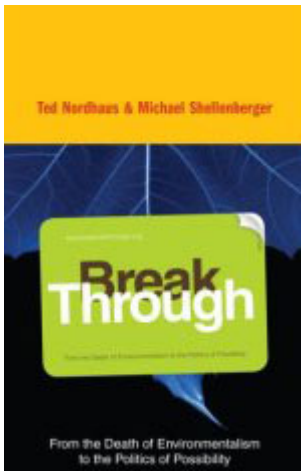
« It’s development, stupid ! » or How to Modernize Modernization?

T. Nordhaus, M. Shellenberger, Break Through. From the Death of Environmentalism to the Politics of Possibility, 2007.

Par Bruno Latour

A chapter by Bruno Latour, SciencesPo, for a book of essays edited by Jim Proctor “ *Postenvironmentalism”,* to be published by the MIT Press, 2008, commenting upon *T. Nordhaus, and M. Shellenberger* “*Break Through. From the Death of Environmentalism to the Politics of Possibility*”.



Even though I am too far from day-to-day North American politics to comment usefully on the many suggestions given in this important book, I do have two vantage points that allow me to comment on the “breakthrough” they wish to make: as a Frenchman and as a sociologist of science.

First, with respect to France, it is a country where Green parties have simply vanished: election after election, they have finally lost themselves in more and more arcane and distracting issues proving the main thesis of “postenvironmentalism” by gracefully committing suicide… Second, France 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… Third, France is the only country that

has believed in modernity so much that it has always believed it possible to entirely get rid of politics and replace it with a government of Reason: in a way Nature (capital N) has always reigned here under the guise of Science (capital S), already proving one of the main theses of the book about the danger of ignoring pragmatism. Fourth, through a tortuous process that still mystifies law professors, France is also the only country to have introduced in its Constitution, the principle of precaution, an initiative of the now almost forgotten president Chirac.[1] Finally, and to the bafflement of all observers, the new French government has embarked on an extraordinary experiment to engage with pressing environmental issues through an innovative process of representation called "*le Grenelle de l'environnement*", in reference to the great bargain at the end of the May 1968 crisis, a hybrid symbol of class struggle mixed with questions of nature — an expression as odd as if you were talking about a "Bastille Day of Ecology" or the "Red October of Nature"… For all these reasons, France is not such a bad standpoint from which to witness what the ecological crisis has done to politics.

Moreover, I might have an additional qualification to comment on this book since I have always been convinced that the key to the understanding of politics lies in the conceptions of science and, more generally, of knowledge acquisition — *political epistemology* is the name given to this crucial connection. The importance of this connection has been obvious throughout the whole history of Western political thought, but never more clearly than since the various ecological crises have brought the very definitions of science and politics in even more dramatic contact. This is where science studies (my field) may provide a chance to comment on what I have called *the politics of nature*.[2]

The great virtue of Nordhaus and Shellenberger's (N&S) plea for development, is to attack head on the question of why the most pressing issues of our days —ecological crisis broadly construed— have not been met with the same enthusiasm, energy, optimism, ideals and forward looking democratic spirit as the past tragedies of poverty, tyranny and war. If I were to summarize the thrust of the book, I'd say that the authors try to overcome the tragic consequences of bringing Nature into politics: in the name of indisputable facts portraying a bleak future for the human race, Green politics has succeeded in depoliticizing political

passions to the point of leaving citizens nothing but gloomy ascetism, a terror for trespassing over Nature and a diffidence toward industry, innovation, technology and science. Everything happens as if Green politics had *frozen* politics solid.

Such a view of environmentalism is of course very unfair to the great number of scientific and political groups who have struggled with such intelligence to bring ecological issues to the forefront of public consciousness. No militant, no scientist, no administrator that I know, will recognize oneself in the portrait the authors make of the “environmentalists.” And yet, N&S are right on one essential feature: no matter how important the work that has been done so far, ecological questions are still taken as peculiar to one specific domain of concerns, not as the core of politics. Never are these issues treated with the same sense of urgency and centrality, with the same passions, the same moral energy than the rest of public issues. At the very least, they don’t mobilize in the same ways the democratic ideals so essential to the pursuit of civilized life.

N&S are clearly focused, in my view, on the right philosophical blocking point: the whole endeavor of political ecology is presented as a question of *learning our limitations* even though, it is this very notion of limits that, paradoxically has limited or even paralyzed politics. What the authors want is to “break through” *the limits of the notion of limits*, so as to unleash the same type of courage, energy and moral enthusiasm that is necessary to overcome the new threats to democratic society.

For a European and certainly for a Frenchman, such an endeavor is especially timely since they tackle this philosophical issue as a psycho-social question, namely as a question of emotion, of feeling, as if they had sensed that the gamut of political passions triggered by the ecological crisis was much too narrow to deal with the massive dimension of the problems —or at least much too weak compared to those that religion, war, protest, art, may unlock. They try to tune in to another tone of political emotions, those necessary to *redevelop*, or, to use another expression proposed by Ulrich Beck, to *modernize modernization*.[3] Those two traits —the detection of the limit of limits and the psycho-social entry into the problem— put this book apart and justify, even though it is often unfair to the practitioners, that it be taken seriously.

The thesis of the authors is never more striking (and never funnier) than when, at the very end, they juxtapose one of Winston Churchill's talks on the renewal of Europe to stand united at the time of the Cold War with one of Tony Blair's speeches on global warming at the Davos Forum in 2005 (p.263 et seq). Blair's talk is excellent but purely factual, uninspiring, as if emptied of any politicizing urge; Churchill's speech is…, well Churchillian, but of course freed from any reference to nonhuman friends and enemies (in 1947, remember, politics was still "for humans only" —they had enough inhumanities to deal with). On hearing Blair's lecture, people shake their head in assent, in despair, in fright, but they are moved no further than to sit on their butts for the rest of their lives. On hearing the second, they rebuild Europe from top to bottom and "never had it so good." Then, N&S try their own little cloning experiment by inserting Blair's factual approach to suck the energy out of Churchill's plea for reconstruction (p.267) and then inject Churchill's energy in the genetic code of Blair's dry argument (p. 268): Churchill expatiates about the Cold War like Blair; Blair speaks of the global warming like Churchill. A very effective thought experiment: Europe remains in ruins for the sixty years to come because no one does anything much after hearing it; global warming is recast as the way to unleash political energy for the next sixty years to come because the right emotional cord has been struck…

Only a thought experiment to be sure, but a revealing one: why has the question of nonhumans failed to enter into politics in any energizing way? More specifically, how can we explain that what should have been taken as a fabulous *extension* of the narrow limits played until now by political games, has been considered as a necessary *restriction* of their horizons? To refer even more specifically to an American myth (which strangely enough N&S don't allude to), how come this unprecedented expansion of politics to nonhumans, instead of being cast as the stark discovery of an era of limits, has not been seen as the renewal of an Endless Frontier? Just at the time when the promises of science, technology and demography make the necessary enlargement of politics to nonhumans at an ever expanding scale clear to all —to the point of engaging the Earth itself in the arenas of political representation—, 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 leave under their feet, from now on, the most invisible of footprint.[4]

A bit too late to lament, one is tempted to say. Why do you feel so frightened just at the moment that your dreams come true? Why do you suddenly turn pale and wish to fall back on the other side of Hercules' columns and think you are being punished for having transgressed the sign: "Thou shall not transgress'" As N&S so energetically admonish us to remember, was not our slogan until now: "We shall overcome!"? You have developed at an incredible speed and scale. Very well. How on Earth could you stop to do so at an ever expanding scale and speed? Now is just the time you should develop *more* not *less*. Or else, don't expect a second to be followed by anyone but a few ascetic souls —just when you need the billions behind you.

Although many people have criticized N&S for castigating unfairly their fellow activists, this is beside the point, because their question is not to be fair to the hundreds of thousands who have already converted to a more ascetic view of history, but to address all the others, those for whom nonhumans are not part of politics at all. Very explicitly, N&S take up the question of ecology in the same way as some Democrats are trying to understand why Republicans keep winning the battle around values and religion, no matter how many well meaning souls claim they *should* not… Well, Republicans do, and that is the only real puzzle to be solved, and quickly. If values are at the front line, well, this is where the battle has to be fought. After all, Saint Paul too was unfair to his fellow Phariseans, and yet he decided that it was to the Gentiles that he had to convert…. Such is the direction in which I want to push the argument of the authors a tad further and to see how we could overcome the limits of an era of limits: not for the Chosen, but for the Heathens —maybe even for the French!

The history of modernism is full of paradoxes —I have reviewed many of them in my career— but this one, by the sheer size of its contradiction and the depth at which it eats into contemporary minds is really stunning. In order to size it up, I will follow what N&S's book manages so well, namely to relate four elements: a stifling belief in the existence of Nature to be protected; a particular conception of Science; a limited gamut of emotions in politics; and finally the direction these

give to the arrow of time.

The present situation may be viewed as a consequence of drawing two completely opposite lessons from the same events depending on our definition of modernism. The thrusting-forward arrow of time (“Progress” in the traditional great narrative) and its resulting emotions (juvenile enthusiasm, indifference to the past, risk taking, frontier spirit, optimism) were associated with a very peculiar idea of modernity which may be summarized in one 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.” As I have shown elsewhere,[5] the very movement forward of the arrow of time and the Frontier spirit associated with it (the modernizing front) was 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.” In such a conception, Science (capital S) is the shibboleth that defines the right direction of the arrow of time because it, and it only, is able to cut into two well separated parts what had remained in the past hopelessly confused: a morass of ideology, emotions and values on the one hand, and, on the other, stark and naked matters of fact. Indeed, the very notion of the past as an archaic and dangerous confusion comes directly from giving Science such a 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 had hidden it to our ancestors. Even if this mental attitude were utterly mistaken, nothing can be understood of the modernist spirit and energy, if one does recognize the beauty and strength of such a view: this 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. Emancipation is the word. Either ecological concerns must manage to be at least as powerful as this modernizing urge or they will repeatedly fail.

And yet, this history of modernism can also be described through a completely different great narrative, so different that there is no way for a modernist mind to reconcile oneself with it —and this is where the paradox lies. Science, technology, markets, etc. have *amplified*, for at least the last two centuries not only the *scale* at which humans and nonhumans are connecting with one another

in larger and larger assemblies, but also the *intimacy* with which such connections are made. Whereas at the time of ploughs we could only scratch the surface of the soil, we can now begin to fold ourselves into the molecular machinery of soil bacteria. While three centuries back, we could only dream, like Cyrano de Bergerac, of traveling to the Moon, we now run robots on Mars and entertain vast arrays of satellites to picture our own Earth. While in the past, my Gallic ancestors were afraid of nothing except that the "sky will fall on their heads," metaphorically speaking, we are now afraid quite literally, that the climate could destroy us.

Notice what I am *not* saying here: I am not saying that the second narrative recovers the bads while the first recover the good, that the first is dystopic while the other has always been utopian. No, what distinguishes the second is that we constantly move from a superficial to a deeper interpretation of what it is to be entangled. What, in the first narrative, was taken as the proof of an increasing human mastery and an advance toward greater emancipation, could also be redescribed, not as the dialectical opposite but as an entirely different phenomenon, namely, a *continuous* movement toward a greater and greater level of *attachments* of things and people at an ever expanding scale and at an ever increasing degree of intimacy. Emancipation or attachment, two great narratives for the same history.

Everyday in our newspapers we read about more entanglements of science, morality, religion, law, technology, finance and politics, never about less… If you had any doubt about, it is enough to read about President Bush's connection with stem cells and religion, or about the latest Nobel Peace Prize given to the Panel on Climate Change! Depending on which great narrative you follow, the same development of science, technology and markets may be seen as the proof of the modernist emancipation or as the source of larger and more intimate connections between humans, laws, organizations, finance, architecture, ways of life. Emancipation yes, but also, something else, more and more attachments. And, sure enough, everything depends on how you understand the mechanisms by which knowledge is produced. If you envision a future in which there will be less and less of these imbroglios, you are a modernist. But if you brace yourself for a future in which there will be 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?

That's the problem, no one can say what you are! The problem is that those attachments have no room whatsoever in the great narrative with which we used to celebrate scientific and technological developments. We have produced what we cannot describe. Modern? Not anymore. Postmodern? Hum, almost as bad. "Postenvironmentalist", then? Horrible and even more depressing.

Everything happens as if modernists were unable to reconcile their idea of Science and Nature —which, remember, according to their narrative, is supposed to be farther and farther removed, as time passes, from law, subjectivity, politics and religion— with the alternative reality that the connections of science and technologies are more pressing everyday, more confusing, requiring even more intervention, more assemblies, more scrutiny, more stewardship. For instance, 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 level of details, with ever more subtle care— to keep it "natural enough" for Nature-intoxicated tourists to remain happy. The official appearance of natural preserves "untouched by human hands" is contradicted by the proliferation of wildlife *outside* parks.[6] Actually these parks offer a nice simile for the philosophical contradiction I am outlining here: like the parks themselves, Nature, this sacrosanct Nature whose laws should remain "untouched by human values," needs our constant care, our undivided attention, our costly instruments, our hundreds of thousands of scientists, our huge institutions, our careful funding. We had Nature, we had nurture, but we don't know what it would mean for Nature itself to be nurtured.[7] The problem is, we don't know how to deal with this gigantic cognitive dissonance: everywhere attachments and yet no other option than emancipation. We seem to be stuck.

And this is where the predicament lies that N&S, with a good dose of courage, have decided to probe: instead of deciding that the great narrative of modernism (Emancipation) had always resulted in another history altogether (Attachments), the spirit of the age decided to interpret the dissonance as a contradiction

between good that had turned bad, and began to exclaim 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*…” See the paradox? Just when the human and nonhuman associations are finally coming to the center of our consciousness, are beginning to be shaped in our political arenas, are triggering our most personal and deepest emotions, this is when a new apartheid is declared: leave nonhumans alone and let the humans *retreat* —as the English did on the beaches of Dunkirk in 1940s.[8] Just at the moment when the fabulous dissonance inherent in the modernist project, this amazing distance between what they say they do (emancipation from all attachments) and what they do (attachments at an always greater scale), here come the pro-Nature folks who, believing that the problem lies in the second aspect —encroachment, involvement, imbroglios— stick desperately to the first —Nature— which is at best an illusion, at worse a perfectly reactionary fall back to the diktat of “natural laws.” Nature, this great shortcut of due political process, once repainted in green, is now used to forbid humans to encroach. Really? At the time of satellites, nanotechnologies, global warming, Nobel Peace Prize to Gore, and so on!? How unlikely. Instead of realizing at last that the first great narrative is bunk and that modernism had always been part of another history (that “we have never been modern”…), they suddenly shifted gears and began to oppose the promises of modernism with the devastation it had generated as if, through some bugs of dialectical reasoning, the worst had emerged from the best. After having devastated the planet, they began to complain they should not have moved at all. Oops! Sorry… we won’t do it again.

When Emmanuel Kant, in the middle of the first industrial revolution, managed to cut asunder human knowledge from things in itself, it was already odd but forgivable: he was after all just witnessing the first tremors of modernist involvement of things and people. When the Vienna Circle, after three or four industrial revolutions and one Great War, tried to erase from the practice of science all its material attachments so as to dream of a pure analytical language absolutely divorced from subjective values, it was more ridiculous but still pardonable —after all they were fighting the Red and the Black terrors. But that in the 21st century, at the time when the very extension of science, technologies,

markets, etc. has become almost coextensive with material existence, they are people who wish to divorce humans and nonhumans, now that's a bridge too far. Modernist ideologies can absorb all contradictions, I know, I have scrutinized this for years, but this one, is really too much.

Such is the intellectual imposture that N&S sum up, rather clumsily, in the word "postenvironmentalism". As is now well known, the paradox of the environment is that the word emerged in public parlance just when the environment disappeared! 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 actions. There was an exterior since, to use the economists' term, action could be *externalized*. The environment became public when there was no longer any exterior, any reserve, any dump in which to discharge the consequences of our actions. Environmentalists, in the American sense of the word, never managed to extract themselves from this 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!— but what should be even more managed, taken up, cared for, stewarded, in brief, integrated, internalized in the very fabric of their polity. Here N&S are at their best: between the environment and the ecological struggle, one has to chose. Nature, no matter grey or green, does not mix well with politics. Only "once out of nature" may politics start again and anew.

In other words, and if I gloss their argument correctly, the environment is what appears when unwanted consequences come back to haunt the originator of the action. If this originator is a true modernist, he will see this return as incomprehensible since he believed he was just liberating himself from all ties and getting finally free (I use the "he" on purpose here…). Thus, the return of the consequences will be taken by him as a contradiction, or even as a monstrosity. Which they are of course, but *only according* to the modernist first narrative. Because in the second, they are quite *normal*, the unintended consequences are the most expected things on Earth! Once you begin to take the whole Earth on your shoulders, then no wonder that you have to carry it along for ever… The giant Atlas knew that perfectly well and we are now learning the same lesson, except, again, it is no longer metaphorical but quite literal.

There seems to be no better locus to test N&S's view on the right way to seize upon the chance offered by unexpected consequences to reshape the very definition of action than the European development 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 with a capital S.[9] 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 ensued: before agreement was produced, hundreds of patients were transfused with blood contaminated by the AIDS virus.[10] The precautionary principle was introduced to break this odd connection between scientific certainty and political action and stated that, even in the absence of certainty, decisions could be taken. 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 precuationary principle (which, as I said, 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 this principle as the 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. Modernists we were, modernists we shall be! But for its supporters (of which I am one) this principle is the symptom of exactly the change of *Zeitgeist* N&S are pointing out: not a principle of abstention, but a change in the way *any action* is considered. A deep tidal change in the linkage

modernism had 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.11

The word “environmentalism” thus designates this turning point of history when the unwanted consequences are suddenly considered as such a monstrosity that the only logical step appears to be to abstain and to repent: “We should not have committed so many crimes, now we should be good and limit ourselves.” Or at least this is what people feel 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 consists in no longer seeing a contradiction between the spirit of emancipation and their catastrophic outcomes, but to take 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. Rightly, the author links their definition to the great American political philosophy of pragmatism, a tradition that has been unjustly forgotten during late modernism but that is much better adapted to the new ecological crisis than any present competitor.12 And it should come as no surprise to see that if pragmatism is so much better at politics, it is also because it possessed a radically different theory of science and technology. Again, political epistemology should play a crucial role here: change your ideas of science and you change all the ideas about the past, the future and what you have to do about the world.

And this is where the psycho-social problem so eloquently played out in the book lies: we (the modernists) have a set of emotions and attitudes for following the first history (“Forward, forward”!) but when we realize that the net result is clearly different (“Imbroglios, imbroglios!”) we are stuck. That is, we don’t have the mental, moral, aesthetic, emotional resources to *follow through* the attachments. No wonder, since we have believed all along that we should be more and more

emancipated *from any attachment*, free at last, liberated from the shackles of an archaic past! If we look back at our own history with this narrative, it appears to us as a monstrosity, as something so horrible, so contradictory that we seem to have no way out of it except by converting ourselves suddenly to ascetism and repentance. This is the time when Atlas is submitted to the Great Temptation: “I should not have taken the whole Earth on my back. I am going to withdraw.” To be sure N&S too make an appeal for conversion, but it is not a conversion from *hubris* to ascetism.13 The term they use is slightly disappointing, and that may explain the anticlimactic end of their book, they propose to convert from the idea of limits to the “politics of possibility.” Well, well, well. Who is speaking now here? Churchill or Blair’

It is strange for a book bent on unlocking new political passions to bet that such a boring term will push the masses into embracing at last the politics of nature, politics that “environmentalism” has failed to expand enough. If I were mean, I would say that the authors prove enough, by their choice of terms, that they have indeed themselves remained behind the hard shell from which they claim to have broken free…

This is where, to finish, I want to nudge them a bit and take more seriously something they say about religion. In one strange (for a European) passage of their book, the two activists look with undisguised envy upon the full parking lots of American Churches on Sunday and wonder why the same energy that is being released to celebrate the Creator has not been mobilized for saving His Creation (p. 198 and seq). This is a serious question that leads to the strange connection between mastery, technology and theology.

Let us remember first that this difficulty in following through with the unexpected consequences of action is not a new thing since it is the whole topic of the novel Frankenstein. As is not so well known, for Mary Shelley, the real crime of the Creator, Doctor Frankenstein, is not to have invented a horrible monster. The true abomination, after he had given life to an unnamed being through some combination of *hubris* and high technology, is to have *abandoned the Creature to itself*… This real sin is revealed in the novel by the Creature when it meets its maker (on a glacier in the Alps but we can forget that detail!). This is when the

Creature claims that it was not *born* a monster but that it became criminal *after* being left alone by a horrified Dr Frankenstein who fled from his laboratory once he had seen the horrible thing twitch to life. “Father, father, why have you abandoned me’” The novel is very explicit about the double crime of Frankenstein: he feigns to repent from one sin (“I should not have created a monster”) when it is another sin that he should have confessed: “I should not have abandoned what I had begun to create and then it might have come along fine.” 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, proliferate and then flee away in horror from what you have committed? Oh, you the hypocrite who confess 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.

Mary Shelley, in a brilliant feat of myth making, had seen at the onset of the 19th century great technical revolutions, that the gigantic sins that were to be committed would be hiding a much greater sin that it has been upon our generation to finally atone for: not technology itself, but the absence of *love* for the technology we have created, as if we had decided that we were unable to follow through with the education of our own children.14 The question is not to stop innovating, inventing, creating, intervening, etc. The real question is to have the same type of patience and energy as God the Creator Himself. And the comparison is not blasphemous if it is true that we have been taking the whole of Creation on our shoulders and have now become literally (and not metaphorically in our actions) coextensive to the Earth. This is another gloss, this time techno theological, of the Biblical assertion that we might have been created in His image.

The link between technology and theology (admittedly not very much studied by scholars who are even more “atechnists” as they are atheists) hinges on the notion of *mastery*. What does it mean to be a master? In the first great narrative, mastery was supposed to be such total dominance by the master that he (a masculine here again is required) 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 second great narrative, this myth is really odd: where have you ever seen a master freed from any dependence on his dependents? When Descartes exclaimed that we should be "*maîtres et possesseurs de la nature*" what is so shocking in this tired old sentence is not the idea that we should be masters (even if this is what the environmentalists believe) but the very idea of what it is to be master of anything or anyone (and this is where the breakthrough should lead, it seems to me). If it is true that we always take our idea of mastery and creation from God, well the Christian God at least is not a master that masters anything (in the first modernist sense of the word) but who, on the contrary, gets folded into, involved with, implicated with and incarnated into His Creation; and who is so much attached and dependent on His Creation that he is continually forced (convinced? willing?) to save it again and again. So once again the sin is not to wish to have dominion over nature but to believe that this dominion means emancipation and not attachment. The question is for the confused domain of theology and ecology to decide which God we want to be for which sort of Creation, 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'"

There is something odd in asking for the unlocking of the energies commensurate with the task ahead and finishing a book by the cold shower of mere "possibility." If there is a trait that is clear in the strange history of the moderns is that they want the *impossible*, and that they are right. What is in question, it seems to me, is to slightly modify what sort of impossibility they are after. 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 totally 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. To breakthrough is to abandon the limit of limits —and here the authors are dead right— but what lies beyond the hard shell they have broken through is still too much tainted by a limited range of options.

Since we share the same admiration for the pragmatists, I might have one suggestion: that they don't rely on the weakened notion of pragmatism offered by commentators like Richard Rorty: his pragmatism has no *pragmata* in it, just people. Thus, the great virtue of pragmatism has been enucleated. The Copernican revolution offered more than half a century ago by Dewey is to have politics finally turn around *things —pragmata* in Greek— what I have translated by still another term: matters of concern (by contrast with matters of fact). The modernists will never be great at a politics of possibility, but if you give them the impossible they are after, a politics of the things in which they have entangled, involved, implicated, incarnated the whole world literally and no longer metaphorically, then "they shall overcome." It is this source of courage, that the authors, against the whole apocalyptic discourse of finally finding our limits, have so rightly tried to unlock. They need all the help they can get. I will be happy to push them a bit further into another conversation. We want to develop, not withdraw.

T. Nordhaus, M. Shellenberger, *Break Through. From the Death of Environmentalism to the Politics of Possibility*, Houghton Mifflin Company, New York, 2007.

Résumé

Even though I am too far from day-to-day North American politics to comment usefully on the many suggestions given in this important book, I do have two vantage points that allow me to comment on the "breakthrough" they wish to make: as a Frenchman and as a sociologist of science. First, with respect to France, ...

Notes

1 Vanneuville, Rachel, and Stéphane Gandreau. *Le Principe de Précaution saisi par le droit*. Paris: La Documentation Française, 2006.

2 Latour, Bruno. *Politics of Nature: How to Bring the Sciences into Democracy (Translated by Catherine Porter)*. Cambridge, Mass: Harvard University Press, 2004.

3 Ulrich Beck *Risk Society. Towards a New Modernity*. London: Sage, 1992 an author, strangely enough, N&S make no use at all.

4 In his book James Lovelock. *The Revenge of Gaia: Earth's Climate Crisis and the Fate of Humanity*. New York: Basic Books, 2006 doesn't explain how we are supposed to go from billions to millions of humans…

5 Latour, Bruno. *Pandora's Hope. Essays on the Reality of Science Studies.* Cambridge, Mass: Harvard University Press, 1999.

6 Mauz, Isabelle. *Gens, Cornes et Crocs (Préface de Raphael Larrère)*. Paris: Editions de l'INRA, 2005.; Western, David, R. Michael Wright, and Shirley Strum, eds. *Natural Connections. Perspectives in Community-Based Conservation*. Washington DC: Island Press, 1994.

7 Hence the crucial importance of Philippe Descola's book *Par delà nature et culture*. Paris: Gallimard, 2005 (which Anglo-American intellectual provincialism has failed so far to translate) which definitively shows, from the anthropological litterature, why no culture has ever had a nature *including* our own even though it is called naturalist!

8 This is the metaphor Lovelock (op. cit) uses against the weak notion of sustainable development… we should retreat ! No wonder that there are not many people ready to fight against the "revenge" of Gaia…

9 Sadeleer, Nicolas de, ed. *Implementing the Precautionary Principle: Approaches from Nordic Countries and the Eu*: Earthscan Publ. Ltd, 2006.

10 Hermitte, Marie-Angèle. *Le Sang Et Le Droit. Essai Sur La Transfusion Sanguine.* Paris: Le Seuil, 1996.

11 This is the reason of the great importance of Ulrich Beck's definition of risk society, that does not mean that we live more dangerously than before, but that actions and consequences –even unexpected- can't be separated any longer: nothing can be externalized.

12 I am using the word "unexpected consequence" in the sense of an author that N&S like as much as I do, namely John Dewey. *The Public and Its Problems*. Athens: Ohio University Press, 1927 1954 even though I differ in their interpretations of what are the *pragmata* of the pragmatists.

13 "Décroissance" is the term used by some French groups.

14 This is also the theme of my *Aramis or the Love of Technology*. Translated by Catherine Porter. Cambridge, Mass: Harvard University Press, 1996.

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