This is the 2013 version of the Gifford Lectures given in Edinburgh that corresponds roughly to the videos available on the Gifford lectures site.
The book of the same title *Facing Gaia* published first in French in 2015 and then translated in English and published in 2017 is a deeply different text with only the 3rd and 4th lecture of 2013 partially taken up in the final text. Although many of the themes are already here, they have been thoroughly rewoven (and translated anyway twice from English to French and then back to English!!) and includes two more lectures.
However, since in the last four years several people have commented on the original lecture text, it seems fit to leave available on the web a trace of the first version.

Facing Gaia

Six lectures on the political theology of nature

Being the first version of the Gifford Lectures on Natural Religion as they have been given in Edinburgh, 18th-28th of February 2013

For Peter Sloterdijk

With thanks to Clive Hamilton, Eduardo Viveiros de Castro, Deborah Danowski, Isabelle Stengers for their comments on this draft and with very special thanks to Simon Schaffer whom I have shamelessly pilfered.
Thanks to King's College (and especially the CRASSH program) for having allowed me to stay for a few weeks in Cambridge.
Many thanks to Michael Flower for attempting to discipline, with his usual kindness, my idiosyncratic English.

Version 2013 not to be confused with Facing Gaia 2017

"I would sooner expect a goat to succeed as a gardener than expect humans to become responsible stewards of the Earth"
James Lovelock
The Practical Science of Planetary Medicine, p. 186.

"Gaia as metaphor; Gaia as a catalyst for scientific inquiry; Gaia as literal truth; Gaia as Earth Goddess. Whoever she is, let's keep her. If science cannot find room for the grand vision, if Gaia dare not speak her name in Nature, then shame on science. To recant now would be a terrible thing, Jim. Don't do it."
Fred Pearce
New Scientist 28 May 1994

'Ce n'est plus la politique tout court, c'est la politique climatique qui est le destin',
Peter Sloterdijk
Globes *p.* 312

'I have cast fire upon the world, and look, I'm guarding it until it blazes.'(10)
Jesus in the **Gospel of Thomas**

'Nous, en revanche, nous envions l'alternative 'mauvais monde ou bon monde'. La fin nous menaçant, notre alternative aujourd'hui est: un monde ou pas de monde. Aussi longtemps qu'il dure, le monde actuel nous semble presque être: 'le meilleur des mondes'.
Gunther Anders
Le temps de la fin p. 87

'Ron Crossguns, who works for the Blackfeet tribe's oil and gas division, has oil leases on his land, a 10-foot cross in his yard, and little patience for that kind of pastoral veneration. He called it "movie Indian" claptrap, divorced from modern realities. Mountains, he said, are just mountains. "They're just big rocks, nothing more," Mr. Crossguns said. "Don't try to make them into nothing holy. Jesus Christ put them there for animals to feed on, and for people to hunt on.'
NYTimes August 15, 2012

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'L'esprit du monde utilise nos bras dans la sphère spirituelle, tout comme il se sert des volcans et des inondations dans la sphère physique ; Qu'importe qu'ils [les humains] *meurent d'une épidémie ou de la Révolution ! '*
Georg Büchner
Saint Just dans ***La mort de Danton***

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‘Once out of nature’ — natural religion as a pleonasm.

Yes, I know, I have no illusion, it is a mad project, too big, too ambitious. How could one solitary man, even well connected, encompass in one overall structure the very nature, indeed the very soil upon which everything else resides? What shape to give to an enterprise that will attempt to *enclose* the globe with all its components for everybody to see and to document so exactly and at such a gigantic scale that it could also play the role of a constantly updated archive of everything that has shaped and that is shaping our common abode? What does it mean to *represent* the Earth and to *compose*, panel after panel, its overall rotundity in a comprehensible and shareable manner?

If those are some of the questions I wish to raise, they were also those that Patrick Geddes, the curator of the Edinburgh Outlook Tower, was raising when asked by his friend Elisée Reclus, the anarchist turned geographer, to help him sketch the giant globe he planned to build for the Paris Exhibition of 1900 at a scale of 1:100000. The building was so big, two hundred meters, that it would have been almost as tall as the Eiffel Tower, using four times as much iron and costing five times as much, casting its thick globular shadow over the right bank of the river Seine. That Reclus, in spite of his celebrity, was not able to build it, speaks volumes about the difficulty of envisioning the Earth as *one* single entity and more generally of addressing the question of the globe *inside* any global structure — be it architectural, philosophical or scientific.

But if Elisée Reclus’s failure should be heard as a warning about the risk involved in addressing the question of the shape of the Earth, we should listen with great care to the way Geddes described his friend’s enterprise:

> "*Instead of a book, were it the best, the latest, here was now the most monumental of museums, the most simple of observatories, the* ***microcosm*** *of the* ***macrocosm*** *itself. Again the description went on, but now this was no mere* ***scientific model*** *in its institute, but the image, and shrine, and* ***temple*** *of the* ***Earth-Mother****, and its expositor no longer a modern professor in his chair, but*

*an arch-**Druid** at **sacrifice** within his circle of **mighty stones**, an Eastern **Mage**, initiator to **cosmic mysteries**. Yet once more, with ever nobler look and deepening word, the scene passed anew into the future of its accomplishments but with an interest no longer solely **cosmic**, but henceforth primarily **human** - the **unity of the world** now the basis and symbol of the **brotherhood of man upon it**; science is an art, geography and labour uniting into a reign of peace and goodwill. With not only intellect but imagination and feeling thus fully aroused, the geographic vision thus rose into the **poetic** - indeed in no mean measure became the **prophetic** also.*

Yet so far from this Palace of Geography being a mere frame, this realisation very nearly came to pass at the Paris Exposition of 1900, which, even as it was, will best remembered by its geographic interest - as in fact "l'Exposition des Panoramas"[1]

All the words count here, not only the connection between 'microcosm' and 'macrocosm' but also the strange shift from scientific 'model' to 'shrine' and 'temple', from 'geography' to 'cosmic mysteries', 'Mage', 'Druid' and the horrifying word 'sacrifice', from 'poetry' to 'prophecy' all the way to the charmingly outdated word 'panorama.' What were all those people doing at the time, with their obsession for models, temples and priesthood? What were they trying to assemble at the end of the 19th century with their vastly expanded panoramas, exhibits and cabinets of curiosity? How strange to us, a century later, to hear about the 'brotherhood of man' and the 'unity of the world' celebrated through the making of a material scale model, a tiny facsimile, a replica of iron and plaster of Paris. And yet, is this not just what I am going to try to do except that my own attempt at enclosing the Earth, once again, in this circle of questions, will be designed in the papier maché confusion of words and a few images? One thing is sure: today as much as yesterday, the same question resonates: what is the exact *shape of the Earth*? And we will have the same difficulty as Reclus in completing the task.

It is hard even to decide how to address the topic. Should I address 'it' directly by turning to 'her' and asking her to shed a favourable eye on what I am going to say. In a bygone era it would have been possible to turn to the Earth and to address her by her many names: Tellus, Terra,

[1] Patrick Geddes, "A Great Geographer: Elisée Reclus, 1830-1905", Scottish Geographical Magazine, vol. XXI, sept/oct 1905, p.561. I thank Pierre Chabard for introducing me to the work of Geddes.

broad-bosomed. And to beseech her that she give me enough talent to be able to praise her and her progeny in a worthy manner. What follows is from an Orphic poem:

> *O mother Gaia, of Gods and men the source, endured with fertile, all-destroying force; all-parent, bounding, whose prolific powers produce a store of beauteous fruits and flowers. All-various maid, the immortal world's strong base, eternal, blessed, crowned with every grace; from whose wide womb as from an endless root, fruits many-formed, mature, and grateful shoot. Deep-bossomed, blessed, pleased with grassy plains, sweet to the smell, and with prolific rains. All-flowery Daimon, centre of the world, around thy orb the beauteous stars are hurled with rapid whirl, eternal and divine, whose frames with matchless skill and wisdom shine. Come, blessed Goddess, listen to my prayer, and make increase of fruits thy constant care; with fertile seasons (horai) in thy train draw near, and with propitious mind thy suppliants hear."*

But such an address, such a beginning, such a prayer would look to be either cheap irony or a futile attempt at resurrecting a cult forever long gone. For a prayer to be addressed to a divine entity, you need not only a cult but also a culture, a whole thriving culture. More importantly, you need a real *people* associated with this divinity; a *demos* for whom such a celebration would be the most deeply engrained and most deeply cherished ritual.

We know this for as long as anthropology has existed: no rite without a collective for whom the only way to assemble truly as a group would consist in having been summoned by this spirit and in appealing to it in return. This much we know from Durkheim. But we also know that such a feedback loop connecting people assembled by *their* deities and assembling deities invoked by *their* people cannot resist too long the corroding influence of critique. The slightest distance or indifference is enough to reduce the deities to decorative themes for paintings, poems and operas. This is what has happened to the immortals gods of Antiquity: they are gone with the people who *had* them and who were *held* by them. Mortals they were and it is only their ghosts that have become a source of amusement or nostalgia. However, the last thing I want is to make you laugh at the evocation of Gaia or believe that Gaia is merely a figure of the past — a shadow, a ghost.

So I will not attempt addressing this character directly since we don't share enough of the same local culture, pertain to the same

people, or go through the same rituals to be able to give it the same name. What I will explore instead is this connection between a people summoned by an *entity* — let us put aside the words deity, divinities and gods for a moment — and this very same people sustaining this entity in return. It is this circular process that will be of interest to us as we begin this series of lectures: *how many ways are there to be assembled by an entity for which rites are performed that maintain this people and this entity in existence*? To sum it up in advance: what I am going to do is a rather *extended* version of *political theology* (a term that will be fully defined, I am afraid, only in the 5th lecture).

Ian Asmann, the great Egyptologist, has reminded us that it was a tradition in the ancient cities of the old world, before the advent of Judaism and Christianity, to establish *tables of translations* for the names of gods worshipped in many different cities and lands around the Mediterranean and the Middle East. At a time of cosmopolitanism (what could almost be said to be an early form of 'globalisation') those translations offered a sort of practical solution to the soft relativism with which every adept of one city-cult recognized the family resemblances amongst the city-cults of the many foreigners that were by now living in their midst. 'What you name Jupiter, I call Zeus' etc.

> *Ogygiadae me Bacchum vocant*
> *Osirin Aegypti putant*
> *Mysi Phanacem nominant*
> *Dionyson Indi existimant*
> *Romana sacra Liberum*
> *Arabica gens Adoneum*
> *Lucaniacus Pantheum.* (Assmann p. 82 French)

With such a procedure in mind, I'd like to raise the following question: is it possible to reuse this tradition of translation tables for the names of gods to list other entities, other cults, other people and to detect among those different collectives the family resemblances that remain invisible as long as we stick to our too local, too ethnocentric, too sectarian point of view ('collective' being the word I use as an alternative to the word 'society')?

Of course, I am well aware of what Assmann has so cogently shown: once the 'mosaic division,' as he calls it, is in place, those tables, and the soft relativism that went with them, are not only impracticable but deeply sinful and impious. The 'true' God becomes untranslatable

by any other name and no other cult than His cult should be maintained anywhere else. Everything happens as if the 'true God' had fulminated: 'Thou shall not make, under any circumstance, my entity commensurable with any other.' From this point on, 'relativism' has been turned into what it is still today for many people, a term of detestation and ostracism. But since I want to draw a *relation* among the different ways to associate people and entities, I am not too worried about this accusation of relativism. In spite of the radical 'division' most local cultures would like to make, I wish to render fully *commensurable* those different ways of being assembled around an entity. At a time of yet another globalisation, as the time quickly approaches when many different globes will be crashing into one another, we need another table of translations. Yes, it is a form of cosmopolitanism or, more exactly as we shall see, of cosmopolitics. And yes, it would be foolish of me to hide it: it is relativism, or rather, relationism. Whom do we have to invoke so as to gather us together when different people have different sky above their head, different soil under their feet and different cities they inhabit?

The way the translating tables worked, according to Assmann, was to shift attention from the proper *name* of the divinities to the series of *features* that this name summarized in the minds of their worshippers. Not 'Zeus', for instance, that is, a name, but 'Leader of the Fates' (*Moiragetes*), 'Protector of Suppliants' (*Ikesios*), as well as 'god of fair Winds' (*Euenemos*) and of course 'Bearer of the Lightning' (*Astrapaios*); that is, a set of qualities or attributes. The idea was that if the lists of features were more or less the same, then the proper name might be taken as indifferent or at least negotiable: 'Your people name it that way, my folks name it this way, but we designate by those invocations the same deity carrying out the same sorts of actions in the world.'

Such a mode of translation is tantamount to shifting from names to *agencies*. It is a fully pragmatic method, a move that William James would have approved of. And a move that would fit the semiotics method as well: always shift from actors to *actants*, from *competences* to *performances*. More importantly, it's also a *political* move: as long as you stick to names, you fight endlessly and fruitlessly; if we direct our common attention to agencies — that is, which real differences does it make in the world? — we might come to agree. And even if we still disagree, at least we move toward a common search for what divinities actually do. Translation tables for the names of gods in the ancient cities

were clearly diplomatic negotiations. Similarly today, if we have to go to war — and war is very likely— we want to make distinctly possible that we don't cut our throats over names but over features that do make a difference between friends and enemies.

One such mock fight, as you are well aware, risks pitting those who speak of various gods against those who speak of 'nature.' I know that the first reaction would surely be to say that those two invocations are incommensurable since they designate entirely different names and concepts. If you talk about Gaia, or God, or Jesus, or Buddha, or any spirit, it is not possible that you are also talking about 'nature.' Between the five first names and the last word, that is, 'nature', there is a chasm that no amount of negotiation may bridge. We recognize here the wedge that comes from the 'radical division' between the false gods and the true one; I should have said, between, on the one hand, all the talk about gods and, on the other, about 'reality' — a word that, as a devoted relativist, I protect inside well padded quotation marks. 'You cannot possibly compare those entities.' 'You have to choose your camp.' 'Nature is not a religion.' Swords, bayonets and guns are drawn at once. Mobilisation is declared.

But wait, wait! We said that we wanted to shift attention from names to agencies. So before we burn each other at the stake, let's have a look at the list of features that you lump together with your emblem and that others lump together under another concept. 'But "nature," you might say, is not an emblem, nor a concept; it is the stuff out of which and inside which we are all made.' I know, I know, but I asked you to wait, to be patient; let's see what we all have in store, let's call each other's bluff and show our hands. Then, we will decide whether or not it's worth fighting.

If for a moment you agree to this truce, what will happen? As soon as we shift the discussion, or rather the parley, in that way it's my impression that the call to arms might come to a standstill. Why? Because in order to deploy all the features that are lumped together under the entity named 'nature', we are going to delay the fight for at least as long as Scheherazade delayed her execution by the sword of King Shahryar. In spite of its reputation for indisputability, 'nature' is the most complex entity there is and the hardest to invoke to bring a story to an end. One could say that nature is *full of suspense*; just what is needed to keep awake the attention of any cruel prince!

In order to follow some of the coming stories more comfortably, I am going to use a trick: I am going to replace the word 'nature' to which we are much too habituated, with a weird exotic expression that will allow us to *distance* ourselves from it. At this point we don't need a grandiose new concept but just a provisional name, a mere placeholder with no other function than that of making us forget our familiarity with the name of this entity. I promise to discard this little ploy once it does its work.

What to call the *entity* under which this specific *people* are *summoned*, the entity that is *generated* in turn by their activity? So as to remain close to the etymology of the word nature, let's call this entity whose features we are trying to entangle: 'Out-of-Which-We-Are-All-Born', 'OWWAAB' for short. It's a bit bizarre at first, smacking of science fiction, but it is just this sort of oddity that I need because later it will help the translation to run more smoothly with many other titles and invocations. For now, it's just convenient for foreigners to greet one another by saying for instance: 'You are the people of Owwaab; I am from the people of Zeus; those folks over there are the people of Odun.'

But how are we going to name the group, the nation, the people assembled under the auspices of Owwaab? We could use the word 'naturalists' but it risks being confused with many other trades and professions. To pursue my little game, let's call them 'Born-from-Owwaab.' If you find this too strange, be reminded that the venerable word 'human' means etymologically 'from the soil' and shares the same root — pun intended — with 'humus', the soil. '*Remember that you are dust and to dust you will return*' — pretty hard, as you see, to escape from Gaia.

Now to complete the 'alienation' or 'distantiation,' as Bertold Brecht would have said, from the too common expressions of 'nature' and 'naturalism,' we need a third term so that we may render comparable what should apparently, in our tradition at least, not be comparable. How are we to designate the loop that connects those 'Born-from-Owwaab' and the assembling entity 'Out-of-Which-We-Are-All-Born'?

If I take up the word 'religion' to designate this loop, even if I stick to its etymology, *religere*, the negotiation, I am afraid, will break down immediately without shedding any light on either ancient cults or the 'naturalists.' 'To be from the people of 'nature' is not a religion!' adepts would shout indignantly— and they would be right (and right also to say they don't deserve to be called 'adepts' either).

Let's be careful here. If they are right, it's for the simple reason that all the words that should make up the vocabulary for the titles at the *top* of the translation table should be well balanced, at least neutral enough to keep the attention focused simply on the list of features, on the actants. That's the only way to allow the parleys to continue. As an umbrella term, it would have been nice to use the word 'cosmopolitics' but the two words 'cosmos' and 'politics' have too much rich baggage to be easily accepted by all the parties at the beginning. 'Cosmology' would be okay, but then we will not know if it is acceptable to speak of cosmolog*ies*, in the plural, or of *a* cosmology in the singular. Hostilities might quickly resume over this question of the plurality of cosmos. Let me propose a vague, boring and poor enough term, 'agency distribution.' Let's agree that we are going to compare different people each summoned by a different entity which defines, orders, ranks, organizes, composes, dispatches, in brief distributes various types of agencies in different ways. Nothing more sophisticated.

Please note that such a level playing field for making comparisons and swapping translations has become necessary — remember Assmann — only because we have to transact with a lot of foreigners bringing in their own affiliations, organizations and rites. And only because we cannot simply exclude them at once from our cities, but are forced, at the minimum, to tolerate their presence without being able to assemble them as one single people summoned by one entity. (We no longer live in the benighted time of Reclus able to merge the 'unity of the world' with 'the brotherhood of mankind'.) Today, as in the Antiquity, it is because we live in cosmopolitan cities and disagree on every issue that we are forced to indulge in such a risky exercise. If we could stick to our old ethnic particularities, we would not need to devise any instrument for tolerance. But here we are, globalized haphazardly, somewhat torn between trying to avoid an all out war and pretending a complete harmony. In brief, we wish to enter into some sort of *modus vivendi*. Those who are already in combat gear and ready to cross swords would do better to depart now from the negotiation table.

For those who remain, let's start the negotiation and, in a way, call the bluff of those who insist on the importance of names. Those who define themselves as 'Those who belong to Owwaab' emphasize four adjectives to designate some of the most important qualities of the entity they invoke: Owwaab, for them, is *outside*, *unified*, *inanimate* and its

workings are *undisputable*. The difficulties begin, however, when they are asked to develop more precisely those four attributes.

Let me start with the expression 'outside.' Apparently what is meant here is something like: 'not dependent on the wishes, whims and fancies of the people that invoke it.' 'Owwaab is non-negotiable.' Fine, this is an attribute common to all the entities able to assemble a people around them. It's precisely because they are *beyond* that they possess the force to summon and gather.

But if we dig a little further, we fall upon a strange and apparently contradictory attribute: Owwaab is simultaneously out and beyond, yes, but also *inside* tiny networks of practice that seem necessary to access it and that are called 'scientific disciplines.' Every time we designate a feature of the 'natural world' that has some of the properties of Owwaab, we are also asked to follow the path of a knowledge producing procedure. Our sight goes simultaneously far away and close at hand focusing on two opposite places at once. As if there was a tension between the exteriority and the interiority of this entity: as a set of *results*, Owwaab is *outside*, 'untouched by human hands'; as a *process of production*, the same Owwaab resides *inside* conduits where many human hands with the help of much paraphernalia are busy making it an *outside* reality. Remember the brouhaha around 'climategate'? In 2009, the public and the climatologists had simultaneously to hold that the global warming was 'out there' but also that it was generated inside the networks of practicing scientists exchanging thousands of emails and swapping data interpretations about computer models, satellite surveys and ice core samples. It's as if the public debate could not accommodate — in the optical sense of the word — to those two levels at the same time, one level always remaining fuzzy while the other is in focus.

And yet no one should have been surprised as this is common to all entities: they have to be *made*, constructed, elaborated, fabricated. But the reason why, in this case, such bifocalism takes a strange conflicting character is that there seems to be no way for this peculiar people who call themselves Those-Born-from-Owwaab to reconcile the two. Whereas many other cultures have worked out this contradiction to the full — the whole anthropological literature could bear witness to this — not a thought seems to have been invested by this peculiar people in the necessary *bifocal* nature of 'nature.' It is as if those people had to make their cosmology turn around *two foci* at once: one where

everything is outside, not human made; the other where everything is inside, human made. An unstable Copernican revolution with two suns at once and the Earth alternating wildly in some demented zigzagging pattern without ever finding a centre of rest. (We will come back to this next Monday). An indication, surely, for those who attempt the translation of this entity into their own language, that there is something odd about such a people. 'On which Earth do they reside?' they might ask.

That this people might belong to no Earth at all becomes an even more intriguing possibility when the second adjective is taken into consideration. 'Owwaab is unified and make every agency obey its universal laws.' But this feature too is hard to reconcile with the bewildering multiplicity of scientific disciplines, specialties, subspecialties, thematic networks and topics by which those 'unified' and 'universal' laws are implemented in practice. Of course, practice could be omitted from the description, but the transaction into which we have agreed to enter is precisely to shift from ideas to practice, from names to features, from concepts to agencies. That's the only way, we seemed to agree, to move on and explore some common ground.

Looked at in this way, the jungle of intertwined scientific disciplines looks more like a legal process, with its complex casuistic of multiple codes and entangled jurisprudences, than the smooth unification implied by the traditional expression of 'laws of nature.' Of course, locally, there exists some process of unification, one topic being explained, accounted for, digested, absorbed, understood by another more encompassing solution, and fortunately so. But such a process to sum up and assemble is itself always local, costly, and has to be achieved through the immense efforts of many organizations, many theories, many paradigms. The process resembles the way legal precedents slowly ascend in importance through many cases, suits, appeals and countersuits, until they are invoked as precedent, as a matter of course, by several courts and thus begin to become relatively universal —at least as long as they are kept up, well archived, documented and commented upon.

If, throughout the negotiation, the acquaintances of those odd people might have been surprised by the two first attributes of Owwaab — exteriority and unity — what should they think of the third: that Owwaab deals only with *inanimate* agencies. This is very puzzling for them. The contradiction resides in the very words employed: an

agency, an actant, by definition is *what acts*, what has, what is endowed with agency. How could you render the whole world 'inanimate'? It turns out that this is not a mystification but a *mystique*, a very interesting and respectable one at that; and also a very spiritual form of contradiction, a surprising form of piety. Here again, every discipline, every specialty, every laboratory, every expedition, *multiplies* the surprising agents with which their world is made of — agents that may be easily followed through the proliferation of the technical vocabulary that invades scientific reports and indeed through the exponential epidemic of the scientific literature itself. If we were to expect unification — or as the official saying goes 'reductionism' — we should prepare ourselves to read fewer and fewer papers that are shorter and shorter, written by fewer and fewer scientists, each explaining more powerfully many more phenomena, all the way to one tiny equation from which everything else would be deduced, a fabulously powerful flash of information that could be written on a bus ticket, a real Big Bang out of which everything else could be generated.

And yet the practice, here again, is exactly the opposite. Even if you factor in duplication, replication, and the race to 'publish or/and perish,' a calm and cold consideration of the scientific literature shows that it ceaselessly *multiplies* the number of agents that have to be taken into account for any course of action to be achieved. If you now replace the technical name of each of those agents by what they *do*, as the simplest semiotic method requires, you are not faced by the oxymoron 'inanimate agencies' but, on the contrary, by a fabulous *multiplication* of the potentials for action. This is exactly what allows so many engineers, inventors, innovators, and investors to devise unprecedented, improbable, and surprising courses of action. The net result of the scientific disciplines is an immense *increase* in what moves, agitates, boils, warms, and complicates; what in brief, yes, *animates* the agencies making up the world. To explain, to account for, even to simplify, always requires an *addition* not a subtraction of agents. This is what makes scientists and engineers so interesting to talk to.

Until, that is, they shift to the opposite end of their contradictory form of mystique and, blissfully unaware of the contradiction, begin to tell you that they, *they alone*, contrary to all the other people, deal only with completely inert and inanimate 'objects' — as they are often strangely called — that have *no* agency except the one given to them by their *antecedent causes*. But the problem is that those causes too behave as

so many agencies — so many actants — quite unable to absorb so totally their consequences that those consequences could disappear from the world, as if the *explanandum* could be gobbled up, so to speak, by its *explanans*. The result is that the people of Owwaab face simultaneous tasks: they have to wade in a first flood made up of all the agencies they multiply at every turn, and they also wade in a second flood, *adding to the flow of the first*, of antecedent causes active enough to absorb, explain, and deduce all the other agents. When you follow those concatenations of causes and consequences, it's clear that the sea level is not going to lower, as expected, but rather that a deluge is coming!

'Why are those three contradictory features not better instituted and more efficiently recognized or even better ritualized?' the other parties to the parleys could ask the 'people of Owwaab': 'faced with similar contradictions, this is certainly what *we* would have worked out', the other collectives could say. Why indeed? Because of the fourth and last attribute given to this entity: indisputability. In itself the attribute is not remarkable. All entities able to summon their people do it through decrees that are beyond doubts and disputes. The peculiarity of this feature in this case is, once again, that it does not register the long and necessary procedures of discussion through which this indisputability is achieved. 'Matters of fact,' to use the most common expression, are only the terminal results of highly complex assemblages of disputing parties, reliable witnesses, peers, proofs, apprentices and masters which are in no way captured by the word 'fact' — except if one is reminded of its etymology. Isolated, left alone, cut from its networks of practice, a 'matter of fact' is a terribly weak and too easily ignored injunction. As Austin said, a 'constative' statement is a poorly contextualized performative statement. It *gains* its indisputability only when carefully serviced and accompanied by its support crews. The paradox is the same as what is visible in 'automated technologies': they are automatic only as long as a whole crowd of helpers stays around to *keep them* working automatically. Nothing is more *heteromatic* than a robot.

But what makes the attribution of indisputability to Owwaab even stranger today is something other than the process of production of 'matters of fact.' It's the unexpected expansion — one could almost say the leakage — of the disputes way beyond the narrow confines of specialists and experts. Controversies have grown to the point where, for almost every topic, a field of contention has spread out of the

academy and forced those involved in the slow production of indisputability — laboratory scientists — to increase dramatically the number of their contributors; they have enrolled many more ordinary members of the public who, in another time, would have simply been asked to study, rehearse, repeat or dumb down the established facts, not to discuss or participate in their production, evaluation or revision.

This is not something that Elisée Reclus would have expected. Imagine what would happen if we were trying to recreate his model of the globe today, let's say in the heart of Beijing or downtown Copenhagen or Rio, and if we attempted to agree on what shape to give the Earth and with which agencies to compose it. Even though Reclus was an anarchist and a former 'communard,' he would have been horrified to be interrupted at every step, when trying to lodge every plaster panel in its right location, by a crowd of dissenting voices asking for more research, different protocols and other alternate scenarios! And yet, this is exactly what is happening now when shifting collectively from a world made of indisputable 'matters of fact' to a world built with disputed 'matters of concern.' The giant globe at a scale of 1:100000 would never be completed, not because it is too costly and made of too many tons of iron, but because it would have a constantly moving girth and be composed of too many changing tiles.

On the one hand, such an expansion of the number of parties to the disputes could be welcomed since it expands also the number of the people who could invoke Owwaab as their most cherished entity — remember that its name is 'Out-of-which-*we*-are-*all*-born.' 'We' and 'all': that's quite a vast ambition! On the other hand, it makes the assembling of 'the people of Owwaab' incredibly difficult since it appears that its limit, borders and confines will never be settled. What Reclus and Geddes could still imagine — microcosm and macrocosm mirroring one another in a beautiful arrangement, that is a *cosmos* —, has become, to put it bluntly, a mess, certainly a cacophony, or, to use another blunt Greek term, a *cacosmos*.

After having looked at the four features — each of them defined also by a specific form of contradiction —, let's come back to the translation table to see whether it might help us to compare different 'agency distributions.' Remember that such is the banal expression I proposed for the structure allowing a *modus vivendi* between different entities and the various people they manage to summon.

But before we can do that, we need to solve a little problem of invocation. How should we address those who call themselves 'born-out-of-Owwaab'? It's not possible just to say: 'Ah! You are those who accept living under the auspices of an entity that is outside, unified, inanimate, indisputable and thus indefeasible.' It's impossible because the attributes that they insist on also emphasize that Owwaab is *inside, multiple, animated* and highly *disputed*. Extra care should be taken here not to hurt the feelings of people who seem immensely sensitive to those contradictions but also immensely devoid of ways to *overcome* them. It's actually because they can't overcome the contradictions that they are so touchy, so sensitive and in a constant state of anxiety, their feelings so easily hurt that they tend to reach for a weapon with which to launch a preemptive strike against whatever smacks of 'relativism.' It's as if Owwaab was in constant danger of being weakened, as if there existed a vast reservoir of furious crowds always ready to be mobilized at a moment's notice to chant hostile slogans against opponents they take to be so many desecrators—proof that those adepts might be so unsure of the solid foundation of their entity that they can't swallow any blasphemy. To quiet them down and introduce some sort of reassurance, we should be able to address Owwaab respectfully in its full force as an entity strong enough to *resist* any desecration. (You will understand that we are not indulging here in the old game of irony or deconstruction but are engaged in the highly delicate travails of *composition*).

I am not sure I am the one with enough of a healing touch, but I will propose to say that Owwaab is not invoked respectfully enough when addressed in what could be called an *epistemological* tonality since, in this case, only the four attributes — exteriority, unity, inanimate agencies and indisputability—are taken into account. But it is not invoked respectfully enough either when only the four contradictory attributes — interiority, plurality, the proliferation of animated agencies and controversies — are underlined in what I will call a *critical* tone (the one most often associated with my field of science studies). Insisting on those four terms only would simply be irritating to the people of Owwaab.

It's already more polite, I would argue, more respectful of this entity's full power, to address it to address it in what we could be called an *anthropological* tonality — by which I mean a way of talking that would list *the eight* features at once. That there has never been an

accepted repertoire to register the two lists of contradictory features together should not be set against my attempt. Remember that the task is novel since we have to absorb the plurality of 'agency distributions' made necessary by our cosmopolitan situation. If we strive for a *modus vivendi* then we have to devise new, even odd ways of being tolerant of one another. To talk of Owwaab epistemologically, critically or anthropologically, does make a crucial difference in the definition of friends and enemies and in our mobilizing capacities.

This other way of addressing Owwaab might comfort and reassure the people Owwaab assembles. Simply compare these attributes with those of other people summoned by another entity. For instance, by one who would possess the same four attributes, except that one *of them* would be different. This is the great service I am expecting from our little translation table: to render commensurable what would be have been impossible to compare had we just indulged in name calling.

Suppose a people assembled by an entity — let's give it another cheap and provisional name like, let's say, Geity — whose attributes are exteriority, unity, animation and indisputability. Then we could easily pass the Zeus-Jupiter translation quiz by comparing Owwaab's and Geity's features. Having the same attributes means that it's the *same* entity *save for the name*. As long as we address them in an epistemological tonality, the same people is mobilized by more or less the same entity with the only difference that agencies are linked by *animated* connections in one case and *inanimate* ones in the other. But what difference that really makes is not so clear, as we shall see. So the two peoples assembled by those two instances could still cut each other's throats; however, bystanders will have to recognize that the difference is as moot as the one between big-enders and little-enders in the conflicting land of Lilliput.

What happens if one shifts to an anthropological repertoire? Then, at once, the difference between Owwaab and Geity becomes enormous. They cannot be confused any more, since Owwaab — such is its full dignity, its fantastic power, the reason why it draws upon the faithfulness of such a vast and powerful people — benefits *also* from the four contradictory attributes we have listed above: it resides *inside* clever networks of practices, it's infinitely *far* from unification, it makes agencies *proliferate* and it is *animated* in all sorts of new ways. When it ends up producing indisputability, it's through a healthy process of disputes and ever expanding controversies. At such a game, Geity is no

match. Its people are stuck in an epistemological rendering that does not move an inch, the only margin of manoeuvre being to decide whether the world is made of animate or inanimate agency, whether it has a 'purpose' or not…

We will have to come back to this question of how to compare agencies, but it's important to sketch the point here because of the exaggerated hope that has been invested in the concept of 'design' as an ideal touchstone. The argument could be exactly the same as the one I have borrowed from Assman for the names of deities. If you shift attention to the range of attributes that their proper names sum up, you may distribute similarities and differences in ways you would have never guessed from considering just their official names, their emblems, or their coats of arms. The semiotics of scientific literature provides just the same set of refreshing views, at a different level, for the name of agents. The mere name of the actor does not tell you much about what the actant is doing.

If for instance you write a moving elegy about the structure of the eye 'so obviously made up by a benevolent designer since no amount of chance encounters could have produced it,' you certainly stage a magnificent fight with another argument in which another author, with the same readiness to pick a good fight, is happy to show that the structure of the eye is 'nothing more than the unintended result of small changes accumulated through generations after generations of chance encounters.' (How delightful to hear this little tricky expression: 'it's nothing more than.') Great fight indeed: design and designer versus no design and no designer!

But now, I pray that you shift your attention to the level below so as to detect *what amount of action*, of animation, of activity both arguments have developed. You will be surprised to see that the 'admirable structure of the eye' in the first argument actually does strictly nothing more than being another fully redundant example of the benevolence of the arch designer — an argument that has been made four thousand times before and in the same repetitive way about everything from the 'admirable structure' of the hand, the 'admirable structure' of the heart, of the cat, the dog, the horse, all the way to the 'admirable structure' of the watermelon (to pick rather unfairly on Bernardin de Saint Pierre)… It might be beautiful and uplifting to hear that 'lilies sing the glory of God' but not if the song does not vary from

one creature to the next. The insistence on those creatures being 'designed' instead of produced 'by chance' most often does not result in their being endowed with any other activity than demonstrating, once again, the same creation by the same mysterious hand of the same Creator. *He* acts; not the eye, nor the lily. To use my jargon, the Creator is a mediator, the lily is a mere intermediary. In term of actantiality — a horrible word for a beautiful thing — the net result is zero since the amount of animation has not increased one iota.

What is so amusing as well as puzzling for those, like me, who are as interested in chanting the glory of God as that of the sciences, is that when you turn to the other narrative, the one that boasts of aligning only concatenations of 'purely material objective agents,' clever descriptions of the most intricate details of the eye trigger surprises. Most importantly, specific lessons are drawn from fresh material, one after another, about what it is to evolve over time. And these are *not* the lessons you would have drawn from the lily or the watermelon. The specificity is so precise that dozens of new experimental pathways are suggested that allow the reader to imagine new forays inside new properties of the world. Plurality is vastly increased.

Now, who celebrates better the 'glory of the Creator'? The one who draws the same conclusion à propos every single agent or the one who multiplies the agencies with which the worlds could be composed? I will say the second, even though I am fully aware of the fact that, at the end of the demonstration, spurred by his opponent, the naturalist will most probably draw from the structure of the eye the same repetitive lesson according to which its evolution 'demonstrates once again beyond a shadow of a doubt' that there is no design and no designer: '*so that the course of nature is conceived as being merely the fortunes of matter in its adventure through space,*' to quote Whitehead. Another triumph for reductionism: Nature 1; God 0. No adventure left in this second official narrative, no story told. A strange form of triumph, I agree, since our intelligent naturalist strives to be as dumb as his opponent, his left hand (he is most probably a man) trying to withdraw from the world the agencies that his right hand has so cleverly multiplied.

And yet I would maintain the striking superiority of the second narrative over the first. If you strip the second from its 'please no design' gloss, the long retinue of actants are still there (I would even say that you may hear them rehearsing backstage before coming in to chant the glory of God!) while the first narrative, the one you hear so often

from the pulpit, once stripped it of its old tune, has not added one single new specific voice to the sum of agents. The parson is left with the same choirboys and the same respectable maiden at the organ to play the same song. The lesson we should draw out of this shift in attention is that we should not predict the alliances and draw the front lines from the official terms at the top of the list but from the properties.

This is why I tried to direct the discussion by following the semiotic method. It's not by adding the word 'soul' to an agency that you will make it do something more, nor is it by calling it 'inanimate' that you will *deprive* it of its action and of its animation and make it do something less. Actants are acting. You may try to 'over-animate' them or, on the contrary, attempt to 'de-animate' them; all the same, they will stubbornly remain actants. Anyway, the difference between *over*-animated and *de*-animated elements is not enough of a cause for which to live, pray, die, or fight or build temples, shrines or globes. If we have to fight, let's at least do it in the name of war ends worth dying for.

By now you must have understood well enough what I am trying to achieve: there is no meaning in using the expression of 'natural religion' because it is either a *redundancy* or a badly assembled *amalgam*.

Many orators of this prestigious lecture series have started from the idea that nature, without scare quotes, was what anthropologists call an 'unmarked category,' and that the difficulty resided more in the highly contested marked category of 'religion' — this one in scare quotes. The problem for many of them has been to 'reconcile' the two outlooks by asking nature — by which is almost always meant 'nature known by the natural sciences' — to please leave some room for another 'dimension,' the 'religious,' understood either in its spiritual location inside the soul or in its cosmic extension throughout what is often called 'Creation.' What made this positioning of the problem so disappointing was not, as is often said, the difficulty of defining religion, spirituality, creation, etc., but the highly implausible and highly unexamined notion of 'nature.'

		NATURAL	RELIGION
Entity	OWWAAB or Nature One (epistemology)	OWWAAB or Nature Two (critical)	GEITY or Religion One
	Nature (anthropological)		
Agency distribution	Outside	Inside	Exteriority
	Unified	Multiple	Unified
	De-animated	Animated	Over-animated
	Undisputable	Disputable	Undisputable
People	Anyone	Scientists	Anyone+Church

Table 1-1

As I have just proposed to show by invoking Owwaab and Geity, if we approach this question in the *epistemological* mode, there is no great difference between turning to 'nature' — now also a coded category defined by the four attributes of exteriority, unity, inanimate agencies and indisputability — or turning to 'religion' — defined by the same attributes minus the fourth one, animated agencies. It is in that sense that the expression 'natural religion' is fully pleonastic. It has been shown many times by historians that, somewhere between the 17th and the 19th century, there has been a kind of *translatio imperii* between the two assembling entities: the 'nature' of epistemology having taken over all the attributes of 'religion' — including its capacity to assemble a specific people devoted to it. While 'religion,' in reaction, has retained the bizarre stance of defining its own entity in the language of epistemology by sticking to the same four attributes — one of them strangely dysfunctional under the name 'design.'

The situation — and thus the very position of the problem — shifts completely if we address those entities able to assemble their respective people in what I have called, for want of a better form, the *anthropological* mode. At once, 'natural religion' becomes a badly composed *amalgam. So, as far as 'agency distribution' is concerned, the expression 'nature' doesn't define what is assembled in practice, nor does the expression 'religion' qualify the sort of people, rites, and attachments proper to*

those practices. This is the point, although so far a purely negative one, that I wanted to reach at the end of this first lecture.

For those who are assembled by 'nature,' this conclusion should be clear from the four contradictory features I have outlined above: to follow its injunctions, one has to burrow deep inside scientific networks, to absorb the staggering multiplicity of its agents, to register the long concatenations of its surprising and animated agencies, and to swallow ever expanding controversies over multiple matters of concern. It's completely unrealistic, you will have to agree, to confuse the people assembled in the first epistemological mode and in the second anthropological one even though both would invoke the *same entity* 'nature,' call themselves 'naturalists' and insist on their utter separation from all the other people assembled by other entities thanks to the virtues of their sacrosanct 'reductionism.' To sum up in terms that might sound too flippant, let me say that the discussion, if we take it seriously enough, leads us to define 'nature' in a *post-epistemological* way or to say that we are moving to a *post-natural* definition of the problem. '

'Once out of nature I shall never take
My bodily form from any natural thing.'

The real surprise (as we shall see in the next lecture) is not that the 'agency distribution' made under the auspices of 'nature' is so complex as to allow Sherezarade to spin many a tale — thus indefinitely delaying her execution—, but that the 'agency distribution' realized under the auspices of 'religion' captures *so little* of the features of what is so vitally important for the people this entity is supposed to summon. If you find it puzzling that the invocation of 'nature' does not register any of the real attributes to which its practitioners are so passionately attached, I find it vastly more puzzling that those who are said to be gathered by the entity they often call 'God' captures, with such an invocation, nothing more than exteriority, unity, and indisputability; that is, almost exactly the epistemology of those they take as their enemies (plus or minus the rump question of design).

Paradoxically, it might be easier to provide a more realistic portrait of the people of nature than to detoxify those who claim to speak religiously from their attachment to a narrow epistemological rendering of their own vocation— after all, this is what my little field of 'science studies' has done for many decades (a field which, by the way, was born here, in Edinburgh, 34 Buccleuch Place — I hope there is a plaque! — in the 'Science Studies Unit' headed by David Edge). It's extremely doubtful that those who claim to be saved by Jesus and to

live in His father's Creation so as to belong to the same Church and be close to those they call their neighbours, would insist on defining those entities for whom they are ready to give their life by the four features of exteriority, universality, over-animation and indisputability. They will probably insist on other features as different from those four ones as those who invoke 'nature known by natural sciences.' Hence the necessity, once again, of not being fooled by the amalgam of 'natural religion' which offers precise indications neither of nature nor of religion.

But the other reason why it's so important to do away with the very amalgam of 'natural religion' is that we are not faced, in the cosmopolitan situation I took as my departure point, with only *two* 'agency distributions' as could still be the case when David Hume was writing his marvellous dialogs or when Adam Lord Gifford funded this lecture series, but with as many distributions as there are entities summoning people today. When naturalists call themselves those Out-of-Which-We-Are-All-Born or when some Christians call themselves those Out-of-W*hom*-We-Are-All-Born, there might be fierce disputes between this 'Which' and this 'Whom,' but what I want us to remain sensitive to is the clamour of those who say: 'What is this "we"? What is this "all"? Don't count "us" in. We are not part of either of those people. Your entities are not summoning us at all. We are under instances that distribute agencies wholly differently. Don't unify the situation so prematurely! Please, don't drag us into your world wars, we don't want to play any part in your plots.' This is the reason why I choose the word 'anthropology' to define the mode in which we could pursue the conversation.

Going beyond the number two, setting up a wide enough comparison between mechanisms for 'agency distribution', and avoiding the wedge between 'nature' and 'religion' might become crucial resources for discovering the right shape of the Earth when the time comes to find a way to participate in the institution, or better, the instauration of Gaia. It's clear that Its shape would be totally distorted if we had to choose whether It's an entity from religion or from science, whether it's a myth or a natural phenomenon. And nothing would be gained by saying that It's a bit of both, a mythical scientific amalgam, since both 'nature' and 'religion' are already amalgams. Confusion would be added to confusion. No, we need a method to discriminate the various people assembled in the name of various entities. Entities don't

like to be addressed in the wrong way by the wrong procedures; and people don't like to be summoned by the wrong entities. I hope I have indicated clearly enough why such an entity could not be defined by the pleonasm of 'natural religion.'

There is no question, in that sense, that we have become divided nations, often divided inside ourselves because we are summoned by many different entities to live under very different types of Earth. As a first approximation, it's obvious that the people who are assembled under Gaia will not resemble either those who used to invoke nature, nor those who say that they worship a deity with all the trappings of religion. None of the four main attributes we reviewed so far seem to be part of Gaia. As we shall see later in more detail, she is not outside but also inside; she is not universal but local; she is neither over-animated nor de-animated; and in addition, no question about it, she is fully controversial. Gaia is most probably another Earth, another Globe, invoked by another people, as foreign to what used to be called nature and natural scientists as from what used to be called religion. How to address It or Her respectfully? This is what we will have to discover.

A shift in agency — with apologies to David Hume. Gifford 2. Tuesday19th February 2013

Tonight we are once again assembled in the hope of defining the conditions in which we could face Gaia, that wholly secular arrangement of wholly secular agencies, without being petrified by Gorgon's glance — or, to put things less dramatically, in the hope of sharing a common definition of the changing shape of the Earth. Yesterday, I proposed to say that if this question could not be solved in the framework of 'natural religion,' it had nonetheless to be tackled as a problem of political theology; a political theology extended to an entity and to a people who, until recently, would not have been thought to be part of the problem, namely, those gathered by nature. Before we can decide whether this inclusion of the 'children of nature' into political theology helps to solve the problem or makes it even more intractable, we have to complete the table set up yesterday with a more realistic definition of religion.

Not surprisingly, this set of features will appear just as distinct from the usual sense of religion as the set of features revealed by science studies (what we could now call Nature Two) has been shown to be distant from the usual definition of science (let's call it Nature One). Then, having filled in the table, we might better understand why reflexions starting from the amalgam of 'natural religion' could never lead very far and how we may now begin to propose an alternative path.

The following quote is from part 5 of Hume's justly famous ***Dialogues Concerning Natural Religion*** when Philo, carried along by his sceptical argument that no knowledge whatsoever of the ultimate cause could be attained (to the great scandal of Demea but, surprisingly, to Cleanthes' final satisfaction), rambles about the many equally plausible and equally meaningless scenarios for the origin of the world.

> *"In a word, Cleanthes, a man, who follows your hypothesis, is able, perhaps, to assert, or conjecture, that the universe, sometime, arose from something like* ***design****: But beyond that position he cannot ascertain one single circumstance, and is left afterwards to fix every point of his theology, by the utmost license of fancy and hypothesis. This world, for aught he knows, is very faulty and imperfect, compared to a superior*

standard; and was only the first rude essay of some infant deity, who afterwards abandoned it, ashamed of his lame performance: ***It is the work only of some dependent, inferior deity; and is the object of derision to his superiors: It is the production of old age and dotage in some superannuated deity; and ever since his death, has run on at adventures, from the first impulse and active force, which it received from him.*** *. . .*

You justly give signs of horror, Demea, at these strange suppositions: But these, and a thousand more of the same kind, are Cleanthes' suppositions, not mine. From the moment the attributes of the deity are supposed ***finite****, all these have place. And I cannot, for my part, think, that so wild and unsettled a system of theology is, in any respect, preferable to* ***none*** *at all.*

These suppositions I absolutely disown, cried Cleanthes: They strike me, however, with no horror; especially when proposed in that rambling way, in which they drop from you. On the contrary, they give me pleasure, when I see, that, by the utmost indulgence of your imagination, you ***never get rid of the hypothesis of design in the universe****; but are obliged, at every turn, to have recourse to it. To this concession I adhere steadily; and this I regard as a sufficient* ***foundation*** *for religion." p. 168-9*

How I wish I had David Hume's wit and Philo's devastating irony; how I wish their graceful English had been my mother tongue. Had I had the slightest chance of borrowing a fraction of their golden style, I would not have remained stupidly idle, like poor Pamphilus, the mere auditor of a conversation that was supposed to educate him 'in the solid foundation of Natural Religion.' What a fraud in such a claim; someone should have warned his father not to let him under Cleanthes' supervision: nothing more corrupting could have touched this young and tender soul! As a young boy, I would have been so scandalized by the obsessive search of those three grown ups for a foundation of religion in the sole and unique question of 'design' that, in spite of my foreign upbringing, I would have surely interjected: 'Forgive me, Cleanthes, and you too Philo, and you very respectable Demea — pardon my barging in, my faulty accent — but why is it that at no time in your long discussion (a very enlightening one for my young ears, to be sure), have you mentioned anything having to do with religion, with what really counts for us in religion?'

'I see your surprise, Demea, and Cleanthes your frowning at my interposition. You surely object that you have talked of nothing else all along. But the only moment when the three of you have agreed is when

you have said, I quote you Philo, "that the best and indeed the only method of bringing everyone to a due sense of religion is by just representations of the misery and wickedness of men."(p. 193). I see from my notes that you, Demea, nodded in approval and so did you, Cleanthes. I have to confess that I find this defence of religion from the wickedness of men and the misery of his life, a miserable one and, yes, horribly wicked. If the God that has assembled His Church and sent his Son and Spirit has no other claim to be worshiped than our human weakness, is He —this might be blasphemous, I know — is He worth the belief that you, Cleanthes, wish me to cherish in my heart? From your horrified gestures, I see that I should stop. Should I continue? I am sorry to spit out in this way all sorts of silly thoughts but then I get them off my chest. Tell my mentors, Philo, that this too is good for my education.'

'I know what you are going to say, my respected teachers, that you today were not talking about what comes from the heart nor what is taught by our most holy Church about the unfathomable mysteries of our religion, but only of what is accessible by unaided reason through the mere scientific knowledge we have of the natural world. But here again, I feel ashamed to have to disagree with such eminent masters. In my view — admittedly weak and still amorphous —, you have done nothing more than pit one blind designer — a sort of 'blind watchmaker' — against another designer who has no other property than being non-visually challenged! But what's the gain in terms of religion? And if I dare to say so, what's the gain in terms of natural philosophy? At no point did you raise any other question but that of deciding upon the ultimate cause out of *which* or out of *whom* we are all born; a "*what*" against a "*who*"? Is this the only question to be raised? Is there a genuine difference between the two or only a purely verbal one?'

'But even more troubling, you establish a foundation for natural philosophy and for religion, then base that foundation purely on knowledge. You, the great philosophers of the Scottish Enlightenment, the youth of Edinburgh, the source of so much pride for all of us: you assert an already unified universe, a universe so unified through your leap of faith that the only remaining task is finding a name for the ultimate cause of this vast coherent whole. From which comfortable, distant, outside theatre seats have you witnessed the spectacle of this already completed universe? If your gaze is so vast that you can already embrace this whole, then declaring where it comes from must almost

be an afterthought. Perhaps you'll take me for some Jacobite just descended from his wild Highlands, but three things are amiss in your vast edifice: your premature unification of the world, your expectation for religion, and your attributions to natural philosophy.'

The story does not tell us whether the discussion broke down at this point. Maybe poor Pamphilus was severely reprimanded for his adolescent ramblings and sent back to his room with nothing but water, bread and a Bible. My own suspicion is that at least one of the protagonists, Philo of course, would have been sufficiently troubled by the young chap's bursts of indignation, to explore those three questions a bit further — but this time silently, in the privacy of his cabinet. He would know (as I do) that it's the great privilege of philosophy that a young untutored mouth may propose refreshing conundrums that would have escaped the mind of a number of more seasoned scholars.

There is no question that Philo, who is — even though commentators are divided on this question — Hume's barely veiled mouthpiece, holds the view that the very idea of 'natural religion' is a pleonasm. As we saw in the previous lecture, there is no way to speak of 'design' and not to bring in some sort of entity, for a very specific type of people who defined it by the four attributes of exteriority, unity, animation or universality and indisputability or non-negotiability. Once this is decided, the only remaining question is to decide whether the job of ultimate cause is better carried out by one all-seeing watchmaker — a 'Providence' that envisions things ahead — or by a blind watchmaker — for instance, 'Evolution' that pushes things haphazardly from behind but very efficaciously when provided with enough time. The third remaining solution being to decide, as Philo does, that the task is fruitless.

As Pamphilus could have said, had he learned any semiotics, the distinction between a *what* and a *who* is a question of *figuration*, two different names of actors given to the same agency. An actant is an actant, and a watchmaker remains a watchmaker, even if he is blind. Philo knows this game better than anybody else since he has proposed in the dialog a bewildering number of substitutes for the same role: architect, giant spider, superannuated deity, monsters, devils and even a big vegetable! All these roles are sometimes attributed to a single unified force, sometimes distributed through many agents, but always charged with the same function of designing garments for clothing the

ultimate cause. This is why Hume and Philo enjoyed themselves so much, destroying all of those propositions like so many clay pipes in a shooting range. Their point was exactly that: all those actors have no more value than clay pipes since you may add as many as you want at your fancy.

But what Philo would have not realized without Pamphilus' scandalized interjections is that a totally different conclusion than scepticism could be drawn from so entertaining a strategy. The whole dialog — Philo has to acquiesce — implies a placing of the problem that is satisfactory neither for him nor for Cleanthes — as to Demea, he is so disgusted by the whole conversation that he leaves before the end of the session! The reason is that the dialog starts with three arbitrary suppositions: that there is a universe already unified enough to be in need of an overall explanation; that the only way to raise the question is through the single requirement of knowledge — aided or unaided by Scriptures; and that the religion dear to the heart of Pamphilus, Cleanthes and even Demea will be abetted or destroyed only once a new and stable *piece of information* regarding the ultimate cause of the universe will have been secured.

Let me present Philo's three new arguments (in reverse order) by using the same tool that I have used in the previous lecture, that is, a translation table that allows our attention to shift from the label given to the entities — at the top — to their attributes —at the bottom. We know that it's easy to declare wars by focusing on the top labels but that front lines become much more entangled when the attributes are taken into account — and that such a shift might provide occasions later for opening peace negotiations.

It is certainly the case that useless wars could be avoided when resorting to the ambiguous name of 'religion.' Pamphilus is right to say that what he identifies by that name has *no attribute in common* with what Philo is attacking so devastatingly and Cleanthes is defending so clumsily. The front lines are completely messed up. To avoid the bizarre labels of last night, let's call them simply 'Religion One,' and 'Religion Two.'

First, the people summoned by Religion Two are clearly and unequivocally defined as members of a 'Church,' that is, as a highly specific grouping with clear boundaries marked by specific rituals and sacraments. You may have noticed that in the three assemblages we

reviewed in the previous lecture, the exact shape of the people remained very fuzzily drawn. It might not even be clear to a 'naturalist' that he or she is part of a specific people summoned by a specific entity. They were alternatively everybody ('*we* are *all* born'), comprising all reasonable humans, or, depending on the controversies, limited to an unspecified assembly of scientists, natural philosophers and members of the public. It seems that naturalists are supposed to be at once completely interchangeable, bodiless minds and also highly skilled and specialized experts. Such a confusion does not help in the exact definition of their folk. As to the people summoned by 'natural religion,' it was not clear if we had to deal with any particular historical Church or with humanity as a whole on its way to conversion. By contrast, here, for Pamphilus, it's clearly a concrete and well-delineated congregation who share the same faith, vocation and rituals.

		NATURAL	*RELIGION*	
Entity	Nature One (epistemology)	Nature Two (critical)	Religion One	Religion Two
	Nature (anthropological)			
Agency distribution	Exteriority	Inside	Exteriority	Incarnation
	Unified	Multiple	Unity	Trinity
	De-animated	Animated	Over-animated	Salvation
	Undisputable	Disputable	Undisputable	Proximity
People	Anyone+a few	Scientists	Anyone+Church	Church

Table 2-1

Second, it's hard to reconcile Religion One and Two when one considers that the key feature of the narrative offered by the Christian tradition totally subverts the very distinction between the people and the entity it summons (remember that people, entity and distribution of agencies are the three concepts we needed to organize our political theology). In such a narrative, the very distinction between what is outside and what is inside is being totally transformed since the God

incarnate is at once radically outside and radically inside. Because God, according to this creed, has chosen to share human destiny, the people He assembles are called to become in turn *like* God. It is difficult to imagine mixing any more thoroughly the paired key notions of exteriority and interiority, of up and down, of Heaven and Earth — we will come back to this feature later when comparing with the people assembled under the paradoxical figure of Gaia. At any rate, the word 'Incarnation' is just as hard to reconcile with Religion One as with the two other definitions of Nature (columns 1 to 2 in the table).

Third, the entity around which the Church assembles bears no relation to the others, since it shares none of its characters of unity, universality, indisputability and immutability. On the contrary, it's best characterized, as far as we can tell, by a chain of successive and radical metamorphoses, mutations, and conversions, of *reprises*, in the very definition of what any entity is. Even when this chain is artificially segmented in successive *events* — God, Son, Holy Spirit, Church, none of them may be defined as a stable *substance*. The label 'Trinity' does not help much at this point, except that it underlines how far it is from the already unified 'God' implied by Religion One. Most importantly, grasping each of its sequences requires a highly specific movement of appropriation and of *retelling*, so that the whole narrative of incarnation can be carried one step forward in time and space in a new refreshing way. While Religion Two is defined by a succession of events taken up one after the other, Religion One strives to define a distant and stable *object*. And it has no other way to define it except by choosing words that have to be as *independent* as possible from the distant target. By contrast, in Religion Two, the realisation of the event — in all the meanings of 'realization' — depends on a *logos*, that is, on *how* to retell the narrative, *how* to address and more exactly to convert the faithful, *how* to spread the Good News of the Gospel. Here again the discrepancies between the two meanings of religion are baffling. The thing told and the word telling it are one and the same — that is, 'the Word' with a capital W, this Word that stands 'at the Beginning' of John's scripture.

Fourth, what is even more disturbing and what explains Pamphilus's indignant retort is that the very way of taking up those questions cannot possibly be grasped in the quiet cool way in which 'natural religion' seems to be complacently debated. This is where lies the most disturbing difference between Religion Two and all the other columns: the talk is not about carrying *information* (Is there an ultimate

cause? Is it a deity, a giant spider, a benevolent Providence or a 'blind watchmaker'?), but about *transforming*, converting, resuscitating those who are talked to. And yet, at no point in his celebrated dialog does Hume make the smallest effort to even begin to understand this gaping difference that has nonetheless occupied the best minds in Christianity for about eighteen hundred years — not to mention its saints and prophets: What it is to speak, not *about* religion, but *religiously*, that is, to welcome, to generate and to encounter again the *beings* proper to religion by the very way you preach them to people?

David Hume's Scottish land of the 1750s seems just as untouched by Christianity as Cicero's benighted Latium in the first century BC (an acronym that used to mean, for those who still remember it, 'Before Christ'). In the mid eighteenth century of our Common Era, Hume does not seem to consider any other way to enunciate anything than by what could be called *information transfer*. That there might be another way (actually many other ways), and that there exists one aiming at transforming the person you talk to or, more precisely, that they are ways of talking that generate or produce *persons*, he gives no indication of even contemplating as a possibility. For him, it seems, there is just *one* regime of speech that he may use exactly in the same fashion to ask his butler if he should carry an umbrella to visit his friend Adam Smith; if his mistress loves him for good; if Cromwell was born the 25th of April 1599; or if God is a spider, an architect, or a giant vegetable. One size fits all. And yet rational discourse is not to treat everything in the same dispassionate tone, but to learn how to detect the different tones adjusted to the different situations so as to be able to sing all of them in the right tune.

This is, I think, why Pamphilus reacted so fiercely: 'You Philo, the sceptic, but you also Cleanthes, and even you, pious Demea, never addressed me in a way that could count for me as a question of *salvation* — of life and death. You spoke in a way that offered no remedy to the *distance* at which we are assembled and alive. All the elements among which you offered to choose — your God, the giant spider, the superannuated deity or the big vegetable — are equally *foreign* to me, none of them produce the *proximity* that would have made us *neighbours* assembled in the same Church for the same rituals and the same destiny. You have transformed the only speech act able to generate proximity into a vain quest for accessing far away regions — a quest which will never have the efficacy of the natural sciences. You behave as

if religion was something of the past. A savage cult just good for strange folks in Africa or way back in the Highlands and that everything left in Christianity was Sunday choirs, beautiful landscapes, pretty gardens and nice morality.'

It's hard not to pity poor Pamphilus left growling in the dark, imprisoned with water and black bread. How could he have imagined, at such a young age, that the grown ups in whom he has so much confidence could teach him a view of the *supernatural* that bore no relation whatsoever with religion, and a view of the *natural* that bore even less relation with the real practice of science?

Had he had the chance to glance at our little table, he might have been prepared for this disappointing result. He would have noticed that the vague term of 'natural religion' mixes about *sixteen* different features that had to be distributed among four different entities summoning four different people who had no real reason to assemble in the same place. Quite an amalgam! It's really sad that the best minds of Edinburgh were able to leave this poor chap hopelessly saddled with the confusion created by a search for 'natural religion' when he was trying to live up to the *several ways in which the worlds can be gathered together*. How sad it is to see that the real enough difference between the far away — accessed so beautifully by the sciences — and the near at hand — accessed so efficaciously by Religion Two, has been so hopelessly reversed that Demea, when he needs to talk with a tremulous voice about the 'unfathomable mysteries of his religion,' has to point his finger *to the sky* whereas, when talking calmly with Philo about 'scientific knowledge,' he targets *the Earth* below.

And yet, there is no irrational mystery in Pamphilus' religion. Or rather, religion is transmogrified into an unfathomable mystery precisely because of this reversal in the directions of the gaze and because the various ways there are to reach the different targets are omitted. Demea, when talking about spirituality, should have directed Pamphilus' attention toward the close at hand and, when talking about science, toward the far away. But to succeed in both redirections, he should have sidestepped *twice* the sharp limits imposed by common sense. This famed common sense that remains just as insensitive about how to generate neighbours, as it is on how to access the far away, persuaded as it is that there is nothing in the world but 'middle size dry goods' that can be talked about, as they say, 'matter-of-factually.'

You understand why Pamphilus' father should be warned: the net result of this famous dialog is that common sense triumphs *against* religion yes but also *against science*. It's a poor education that misses the far away just as much as the close at hand. It's a poor education that renders Copernicus', Galileo's and Newton's long nights of labour as impossible to register as the detours the Good Samaritan has to take to transform into his *neighbour* — his *prochain* — the poor bloke left half dead on the road from Jerusalem to Jericho. If that is the result of the Scottish enlightenment, then it must have cast a deep shadow over lots of other sources of light as well and marked not the beginning but rather the end of an era. I hope Demea, after having left the room, has read with tears this admonishment: '*If anyone causes one of those little ones to sin, it would be better for him to be thrown into the sea with a large millstone tied around his neck.*' (Mat 18-6).

The scandal resides in the way Demea had too quickly accepted that the ordinary tools of reason could *no longer* follow the process of his religion in a *continuous* step by step fashion. Probably out of desperation, he resigned himself to jump headlong into the comforting murkiness of profound mysteries. If such an abandoning of rationality could not convince Philo, it did not educate poor Pamphilus either. He was left with the only solution to take a great leap of faith just at the point when renewed attention and care in following the thread of experience would have been most necessary. And yet, the young man rightly concluded that he has at his disposal one reason, and *only one*, and it relied on exactly the *same set* of cognitive abilities to follow *different* types of objects, different threads, different manners of speech acts. Demea had led him astray by acting as if there existed limits to Reason and that, at some point, this step by step procedure had to be abandoned for some *salto mortale* that he called (blasphemously?) Faith. As if, once the flight through the natural had been exhausted through lack of oxygen, another vehicle could trigger some post-combustion rockets and give access to the supernatural. As we are beginning to understand, the great advantage of doubting the natural is that we don't have to keep on looking above our heads toward the supernatural. In the really secular world to come, both the natural and the supernatural might disappear at last.

Pamphilus (and maybe Philo as well) has certainly detected the origin of such confusion. Demea seems to think that information transfer and transfers of transformation require two distinct cognitive

abilities —one for this world and the second for the other world. — as if we had two sets of them: one for this world and the second for the other world. The sad thing is that the canonical opposition between Faith and Reason fails equally to follow the step by step procedures that allow us to trace, with the same attention, the same mind and the same brain, the complex movement of information — Nature Two — as well as the equally complex movement that transforms, and sometimes saves those who are thus addressed — Religion Two. Such an opposition introduces a wedge between two irreconcilable *domains*, where must exist just a few small *disparities* in the tools employed by the same and only reason to follow two different threads (two, among many others). Being rational is to learn how to follow all the paths without somersault, not to be limited to one only.

If there is something clearly shocking in Demea's abandoning of rationality, there is something more forgivable in Cleanthes' attempt. To be sure, he does nothing to help his pupil register the attributes of Religion (Two). He too believes that it's necessary, when talking about religion, to look high up instead of down here. But at least, he doesn't wish to abandon the procedure of reason and does not think that a tremulous voice will help him answer his God's call in the right key. This is why he is beaten by Philo every time; he repeatedly tries to use the vehicle of information-transfer in order to access a type of truth for which it is as ill-adapted as an overstretched limousine snaking its way through the narrow country lanes — as in the first opening scene of Lars von Trier's *Melancholia*. Every time Cleanthes realizes that his expensive vehicle is in the lurch, he admits quite frankly that this is not the trip he wished to take in the first place. The problem is that, just like von Trier's heroine, Justine, he has no other place to go and no other ride to reach it anyway.

What makes his attempt so vacuous and yet so important for our undertaking tonight is that Cleanthes, as far as we understand it, refuses to believe that Religion number Two could have *no consequence* on Nature. To put it bluntly, he does not want Philo to *own* the whole 'real world' for himself. This too would be a flight from reason, just as dramatic as Demea's. You may criticize 'natural religion;' prove that it's a pleonasm; show that the idea of two books — Bible and Nature — written by the same Author is a bungled metaphor; and yet still wish *not* to let Nature swallow Creation entirely (especially if it's Nature

number One that does the swallowing). Cleanthes tries to counterbalance the dangerous drift that would restrict Religion inside the heart, limit its vocation to the salvation of only humans, and, even more narrowly, shrink the salvation of those humans solely to the souls of the few members of the Kirk.

Cleanthes knows very well that Incarnation is not simply about the self, about the human, about the soul, that it's about the world, about Creation (let's use the word *cosmos* here in order not have to choose between Nature and Creation). But he sees no entrance to this world because the closed and round shape that Philo has given it offers no hook for such a connection. When he tries to transplant Religion Two within a cosmos, to give it a ground, a soil, an Earth, he fails miserably *because only Nature One* is presented to him. This is why he is stuck with the idea of 'design': on the surface of the smoothed impregnable walls of Nature around which he has been turning in desperation, he can do nothing more than paint the vain graffiti 'God has been here!'

And yet Cleanthes' enterprise could be taken much more seriously: his aim is to hybridize through another grafting of the people assembled by Nature with the people assembled by Religion number Two. At the very least, through his misdirected obstinacy he indicates that the task of political theology is not yet completed. Maybe he believes that he is another Saint Paul, put in charge of writing another version of the *Epistle to the Hebrews* — except, this time, it is to the people of the 'naturalists' and not to those of the 'circumcision' that he is trying so clumsily to address his message of salvation!

If I had to poke a few holes in Hume's dialog (with many apologies to the memory of your great Scottish philosopher), it's because it allowed me to fill in the fourth column of my table and to underline some of the discordances among those differing people and entities. By doing so, we might ready ourselves to face Gaia in a slightly more promising way since now there might be an alternative to 'natural religion'; an alternative that could reopen the question not by following the usual limits of the plots but by a radical *reallotment* of the attributes. To speed things up, I have sketched one of those propositions by reshuffling the previous table — even though such a doodle might not strike you as much more mature than Pamphilus' indignant retorts.

	Multiverse	Premature Unification		Ongoing unification	
	SECULAR	NATURAL	RELIGION		
Entity		Nature One (epistemological)	Religion One (epistemological)	Information transfer Ex Nature Two	Transfer of transformations Ex Religion Two
Agency distribution		Outside	Inside	Inside	Incarnation
		Unified	Unified	Multiple	Trinity
		De-animated	Over-animated	Animated	Salvation
		Undisputable	Undisputable	Disputable/Far away	Reprises/Proximity
People		Anyone	Anyone+Church	Scientists	Church

Table 2-2

Quite logically, I propose to put Nature One and Religion One close together since they share the same epistemological definition, and that they differ only in the meaning of the word 'animation' (as we saw yesterday) and in the size and boundaries of the assembled people. Together, they make what is usually called 'natural religion.' Such was the canonical departure point for many meditations on how to 'reconcile' materialism and spiritualism, Science and Religion, objects and values, 'is' and 'ought' and so on. No wonder that those meditations could never extract themselves from amalgam and pleonasm since both people are summoned by an entity that could reasonably be called either God or Nature, *Deus sive Natura*. At least, they both morph into one another so easily that it's impossible to call one of them *secular* and the other non-secular. The history of political epistemology should account for this *translatio imperii* through which the features of Nature have been decanted into those of God, before being poured over, once again, from God to Nature, in a long chain of successive transfers, from the Greek to Christianity through the Church Fathers all the way to the various types of 'scientific revolutions.'

Since the time might have come 'to put new wine into new wineskins,' I propose a risky move: putting side by side the two lists of features that had apparently nothing in common except that they each

differ radically, the first from Nature, the second from Religion. And it's true they have nothing in common, since one is about information transfer (what I call *chains of reference*) while the other, as we saw above, is concerned with *transfers of transformations*. The two people assembled by those two entities are entirely distinct: one is trying, through instruments and delicate chains of reference, to access the invisible and the far away; the other, through predication and conversion, to multiply those who are near and close. So far, their only joint features are, first, to be equally ignored by common sense and, second, to be, each in its own way, the hidden agenda of one plank of the program making up 'natural religion.'

And yet, they might share something much more essential, provided we consider the overall effect of such realignment and begin to compare our columns, this time, two by two.

When put close together, it becomes clear that Nature One and Religion One share the same basic premise: they proceed as if the task of unifying the world had *been completed*, and as if it were unproblematic to speak of the world as a whole. For both of them the *universe has already been fully unified* (for Philo as well as for Cleanthes unified once and for all by their inimitable model, that is, Newton's physics and theology). This is why, to Pamphilus' dismay, the question of the ultimate cause could be so easily raised. Philo and Demea embrace the world *in toto*, as if the 'view from nowhere' was a real place offering comfortable seating as well as good sighting. Both are full members of what Peter Sloterdijk calls the 'age of the Globe,' that is, a time when there was no difficulty whatsoever in holding the world as a globe in one's hands just as Atlas does in Mercator's famous frontispiece. (A topic that we will revisit in the fourth lecture.)

What is interesting is that, as soon as we render problematic this premature unification of the cosmos, by contrast a new communality appears in the two other columns on the right. Both are fully *secular* — provided you agree to designate by this somewhat capricious adjective ways of life that do not rely on the pre-existence of an overarching God slash Nature. Since, in order to reach their differing goals they can't rely on such a deity to do the job for them, both have to pay the price of their extension to the full — a common feature that is worth underlining.

When taken as practices, scientific disciplines, launched in the hard step by step process of reaching the invisible and the far away, have to encounter, one after the other, each of the new and surprising

agents composing a world that is not yet unified, not yet undisputed, and not yet outside. This is why the scientific way of life is simultaneously so slow, so diverse, so exciting — and also why it's so frustrating and often so controversial. To call something 'scientific' is not a guarantee of certain success but the warning that a risk has been taken that may thus end up in failure. My benighted little field of science studies takes great pride in following those paths, those networks, in ever more and more detail: how scientific procedures have to pay the full cost of each segment along their extension, from a new surprising agent brought to the laboratory, and then, once submitted to harsh laboratory trials, how it manages to maintain its complex systems of proofs outside of its narrow confines so as to survive in the 'real world' outside. Naturally, the people devoting their life to this mode of extension may *wish* that their results be already universal, incontrovertible and fully exterior to their man- and machine- made narrow procedures, but nonetheless there will be a reminder the next day to pay once again in hard currency the total bill for their extension one step further — paper after paper, citation after citation, colleague after colleague, place after place, process after process, proof after proof, patent after patent, little fact after little fact. No fact for free, always already there everywhere.

If we turn to those people assembled by entities who seem to appear and disappear, depending on how they are talked about, we find, strangely, that they, too, must follow a hard and costly, slow, step-by-step process of extending their agencies. This people can't rely on claims about their entity's premature and unsubstantiated universal completion. Naturally, you might claim that you 'believe in God' but the next day you will be reminded that '*if you lack charity you won't be better than echoing bronze, or the clash of cymbals*' (I-Cor 13-1). And how would you extend charity, I beg you, without taking each detour, at each moment, for each word, each person, to reach the near and the close at hand and start every time anew? Here again, it's totally impossible to suppose that a premature unification of what is at stake could protect you from paying the full cost of the extension of the Good Message, faithful after faithful, place after place, translation after translation. And if you believe you have already done it, yesterday, for good, forever, then you have also forever lost along the way the very content of the Message you were supposed to transfer. For a word that was supposed to transform those to whom you were preaching into persons loved and

saved, you have substituted a word that is simply providing meaningless information. And to add insult to injury — or rather to sin —, that information is empty since there is not a single byte in it! Demea, Demea, don't you realize you have nothing to say if you don't say it in the right tone?

It's too early to check whether or not those two modes of extension — or modes of existence, as I call them, that is REF and REL — could resonate in any meaningful way and assemble their people through a more relevant political covenant. What I want to point out now is the last feature of my reallotment. If we consider that the two columns making up 'natural religion' are unifying the universe prematurely, and that the two 'secular' columns making up the hidden practice, one of Nature and the other of Religion, stand for the slow and painstaking extension of networks *inside* this non-unified universe, we obviously need a concept to designate *what in which* they expand. I will reuse William James's word *multiverse* for such a non-formatted space — and will locate this concept in the left column of my little chart. The word multiverse points to the fully secular series of surprising agents *before* they are unified by any global view —be it that of Nature or that of God — and *before* they are assembled in many provisional compositions by the slow and costly process of extension carried out *either* by chains or reference *or* by the preaching of transformative messages.

Needless to say that which follows pertains to philosophical fiction, but I'd like to sketch, for the remainder of this lecture, what could have been settled differently and what alternative it could have offered to 'natural religion.' What would have happened to the dialog had the four protagonists benefited from the introduction of such a scheme? It seems to me that we could have secularized the sciences — against both Philo and Cleanthes ; opened a space for other trails through the multiverse than knowledge — against Philo and to the possible benefit of Pamphilus and Cleanthes; and could have put anthropology's comparative basis to much better use — against all of the four protagonists.

Let me start with the first lesson. An epistemological version of scientific disciplines is offered when the results of science are divorced from its production process so much so that any allusion to its human-made basis is taken as a *debunking* of its objectivity. As I have underlined earlier, if philosophers and scientists are so touchy about relativism, it's

because they are so anxious about not being able to reconcile the two sets of features that we have labelled Nature One and Two. They have never publically adjusted to this bifocal vision so that their eyes could accommodate the two fields of vision at once (more of this in the fourth lecture).

The pseudo controversy over climate science is a good case in point. It's my contention that because they are so viciously attacked by colleagues who claim to defend the mantle of science against their science, climatologists offer a unique occasion to explore a post-epistemological version of their trade. Every time climatosceptics mention the word 'lobby' to describe their enemies, they point to the existence of a real enough *community* of scientists. By highlighting this community equipped with instruments, working with models, exchanging e-mails, going to conferences, standardizing data sets, applying for money, organizing consensus meetings, publishing policy summaries, they believe that this humble and material activity should be taken as proof that climate science is *not* a really good science. They seem to believe that climate could be better known *independently* of any scientific network or that any one of them, by the mere power of reason, could second guess what tens of thousands of colleagues have patiently assembled. Or that there exists somewhere a 'true knowledge of the climate,' ready to appear mysteriously without any mediation at all to reveal the final truth about itself through clear-cut evidence —a sort of Burning Bush revelation except, this time, in plain speech.

What is so distressing in such a restricted view of scientific practice is that bona fide climatologists *too* seem to believe that foregrounding their humble activity will *weaken* their claims to certainty; that they have something to hide or at least that they should background as much as possible the complex institution, the '***Vast Machine***,' as Paul Edwards calls it, that they had built to reach certainty; as if, indeed, they too could not adjust to the bifocal view of their own practice.

Such is the primitive scene science studies had to witness over and over again: how come there is no *legitimate* way to accept the humble conception of scientific truth? Why is it so difficult, as the anthropological rendering of scientific practice invite us to do, to accept that scientists do indeed compose a people, and a very specific one? And yet, such an acceptation would offer a much more realistic picture since scientists are constantly trying to define the *limits* of their assemblage

and the exact *standing* of those they represent. This might sound at first like a return to the 'social' dimension — and God forbid — to the 'social construction' of science. But I take it here as an essential part of the political philosophy of science. It's not that Philo represents the whole human race disserting about outside reality while Demea or Pamphilus are only concerned about their local churches. It is rather that scientists ceaselessly decide who belongs and who does not belong to their group by multiplying examinations, imposing professional standards, projecting themselves in a future where 'everybody' will be scientifically minded, or, on the contrary complaining about the 'lack of vocation' of young students for the sciences — just as pastors and priests complain about their empty seminaries.

Why don't they confess that they are indeed a people engaged in the complex process of people building? There is nothing wrong in drawing in one single movement a type of agencies, a type of people and a type of entity summoning this people. That's what science — anthropologically and not epistemologically defined — is all about. When climatosceptics denigrate the sciences of climatologists, they too assemble another flock, define other entry tests, police differently spread border lines with new documentations, endow matter with other qualities, expect from politics other goals, and live under another God. So do climatologists. Who are you representing and what are you fighting for? No reason to hide yourselves behind the idea of a view from nowhere held by people who belong to no people. One is tempted to say: 'Stand on your own ground, for God's sake, instead of believing that you have to try to make your science answerable to the impossible standards of epistemology requiring you to disembody yourselves toward a place of no place.'

Of course, climatologists would be able to stake their ground more firmly if they could clarify the strange status of the agents that they are claiming to represent. They are not helped by this odd idea that they act in the name of *mute* agents that *speak* nonetheless about themselves in strange tongues. Here again, climatosceptics would like them to decide: 'Are *you* doing the speaking about the climate or is it the climate that speaks loud and clear *by itself*?' But it would be ludicrous to reply to such a demand. One could instead address them more vehemently: 'Why don't you proudly accept the extraordinarily rich anthropological repertoires that scientists have managed to build through the centuries in order to *make* things *speak* so that they do speak *through* the scientists'

speech apparatuses to bear proofs, under trials, in front of the assembled *reliable witnesses* — your colleagues and your judges —, of what they *would have* said had they been able to speak?

If people tell you that you indulge in politics and that you are taking yourselves to be the *representatives* and the *voices* of many hidden and suppressed voices, say yes for God's sake! Yes of course, how would anyone know the first thing about the climate without you and your paraphernalia? If politics consists in representing the voices of the downtrodden and of the unknown, well then we would all be in a much better situation if, instead of pretending that "the others" are doing politics and you just "do science," you confessed that you do try to *assemble* a political body and to live in a coherent cosmos summoned by a different entity. It's very true that you don't speak in the name of a constituency that would overlap with national or with social boundaries and that the source of your authority is based on a very odd system of election and proofs, but that's precisely what makes your political power of representation of so many new agents in the coming conflicts about the shape of the world so very precious. Don't sell this politics for a dish of bread and lentil stew.'

The second lesson is much harder to swallow, and I doubt Philo would have accepted it, but it would clarify future debates enormously, if we could disentangle Nature from a 'Nature known by the natural sciences' (I have used the two terms somewhat confusedly myself until now). This is where the addition of our fifth column, that of the multiverse, is going to help. Is it possible to say that the sciences find their way *through* the multiverse and propose a great many transitional assemblages? I know it's very difficult to make this argument as long as knowledge floats around without being firmly but politely brought back inside its network of production. The novelty is that *what* knowledge travels through, *what* it assembles, is not itself nature nor is it especially 'natural.' 'Nature,' in that sense, is rather what is *performed* by the natural sciences, what is generated by the *extension* of equipped and rectified knowledge networks able to access the far away by the slow and costly pavement of chains of reference.

Such a view does not cast any doubt on the quality, objectivity and solidity of scientific disciplines since it's now clear that those networks end up producing outside, incontrovertible, universal, knowledge. It's just that the networks are foregrounded. Such a highlight does not limit

their extension, as if there was a possibility, *outside* of those networks, to *know* more and better; or, as if those networks were missing something of the objects they know, like the infinite recess of the most mysterious 'things in themselves.' No. Whatever they succeed in reaching, *they fully know it* since no other knowledge of the same type from any other mysterious source may beat their certainty. What would it mean to *know* the anthropic origin of the climate change *better* than climatologists? How would you do it, except by building new more sensitive instruments, putting new data within the already existing data bases, setting up new institutions, defining new computing models, testing new variables and thus, in effect *joining* the climatologists' fold — and even sending them emails?

The point was harder to make, I agree, at an earlier time when the paraphernalia, the groups, the cost, the institutions and the controversies around matters of fact were not so visible. But this is no longer the case now that every matter of concern is delivered with its instruments, its assembly of disputing experts and its public, much like any GPS data point comes with its retinue of satellites. The effect of such a new vision of scientific practice is that, for appealing *against* the results of science, there is no outside supreme court — especially *not* the supreme court of Nature. You cannot do as if you were knowing more and better and yet not taking part in the knowledge production machinery.

In other words, knowledge, has stopped floating mysteriously around with the strange ability to sometime disappear and sometime fuse with the thing known so completely that it couldn't be distinguished from it. As if the 'thing in itself' was made in and of '*knowability*'; as if it could be known even *without* the equipment and networks of real life scientists, waiting quietly for them to appear and say exactly the same thing they eventually said! What it is for a thing to be known scientifically and what it is for a human mind to know something scientifically are part and parcel of the same process that extend — or fail to extend — in the same way. And, mind you, it does not follow from this argument that 'science cannot know everything' or that there are 'other sources of knowledge than scientific.' If we are talking about equipped and rectified knowledge — what is nowadays most often associated with the scientific disciplines— then the answer should be a resounding 'No!' there are no other ways of knowing and what is known in this way is grasped to the full. This is what I have

called the post-epistemological and, thus, the post-natural version of the natural sciences. Although the label of 'natural science' in a post-natural situation might be in great need of readjustment — especially at the time of the anthropocene (more on this later)!

But, and it is a big 'but' which should be pronounced with great care and caution, knowing something *in this way* is no longer the *only manner* to trace paths in the multiverse. That's the third lesson to draw from our table, the most difficult and one that I have to propose rather too abruptly for now. With such a view of science, it should be plausible to entertain other paths and trails which have no ambition to compete with the sciences and no claim to knowing in the same fashion but (and that's another even more delicate 'but') which claim to have a *firm grasp* on the multiverse nonetheless? Once knowledge is relocated, other modes of extension may claim access to ontology provided we deploy the multiverse so as to let all of those trails cohabit and sometimes cross one another. It might take some time to familiarize ourselves with such a scheme, one that requests that equipped and rectified knowledge be made a mode of extension, a mode of existence, *among others* and no longer the *voice over* ruling mysteriously from an undetectable supreme court on all the other modes.

The great interest in accepting this much earthlier definition of science — an interest that would not have been relevant at the time of Hume's dialog —, is that today we might wish to enter into conversation with many other collectives who have completely different way to collect their agents and to be assembled by their entities. If the paradox of 'naturalists' is that they did not think of themselves as a people but only as rational interchangeable humans having a world to know and no entity to summon them, the other paradox is that, in their imperial conquest, they kept encountering other collectives which they mistook for people encumbered with gods and enslaved by strange beliefs about the world. In other words, 'naturalists' encountered the other as *cultures*, that is, as so many different *belief systems* about *one* world of nature.

It took a long time for anthropologists to realise that nature was far from a universal category; that most people have never lived 'in harmony with nature'; and, which is even more enigmatic, that so-called 'naturalists' had never lived in nature either since they never managed to reconcile the apolitical, irreligious, de-animated version of

Nature One with the practices of science, that is, with Nature Two. If the multiverse is reintroduced and if the natural sciences are relocated inside it, is it possible to let the other collectives stop being 'cultures' and give them full access to reality by letting them compose their cosmos, but by using other keys, other modes of extension than the one allowed by knowledge production? Such a reinterpretation is especially relevant today because, if nature is not universal, *climates* have always been important to all people. The reintroduction of climates and atmospheres as the new common cosmopolitical concern gives a new urgency to this communality between collectives.

The argument sounds strange, but remember that if it's understandable that scientists want to do away with spirits, souls, divinities and other occult forces, this is not because they have managed to substitute for them a 'purely material world,' it is because those agencies answer to *other gods*, define *other* entries through the pluriverse and assemble *other* types of people with whom scientists might not wish to enter into contact. This is what I have called a *secular* view of science and nature. It's not nature against belief, as would be required by the relativist language game, but one political theology against other political theologies. As far as practice is concerned, 'naturalists' have never managed to live in the idealised materiality that justifies, for some of them, their 'materialism' and 'reductionism.' It's simply that there exists a *style of writing* about science that manages to require that the characters of the narratives be played by actors looking like inert, boring, obstinate agents. But as every actress will tell you, it takes a good deal of practice to play boredom on the stage. No scientist has ever been able to withdraw the agencies animating his or her own demonstrations. Separating action from agencies would be like killing for good the actors who are supposed to play the dead in the last scene of a play! The history of the claim to 'materialism' — and thus the spurious fight against or in favour of 'spiritualism' — is a simple confusion between the style that *de*-animates agencies and the style that *over*-animates them. Once again we should look at the actions taking place beneath and off stage.

Were I audacious enough to suggest another end to the celebrated ***Dialogues on natural religion***, I would have assembled the protagonists in Hume's smoking room and asked his butler to bring cigars and Port, there to sum up our discussion in the ways it's often staged at the end of

whodunits by the clever detective always so much smarter than the police inspector. In my case, unfortunately, it will be much less conclusive since we have only hapless Pamphilus to play the role of Ms Marple.

Turning to Demea he could have said: 'Why have so completely abandoned your creed that you let religion become a set of archaic rituals, moralistic tenets, and obscure mysteries? You have not only abandoned any access to the world through reason, you have left the world to science, and left the science to epistemology, relying on common sense, indignation or tradition whenever you feel cornered.'

To Cleanthes, he could have said: 'My respectable preceptor, I understand that you want our religion to have some bearing on an outside reality and some hope of sitting proudly among the sciences without relying on Demea's crass ignorance to prove religion's full force, but why did you imagine that you would have to compete with Philo in some trip toward the invisible and the far away given that you are neither competent nor interested in paving your way there with instruments and inscriptions? Either you do establish those reference chains and you become a respected scientist, or you don't and you will succeed in doing nothing more than drawing ridicule to our religion not having advanced it one iota by one single act of conversion. Is there really no other way to access the world than either to capitulate to an inflated notion of science or to add a postiche clock maker on top of it all?'

'And you, Philo, ridiculing Demea is fine and fun but why give Cleanthes such a hard time? Is he not after something that you should be interested in achieving too? As you yourself have so often shown, we should be extremely suspicious of establishing any *spurious continuity* throughout the concatenations of causes and consequences. You too should be interested in a solution that re-establishes some distinction between knowledge and the world. Not, as your alias David Hume proposed, by introducing the human mind and its associative power into the picture, but by considering that the multiverse *itself* might be discontinuous. This conclusion would not have weakened objective science, but insured that it's cared for and equipped and that no one else can feed on its "limits." This would have led scepticism in a totally different direction and would have saved future generations a lot of time spent in useless discussions by permitting a certain scholar from

Konigsberg to keep snoring all the way through his "dogmatic slumber".'

I think that Pamphilus, had he read more anthropology, would have concluded by stating again his surprise that his mentors would be so uninterested in putting to good use all the trails that other collectives have drawn through the multiverse to cope with their varied climates. Like him, I suspect that there is not much hope of drawing the changing face of Gaia as long as we haven't brought the sciences back to Earth and as long as we have not refreshed the meaning of what could be called Incarnation. I share his surprise that, for two of the most important enterprises of our own culture, namely Science and Religion, *being from this Earth* appears to be so strangely impossible.

The puzzling face of a secular Gaia. Gifford 3. Thursday 21st February 2013

It is likely that very soon, in the history of science as well as in the popular imagination, the scene I am about to describe will gain the same status as that of Galileo, when, during the crisp nights of November and December 1609, he turned his telescope to the Moon and that it dawned on him that every planet, including the Earth, was just like the others. Except that, this time, positions have been reversed and the discovery turns out to be that the Earth is a planet like *none* of the others! Unfortunately, what is missing at this point is a play written by some new Bertolt Brecht to retell the two stories in reverse order: not from the narrow space of Venice to the whole universe, but from the whole of nature back to the narrow confines of the Blue Planet.

It is the Fall of 1965, at the Jet Propulsion Lab, in Pasadena, in the offices of the Biosciences Division, where James Lovelock, a somewhat eccentric engineer qua physiologist — not to say at the time a maverick — is drafting a paper with Dian Hitchcock (no relation with the film director!) on how to detect life on planet Mars. The two authors are somewhat embarrassed to confess to their colleagues from the ***Voyager*** mission—who are busy devising complex and expensive robots to be landed on the Martian soil with the aid of giant rockets—that in order to answer such a question the best solution is to stay where they are, in Pasadena, and to turn a cheap infrared instrument from the Earth toward the Red Planet to check whether or not the atmosphere is chemically at the equilibrium state or not. According to the two scientists, this simple measurement is enough to provide the answer: Mars is as dead as the dodo. No need to fly there at great expense to prove the obvious.

It's hard not to be struck by the reverse symmetry between Galileo's and Lovelock's gestures of turning cheap instruments to the skies to make radically opposite discoveries.

When Galileo, out of the fuzzy iridescent and distorted images that his toy telescope extracted from the Moon, decided, thanks to his extended knowledge of perspective drawing, to conjure up the shadows of mountains, of ridges and valleys, he hurried to establish between the

Earth and its satellite a new sort of commonality — not to say a new fraternity. Both were planets. Both had the same dignity. Both turned around another centre. Now, at last, the world could vastly expand. No longer was the Earth demoted to the filthy basement of a corrupted sub lunar world ringed by circles ordered in ranks of higher and higher quality, from the super lunar loftiness of the planets all the way to the supreme perfection of fixed stars, just one step removed from that of God Himself. The Earth now possessed the same importance as all the other heavenly bodies without any hierarchy among them; as to God, He could be encountered everywhere in the vast expanses of the world.

Astronomers, writers, polemists, priests and parsons as well as libertines, could now send throughout those new Earths a large population of fictional characters who could meet all sort of creatures inhabiting those other bodies and who were allowed to witness all sort of strange phenomena. New narratives by Kepler, Cyrano, Descartes, Fontenelle and Newton were made possible about a world that constantly expanded because it turned out to be remarkably similar everywhere. It is at this point that 'a view from nowhere' could gain some likelihood since interchangeable disembodied spirits could now write the laws of a cosmos that were everywhere the same since they extracted from planets no other property than being just like billiard balls. After all, falling bodies are falling bodies; when you have seen one, you have seen them all! Extension is thus possible since every single *where* is literarily the same as any other: *res extensa* may be indeed be extensively expanded. To use Alexandre Koyré's turn of phrase, Galileo helped his readers to move 'from the closed world to the infinite universe.'

What is called in English 'the view from nowhere' is a tad more localized in French since we call it *'le point de vue de Sirius.'* It is from one of those fictional locations that Lovelock situates a little green Martian astronomer who would not need to travel at all in any sort of flying saucer to decide, thanks to the mere reading of his equally fictional instrument, that the Earth is a planet fully alive because its atmosphere is far away from chemical equilibrium. If this is so, then, Lovelock concludes in a flash of intuition, *something* must keep this state of affairs in place, some *agency* that has not been conjured up before, which is absent on Mars as well as Venus or the Moon, a power of action so combined as to always maintain — or to recover — over billions of years

a state of affairs steady enough to counter the perturbations introduced by many outside episodes— a more energetic sun, asteroids impacts, pollution by oxygen and so on.

While Galileo, by looking up beyond the horizon to the sky, was expanding the similarity between this Earth and all the other falling bodies, Lovelock, by looking down on us from one of those heavenly bodies, is actually *decreasing* the similarity among all the planets and this highly peculiar Earth of ours. From his tiny office in Pasadena, like someone slowly sliding the roof of a convertible car tightly shut, Lovelock brings his reader back to what should be taken, once again, as a sublunar world. Not because the Earth lacks perfection, quite the opposite; not because it hides in its interior the dark site of Hell; but because it has — and it alone has — the privilege of being alive in a certain fashion — which also means, in a certain fashion, yes, that's right, being *corruptible* — that is, animated and also, thus, simultaneously steady and fragile. In a word: actively maintaining a difference between inside and outside. Even stranger, the Blue Planet suddenly stands out as what is made of a long concatenation of historical, local, hazardous, specific and contingent *events* as if it were the temporary outcome of a '*geohistory*' as attached to specific places and dates as the Biblical narrative, that is, exactly what was not to be taken into account when considered simply as a falling body among all the others.

Is not the reverse symmetry really admirable? Take the cliché of three 'narcissistic wounds' celebrated by Freud: first Copernic, then Darwin and then — somewhat narcissistically — Freud himself? Human arrogance was supposed to have been deeply hurt by the Copernican revolution that had chased the human out of the centre of the cosmos (and hurt deeper still by the discovery, secondly of Darwin, and, thirdly, of the Unconscious that had kicked the human subject out of its privileged position). But in order to invent such a series of wounds, Freud had to forget the enthusiasm with which the so-called 'Copernican revolution' had been embraced by all those who had suffered so much for being stuck in the dark centre of a cosmos out of which they had no other escape but the super lunar regions, the only place where incorruptible truths could be found. Out of the hole at last! Brecht celebrated this access to the large open sea in the first version of his play.

Although it is highly doubtful that Freud was right in calling those successive decentrings a 'wound' to our human dignity, it is hard to deny that it is indeed a narcissistic injury, and a deep one, that Lovelock is inflicting on all those who dreamt of moving out everywhere in the vast expanse of space. This time, we humans are not shocked to learn that the Earth is no longer at the centre and that it whirls aimlessly around the Sun; no, if we are so deeply shocked it is, to the contrary, because the Earth should indeed be *at the centre* and that we are imprisoned in its tiny local atmosphere with no way to escape it. Suddenly, as if a brake had been applied to all forward movements, Galileo's expanding universe is interrupted and Koyré's motto should now be read in reverse: '*from* the infinite universe *back* to the limited closed cosmos.' Recall all the fictional characters you have sent away! Tell spaceship ***Enterprise*** to come back home. As to planet *Pandora*, this is not where the next Frontier against the barbarian Navis will ever be expanding! You may still spend huge budgets on what used to be called, ironically, the 'conquest of space,' but it will be to transport, at best, half a dozen encapsulated astronauts from a live planet to a few dead ones. Where things will happen is down here and now. Don't dream any more, you mortals. You won't escape to outer space. You have no other abode than down here, the shrinking planet. You can't compare it with any other. Earth is what in Greek is called an *apax* — a name used once — and that's the name that your species, Earthlings, deserves as well — or if you prefer a word with the same etymology: *idiot*.

Yes, quite a first narcissistic injury from which we have to recover quickly, to be cured before the second one strikes us, that of the anthropocene. Not only should the Earth be the centre of our exclusive attention, but we should also feel responsible for what happens! No escape, twice. (We will return to this next week). Back to Earth, anyway. And 'out of nature,' certainly, if by nature we have meant the isotopic expanse of *res extensa*. The lock has been turned tight two turns in a row. Suspicious name this scientist has, don't you think? *Love lock*… 'Love'? I am not quite sure, but 'closure,' yes, for sure; or, at the least, a decisive change of horizon.

We have all read ***Lord of the Flies***, a story — we have to recall — about young boys stranded by accident on an island from which they could not escape either and where they glide down the slippery slope to

barbarity. It is not casting aspersions on William Golding's reputation to surmise that—when after quite a few beers in the Wiltshire village of Bowerchalke's little pub, he suggested to Lovelock that he should call his theory 'Gaia,'—he certainly had not reread his Hesiod for a long time. If he had, he would have known that he was placing on his friend an ominous curse from which his theory might never recover. And the same is certainly true of the many New Age rituals where people assemble to celebrate Gaia as a benevolent, caring, maternal whole.

No, she is not maternal, or else you should change entirely what you mean by 'Mother!' In ***Metamorphosis***, far from being a figure of harmony, Gaia, the mythological character, emerges in great effusions of blood, steam and terror together with Chaos and Eros. In Hesiod's admittedly biased narrative, she is an earthly, black, brown, dark skinned and scheming monster, a feminine power that three times in a row — three times ! — tricks her progeny into murdering her loved ones… She first pushes her son Kronos to cut with a 'jagged teeth iron sickle' her husband Ouranos' sexual parts — showering blood all around, every drop begetting a horrible monster. Then, together with Rheia, Gaia convinces Zeus to fight against his own father and to defeat him. But then, never at rest, she plots to mobilise her last child, Typhon — a hundred snakeheads monster—, to destroy the empire of her son Zeus. The Olympian fortunately wins, but the poor humans are now victims of Typhon's irresistible winds, tempests and cyclones. And only then did Gaia stop scheming (according at least to Hesiod's story). Sorry to say, but Gaia, at least viewed from the later point of view of the Olympian gods, is a dangerous bitch.

Yes, no doubt, there is a curse attached to Gaia theory. How often have I been warned not to use the term and not to confess that I was interested in Lovelock's books — to the point of writing a play about them and, worst of all, to concentrate this prestigious lecture series on his favourite character! 'You can't possibly take seriously, I was told, those pseudo-scientific ramblings of an old self-employed inventor who claims quietly on television that seven out of eight humans will be soon wiped out because, as a new Malthus, he pretends to have calculated the "carrying capacity" of planet Earth — 300 million or so — and that he does not really care, anyway, since he will die high above the Earth, in a rocket, during a space trip, thanks to a free ticket offered to him as a bonus by no less a sponsor than Richard Branson! Come on,

this mixture of science and vaguely religious insights cannot be the centre of a new view of science, politics and religion. How silly you are to compare him with our great Galileo.'

One of the many reasons why I have resisted those warnings is that I am not quite certain what my dissuaders would have said, in 1610, about Galileo, when reading his ***Sidereus Nuncius***. After all, an engineer rambling about God, the Earth, the Moon, the Church, the Bible and human destiny, comparing the Earth and the Moon to billiard balls, while dedicating his work to *Cosmos Medices Magno Haetruriae Ducci*, might not have been met by them, at the time, with a much more favourable welcome. To be sure, Richard Branson is not duke Medici, but that is not enough to break the symmetry of the two opposite cosmologies I wish to explore with you tonight. In both cases, it's the fate and the face of the Earth that is in question, and that is enough to take both equally seriously.

So, if there is a curse over Gaia's theory, I feel that it is more than fair to try to lift it by putting Lovelock's Gaia in the most charitable light. Clearly, I am not going to evaluate his discoveries as a specialist of the Earth system could have done, but only in terms of the political theology presented in the two other talks. Remember that our task in those lectures was to detect three elements so as to render collectives comparable enough: What sort of people they are? What are the entities under which they assemble? And how do they distribute the agencies making up their cosmos? This is why it is so important to understand how Lovelock composes the assemblage called Gaia and what difference it makes for humans. Or, to put it more bluntly: what sort of *political animals* do humans become when their bodies are to be coupled with an animated Gaia? As we go on, it will become clear that the 'people of Gaia' are not the same as the 'people of nature.'

If there is one thing we have learned earlier it is that any accusation of 'mixing up science and religion' should not worry us too much since, in most cases, what passes for science as well as for religion is already a mixture that no distillation may purify. As we now know, what is more important in order to weigh the novelty of a figure such as Gaia, is to detect *which type of agency* its name sums up and *what sort of unity* it is allowed to have. We have understood that it is not because you give an entity the name of a god that it acts as one — and that it is not

because you claim to live under an entity that is *not* a god that it does not belong to religion.

Surprisingly, on both of those counts, even if you factor in the many hesitations in Lovelock's prose, Gaia plays *much less* religious a role than the notion of nature that classical scientists used to defend and that those who claim to be religious wish to supersede. Hence the double misunderstanding over Lovelock's argument that has come from both scientific and religious circles. What I am going to show is that if the adjective 'secular' means 'of this world,' then Lovelock's intuition can be called *fully secular*. The paradox of the figure we are trying to encounter tonight is that the name of a primitive, shapeless and shameless goddess has been given to what is probably the *most secular entity* ever produced by Western science.

Two of Gaia's surprising features are, first, that it is composed of agents that are neither *de*-animated nor *over*-animated and that, secondly, contrary to what is often claimed in criticism of Lovelock, it is made of agents that are not *prematurely unified* in a single acting whole.

The best way to grasp the first feature might be to explore the parallel between Lovelock and another famous scientist, not this time Galileo, but rather Louis Pasteur. What makes the parallel with Pasteur so tempting is not only the role given to microorganisms but the consequences they both drew for medicine. Is Lovelock not the author of a book called ***The Practical Science of Planetary Medicine***? In the same way as Pasteur, soon after giving shape to his microbes, tried to convince surgeons that, unwittingly, they were killing their patients through their scalpels, Lovelock, as soon as he has drawn Gaia's face, tries to persuade humans that they have the strange role of being unwittingly no more than Gaia's *disease*… *'The people's plague'*! As if the challenge, this time, was not to protect humans against microbes, but to protect Gaia against those tiny microbes that are called humans! As I have shown elsewhere, if Pasteur's microbes have deeply modified every definition of friends and enemies in a given collective, we can brace ourselves for a similar change when we deal with an active Gaia. Just as in Pasteur's time, what is at stake is war and peace.

But first, let us see how the parallel could work. If you remember the long battles that the nascent microbiology had to fight against eminent chemists such as Liebig, you will recognize a situation very

similar to the one where Lovelock tries to move from geochemistry to what he calls '*geophysiology*.' In both cases, attempts to introduce some hitherto unknown agency in spite of scientific disciplines intent on dis-animating the world are accused of being a return to vitalism, that is, of over-animating agents. In both cases, the intuition that, in a given set of chemical reactions, something *more* is at work than the usual suspects known at the time is met with deep suspicion — a suspicion fully justified by earlier fights against other hard to defeat paradigms.

This was certainly the case for Justus von Liebig, Pasteur's nemesis at the time. After a century of battles against mysterious agents and vital forces, chemists had finally established their paradigms by learning to account for all the reactions they could put their hand on through 'strictly chemical pathways.' This is why they had, initially, no patience for Pasteur, even if he was himself a chemist, when he claimed to show that sugar could not be transformed into alcohol *without* the addition of an unknown agent, yeast, whose presence was indispensable for triggering chemical fermentations. They had still less patience when Pasteur accused the chemists who refused to believe in his demonstrations that they had unwittingly 'contaminated' their broth with those invisible agents.

As is well known, scientific agents, when considered in their nascent stage, are first a *list of actions* before being given a name — usually in a language, ancient Greek, that no scientist speaks any more —that sums up those actions. To use a semiotic notion that we have already encountered in the translation tables for the names of gods, agents have *performances* long before they are granted *competences*. What an agent is able to do is deduced from what it has done — a pragmatist tenet if any. In Liebig' hands, 'yeast' was the mere by product of fermentation. In Pasteur's laboratory, the same character is called to a more glorious destiny.

If in a few pages the reader moves from (I quote) '*Until now minute researches have been unable to discover the development of organized beings*' to '*It is nevertheless it that plays the principal role,*' it is because, in his beautiful set of memoirs on fermentation written from his bench in the city of Lille, Pasteur has extracted this 'principal role' from a set of scenes where the emerging character is first revealed through a series of very humble actions: it is nothing more than '*spots of a grey substance*', it '*looks exactly like ordinary pressed yeast,*' it '*is slightly viscous and grey in colour,*' it '*can be collected*

and transported for great distances without losing its activity,' it is *'weakened when the material is dried or when it is boiled in water,' 'very little of this yeast is necessary to transform a considerable weight of sugar'* and so on and so forth. What is this mysterious 'it'? Answer: all those performances. It is through this process of condensation that performances are later summarized into competences, much like a profile on Facebook ends up zooming in on who is the character who owns the page; or, to use a more respectable idiom, in the same way that attributes fuse into the essences of which they are — but only later —made to be the attributes.

If the chemists' opinion slowly turned around, it was not only because of Pasteur's impeccable experimental ingenuity but also because he had very quickly directed the same argument this time against vitalists and demonstrated that those who, like Félix-Archimède Pouchet, believed in spontaneous generations, had also 'contaminated' their broth by surreptitiously introducing what was soon to be called 'microbes.' In Pasteur's clever hands the anti-Liebig agent was also anti-Pouchet. Through this two-front attack, Pasteur, in less than a decade, had woven his way through the Charybdis of reductionism and the Scylla of vitalism thus establishing the totally original existence of a new agent that could neither be reduced to 'strict chemistry' nor to any of the mysterious 'miasma' that had confused medicine for centuries. The list of agencies acting in the world had been extended by one new item the *envelop* of which had been carefully designed to add a new form of life.

The case of Pasteur proves, once again, that science does not proceed by the mere *expansion* of an already existing 'scientific world view' valid everywhere, but by the *revision* of the list of furniture present in the world, what is normally called by philosophers, and rightly so, a *metaphysics* — next to physics, yes, there is *meta* physics. But what is peculiar to scientists' metaphysics is that a set of actions revealed by laboratory trials in the presence of virtual witnesses always *precedes* the name that is given to the actants. In other words, reductionism does not consist in limiting oneself to *a few* well-known characters so as to tell the story of everything, but in giving names to characters that have first proven their mettle through trials and tribulations. This is why the word 'metaphysics' should not be shocking to any practicing scientists but only to those who believe that the task of furnishing the world has

already been completed. And, of course, as soon as you have decided who and what plays 'the principal role,' politics follows in tow.

I think that Pasteur's case helps to throw a more favourable light on Lovelock's introduction of other 'organized agents' to which he attributes the 'principal role' in a series of actions that his contradictors see as nothing more than coincidences or mere superimpositions. This time it is not the indispensable presence of '*spots of grey substance*' to trigger a '*lively fermentation,*' but a series of chemical instabilities that are begging for the introduction of another agency to fill in the balance sheet. When Lovelock puzzles over the role played by the strange ratio of oxygen and carbon dioxide in the atmosphere, he introduces those actors on stage in much the same way as Pasteur:

> '*Many biologists today seem to think that [the balance of nature] alone explains the level of the two great metabolic gases — carbon dioxide and oxygen — in the air.* ***This view is wrong****. The* ***picture*** *it gives of the world is like that of a ship with the pumps connected merely to recirculate the bilge water within it, rather than to pump it out. As the water leaks in, the ship would soon sink (…) So what is this "leak" that thus determines the level of carbon dioxide in the atmosphere? In* ***short it is rock weathering*** *(…) Until the 1990s, geochemists maintained that the presence of life has had no effect on this set of reactions. It is* ***simple chemistry*** *that determines the level of carbon dioxide in the atmosphere. But I disagreed. (…)* ***By their growth****, plants pump carbon dioxide from the air into the soil, proof being the observed 10- to 40-enrichment of carbon dioxide in the air space of the soil.' p. 108*

Lovelock's prose has the flavour of a whodunit, except that the enigma that the detective has to solve is not triggered by the discovery of a corpse, but, on the contrary, by the mystery that at least one (falling) body has *not* been murdered — at least, not yet! So the drama always unfolds in much the same way: the Earth *should be dead*, just like Mars. It is not. What force is able to keep saving it from assassination? Let's stage a trial to test whether the normal laws of geochemistry are up to the task of protecting it. Every time the trial is lost by standard chemistry, you have to add a little *je ne sais quoi* that counterbalances the forces rushing to equilibrium. Then find a name for the invisible protector, of the agent that is responsible for this absence of death. Carbon dioxide should be in a much higher quantity in the air? Where does it sink? In the soil. Through which agent? Through the action of

microorganisms and vegetation. Now test to see if they are up to the new role given for them.

Then, repeat this forensic test for all the successive ingredients that are supposed to populate the Earth. Nitrogen is not where it supposed to be, in the sea where it would have increased the salinity so much that no organisms could have kept their cell walls protected against the poison of salt. Thus, the question should be raised about which forces are propping it up in the atmosphere.

> *'If there were no life on Earth the continued action of lightning would eventually remove most of the nitrogen from the air and leave it as nitrate ions dissolved in the ocean (…) On a lifeless Earth it seems probable that these inorganic forces would partition nitrogen so that most was in the sea and only a little was in the air' p.119*

Then take water. Once again, it should have escaped long ago just as it did on Venus or Mars. How come it is still there? A challenge is launched against geochemists: 'Try to explain this situation through the normal laws of chemistry, you the proponents of a "balance of nature"!'

> *'The Earth has abundant oceans because it has evolved,* ***not by geophysics*** *and geochemistry alone, but as a system in which the organisms are an* ***integral part****' p.* 128

What is so literally *moving* in Lovelock's (and Lynn Margulis's) prose, is that every item we used to consider as parts of a background *scenery* on the stage of which the majestic cycles of nature were supposed to unfold, is interrupted, and rendered active and mobile thanks to the introduction of a new invisible character able to reverse the order and hierarchy of agencies. Cloud cover? Amplified in part by the projection of algae. Mountains? Almost all of them produced over eons of time by the rain of tests and shells from living organisms. Even the slow crawling of plate tectonics is said to have been triggered by the sheer weight of sedimentary rocks.

There is something almost cartoonish in such an opera, as if every time Lovelock was touching a part of the décor with his magic wand, suddenly, just like in a Disney version of ***Sleeping Beauty***, every inert passive agent of her Palace began to yawn, to awaken from its slumber and became fiercely busy, from the dwarfs to the clock, from the door knobs to the chimneys. The humblest props now play a role, as if there were no distinction any more between main characters and the

environment drawn around them. Except for deep molten rocks inside the Earth and deep space beyond the thermosphere, there is not one single element of the background that is not brought to play its part on the foreground. Every thing that was a mere *intermediary* for transporting a strict concatenation of causes and consequences becomes a *mediator* adding its grain of salt to the narrative. In Lovelock's term, life and climate have evolved together and are made to be twice the same phenomena.

Looked at from above, the Earth, taken as one big broth, is unexplainable without the addition of the work done by living organisms, just as fermentation, for Pasteur, cannot be triggered without yeast. The same movement of animation that, in the 19th century, had transformed beer, wine, vinegar, epizooties and epidemics into the work of microbes, is now carried over to the point of churning air, water, fire and soil out of the relentless actions of living organisms. Everything is made to move in this merry-go-round — enough to make you dizzy. Much more dizzy than when Galileo launched the Earth around the Sun since no one could detect from ordinary experience the difference between helio- and geo-centrism— that was exactly Galileo's relativist principle. This time, however, people are going to *feel* how much this new form of geo-centrism does make a difference!

Fine, you could say, the picture of the Earth is now animated well enough; indeed, it has been turned into a true 'moving picture.' But has it not been *over*-animated? Such is the second feature of the scenography I wish to review tonight. How has Lovelock fared in weaving his way between the two reefs of reductionism and vitalism?

On the face of it, fairly badly, since the main critique levelled against Gaia theory is that it is made to act too quickly as one single coordinating agent. Witness one of the many definition offered of Gaia:

> *"Gaia is the planetary life* ***system*** *that* ***includes*** *everything influenced by and influencing the biota. The Gaia system shares with all living organisms the capacity for* ***homeostasis*** *– the regulation of the physical and chemical environment at a* ***level*** *that is favourable for life." p.* 56

It's true that it's not easy for the charitable reader to find one's way through the many versions proposed by Lovelock himself. How should

we understand sentences such as the following where he states simultaneously that it is not and that it is a unified whole:

> *"When I talk of Gaia* ***as a super organism,*** *I do not for a moment have in mind a* ***goddess*** *or some* ***sentient being****. I am expressing my* ***intuition*** *that the Earth behaves* ***as*** *a self regulating system, and that the proper science for its study is* ***physiology****" p. 57*

Puzzling sentence indeed. If it is not a 'goddess' why call it Gaia? And what difference does it make for a '*super-organism*' to be a '*sentient being*' or a '*self-regulating system*'? This is putting too much weight on the poor little adverb '*as*.' But before we accuse Lovelock of expressing through those fuzzy terms what he confesses to be an '*intuition*,' we should not forget that Pasteur hesitated just as much on how to envelop the new agency of his ferments when, at the end of his famous paper on lactic acid, he had to confess also:

> *'All through this memoir, I have reasoned* ***on the basis of the hypothesis*** *that the new yeast is organized, that it is* ***a living organism****, and that its chemical action on sugar corresponds to its development and organization. If someone were to tell me that in these conclusions* ***I am going beyond*** *that which the* ***facts prove****, I would answer that it is* ***quite true****.'*

If I contend that Lovelock is on to something as original as Pasteur anti-Liebig anti-Pouchet microbe, it is because, as is well known, the philosophy of biology has never stopped borrowing its metaphors from the social realm. It is haunted by the spectre of an 'organism' which is always, in sociology as well as in politics or economics, a '*super-*organism,' that is, an actor to which is delegated the task — or rather the mystery — of coordination. The puzzle of composing a body raises exactly the same difficulty whether it is made of cells, of humans, of ants, of bees or in the case of a watch, made of cogs, springs and wheels. If we wish not to lose sight of the problem of coordination, we should stick to *one level* only and see what scientists really mean by a 'whole superior to the parts.' Biology and sociology are in exactly the same quandary. Through my work on social theory, I have learned to be very quick at detecting when people shift from one research program — understanding *how* coordination is obtained — to another one — *getting rid* of the problem by jumping to another level, be it that of 'society,' market, Leviathan, corporate body, system, structure, or any emergent kind of a 'whole.' The stakes are very high for us because, as soon as a

super-organism is taken for granted, it's not only science but politics as well as theology that may disappear. This is why it is so crucial to understand whether the figure of Gaia is unified and through which channels.

It is true that when Lovelock compares Gaia to a cybernetic machine, what inevitably comes back is the idea of a great dispatcher, a Providential engineer lording over the 'system' so as to keep the thermostat (a frequent metaphor of his) at some *optimum* level. Here, a sudden switch to a second level, superior to the first, hides the difficulties of coordination in the absence of any engineer planning his or her self-regulating system in advance. And it is also true that, if such had been Lovelock's main argument, the payoff in moving out of Nature to Gaia would be a great disappointment. We will move from Providence — the laws of nature to which all agents simply 'obey' — to one local Providence, Gaia, that makes everything on the planet act as a whole by distributing roles and functions to its 'parts' and connecting them with feedback loops. In the terms introduced in the two first lectures, Lovelock would be a sectary of Nature One (or Religion One) because he would have embraced a premature unification of the whole.

But the nice thing with Lovelock's prose is that he makes no effort to sustain his cybernetic metaphors for very long. They are quickly swamped with contradictions as if the historicity of Gaia was much too strong to conjure the idea of a governor in command. As he often writes: '*The anatomy of Gaia is forever changing*' (p. 56). Which is exactly what is impossible with the metaphor of 'spaceship Earth' the technical simile against which he never tires of fighting. In opposition to Neurath's famed boat (or rather Jason's **Argo**), a spaceship does not change all its parts as it goes along. Gaia does.

Contrary to the three characters of Hume's dialog, contrary to James Hutton and his mechanical metaphor, Lovelock is not struck by the carefully *designed* nature of Gaia. His problem is not to burnish the copper plaque where the name of the designer — God, chance or natural selection — has been stamped. What is so striking for him is, on the contrary, that there is no design whatsoever — and yet that Gaia is alive. Having a history is not the same thing as having been designed. It is because there is no engineer at work, no watchmaker — whether blind or not—, that no *holistic* view of Gaia could be sustained. It is because Gaia has a history that it cannot be compared to a machine and

why it cannot be reengineered either (a point of great importance when the dreams of geo-engineering will soon begin to threaten the planet even more than before). We are not cosmonauts ensconced in a spaceship — and there is no Houston anywhere to call on in case of a problem. It is in that sense that the figure of Gaia is such a secular one. Don't even try to think that you may retro-control it.

So what are the real specifications of the agents making Gaia act 'as' a super-organism if it is not a system *designed* by an engineer or a governor to be a functioning whole? I am under the impression that the question cannot be answered before we understand what Lovelock takes as its main intuition — the intuition according to which everything that used to be in the background has been being sucked in the foreground.

If, as a physiologist, he fights against geochemists, he fights just as well against evolutionary biologists who consider that organisms *adapt to* their environment without realizing enough that they also *adjust* their environment *to them*. For Lovelock, every organism that is taken as the point of departure of a biochemical reaction should be seen not as thriving 'in' an environment, but as *curbing* the environment to accommodate its need to thrive better into it. In that sense, every organism *intentionally* manipulates its surroundings to its own benefit. No agent on Earth is merely superimposed on any other as a brick juxtaposed on another brick, or as a potato on another potato in a potato sack as would be the case on a dead planet. Each of them acts to modify its neighbours, no matter how slightly, to render its own survival slightly less improbable. This is where lies the difference between geochemistry and geophysiology. It is not that Gaia is some '*sentient being*' but that the concept of 'Gaia' captures the distributed intentionality of all the agents that are modifying their surroundings to suit themselves better.

So far nothing is really out of the ordinary. Things get more interesting when this argument is used to extract the notion of cybernetic feedback out of its technological repertoire. Every evolutionist admits that humans have adjusted their environment to suit their needs. It is just that Lovelock extends this technical ingenuity to every single agent, no matter how small. This is not only the case for beavers, birds and termites, but for trees, mushrooms, algae, bacteria

and viruses as well. To be sure, this is somewhat anthropomorphic but, as we have seen earlier, what begs for an explanation is not the extension of intentionality to non-humans but rather how it is that some humans have *withdrawn* intentionality from the living world imagining that they were playing on the planks of an inanimate stage. The enigma is not that there are people still believe in animism, but the persistance of belief in *inanimism*. Being alive is not only to adapt but also to modify one's surroundings, or, to use Julius Von Uexküll's famous expression, there exists no general U*mwelt* (a term to which we will have to return) that could encompass the U*mwelt* of each organism.

The point however is not about whether to grant intentionality or not, but about what happens to such an intention once every agent has been endowed with one. Paradoxically, such an extension quickly erases all traces of anthropomorphism and introduces at every scale the possibility of unintentional feedbacks. The reason is that we are not asked to believe in one Providence, but in as many *providences* as there are organisms on Earth. The sheer result of such a generous distribution of final causes is not the emergence of one overall Final Cause, but *a mess*, since, by definition, what is true for each actor is also true of all its neighbours. If A modifies B, C, D and X to suit its survival, it is also the case that B, C, D and X modify A in return. It seems that moralists have never looked very seriously at the consequences of the Golden Rule: if 'everyone does to others what they would like others to do to them,' the result is neither cooperation nor selfishness, but the chaotic history we are used to, since we live in it. What could be the meaning of a *final* cause if it is no longer 'final' but *interrupted* at every point by the interposition of other organisms' intentions? You can follow the ripples of one stone on a pond but not the waves made by hundreds of cormorants diving at once in order to catch fish. By generalizing providence to every agent, Lovelock insures that the providential plans of every actor will be thwarted by many other plans. The more you generalize the notion of intentionality to all actors, *the less* you will detect intentionality in the whole, even though you might observe more and more negative or positive feedbacks.

Here again, the parallel with Pasteur holds in an interesting way since his discovery was not so much the existence of microbes but the complex coupling of microbes with the '*terrain*' they influenced and that influenced their development in return. It is only because he managed

to show that he could vary the virulence of diseases by passing the microbes through different species — rabbits, hens, dogs and horses — that Pasteur could finally convince physicians that they had to give microbes a role in the development of epidemics. Here again, reductionism is not defined by the de-animated nature of the agent but by the number of other agents made to participate in the course of action.

So far, Lovelock's argument is completely compatible with Darwinian narratives since every agent is working for itself without being asked to stop following its own interest 'for the sake of some superior good,' which would be the case if there were any dispatcher. But where it adds something to them is in the definition of what it really means for any agent to be 'for itself.' For Lovelock and Margulis, taking things literally, there is *no environment* any more. Since all living agents follow their intentions all the way by modifying their own neighbours as much as possible, it is quite impossible to tell apart what is the environment to which an organism adapts and what is the point where action starts. As Timothy Lenton write in one of his review articles:

> *'Gaia theory aims to be consistent with evolutionary biology and views the evolution of organisms and their material environment as so closely coupled that they form a single, indivisible,* ***process****. Organisms possess environment altering traits because the benefit that these traits confer (to the fitness of the organism) outweigh the cost in energy to the individual.'* P. 440

Such is the origin of the peculiar beauty of reading Lovelock's or Lynn Margulis' prose. The inside and outside of all boundaries are subverted. Not because everything is connected in a 'great chain of being'; not because there exists somewhere an overall plan ordering the whole concatenation of agents; but because this coupling of one neighbour actively manipulating its neighbours and being manipulated by all the others defines *waves of action* that do not respect any traditional borderlines and, more importantly, that are not happening at a fixed scale. Those waves — Tarde would call them overlapping 'monads' — are the real actors and what should be followed *all the way*, wherever they lead, without sticking to the internal boundary of an isolated agent considered as an individual inside an

environment. Those waves are, if I can say so, the real brush strokes with which Lovelock feel that he is allowed to paint Gaia's face.

Such dissolution of the environment has several important consequences: first it purges Darwinism of its remnant of Providence; but more importantly, it modifies the scale at which evolution occurs; and finally, it redefines deeply what we could mean by natural history. Let me end this lecture with a brief look at those three features.

In the early days of Gaia theory — before the introduction of the Daisy model —, evolutionists complained that it could not be Darwinian because there is no population of planets competing for survival. But such a criticism revealed a telling limit in the way they understood adaptation — a limit coming from the economic theory they had borrowed to account for their biology. In this theory, you have to choose either the self-interested individual or the integrated system — a quandary biologists borrowed from the social sciences. But what is totally implausible in the idea of 'selfish gene' is not that genes are selfish — every actor pursues its interest all the way to the bitter end —, but that you could calculate its 'fit' by *externalizing* all the other actors into what would constitute, for a given actor, its 'environment.' This does not mean that you have to wheel in a super-organism to which the actors will be requested to sacrifice their goals. It simply means that life is much messier than economists and neo-darwinians want it to be, and that any selfish goal will be swamped by the selfish goals of all the others, making the calculation of an optimum simply impossible. The reason why Darwin's secular intuition has been so often degraded in a barely disguised version of Providence, is because neo-Darwinians had forgotten that if such a calculation works in *human* economics it is because of the continuous imposition of calculating devices in order to operate, to enforce, the technical term is to *perform* the distinction between what a given agent should count and what he should decide not to count. Without those devices, profit would be impossible to calculate and even more to extract from the so-called 'environment.' As soon as you extend Darwinism to what every agent does to all the others on which it depends, the calculation of optimization is simply impossible. What you get instead are occasions, chances, noise and, yes, history. What uses to be the environment of an individual actor vanishes.

But the main mistake of evolutionists in their critique of Gaia theory was the wrong idea of how it was supposed to act 'as' a whole. We recognize here the same alternation between actors and system that renders human as well as biological societies impossible to grasp. As soon as you abandon the boundaries between the inside and the outside of an agent, you begin to *modify the scale* of the phenomena you consider. It is not that you shift levels and suddenly move from the individual to 'the system,' it is that you *abandon* both points of view as being equally implausible. This is what is going to happen, as Lovelock and Margulis have shown, when you follow waves of action beyond the boundaries of the cell walls.

One example of such a wave has taken an iconic character in Lovelock's saga: the sudden appearance of oxygen at the end of the Archean. In this opera, oxygen is a relative newcomer, an event that has destroyed masses of earlier living forms feeding on methane, a massive case of pollution that has been seized by new forms of life as a golden opportunity.

> *'Oxygen is poisonous, it is mutagenic and probably carcinogenic, and it thus sets a limit to lifespan. But its presence also opens* ***abundant new opportunities*** *for organisms. At the end of the Archean, the appearance of a little free oxygen would have* ***worked wonders*** *for those early ecosystems. (…) Oxygen would have* ***changed*** *the environmental chemistry. The oxidation of atmospheric nitrogen to nitrates would have increased, as would the weathering of many rocks, particularly on land surfaces. This would have* ***made available nutrients*** *that were previously scarce, and so* ***allowed an increase*** *in the* ***abundance*** *of life' p. 114.*

If we now live in an oxygen-dominated atmosphere, it is not because there is a preordained feedback loop. It is because organisms that have turned this deadly poison into a formidable accelerator of their metabolisms *have spread*. Oxygen is not just there as part of the environment but as the *extended consequence* of an event continued to this day by the proliferation of organisms. In the same way, it is only since the invention of photosynthesis that the Sun has been brought to bear on the development of life. Both are consequences of historical events that will last no longer than the creatures sustaining them. And

as the citation shows, each event creates for other creatures, later on, new occasions to seize as novel opportunities.

The crucial point here, it seems to me, is that scale does not intervene because we would have suddenly shifted to a higher point of view. If oxygen had not spread, it would have remained a dangerous pollutant in the vicinity of archeo-bacteria. Scale is what has been generated by the success of living forms. If there is a climate for life, it's not because there exists a *res extensa* inside which all creatures would passively reside. Climate is the historical result of interfering connections amongst all expanding creatures. It expands, it diminishes or it dies with them. The Nature of olden days had levels, layers and a well ordered zoom; Gaia subverts levels. There is nothing inert, nothing benevolent, nothing external in it. If climate and life have evolved together, space is not even a frame, nor a context: space is time's child. This is what makes Lovelock's Gaia so totally secular: all effects of scale are the result of the expansion of one particular opportunist agent seizing occasions to develop on the fly. If it is an opera, it is one that is constantly improvised and has no end, no rehearsal and no score. This is the polar opposite of James Hutton's view when he famously said at the end of his *Theory of the Earth*:

> *'We have the satisfaction to find that in nature there is wisdom, system and consistency. (…) The result, therefore, of our present inquiry is, that we find no vestige of a beginning, — no prospect of an end.'*

No prospect of an end, really? For the rocky Earth maybe, for Gaia this is doubtful, for some of its participants, it is far from sure.

If there is no frame, no goal, no direction, we have to take Gaia as the name of the process by which varying contingent occasions have been offered a chance to render later events more probable. Gaia is neither a creature of chance nor of necessity. Which means that it looks a lot like what we have come to take *as history itself*. Such is the last trait I wish to emphasize.

When we say that Gaia is a 'historical figure' we offer the same ambiguity as when we say, for instance, that the Act of Union or Pasteur's discoveries of microbes are 'historical.' The adjective designates simultaneously the event and the narrative of the event. It is well known that historians have a complex relation with the objectivity

of their findings that the word 'narrative' could either weaken — 'We are just telling stories' — or strengthen — 'We are branching narratives onto what is in itself *also* a narrative.' In this last instance, the word narrative designates the specific ontology of events that could have been otherwise, for which there was no plan, that are not lead by any Providence and of which the successes and failures are constantly re-evaluated by the continual retelling that modifies once again, their contingent meaning. With this definition, we see how we could move from a narrative of Pasteur's discovery of microbes — *he* has a history, *they* don't —, to the history of microbes — they have a history too. This is why, when Stephen Jay Gould took such pains to tell the story of the Burgess Shale fossils so as to avoid any teleology — even the one coming from their neo-Darwinist version—, he chose Franck Capra's film ***Wonderful Life*** to explain how things *could* have been different for so many lives along the way. You need fiction to tell a somewhat realistic story of what live forms have to pass through. Similarly, if Gaia is to be *told* through narratives, it is because *it is also,* in its very fabric, a narrative.

In a piece of work that, by its sheer size, bursts the limit of a scholarly book, Martin Rudwick has shown that when geohistory began to '*Burst the limits of time*' it was not to escape from the narrow prison of the Church's teachings. It was, on the contrary, because it began to merge the tools of exegesis and hermeneutics, with the newly developed disciplines of archaeology, digs, historiographical archives and expeditions.

> "*This book has traced how this novel geohistorical approach has derived from transposition from the human world into the natural both from the* ***profoundly historical perspective of Judeo-Christian religion*** *and from its secular counterpart in* ***erudite human history an antiquarian research****. The former, far from being an obstacle to the perception of the immense timescale of geohistory, facilitated the* ***extension of historicity*** *back into the vastness of deep time. And the latter provided the new practice of geohistory with its crucial conceptual metaphors of nature*'

As Rudwick shows beautifully, the revolution — and it was a revolution — came once geologists convinced themselves that the planet was not the result of the eternal laws of nature (their ideal vision of Newton's achievements) but of highly *specific* places and dates — something that

they could begin to realize by digging, for instance, through the older layers of Mount Vesuvius's eruption, but that they could also read about *in the gospel*. To be able to read cosmic events out of minuscule disruptions in the orderly layers of life was something common to the emerging science of geohistory as well as to the deciphering of Incarnation and its complex web of textual emendations. Once intentionality and interpretation have been spread to all living creatures, we may understand in a very different manner how 'the lily could sing the Glory of God' in more ways than one. 'Nature Two and Religion Two might not be that far apart. '*Can there any good thing come out of Nazareth?*' (Jn-1-46).

Is it possible at last to imagine a secularized science talking about secularized phenomena? How to name this new form of narration? Of course, we could use 'natural history' and 'natural philosophy' in their old 19th century meaning, but it is hard to extract from the adjective 'natural' the poison that Nature — capital N — has injected in it. Feminists have proposed to modify the venerable term of history thanks to the pun 'herstory,' so as to insist on the hitherto unrecognized presence of women's role in male history. If it is very true that the distribution of agency by male historians about male historical figures ignored most of the feminine actors, it is also true that there has been a great inequality in the distribution of active forces when having human — males and females — strutting on a stage made of what had no history. If we don't want to use 'Gaiastory,' we could use the word 'geostory' — better than geohistory — to capture what '*geostorians*' such as Lovelock are talking about, that is, a form of narration inside which all the former props and passive agents have become active without, for that, being part of a giant plot written by some overseeing entity.

Have we finally drawn the face of Gaia? No, obviously not. At least, I hope I have said enough to convince you that finding what is the 'place of Man in Nature' — to use an old expression — is not at all the same thing as to narrate the geostory of the planet. By melting into the foreground everything that used to remain in the background, we don't expect to live at last in 'harmony with nature.' There is no harmony in this contingent cascade of unforeseen events and there is no nature either — at least not in this sublunar realm of ours. But to learn how to situate human action into this geostory is not — such is the crucial

lesson — to 'naturalise' humans either. No unity, no universality, no indisputability, no indefeasibility is to be invoked when humans are thrown in the turmoil of geostory. You could say, of course, that this rendering is much too anthropo*morphic*. I hope it is and fortunately so, but not in the old sense of imputing human values to an inert world of mute objects, but, on the contrary in the sense of giving humans — yes *morphing* them into —a more realistic shape. Anyway, what a strange thing it would be to complain about the pitfalls of anthropomorphism at the time of the anthropocene!

Playing on the stage of the New Globe Theatre. Gifford 4. Monday 25th February 2013

I am surely not the only one in this room who waited with great anticipation, during the six first months of 2012, for the conclusions of the **34th International Geological Congress** that was to be held in Brisbane during the summer. I have to confess that until recently I was not in the habit of following the work of this eminent academic body — even though their somewhat Nietzschean motto: '*Mente et malleo*,' '*By Thought and Hammer*,' would have fitted fairly well my own profession! If I did, it was because I was waiting for the outcome — and I suppose the whole world with me —, of the *International Commission on Stratigraphy*, or, to be more precise, of its *Sub-commission on Quaternary Stratigraphy* presided over by Dr Zalasiewicz from Leicester University. Would they officially declare that the Earth had entered a new epoch, the Anthropocene, or not — and, if so, from which precise date? For the first time in geostory, humans were to be officially declared the most powerful force shaping the face of the Earth. It would come as no surprise to you that such a decision would have been counted as a true 'epochal change' for the geostorians with whom, in these lectures, we are trying to get acquainted.

Here is a quote from the report of the sub-commission:

> *'The 'Anthropocene' is currently being considered by the Working Group as a potential geological* ***epoch****, i.e. at the same hierarchical level as the Pleistocene and Holocene epochs, with the implication that it is within the Quaternary Period, but that the* ***Holocene has terminated****.* (…)
>
> *Broadly, to be accepted as a formal term the 'Anthropocene' needs to be (a) scientifically justified (i.e. the 'geological* ***signal****' currently being produced in strata now forming must be* ***sufficiently large, clear and distinctive****) and (b)* ***useful*** *as a formal term to the scientific community. In terms of (b), the currently informal term 'Anthropocene' has already proven to be very useful to the* ***global change research community*** *and thus will continue to be used, but it remains to be determined whether* ***formalisation*** *within the Geological Time*

Scale would make it more useful or broaden its usefulness to other scientific communities, such as the geological community.

The beginning of the 'Anthropocene' is most generally considered to be at c. 1800 CE, around the beginning of the Industrial Revolution in Europe (Crutzen's original suggestion); other potential candidates for time boundaries have been suggested, at both earlier dates (within or even before the Holocene) or later (e.g. at the ***start of the nuclear age****). A formal 'Anthropocene' might be defined either with reference to a particular point within a stratal section, that is, a Global Stratigraphic Section and Point (GSSP), colloquially known as a* ***'golden spike****; or, by a designated time boundary (a Global Standard Stratigraphic Age) (…)*

So far so good. Unfortunately, I had forgotten that geologists are used to taking their time — indeed they usually deal with millions and billions of years. So, indifferent to the pressure exerted by laymen like me who eagerly needed to know if the news was official or not, they quietly stated in their conclusion, that they had to delay their final vote for at least four more years! Their decision was anti-*climactic* (a strange expression in our present climate…).

'The Working Group has applied for funding to allow further discussion and networking, and is working to reach a consensus regarding formalisation by, it is hoped, the 2016 International Geological Congress.'

Note the leisurely and rather infuriating 'it is hoped' — as well as the usual reaction to apply 'for more funding.' As if they had so much time and so little money! Of course, geologists need time to find enough tell-tale signs of the vastly enlarged role of this 'anthropos' whose civilization is already powered by around 12 terawatts (10^{12} watts), and which is heading toward 100 terawatts if the rest of the world develops at the level of the US, a stunning figure if one considers that plate tectonic forces are said to develop no more than 40 terawatts of energy. And every sub-commission adds its own sudden change of scale: having modified the flows of all the rivers, the 'anthropos' is now the most important agent of change for all the catchment areas of the world; it is already the main agent in the production and distribution of the nitrogen cycle; through deforestation, it has become one of the main factors in accelerated erosion; and of course, its role in the carbon cycle becomes enormous as does the degree of its complicity in the disappearance of species — to the point of being responsible for what is

often called the 'sixth global extinction.' What is so depressing in reading the documents of the sub-commission on stratigraphy, is that it runs through exactly the same items you could have read in any 20th century listing of all the glorious things that humans have done in 'mastering nature,' except that today the glory is gone, and both the master and the slave — that is, humans as well as nature — have been melted together and morphed into strange new geological — I mean *geostorical* — forces.

What would make the situation amusing if it were not so dramatic is the mix up of time scales this working group has to deal with. Do you remember how at school we were asked to be very impressed by the *slow pace* of geological time lines? While we could not even imagine how we would ever reach the age of twenty, our professors were at pains to find enough pedagogical tricks to burn in our young minds the infinite distance separating us from the era of dinosaurs or from that of *Australopithecus*. And here, suddenly, in a complete reversal, we find geologists flabbergasted by the quick pace of human history; a pace that forces them to try lodging a 'golden spike' in a span of two hundred or even of sixty years (depending on whether you prefer a short or very short temporal boundary demarcating the emergence ofAnthropocene). The phrase 'geological time' is now used for an event that has passed more quickly than the existence of the Soviet Union! As if the distinction between history and geostory had suddenly vanished, the carbon and the nitrogen cycles taking on as much cosmic significance as the last glaciations or the Manhattan project. Let the adepts of stratigraphy take their time and wait patiently for 2016. Given the importance of what is at stake, we cannot blame them for demanding some time to adjust to this acceleration of time by falling back on the somewhat slower senatorial pace of academic bureaucracy!

What makes the Anthropocene a clearly detectable golden spike way beyond the boundary of stratigraphy is that it is the most decisive philosophical, religious, anthropological and, as we shall see, political concept yet produced as an alternative to the very notions of 'Modern' and 'modernity.' But what is even more extraordinary is that it's the brainchild of stern, earnest and sun-tanned geologists who, until recently, had been wholly unconcerned by the tours and detours of the humanities. No postmodern philosopher, no reflexive anthropologist,

no liberal theologian, no political thinker would have dared to weigh the influence of humans *on the same historical scale* as rivers, floods, erosion, and biochemistry. Which 'social constructivist,' intent on showing that scientific facts, social relations, gender inequalities are 'nothing but' historical human-made episodes, would have dared saying that the same is true of the chemical composition of the *atmosphere*? Who is the literary critic who would have extended his or her deconstructionist exegesis to the layers of sediments revealing in all of the planet's deltas the unmistakable traces of man-made *erosion*? Just at the time when it became fashionable to speak of a 'post-human era' with the blasé mood of those who know the time of the human is 'passé,' the 'anthropos' is back — and back with a vengeance — through the hard empirical work of those used to be called 'natural scientists.' What the various fields of humanities with all their sophistication could not detect, obsessed as they were to defend the '*human dimension*' against the 'unfair encroachment' of science and the risks of an excessive 'naturalization,' the *natural historians* were leftto ferret out. By giving an entirely new dimension to the notion of a 'human dimension,' it was *they* who devised the most radical term that would simultaneously put an end to anthropocentrism as well as (at least, this is my claim) to older forms of naturalism by suddenly foregrounding the human agent under another shape.

Because of such a conceptual feat, before going on, I think it's fair to respectfully bow to Paul Crutzen, the atmospheric scientist, and his colleagues, the geoscientists. They all deserve the motto '*Mente et malleo*' since it is thanks to the intelligent handling of their hammer that we have come to realize that all our most cherished values, when they were gently struck, rendered a rather hollow sound.

Let me further introduce this second set of lectures by pointing out what I find so original in this concept of the Anthropocene and also use the occasion to review what we achieved last week in preparation for the much harder task that lies ahead, that is, the question of war and cosmopolitics and maybe, if we manage to go that far, the question of the rituals of peace that will have to be invented to encounter Gaia properly.

The first advantage of living in the time of the Anthropocene is that it directs our attention toward much more than a 'reconciliation' of

nature and society as one larger system that would be unified in terms of either one orthe other. To operate such a dialectical reconciliation you would have to accept the Great Divide of the social and of the natural — the Mr Hyde and Dr Jekyll of modernist history (I will let you decide which one is Hyde and which one is Jekyll). But the Anthropocene does not close this Divide: it ignores it entirely. Geostorical forces are no longer the same as geological forces. Wherever you deal with a 'natural' phenomenon you encounter the 'anthropos' — at least in this sublunar domain of ours — and wherever you tackle the human you discover types of attachments that had been lodged before as the purview of nature. In following the nitrogen cycle, where would you put the biography of Franz Haber and where the chemistry of plant bacteria? In drawing the carbon cycle, who would be able to tell when humans enter and when they leave this merry go round? It looks much more like a Mobius strip that would require us to think through a rather puzzling form of continuity provided you entirely *redistribute* what used to be called natural and what could be called social or symbolic. The divide between the natural and the social sciences — remember the gap between 'physical' and 'human' geography, or the one between 'physical' and 'cultural' anthropology? — has become moot. Neither nature nor society can enter the Anthropocene intact, waiting to be quietly 'reconciled.' In the same movement, the Anthropocene brings the human back on stage and dissolves for ever the idea that it is a unified giant agent of history.

This is why, in what follows, I will use the word '*anthropos*' to designate what is no longer the 'human-in-nature' nor the 'human-out-of-nature,' but something else entirely, another animal, another beast or, more politely put, a new political body yet to emerge. Such is the main topic of this lecture series: to define the scale, scape, scope and goal of this new people taken severally which has unwillingly become the new agent of geostory. One thing is sure: this actor making its debut on the stage of this New Globe Theatre has never before played a role in such a thick enigmatic plot.

Our second advantage is that the concept of Anthropocene underlines the strident urgency of the preparations we are busy making for facing Gaia. It's only recently that the two figures of Gaia and the Anthropocene, although related, are being superimposed. If, as I said on

Thursday, Gaia inflicts upon humans a narcissistic wound by bringing them back from an infinite universe to a tiny cosmos, it is only after entering the Anthropocene that humans have begun to really feel the pain. As long as they were humans-in-nature, they could ignore Gaia's limits that lay far away in the background. Now that humans have become the *anthropos* of the Anthropocene, they bump into those new limits at every turn, banging into them with screams of surprise and disbelief — even trying to deny that there exist limits at all.

What is even more infuriating for them is that humans are themselves responsible for having met those limits so quickly, in the space of a few generations, maybe two. (Yes, incredibly enough, all of that has happened in *my own life span*; that's the true golden spike: my own carefree, careless generation starting as a baby boom and ending in a grandpa bang!) Whereas Gaia could be taken as having a somewhat leisurely pace, to the point of being considered as some sort of homeostatic system maintaining equilibrium over immensely long geological time spans, it has taken on—because of this sudden change in 'human dimension— a feverish form of palsy, falling catastrophically from tipping point to tipping point, from one positive feedback to the next, in a rhythm that frightens climatologists even more with the publication of each new data set. So much so that, in Lovelock's own terms, Gaia reveals Itself as something that is 'at war' and that is even ready to takes Its 'revenge'.

It seems to me that the real reason why we are assembled tonight for this series of exercises in political theology, is because we are all painfully aware that in order to confront this new urgency there is literally *nobody*. Why? Because there is no way to *unify* the *anthropos* as a generic character to the point of burdening it with everything that will happen on this new global stage. If we learned anything last week, it is that such an actor is unified neither by nature — Nature One — nor by religion — Religion One.

It makes no sense to talk about the 'anthropic origin' of global climate warming, if by 'anthropic' you mean something like the 'human race.' Hundreds of different people will at once raise their voice and say that they feel no responsibility whatsoever for those deeds at a geological scale — and they will be right. Indian nations in the middle of the Amazonian forest have nothing to do with the 'anthropic origin' of climate change — at least so long as politicians have not been

distributing chainsaws at election times. Nor are the poor blokes in the slums of Mumbai, who can only dream of having a bigger carbon footprint than the black soot belching out of their makeshift ovens. Nor is the worker who is forced to drive long commutes because she has not been able to find an affordable house near the factory where she works. This is why the Anthropocene, in spite of its name, is not a fantastic extension of anthropo*centrism*, as if we could pride ourselves in having been transformed for good into some sort of flying red and blue Superman. Rather, it is the human as a unified agency, as one virtual political entity, as a universal concept that has to be broken down into many different *people* with contradictory interests, opposing cosmoses and who are summoned under the auspices of warring entities — not to say warring divinities. The *anthropos* of the Anthropocene? It is Babel *after* the fall of the giant Tower.

And it is probably useless to claim that the scale of the threat is so great and its expansion so 'global' that it will act mysteriously as a unifying magnet to turn all the scattered people of the Earth into one political actor busy rebuilding the Tower of Nature. As we saw last week, Gaia is anything but unified and unifying. There is no way to think of Gaia globally since it is not a cybernetic system designed by any engineer. It is 'Nature' that used to be universal, stratified, undisputable, systematic, de-animated and indifferent to our fate. Not Gaia, which is, as we learned, the name offered as a shorthand for all the intertwined unpredictable consequences of the dispersion of agents, each of them pursuing its own interest by manipulating its own environment for its own comfort —some agents happening to act as a negative and unforeseen feedback on the development of others.

Oxygen-producing multicellular organisms and carbon-dioxide emitting humans will expand or not depending on their success and will gain exactly the dimension they are able to capture. No more, no less. Don't count on any preordained overarching feedback system to bring them back to order. It is totally impossible to appeal to the 'balance of nature,' to the 'wisdom of Gaia' or even to its ancient, relatively stable history as a police force whenever politics has divided those scattered people too much. In the period of the Anthropocene, gone are all the dreams entertained by deep ecologists that humans can be cured of their political strivings if only they could be convinced to turn their attention to Nature. We have permanently entered a post-

natural epoch. Ecological questions are not there to assemble stakeholders peacefully; they divide more surely than any issue of the past — they always have. If Gaia could speak, It would say like Jesus: '*Think not that I am come to send peace on earth: I came not to send peace, but a sword*' (Matt: 10, 34). Or even more violently as in the apocryphal Gospel of Thomas: '*I have cast fire upon the world, and look, I'm guarding it until it blazes.*'(10)

But what about science? Surely here at least we could find a unifying principle of last resort that would bring everyone into agreement and that could direct crowds of humans towards undisputable programs of action. Let's us all be scientists — or at least let's spread science everywhere through education — and we will get our act together. 'Facts of all countries unite.' That this is not the case is not only due to the spurious 'controversy' waged by climato-sceptics, climato-deniers or climato-negationists (whatever you care to call them). It is caused by the very oddity of all those disciplines that depend so much on a highly complex distribution of instruments, modelling, international agreement, bureaucracy, standardization and institutions, the machinery of which has never been presented in a positive light to public consciousness — what I earlier called Nature Two (more on this in a few minutes). Climate scientists have been dragged into a post-epistemological situation that is as surprising to them as it is to the general public —both finding themselves thrown 'out of nature.'

If there is unity neither in nature nor in politics, it means that whatever universality we are looking for has to be *composed*. It is to render such a composition at least thinkable that last week I introduced the little scheme by which every collective will present itself to the others as a people summoned by an entity and make explicit the way it distributes agencies. Thanks to such a scheme, collectives are rendered not exactly comparable, but at least 'assemblable' — if there is such an expression. Not because they would all be treated like so many *cultures* — as was the case with traditional anthropology; nor because they are forcibly unified by being, after all, 'children of Nature,' —as was the case with the former natural sciences; nor, of course, because they would be a little of both— as in the impossible dreams of reconciliation or dialectic. If they are rendered translatable to one another, it is because they agree to state explicitly who they are, what friends and foes they

have and on which conditions they could enter into some cosmopolitics without any Providence atop them all to distribute their roles and their fates.

Such is the fully secular assemblage I propose. It is the one that gathers collectives without dividing them first by using the one-Nature/multiple-cultures scheme; this famous mono-naturalism slash multi-culturalism that would play the same role as the 'Mosaic division' with which I began the first lecture. In my sort of assemblage, we do not start by saying that one of them is true and that all the others are so many (interesting and even respectable) forms of falsehood. Not because we *abandon* the quest for truth, but because the assembly is to be made under the auspices of *geopolitics* and not under those of *knowledge* only. If we did abandon the quest, we would have to say that some collectives have a 'religious,' 'spiritual' or 'symbolic' view of Nature, while *one* other — but one that does not even take itself as a real actual *people* — does not have simply a 'view of Nature' but has Nature, so to speak, *all to itself*. By abandoning the quest we would be deprived of any chance of mobilizing other collectives to face Gaia. More tragically, the 'people of nature' would be left alone and would convince nobody to join them in the task ahead. Confronted with such an unprecedented situation, they would play the old character of 'man-in-nature.' Which is another way of saying that they would keep insisting on being modern — or trying to save modernization once again. But if I am right, the modernizers have little chance of surviving in the Anthropocene, no more than a camel to pass through the eye of a needle.

Instead, what I propose to say is that, in this new cosmopolitical situation, those who wish to present themselves to other collectives have a) to specify what sort of people they are, b) to state what is the entity or divinity that they hold as their supreme guarantee and c) what are the principles by which they distribute agencies throughout their cosmos. Of course, conflicts will ensue — but then also, later, some chance of being able to negotiate peace settlements. It is precisely these peace conditions that are *not even going to be looked for* as long as we believe that the world has *already* been unified once and for all — by Nature, by Society or by God, it doesn't matter which. This might be a mad pursuit, but that's the one I propose to outline in the course of this second week.

Let us start this potential work of assembly with an imaginary collective whose members would proudly present themselves to others by saying 'we pertain to the people of Gaia.' That others are shocked at the introduction of a 'goddess' into what should remain 'a strictly naturalist description,' can no longer embarrass us. With our translation tables in hand, there is no longer any difficulty in granting a proper name to the entity under which such a people is happy to be summoned. If anything, as I argued last Thursday, Gaia is *much less* a religious figure than Nature. If you remember the invocation of 'Owwaab' in the first lecture, there is no longer any need to hide the personification that deserves a capital letter and a gender. This is why, to emphasize the contrast even more, I will use for Gaia the capitalized 'It,' so as to underline its secular properties, while reserving for 'Nature' the capitalized 'She.' Gaia is what *ends the hypocrisy* that made people invoke Nature while hiding the fact that it was the name of a divinity; while not telling any body through which right of entry she would enrol the people She was able to summon; while failing to mention the highly peculiar de-animated way in which She distributed its series of causes and consequences.

This is where our usual semiotic trick of always shifting from names to agencies will come in so handy. 'Nature' possessed the strange ability to be at once 'outside' and 'inside.' She had the fascinating ability to be mute and simultaneously to speak by Herself through facts — with the added benefit that you never knew, when naturalists spoke, who was doing the speaking. More surprisingly, She was organized by successive *levels*, from atoms, molecules, and living organisms, to ecosystems and social systems, in a well-ordered procession that allowed those who invoked Her to always know where they were and what provided the best foundation for what was to follow. This architectonic quality allowed Her (or them) to dismiss at will (or, as they say, to 'explain') a particular level in the name of the level just below it, according to the implausible 'reductionism' we have encountered earlier. Even more surprisingly, it allowed them to dictate what things in the world *ought to be*, while claiming never to mix *ought* with what simply *is*. A cute but hypocritical modesty, as if it was more risky to say what something should be, than to define what the *essence* of something is.

In the vast repertoire of religious studies, it is hard to find a divinity whose authority has been less contested than the laws through which Nature could force everything into *obeying* Her. No wonder that politicians, moralists, preachers, legists, economists and popes still long for such an indisputable fountain of authority. Ah! If only we could profit from the templates offered by natural laws! Another source of authority, I am sorry to suggest, that global warming appears to have dried up.

So, if you now loyally compare the attributes with which Nature and Gaia are endowed, I think it's much more secular (I was going to say 'more natural'!) to claim 'I am from Gaia' than 'I am from Nature.' At least, you know that the person who salutes you with such an invocation belongs to a specific people that is frankly assembled under the auspices of a personified entity whose properties he or she can list — just as in Antiquity with the translation tables for the names of Zeus or Isis, or in Brazil for establishing a concordance between the names of Christian saints and those of the *orishas*. When you meet someone who is *from* Gaia, you may be confident that you are *not* going to be sold a totally implausible speaking mechanism, as well an already built architectonic so well ordered that it will tell you what you *should* do under the cover of what simply *is*. Freed from the fact/value divide and extirpated from the stultifying architectonic of levels from A, as in Atoms, to Z, as in Zeitgeist, you may clearly state your goals, describe your cosmos and tell at last your friends from your enemies.

What are the other virtues we could grant the people of Gaia? (I hope you understand that I am drawing here the picture of a *completely imaginary* collective, one that would be able to equip itself to survive in the Anthropocene by taking seriously what it means to be post-natural as well as post-epistemological.) Another great quality of such a people is that they may escape from the *bifocal vision* that we have recognized in the first two lectures. What was so strange about the 'people of Nature' is that their residence was totally implausible; they seemed to hover in outer space without having a body, or even a mouth; at times completely fused with the things objectively known; at other times a totally detached spectator contemplating Nature from the view from nowhere —'*la vue de Sirius*.' But scientists cannot survive in such a vacuum, no more than astronauts without a spacesuit.

So, whenever they have to actually do something, through a sudden change of repertoire that is never clearly accounted for, the same scientists are brought back to flesh and blood earthly bodies and local places. When, for instance, physicists celebrate the great heroes of Cambridge science, they don't hesitate to fasten a plaque like this one, in Free School Lane (just next to the department of History and Philosophy of Science, the Black Stone of our field of science studies).

> '***Here*** *in 1897 at the old Cavendish laboratory J.J. THOMSON* ***discovered*** *the electron* ***subsequently*** *recognized as the first* ***fundamental*** *particle of physics and the* ***basis*** *of chemical bonding electronics and computing.'*

It is hard to point out a more *situated knowledge* than this one: from this very local place on Free School Lane, in the hands of a great scientist, electrons are supposed to have spread successfully to populate all chemical bonding and all computers! But in the next minute, the same physicists will have no qualms about admiring how Steven Hawkings' mind roams through the whole cosmos in intimate dialog with the Creator, wishfully ignoring that Hawking's mind benefits not only from a brain but also from a 'corporate body' described by Hélène Mialet in her book ***Hawking incorporated***, as composed of a vast network of computers, chairs, instruments, nurses, helpers and synthesizers that are necessary for the step by step flow of his equations. With such a bifocal view of science, it is hard to reconcile the view from nowhere with the highly localised classrooms, office spaces, laboratory benches, computer centres, meeting rooms, expeditionary treks and field stations, where scientists have to locate themselves when they begin to really *talk* about their findings or to really *write* their papers.

The two views are just as irreconcilable as are the many advertisements that hype the uploading of our data towards the cold ethereal 'Cloud' with the carefully hidden pack of power stations that have to be built down on Earth to cool the vast arrays of computers always at risk of overheating. No doubt it is such a discrepancy that has made Science, since at least the 17th century, so difficult to assimilate inside the general culture and that has rendered so many scientists morally naïve as well as politically impotent. As Stevenson has shown in his famous parable, you cannot simultaneously be Jekyll and Hyde: the mad scientist — that is, remember, Mr Hyde — cannot cope with

such a split personality for long. At some breaking point, scientists do become mad and no amount of potion is able to restore their balance.

If, for the people of 'Nature,' the two views seem irreconcilable, for the 'people of Gaia' *this is not the case*. Here again, climate science has introduced an epochal change, offering us, in science studies, a pretty clear cut golden spike. When, for instance, Charles D. Keeling has to defend his long-term data series on the daily, monthly, yearly rhythm of carbon dioxide in the atmosphere, it would make no sense at all for him *not* to foreground the instrumentation with which he has worked for forty years on the Mauna Loa volcano in Hawaii. If he had to fight so long against government agencies, against the National Science Foundation itself, against the oil lobbies, it was to save his instruments and the data they produced. Without them, it would have been impossible, for the rest of his community, to detect the fast pace with which carbon dioxide was accumulating. To talk about the climate objectively *and* to deploy what Paul Edwards calls the **Vast Machine** activating the **Politics of Global Warming** are one and the same thing, or, to use his terms, it is the same movement that creates an 'epistemic culture' and the 'knowledge infrastructure' that goes with it. The more climate sceptics insist on the old idea of a Science floating everywhere at no cost, the more climatologists are in turn forced to insist on this foregrounding and the more they see themselves as a specific people with specific interests locked in conflict with other people for the production of relevant data series.

Am I right in thinking that for the first time in the history of science, it is *because* of the public visibility of their network that credibility could come to scientists? That it is because they are viciously attacked in the name of epistemology, that they have, for the first time, to fall back on the concrete institutions of science as their own way to access objective truth? That they, at last, are willing to say that the more *situated* their knowledge is, the sturdier it will be? Instead of alternating wildly between an impossible universality and the narrow confines of their limited 'standpoint,' it is because they extend their data sets, instrument after instrument, pixel after pixel, data point after data point, that they might have a chance to *compose* universality — and to pay its price tag in full. As a set of interlocking disciplines, climate sciences are much closer to what I have called Nature Two. If this compositionist point is so crucial, it is because we might find in

climatology, not '*la gaya scienza*' anticipated by Nietzsche, but a *Gaia science* that would at last be compatible with the anthropology, the politics — and maybe the theology — we are striving for.

Is it not extraordinary to learn from natural sciences that we seem to have moved backward, through some sort of counter-Copernican revolution, to a sublunar world whose functioning are largely disconnected from the rest of Nature? But the reason why we are not dragged back to a time before Copernicus is because another image of the world has also been smashed, an image that had remained intact through the whole of philosophy, the idea of a *Sphere* that could allow anyone to 'think globally' and to carry over one's shoulder the whole weight of the *Globe* — this strange Western obsession, the true 'White Man's burden.' In other words, we have to lift what could be called 'Atlas' malediction.' Atlas, we have to be reminded, is one of the Titans, one of the many monsters that were generated from the blood of those whom the mythological Gaia had schemed to assassinate (in Hesiod's unfair portrait of the old primeval goddess).

To lift this extra weight from our shoulders we have to indulge in a little bit of '*spherology*,' this fascinating discipline invented from scratch by Peter Sloterdijk in his massive three volume study of the envelopes indispensable for the furthering of life. Sloterdijk has generalized Von Uexhkull's *Umwelt* to all the *bubbles* that agencies have generated to make a difference between their inside and their outside. To accept such an extension, one has to consider all the philosophical as well as the scientific questions thus raised as being part of a vastly expanded definition of *immunology*, understood here not as a human nor as a natural science, but rather as the first *anthropocenic* discipline.

Sloterdijk is the thinker that takes metaphors seriously and fully probes their real weight—for hundreds of pages if necessary. His immunological problem is to detect how any agency protects itself from destruction by building a sort of well-controlled atmosphere. He asks this question at every scale with a dogged obstinacy. Including when he mischievously takes his master Heidegger to task for having failed to answer the following question: 'When you say that the *Dasein* is "thrown *in* the world?" What is this "*in*" made of? What is the air you breathe there? How is the temperature controlled? What sorts of materials make up the walls that protect you from suffocation? In brief,

what is the *climate* of such an *atmospheric condition*?' That is, exactly the base and basic questions which philosophers and scientists of all hues and descriptions have never agreed to answer with any precision.

According to Sloterdijk, the complete oddity of Western philosophy, science, theology and politics is to have invested all its virtues in the figure of a Globe — with a capital G — without paying the slightest attention to how it could be built, sustained, maintained and inhabited. The Globe is supposed to capture everything that is true and beautiful, even though it is an architectonic impossibility that will crumble as soon as you look seriously at how and where *it stands*. Sloterdijk asks a very simple, humble architectural question, one that is just as material as the geologists with their inquisitive hammer: *where* do you reside when you say that you have a 'global view' of the universe? How are you protected from annihilation? What do you see? Which air do you breathe? How are you warmed, clothed and fed? And if you can't fulfil those basic requirements of life, how is it that you still claim to talk about anything that is true and beautiful or that you occupy some higher moral ground? Without specifying their climatology, the values you try to defend are probably long dead already, like plants that have been kept inside a greenhouse overexposed to the sun. In Sloterdijk's, even more than in Lovelock's hands, the notions of homeostasis and of climate control take on an even more metaphysical dimension.

When you begin to ask such elementary questions, you realize how implausible is the very idea of seeing anything from Sirius. No one has ever lived *in* the infinite universe. More telling, no one has ever lived '*in* Nature.' Those who frighten themselves by imagining that they are roaming through the infinite universe are always looking at a small globe with a surface area of only two or three square meters while inside the warmth of their earthly cabinet under the comfortable lighting of a lamp. Instead of '*le silence de ces espaces infinis m'effraie*,' Pascal should have said 'the hum of the machinery of those confined spaces soothes my mind.' When epistemologists claim that we could live 'in Nature,' what they really do is to carry out what for Sloterdijk amounts to a criminal act of destruction, tearing down all the protective envelopes necessary for the immunological function of life (and life, for him, does not distinguish between biology, sociology or politics).

Any thought, any concept, any project that ends up ignoring the necessity of the fragile envelopes that make existence possible is a *contradictio in terminis*. Or, rather, a contradiction in architecture and in design: it is unsustainable; it does not have the atmospheric, the climatic conditions that could make it liveable. It would be like trying to save all your precious data to the Cloud but without investing in computer farms and cooling towers. If you still wish to use the words 'rational' and 'rationalism,' fine, but then also do the work of designing the fully furnished spaces where those who are supposed to inhabit them may breathe, survive and reproduce. Materialism without climate controls is another form of idealism. Page after page, Sloterdijk rematerializes in a completely new way what it is to be *in* space, *on* this Earth, offering us what is probably the first philosophy resonant with the Anthropocene.

Regretfully, tonight I will make use of only one of the results of his marvellous inquiry, a result, however, that goes to the heart of our political theology of nature. In the middle of his second volume (soon to be accessible in English), Sloterdijk devotes a hundred pages to a meditation that he titles '*Deus sive Sphaera*,' 'God, that is, the Sphere.' Although it could seem to be just a tiny technical fault in design, it is one that destabilizes the whole architectonic of Western cosmology and that is most clearly detectable in visual imageries such as these. (see the images)

As you can see, the little chink that he is the first, as I see it, to point out results from the unresolved bifocalism of a Christian imagery that tries to superimpose its incoherent theo- and geo-centric globes. It just so happens that when you place God in the centre, the Earth is rejected at the periphery. This is fine, since it gives our planet a humble and, well, a *peripheral* role. But the problem is that when you place the Earth at the centre, with Hell located smack in the middle, beneath the sublunar world, it is God that is forced to occupy the periphery. That move is harder to swallow. God is not supposed to be 'peripheral.' How could you build a whole cosmology with two contradictory centres, one turning around God while the other is circling around the Earth?

But the really fascinating thing, is that for about two millennia this little architectonic fault made no difference whatsoever to theologians, artists and mystics. As Sloterdijk sums up:

> *'The bifocalism of the 'image of the world' had to be kept latent, without the possibility of having any explicit dialog about the complete contradiction between the geocentric site and the theocentric site of the projection inside the illusory bubble of* philosophia perennis' *PS II p.* 418 (my translation from French).

So powerful is the '*illusory bubble of the* philosophia perennis', the malediction of the Globe, that theologians have drawn a cosmic God in the form of two wobbling spheres without ever being alerted to its technical implausibility. From Dante to Nicolas de Cues, from Robert Fludd to Anathasius Kircher, all the way to modern illustrators such as Gustave Doré, the discrepancy was simultaneously obvious and constantly denied. Although it was visually impossible, the smooth emanation from God's grace to human Earth was never put into question even though no one could literally *draw* its mystical rays in continuous lines through the yawning gap dividing the two systems.

You could object, I am sure, by asking why we should pay any attention to this discrepancy in Christian theology? Coherence is not the forte of religious souls, anyway, and one more kink in their operation should be hardly detectable. But what fascinates me in this discovery is that exactly the same incoherence applies to the architectonic with which *rationality* has been built. The two images of the world in Christian theology are just as irreconcilable as the images that would represent, for instance, the physics of the electron as simultaneously *everywhere* in the world and safely located *inside* J. J. Thomson's Cavendish laboratory. And you find exactly the same denial of such an impossibility, not this time among theologians and mystics, but among scientists and philosophers. The '*illusory bubble of* philosophia perennis' keeps '*latent*' the '*complete contradiction*' between 'Nature One' — cosmos-centric — and 'Nature Two' —laboratory-centric— making any '*explicit dialog*' between the two just as impossible as the reconciliation of geo- and theocentric '*images of the world*' in medieval cosmology.

What Sloterdijk has detected in Christian imagery, science studies has detected just as clearly in scientific writings. No wonder; it's the same problem twice—one in the history of religion, the other in the history of science, thanks to the *translatio imperii* of which we have seen so many examples already. It is impossible to *locate* the Earth or to *stabilize* the centre around which the other entity is supposed to turn.

Witness the bungled metaphor of the 'Copernican revolution' that Kant claims to have introduced in philosophy: it makes everything turn around the Subject while simultaneously abandoning the old human centred cosmology. To come back to the first meaning of the word 'revolution,' everything looks as if there was no stable centre around which to make the Earth *revolve* — a problem that we will tackle in the next lecture.

Following Sloterdijk's probing of the architecture of Reason, we realize that the globe is not what the world is made of, but a Platonic obsession transported into Christian theology and then loaded into political epistemology to provide a figure — but an impossible one — for the dream of total and complete knowledge. There is a strange fatality at work here. Whenever you think of knowledge in a zero gravity space — and this is where epistemologists dream of residing — inevitably it takes the shape of a transparent sphere that could be inspected from a place of no place by a body of no body. Just like Captain Haddock's whisky, on board the space ship designed by professor Calculus in ***We Have Walked on the Moon***, takes on a golden spherical shape as soon as Thomson and Thompson stupidly cut its artificial gravity. But once you restore the gravitational field, knowledge immediately loses this mystical spherical shape inherited from Platonist philosophy and Christian theology. They flow again in their original form of historical narratives.

It is because of this bifocalism, that the two portraits of Atlas are equally implausible, the Atlas who is supposed to hold the world on his shoulder (without being able to gaze at it, as Sloterdijk points out) but also the one invented by Mercator, the very emblem of the scientific revolution — an Atlas who is supposed to hold the entire cosmos in his hands as if it were a football. Mercator, having fused the male scientist with the much older metaphor of God's hand, morphed him into a giant, a real Superman able to keep everything in his palm. But if the globe is indeed held for good in the hand of some average size human, then, inevitably it is a map, a model, a *globe* in the very humble and local sense of the little instrument of *papier maché* that many of you, I am sure, love to make whirl around with a movement of your fingers. Or, else it is one of those contraptions that Patrick Geddes and Elisée Reclus invented so as to give a popular shape to the encyclopaedic knowledge they had accumulated. But then it is a panorama, a geodesic

dome cinema, an amusement park, maybe the Globe Theatre, but it is not that in which the cosmos itself is lodged.

To lift the fatality of the Globe — what I have called Atlas's malediction —, one has to stick to good old science studies or to Sloterdijk's spherology and point out that 'global' is an adjective that might describe the shape of a local contraption to be inspected by a group of humans gazing at it, but never the cosmos itself inside which everything is supposed to be enclosed. No matter how large it is, the array of the clusters of galaxies dispersed since the Big Bang is not bigger than the *screen* on which the streams of data from the Hubble telescope are being pixelized and coloured. As the saying goes, 'thinking globally is always acting locally' because no one has ever thought globally — especially not about Nature and Gaia.

This is a useful tenet in social theory as well as in cosmology. I have often noticed that when my colleagues were talking of the 'whole society,' of 'social context,' or of 'globalization,' they were using their hands to form a shape that was never much bigger than a reasonably sized pumpkin! We should apply the same humble localization to all the talk about 'globalization.' You are never more provincial than when you claim to have a global vision — 'so much *globaloney*.' If there is one lesson to be retained from actor-network theory, it is that there is no reason to confuse a *well-connected* locality with the utopia of the Globe. Once again, in spite of the illusion provided by the intoxicating manipulation of Google Earth™, scale is the result of the *number of connections* between localities not the circulation through any preordained zoom from the very big to the very small.

The reason why this relocalization of the global has become so important is because the Earth itself might not be a globe after all. When we unify it as the terraqueous sphere, we are forcing geostory inside the older format of medieval theology and 19th century epistemology of Nature. Even the famous view of the 'blue planet' might end up being a composite image, that is, an image composed of the old shape given to the Christian god and of the complex network of data acquisition from NASA, that was in turn projected inside the distributed panorama of the media. Here is actually the source of the fascination that the image of the sphere has exerted from Plato to NATO: the spherical shape smoothes down knowledge into one continuous, complete, transparent, ubiquitous volume that hides the

extraordinarily difficult task of assembling controversial data points coming from many different instruments and disciplines. A sphere has no history, no beginning, no end, no hole, no discontinuity of any sort. It is not only an idea, but the very ideal of ideas. It is what you wish to passively contemplate when you are tired of history. And thus, it is precisely that inside which you don't want to be imprisoned to tell any geostory. For this, as we saw yesterday, you need data in their original form of *narratives* — what can be articulated in a geostory.

No political theology of Nature is possible, as long as we don't extract ourselves from Atlas' malediction: *Orbis terrarum sive Sphaera sive Deus sive Natura*. Such is the last point I want to make as this lecture nears its end: the notion of a globe and any global thinking entails the immense danger of unifying too fast what should be composed instead. The spherical globe hides the activity needed to draw its shape since, in order to design a circle, you need to come back to your departure point by following some sort of a loop. The *concept of a loop* should take precedence over that of the sphere. It is the only way to become secular in science as well as in theology.

This point is at first simply geometrical —you need to draw a circle before being able to generate a sphere; it is of course also historical — it is only because Magellan's ship returned that his contemporaries could engrave deeper in their mind the image of a spherical Earth; but it is also moral — it is only when you feel that your action is coming back to you that you sense that you are made *responsible* for it. Thus the loop that is necessary to draw any sphere, is *pragmatic* in John Dewey's sense of the word: you need to feel the consequences of your action before being able to represent yourself as having taken an action and realized what the world is like that resisted it. As Sloterdijk points out, it is only once humans see pollution coming back at them, that they begin to really feel that the Earth is indeed round. Or rather, this roundedness of the Earth known from oldest antiquity — but superficially known —, gains more and more plausibility as there is a growing number of loops by which it is possible to slowly encircle it.

This is the reason why it is so crucial to shift from the Globe to the loops that slowly draw it. Without Charles Keeling's Mauna Loa observatory and the instruments to detect the carbon dioxide cycle, we would *know* less, I mean we would *feel* less strongly, that the Earth

might be rounded by our own action. And before that, we had to feel the hole in the ozone layer, thanks to Dobson's instrument; to feel the possibility of the nuclear winter thanks to the polemic amplified by Carl Sagan and his colleagues. That's what the Anthropocene is all about. It is not that, suddenly, the tiny human mind should be transported into a global sphere that would, anyway, be much too big for his or her tiny scale. It is instead that we have to weave ourselves, to cocoon ourselves within a great many loops so that progressively, thread after thread, the knowledge of where we reside and on what we depend for our atmospheric condition can gain greater relevance and feel more urgent. This slow operation of being wrapped in successive looping strips is what it means to be 'of this Earth.' And it has nothing to do with being human-in-nature or human-on-a-globe. It is rather a slow and painful progressive merging of cognitive, emotional and aesthetic virtues because of the ways the loops are rendered more and more visible through instruments and art forms of all sorts. Through each loop we becomes *more sensitive* and *more responsive* to the fragile envelopes we inhabit.

How many more loops do we have to circle around the Earth before the 'knowledge' gains enough of a trenchant feel for this shapeless *anthropos* to become a real agency and a plausible political actor? How many loops had to encircle some of you before you stopped smoking? You might have 'known' all along that cigarettes cause lung cancer, but this is a very long way from actually quitting smoking. You have to feel the pain in your back, as in those shocking advertisements on top of cigar boxes, before you measure up what it is to know something. Here too you need complex institution and well-endowed bureaucracies to feel the consequences of your actions upon yourself. How many loops do you need to *feel* the rotundity of the Earth for good? How many more institutions, how many more bureaucracies do you need, you personally, you here, tonight, to feel that you are really responsible for something so far away as the chemical composition of the atmosphere? (By the way, it is not fortuitous that the same lobbies who feed the climate-sceptics have been at work for so long to break the connection between cigarettes and your lungs.) As the line attributed to Lao Tzu says: 'to know and not to act, is not to know.' It is the connection mechanisms that count, not any jump to any global knowledge.

But there is another final and a more cogent reason why we should be so extremely suspicious of any global view, a point we have rehearsed often enough: Gaia is not a Sphere at all. If anything, Gaia is a tiny pellicle, no more than a few kilometres thick. So, It is not global in the sense of being run, as a system, from any control room by some overarching and overpowering Super Dispatcher. As we saw last Thursday, Gaia is not made of loops in the cybernetic sense of the metaphor, but in the sense of historical events expanding further or not depending on what the other agencies are doing with their own 'final' causes. This means that to understand the entanglement of the contradictory and conflicting connections amongst events is not a job that can be done by jumping to a higher 'global' level to see them all acting as one single whole; it can only be accomplished by crisscrossing their potential paths with as many instruments as possible to have a chance of detecting in what ways they are connected. Once again, the global, the universal and the natural, act as so many dangerous poisons, that obscure the difficulty and the cost of laying down the networks of equipment that render the consequences of action visible to *all* the various agencies that do the acting — not only, for instance, the actions of the former humans, but also those of nitrogen releasing algae or that of rock weathering roots and nodules.

This seems to me the real meaning of what it is to live in the Anthropocene: 'sensitivity' is a term that applies to all the agencies able to spread their loops further and to feel the consequences of what they do come back to where they started. When the dictionary defines to be 'sensitive' as being '*quick to detect or respond to slight changes, signals or influences*' this adjective applies to Gaia *as well as* to the *anthropos* — but only as long and as far that it is fully equipped with enough sensors to feel the feedbacks. Of Gaia, Isabelle Stengers often says that It has become *ticklish*. Nature, the Nature of olden days, might have been indifferent, overpowering, a cruel stepmother, but for sure it was not ticklish! Its complete lack of sensitivity was on the contrary the source of thousands of poems and what allowed Her to trigger by contrast the feeling of the sublime: we, humans, were sensitive, responsible and highly moral: not Her. Gaia, however, seems to be overly sensitive to our action, and It appears to react incredibly fast to what It feels and detects. This is why we should become cautious, careful, yes, sensitive in return. No immunology is possible, without high sensitivity to those

multiple, controversial, entangled loops. Those who are not '*quick to detect or respond to slight changes*' are doomed. And those who, for some reason, interrupt, erase, background, diminish, weaken, deny, obscure, underfund, disconnect any of those loops are not only insensitive and unresponsive — they are simply criminal. This is why there is some reason to call 'negationists' those who, having denied Gaia's sensitivity, listen the call of the Devil, that Faustian character who says: '*I am the Spirit of always saying* No.' No doubt that this is one of the sources from which *evil* has come.

I will conclude with one possible reading of the crashing planets at the end of Lars Von Trier's **Melancholia**. It might not be the Earth that is being destroyed in one last sublime flash of apocalypse by an errant planet: it is our Globe, our ideal idea of the Globe that *should be* destroyed for any work of art, any *aesthetic* to emerge — if you agree to hear in the word aesthetic its old meaning of being able to 'perceive' and to be 'concerned,' that is, a capacity to render oneself sensitive, a capacity that *precedes* any distinction between the instruments of science, of art and of politics. In one of his many linguistic innovations, Sloterdijk has proposed to say that we should shift from *monotheism*, with its old obsession with the shape of the Globe, to *monogeism*. Monogeists (not to be confused with monogenists) are those who have no spare planet, who have only one Earth, but who don't know Its shape better than they knew the face of their God of old — and who are thus confronted with what could be called a totally new kind of *geopolitical theology*.

War of the Worlds: Humans against Earthbound. Gifford 5. 26th of February 2013.

I don't know if you have noticed the strange ways in which we reassure ourselves, nowadays, when confronted with the constant flood of bad news coming from the scientific literature on the state of the Anthropocene. We have reached a point where we might take comfort in reading, for instance, the following quote:

> *'We have today a chance to play a new role in warning people of the apocalypse, the role of* ***prophylactic*** *messengers. If we differ from the classical Judeo-Christian announcers of the apocalypse, it is not only because we are* ***afraid*** *of the end (whereas they* ***longed*** *for it) but more because our apocalyptic passion has no other goal than to* ***avoid*** *the apocalypse. We warn of the apocalypse* ***only to be proven wrong****. Only to enjoy every morning again the chance to still be around,* ***ridiculous*** *maybe, but standing here nonetheless'* (my translation from French p. 30)

This is a passage from Günther Anders, a prolific and neglected writer who was also Hannah Arendt's first husband, in a 1960 book aptly called ***The Time of the End***, a comment on what political theology had become under the atomic mushroom cloud. If I find some solace in this description of Cassandra's character, it is because it was written *fifty years ago*, and was not alluding to global warming at all, but to this earlier terrifying threat that used to be called the 'nuclear holocaust' or the 'nuclear suicide' — a global *warning* if any. (A threat, by the way, which is still pending, even though no one mentions it with the same stridency anymore.)

Don't you find such a quote somewhat reassuring? It proves that we have been there already. We are still standing around, '*ridiculous*' may be, but here nonetheless. We have survived. People of my generation have lived under the shadow of MAD — Mutually Assured Destruction — for most of their life, some since August 1945, others since the missile crisis in October 1962 (my own recollection of the pending Apocalypse — a close call if there ever was one). And yet, in the horizon of this virtual holocaust, we seem to have lived fairly well, thank you. Catastrophe mongers delight in imagining (to borrow from the title of a popular book) '**The World *without us*,**' but, surely, such

prognostications should not be taken more seriously than those of the Mayan calendar. So what else is new? Is this not one more proof that those whom the sceptics call 'catastrophists' have been wrong all along, that things are never that bad and that ingenuous humans, in the end, always learn how to cope and to get by?

Or is it because, in this case, the prophylactic message of apocalypse has worked and the very horror of things-to-come has indeed modified the vision of those who were ready to wage a mad nuclear —no holds barred? If Cassandra has been '*proven wrong*,' it's because everyone agreed she might be right after all, and that the Trojans, after heeding her call, took the necessary steps to avoid in the end the inevitable: the wooden Horse remained on the beach outside the walls of Troy with the Achaeans uselessly tucked inside — Ulysses' cunning being of no avail.

I feel very fidgety to have to talk tonight about war and peace, revolution and revelation (the etymology, as you know, of the word 'apocalypse'). But if it might be too flippant to brandish the theme of the end of the world, it would be even more bizarre *not* to take the theme seriously in a lecture series on the political theology of nature. Politics, theology and nature — or at least the Earth — are all pointing to, if not the End, at least to a radical change of horizon. Those who don't feel in their bones that they might lose the world, do they deserve to live? Not only in the old banal way — every one of us will have to quit it at some point — but also in the new unexpected manner—it's the world that might forfeit us. We have entered, or we have never left, or we should never leave 'the Time of the End.' In his foreword, the French translator of Anders' remarkable little book wryly modifies Marx's 11th thesis: '*Philosophers have only interpreted or changed the world in various ways. From now on, the point is to* ***conserve*** *it.*'

I am well aware that it is somewhat nauseating to hear academics rant on about doom, blood and war when they have not the slightest experience of conflicts, living, as they most often do, in the comfort of their well-heated cabinets. But I am also aware that no amount of warm feelings will ever be up to the task of making us able to 'conserve the Earth.' So, I find equally nauseating the well meaning expectation that as soon as we talk about 'God's grace in His Creation,' or 'Nature's beauty,' or the 'objective knowledge of natural laws,' we — we, the puny

striving humans —, will immediately come to agree and take the necessary decision to heed the warning and avoid, in the end, the inevitable. As we have learned earlier, Nature does not unify all the people of the Earth any better than religion or objective knowledge. The appeal to nature is not more potent than Cassandra's wail.

We cannot even count on catastrophes to raise our awareness: quite the opposite. In one of the many terrifying books I have read in preparing those lectures, ***The End. The Defiance and Destruction of Hitler's Germany* 1944-1945**, the historian Ian Kershaw showed that Germany lost more soldiers and civilians in the *final* year of the war, when they had lost any hope of winning, than in the four years before. He demonstrates that in the most cataclysmic of situations, when the Reich is doomed, the war clearly lost and everyone, from marshals to house maids, knows it, nonetheless, *for want of an alternative*, the fight goes on, with the dictatorial criminal system almost intact, all the way until the final collapse.

It is because we cannot console ourselves with an appeal to human wisdom, to warm spiritual feelings, to the harmony of Nature, to the obvious character of the threat, nor to the immensity of impending doom, that I have to drag you, I am afraid, into this meditation on war and peace. If there is nothing nice, harmonious, or soothing in dealing with ecological issues; if Lovelock could describe Gaia as being 'at war' and 'taking Its revenge' on the humans whom he compares to the British Army, in June 1940, stranded on the dunes of Dunkirk, in full retreat, forced to abandon their weaponry lying useless on the beach; it is because the Anthropocene might be conceived, not as the great irruption of Nature finally able to pacify all our conflicts, but *as a generalized state of war*.

No matter how horrendous history has been, geostory will no doubt be worse since what, until now, had remained safely in the background — the landscape that had framed all human conflicts — has now joined in the battle. '*Faites donner la Garde*!' Something that neither the Trojans, nor the Germans, nor even Dr Strangelove (in spite of nuclear winter), would have expected. What had been metaphorical until now — that even the stones are screaming in pain at the misery humans have caused them —, has become literal. The expression 'a climate' or 'an atmosphere of war' has taken on another meaning now that another historian, Harald Welzer, has been moved to quietly write

a most disquieting book, **Climate Wars,** with the terrifying sub-title **Why People Will be Killed in the 21st Century**.

Clive Hamilton, in another of those many books that made me lose quite a lot of sleep, ***Requiem for a Species - Why we Resist the Truth about Climate Change*** (sorry, I can't help sharing with you some of my most frightening readings — how I wish I could quote from more cheerful titles!), claims that the enemy of action is *hope*, this unquenchable hope that things will get better and that the worst is not always for sure. Hamilton argues that, before anything can be done, we have to uproot hope from our desperately optimistic frame of mind. So, it is with many qualms that, at the beginning of this lecture, I post the sombre Dantesque warning: '*Abandon all hope,*' or in a less dark gothic style '*Abandon all* hype *ye who enter here.*'

To understand why this state of war has been generalized, it is best to turn to the writer who has defined this situation as being one, as he calls it, of *exception*: the toxic and unavoidable Carl Schmitt, the main expositor of 'political theology.' His key notion of the political, as is well known, is deduced through the definition of the enemy — *hostis* not *inimicus* — a concept that should not be confused with any moral, religious, commercial or aesthetic attitude toward fellow humans (nor, in spite of Schmitt's unrepentant adherence to Nazism, with any militaristic appetence for the gore of battlegrounds).

> *'The political enemy need not be morally* ***evil*** *or aesthetically* ***ugly****; he need not appear as an economic* ***competitor****, and it may even be* ***advantageous*** *to engage with him in business* ***transactions****. But he is, nonetheless, the other, the* ***stranger****; and it is sufficient for his nature that he is, in a specially intense way, existentially* ***something different*** *and* ***alien****, so that in the extreme case conflicts with him are* ***possible****.* ***These can neither be decided by a previously determined general norm nor by the judgement of a disinterested and therefore neutral third party.****' p.* 27

The crucial point for now is the last sentence: as long as there is a '*third party*' that is able to apply a '*previously determined norm*' to judge in a '*disinterested*' way who is wrong and who is right, there is no enemy, thus there is not a state of war, nor is there, according to Schmitt, any politics. As long as there is a referee, an arbiter, a Providence, a Super-dispatcher, that is, for him, a State, the thousands of inevitable

struggles among fractious humans are nothing more than internal strife that can be solved through mere management or through *police operations*. They can be *judged*, they can be *calculated*; they don't need to be *decided*. There is no war where management and accounting are sufficient. There is no war when conflicts can be solved by sending in the police; when those who dissent agree that the State has the right to define the situation. War begins when there is no referee, when there are no 'general norms' that may be applied to pass judgment: such is the extreme 'state of exception.'

> *'The friend, enemy, and combat concepts receive their real meaning precisely because they refer to* ***the real possibility of physical killing****. War follows from enmity. War is the existential* ***negation*** *of the enemy. It is the most* ***extreme consequence*** *of enmity. It does* ***not*** *have to be common, normal, something ideal, or desirable. But it must nevertheless remain a* ***real possibility*** *for as long as the concept of the enemy remains valid.' p. 33*

So, to understand what follows, we have to keep mind the link between politics, enmity, war and the absence of a third party and see what happens *when we introduce unexpected non-human agencies into the disputes.*.

I am aware that at no point in his political theology, did Schmitt ever touch upon ecological issues. He was exclusively concerned with human enemies. So, the '*other,*' the '*stranger,*' '*what is existentially* ***something different*** *and* ***alien***' cannot be read as referring to any other agencies than anthropomorphic ones. And yet, eighty years later, the range of aliens that have joined in the fray has dramatically expanded. The key concept here is *the presence or absence of a 'third party.'* What Schmitt could not even envisage, we, contemporaries of the Anthropocene, are forced to consider: the appeal to Nature known by the natural sciences no longer consists in '*a previously determined general norm*' to which we could rely for '*judgement by a disinterested and neutral third party.*'

If I have been even marginally right in the previous lectures, you will have gathered that Gaia is unfortunately no longer 'disinterested' in what we do. The complex set of natural sciences that compose climatology will no longer be able to play the role of indisputable and final referee — not because of the spurious 'controversy' over the anthropic origin of climate change, but because of the number of loops they have to establish, one after the other, to make us sensitive to Gaia's sensitivity. This is what I have called their post-natural, post-

epistemological situation. Strangely enough, Nature, at least the sublunar Earth, has been placed into a 'state of exception,' that is, in a situation that obliges everyone to make decisions because of the 'extremes' of life and death. Gaia and the Earth system sciences are fully engaged in a geostory that will turn out to be just as *'full of sound and fury'* as the history of olden days — and, yes, probably *'told by an idiot'* as well! This is the argument I wish to pursue, no matter how slippery it is.

When in earlier epochs, before the Anthropocene, we talked about Nature, we were in effect quietly and unwittingly talking *as if there existed a State of Nature* — a State with a capital S, that is, a monstrous Leviathan, half of which was made of politics, the other of Science. That it had been built through the strangest type of social contract and thanks to the most bizarre use of Science, we have known that since the publication of ***Leviathan and the Air-Pump***, Shapin and Schaffer's master book about the dispute between Boyle and Hobbes. The composite body of such a monster holds the sword in one hand and the air pump in the other, thus providing a telling emblem for three centuries of political epistemology.

But since then, because of the many controversies in science as well as in ecology, what we have been witnessing is the progressive dissolution of this division between Politics and Science, or, to use my terms, the end of the Modernist Constitution. Nature cannot provide the safety of a State — capital S; while Science — also capital S— no longer serves as the supreme court of appeals projecting its vast protective shadow over politics. In an unexpected and unprecedented twist on Hobbes's most famous concept, we have entered instead a completely new *state of nature*, this time written with a small 's' and a small 'n.' That is, *a war of all against all*, in which the protagonists may now be not only wolf and sheep, but also tuna fish as well as CO^2, sea levels, plant nodules or algae, in addition to the many different factions of fighting humans. The problem is that this state of nature is not situated, as with Hobbes, in the mythical past *before* the social compact: *it is coming at us*; it is *our present*. Worse: if we are not inventive enough, it might be *our future* as well. No wonder that we are terrified at having lost the safety of the State: there is nothing reassuring in the dissolution of the Great Leviathan and in the demise of our most cherished constitutional arrangements.

If it is too early to panic, it is because the safety provided by the State of Nature — capital S, capital N — has never been delivered for good anyway, and because we have not abandoned the task of looking for safety and protection, peace and certainty. It's just that we have realized that we can not obtain a civilized collective without *composing* it, bit by bit, agency by agency, thus planning a new Leviathan that would come to grasp with Gaia. In other words, the task of building the Republic, the true *res publica*, is still *way ahead* of us. It is not that ecological disputes are destroying the social compact and that we should lament the lack of respect for scientific authority: it's just that, thanks to Gaia's irruption, we realize that we had have not even *started* to draft a realistic contract, at least not one that could hold together in this sublunar Earth of ours.

Is this not what assembles us tonight? Now that the capital 'S' capital 'N' State of Nature has been dissolved, how can we get out of the small 's' small 'n' state of nature — the war of all against all? Renewing politics at the end of religious wars sounds much like renewing it in the midst of scientific controversies. We are still facing Hobbes' old question —how to put an end to civil wars —, except that he wished to rebuild civil society after the guarantee of one catholic Religion had vanished, while we have to do the same now that the authority of a unified capital N Nature known by the unified capital S Sciences has crumbled as well. In the new Leviathan, the careful exegesis of scientific literature replaces that of religious scriptures. I agree that raising such a vision is not an easy task because the situation is not as it is in Hans Blumenberg's book—a ***Shipwreck with a Spectator***. It is a shipwreck alright but there is no spectator left; rather, it's just like in the ***Odyssey of Pi***: in the lifeboat, there is a Bengal tiger! The poor young castaway has no solid shore from which to enjoy the spectacle of how to survive alongside an untameable wild beast for which he is simultaneously the tamer and the meal!

To sketch such a Leviathan, we should not look to our modernist past with any regret, because no good would ensue were we to deny that such a generalized state of war is indeed the case. If we were to do so, we would simply suck politics out of the landscape and replace it by either management or police operations. As Schmitt writes:

> '*A world in which the possibility of war is utterly eliminated, a completely* ***pacified*** *globe, would be a world without the* ***distinction*** *of friend and enemy and hence a world* ***without politics***' *p.* 35

Well, the good news, to say the least, is that '*a completely pacified globe,*' is not what we are facing. Such a dream has existed to be sure: it has been the ideal of naturalists—the utopia of deep, superficial or mid-depth ecologists; and it is still the horizon of those who hope to manage, engineer or re-engineer the planet; of those who wish to get by with 'sustainable development'; and of those who claim to be the good intendant, the earnest butler, the clever gardener or the careful steward of the Earth. In brief it is the dream of those who would prefer to do '*without politics*' altogether.

The great virtue of reactionary thinkers like Schmitt is to force us to make a choice much starker than that of so many wishy-washy ecologists still swayed by unremitting hope. Schmitt's choice is terribly clear: either you agree to tell foes from friends, and then you engage in politics, sharply defining the borderlines of real enough wars — 'wars of the worlds' —; or you shy away from waging wars and having enemies, but then you *do away with* politics, which means that you are giving yourself over to the protection of an all-encompassing State of Nature that has *already* unified the world into one whole, a State that should thus be able to resolve all conflicts from its disinterested, neutral, over-arching third party view — *sub specie aeternitatis, sub specie Dei, sive Naturae, sive Spherae.*

The second solution would of course be better, I agree — I am not a bellicose person myself — but only providing that such a State exists. If there is none, then, it is simply criminal to place yourself and others in the care of a non-existent entity. You would put those who follow you smack in the middle of a situation similar to the one described by Jan Kershaw, one with no way out: it won't be just Dunkirk (in June 1940, there was still hope); it will be Germany May 1945: unconditional surrender. It's a stark choice, I agree: a State of politics or a State of knowledge, one has to choose. Either nature extinguishes politics, or politics resuscitates nature —that is, finally agrees to face Gaia. Remember the gospel I quoted yesterday, a phrase that Schmitt would have understood all too well: '*Think not that I am come to send peace on earth: I came not to send peace, but a sword*' (Matt: 10, 34). Without drawing such a

sword out of the scabbard, there will only be police operations that would inevitably and miserably fail, but no plausible politics of nature.

How I wished I could entertain you with soothing words about the splendour of natural parks, the beauty of God's Creation, or the stunning new discoveries of the Earth system sciences! But the hard dark job of politics has to be done first. For this, we have to define a) what is the threat, b) who are the enemies and c) which sort of geopolitics we will end up with. Let me broach each of those topics one after the other.

To cope with the threat, we first have to understand why we feel it is *coming towards us*, and why is it so difficult to *face* it head on. As long as I have been trying to encounter Gaia, I have pictured in my mind the movement of a dancer, first fleeing backward, as if she was escaping faster and faster from something truly horrible, indifferent to the destruction she left behind by moving blindly backward — much like Benjamin's 'angel of history' —, and then, glancing behind her more and more often, she finally begins to turn around, slowed down as if she was penetrating a thorny bush, looking to the full horror of the shape of things she has to face, and, at last, suddenly coming to a complete stop, eyes and hands wide open in disbelief. (How I wish I could show you such a dance).

Contrary to what they often say of themselves, Modernists are not forward-looking, but almost exclusively *backward*-looking creatures. This is why the irruption of Gaia surprises them so much. Since they have no eyes in the back of their head, they *deny* it is coming at them at all, as if they were too busy fleeing the horrors of the times of old. It seems that their vision of the future had blinded them to where they were going; or rather, as if what they meant by the future was made of entirely their rejected past without any realistic content about 'things to come.' (French usefully distinguishes between '*le futur*' and '*l'avenir*.')

Children of the Enlightenment are used to defining with great relish the threatening *past from which* they were courageous enough to escape; they are largely silent on the shape of *things to come*. Modernizers are extraordinarily good at freeing themselves from the shackles of their archaic, provincial, stuffy, local, territorial past, but when the time comes to designate the new localities, the new territories, the new provinces, the new narrow networks towards which they are migrating,

they content themselves with utopia, with hype and great movements of the chest as if they were preparing themselves to breathe the thin intoxicating air of globalisation. No wonder: they never paid any attention to *where* they headed, obsessed as they were to *escape* from attachments to the old land. Good at detachment, they seem quite naïve when the question is how to reattach themselves to a new abode. They sound like astronauts making plans to head out into empty space without space suits.

As Sloterdijk has taught us: you cannot move from an inside to an *outside*, from a place to a place of nowhere, but only from a carefully controlled *inside* to another even better controlled *inside*. As he demonstrates, the move is not only from slavery to freedom, but also from implicit conditions of existence to *fully explicitated* conditions of existence. That's the meaning of climatology. Without an atmosphere to breathe, you suffocate. What Gaia has done, is to have forced every one of us to render explicit the breathing conditions we require: out of the suffocating archaic past, running toward an otherwise suffocating future!

Funnily enough, the more progress-oriented modernizers are, the more they are ready to deny that ecology could even be an issue; the more rabid is their contempt for those they call 'prophets of doom,' 'apocalypse mongers.' If you push them a bit more, they will even tell you that all the talk about the End of Time or the Irruption of Gaia is nothing but so many schemes to exploit the poor developing countries even more — if the modernizers are from the Left — or, if they are from the Right, that it's nothing but a plot to impose communism on the rich developed nations. It's as if they were all saying: 'Progress-minded of all nations and of all parties, let's unite in the denial of climatology as our new horizon. We need neither a territory nor a soil. There is no limit! Only reactionaries insist on limits; they don't want us to be emancipated; they want to drag us back to the land, to an era of restrictions and misery from which we have finally so successfully migrated. Yes, it's not a joke, they do want us back living in caves — back in Plato's Cave.'

We have to understand the return of the Earth in a non trivial, non archaic way, because Gaia is simultaneously what was there and has been forgotten and left behind — Gè, the old goddess —, and what is coming to us and our future. What could be called the 'return to the

land' could mean backward and forward simultaneously. How surprising it is to find oneself in such a situation with two entirely opposite views of what it is to progress forwards. As if the whole emancipation narrative had made us totally helpless at finding our way to where we belong. As if the very notion of 'belonging' smacked of reaction. You would think that after several centuries of the critique of religion, we would have no difficulty whatsoever in recognizing that we are 'of this Earth.' How strange that, after having heard so many clarion calls for embracing materialism, we find ourselves totally unprepared to deal with the *material conditions* of our atmospheric existence? After so much ridicule of religion as the 'opium of the people,' after so much fun made of those who wish to escape to the 'rear world' of Heaven so as to flee from the harsh conditions of this world of toil and soil down below, here we are, nonetheless, dumbfounded that there might be limits to our actions, even unable to state what it is to behave in a worldly, earthly, Earth-bound fashion. How much we have enjoyed learning about the 'death of God' that was supposed to return us to a human, too human condition, and yet we find ourselves hesitant, fumbling in the dark in the 'valley of tears' wondering what it is like to feel the ground under our feet. The surprise is that we are so surprised at being *of here*, no longer exactly humans, but rather Earth *bound*.

Consider two entirely opposite definitions of what it is to be reactionary or progress-minded. If the word 'human' come from 'humus,' that is, the soil, we change the direction of the arrow of time entirely, as soon as we replace 'soil' by 'Earth.' To insist on the soil is to be reactionary in the old way — appealing to '*Blut und Boden*.' Reactionaries of all hues and colours have always insisted on how criminal it was to attempt to leave the ancient land, to abandon the old soil, to forget the limits, to be emancipated and cosmopolitan. Against those calls for remaining 'backward,' how right the revolutionaries were in calling for emancipation. And yet what they could not imagine was that there might be another meaning to being attached to the old soil, this time to the Earth. As soon as you say this, things turns around, and the land that used to be what you should leave to undergo modernization, becomes the new Earth that is coming at you. It is still being reactionary since what you move toward is your meeting with the Earth and what you react against is your revolutionary ideal, but

reactionary in a new way— tentative and hesitant, maybe progressive in the long run.

What progress-minded people could not anticipate was that the revolution they longed for *was already happening*. However, it had come not from any massive change in the 'property of means of production' but was occurring full speed in the movement of the carbon cycle! At a time when so many people lament the 'lack of revolutionary spirit' and the 'demise of emancipatory ideals,' it is left to natural historians to reveal that the revolution has already occurred, that the events we have to cope with do not lie in the future, but largely in the past; that whatever we do now, the threat will remain with us for centuries, for millennia, because the relay of so many irreversible revolutionary actions *by humans* has been taken over by the inertial warming of the sea, the changes in the albedo of the poles, by the growing acidity of the oceans and by the tipping points reached by the slow creep of Himalayan glaciers. So here is another unanticipated twist in the arrow of time; the revolution has already ended, or it has to be done all over again; this is enough to make everyone of us totally disoriented. At the root of climate scepticism, there is this amazing reversal in the direction of progress, in the definition of what is the future and what it means to belong to a territory.

So that you don't believe I am trying to exclude myself from this argument, let's confess that *we are all climato-sceptics*. I certainly am. And so is the climatologist I was interviewing a few months back, a remarkably sad scientist who, as he ended the description of his beautiful discipline, had to sigh: 'But in practice, I am a sceptic nonetheless, since, from the fully objective knowledge I contribute to producing, I do nothing to protect my two kids from what is coming.' This is the terrible quandary in which we find ourselves: being either one of those who deny that *there is* a threat, or one of those who, knowing full well the extent of the threat, do nothing to meet it. Nothing, at least, that could be at the right scale. I am not sure what is worse: to be a denier or to be impotent? What is sure is that we behave like divided souls, changing light bulbs one day, sorting refuse another, while reading with tears in our eyes that Artic glaciers are calving icebergs at an unprecedented speed — and being able to do nothing about it. Nothing.

Even the Engels of ***Dialectics of Nature*** did not wish to be so right that we would witness every one of the agencies of the planet being mobilized in the dizzying frenzy of historical action. Even the Hegel of ***Phenomenology of Spirit*** could not envision that the advent of the Anthropocene would so radically reverse the direction of his project that humans would be dialectically immersed in the geostorical adventures of carbon, oxygen and methane. Think of that: the whole breath of the Spirit is now sublated, *aufheben*, overcome, intoxicated by carbon dioxide! What a situation to be in! It would be exhilarating to live at such a time, if only we could witness its drama from the safe shore of something that had *no history*. But it is only now, when geostory unfolds, that we realize how cosy it was to preach the 'death of God,' to frighten ourselves with the 'absurdity' of life, and to delight in the happy task of critique and deconstruction: those who used to enjoy those games remained like epicurean tourists comfortably seated on the shore, safely protected by the ultimate certainty that Nature at least will always be there, offering them a totally indifferent but also a solid, eternal ground. '*Suave mari magno turbantibus aequora ventis.*' This time: 'Shipwreck *with* spectators!'

> *'Tis sweet, when, down the mighty main, the winds*
> *Roll up its waste of waters, from the land*
> *To watch another's labouring anguish far,*
> *Not that we joyously delight that man*
> *Should thus be smitten, but because 'tis sweet*
> *To mark what evils we ourselves be spared;'* (Lucrecius Book 2 line 1-6)

But now there is no spectator because there is no shore that has not been mobilized in the drama of geostory so that no tourist can be '*spared*' the '*labouring anguish.*' If it has become impossible to escape from the theme of the end of the world, in spite of the theme's apparent flippancy, it is because we need to exert an enormous violence on ourselves to practice this turn, this *metanoia*, this conversion, and to force the backward-looking Modernist to finally look forward; to consider a state of affairs that is not a future — something comprising the vague hope that things will take care of themselves ('*Après moi le déluge!*')— but a state of affairs that comes as a threat and that does not

bring hope. To talk about the end of the world, to accept living in apocalyptic times, is not to delight in the spectacular special effects of John's vision in Patmos, but simply to encode the difference between moving *out* of a horrible past and encountering something that comes *towards* you.

What is coming should *appear* as a threat, because it is the only way to make you *sensitive* at last to mortality, to the very difficulty of being of this Earth, to make you tragically aware, as Sloterdijk would say, of the immense difficulty of explicitating your immunology, your air condition. The fireworks of the Apocalypse are not there to prepare you for a rapturous upload to Heaven, but on the contrary, to make you ready to *avoid* being chased off the Earth by Earth's own reaction to your presence. It is a harsh solution, but it seems the only way to oblige us to turn our attention around after so many years of neglecting what happened behind our back. To morph Benjamin's simile, we could say that the '*angel of geostory*' looks forward in disbelief, realizing fully well that there is a threat and that there is a war! This is what I mean by facing Gaia.

And this is exactly what Hans Jonas, building on his knowledge of Christian eschatology, called the 'imperative of responsibility.' Without making the threat visible *artificially*, there is no way to make us spring into action. This is what Günther Anders called a 'prophylactic' use of the Apocalypse, or what Jean-Pierre Dupuy defines as the necessity of 'enlightened catastrophism,' a somewhat tame oxymoron that has the same content as Clive Hamilton's argument that we should first abandon hope — projecting ourselves *from* the present *to* the future — in order to turn around — being reoriented by some powerful figure *from* the virtual future *to* transform the present. The fusion of eschatology and ecology is not a fall into irrationality, a loss of nerve or some mystical adherence to an outdated religious myth; rather it is a necessity if we want to cope with the threat and stop playing the appeasers who always delay, once again, putting themselves on a war footing in time. Apocalypse is the call for being rational, at last — that is, for being on our toes. Cassandra's warnings will be heard only if she addresses people who are attuned to the din of eschatological trumpets.

Interestingly, Jonas himself makes the connection with Hobbes' appeal to the threat created by the state of nature. It is only because citizens are directly frightened by the *summum malum* of the war of all

against all, that they are ready to engage in the social compact and to build that 'mortal god' of the Leviathan. What we should strive to do, Jonas argues, is to force upon ourselves the same fright, thereby to raise what in lighter days could have been called 'our ecological consciousness.' But, as he points out — and this will not come as any surprise to you—, there is an added difficulty with ecology that Hobbes did not have to consider. Every one of us is *directly* concerned by the threat of civil war, enough to be kept constantly aware of the danger of losing the safe ground of peace. Everyone understand what it means to 'Call the police!' 'Prepare for war!' However, there is no equivalent for ecology because the threat seems too distant. (It is actually frightening to realize that, in 1979, Jonas still thought that the menace was so far away that he had to appeal to the welfare of 'future generations' — how fast things have changed now that we are talking of 2050, maybe as soon as 2020 that the dangers will be most visibly felt — have you noticed that no one talks of *future* generations any more?). Even if it is not distant, the threat is at least of such an immense scale that it is totally *disconnected* from our own personal, individual destiny, from our own emotional frame and cognitive make up. As we saw in the last lecture, nobody in particular is the *anthropos* of the anthropocene. To become sensitive, that is, to feel responsible, and thus to make the loops feed back on our own action, we need, by a set of totally artificial operations, to place ourselves *as if we were* at the End of Time, thus giving a completely new meaning to Paul's admonition:

> *'And they that weep, as though they wept not; and they that rejoice, as though they rejoiced not; and they that buy, as though they possessed not; and they that use this world, as not abusing it: for the fashion of this world passeth away.'* (Cor 7, 30-31).

Now that we begin to realize how we could turn around so as to face the danger instead of fleeing from it, we have to deal with the second even more difficult topic: that of how to tell friends from foes, which is the condition, as we saw earlier, for keeping politics alive — at least if you accept to follow me in this expanded use of Carl Schmitt's definition of enmity (a definition whose dosage should be watched as carefully as we would do with a powerful poison).

That there is a huge difference in responding to a threat under the auspices of politics or under that of knowledge may be clearly seen when you compare the quick, panicked pace of the weapons race triggered by the Cold War and the slow leisurely evolution of negotiations over climate. Hundreds of billions of dollars have been poured into atomic armaments to respond to a threat for which the information obtained by spies was slim at best, while the menace caused by the anthropic origin of climate weirding is probably the best documented, most objectively produced piece of knowledge anyone would ever be able to possess in advance of taking action. And yet, in the first case, all the traditional emotions of war-like politics led, in the name of precaution, to the build up of a baroquely *oversized* arsenal; while in the other, much energy is still spent to delay, deny, or water down the knowledge necessary to trigger ridiculously *undersized* sums of money. Just compare the sensitivity of the public to the reception of Georges Kennan's secret 'long telegram' of 1946 about Soviet strategy, to that of Sir Nicolas Stern's fully open review, in 2006, on the small money that should be spent by industrial nations to avoid most of the deleterious effects of climate changes. In one case, the clear presence of enmity, war and politics gave to the word 'precaution' the meaning of *quick action*; while in the other, the uncertainty over enmity, war and politics gives to precaution the appeasing connotation of '*wait and see*' — and, above all, *to delay*. Panic strikes in one situation — mobilization ensues — while, in the other, demobilization follows even though it deals with the great Pan himself.

Confronted with such a discrepancy in the speed of reaction, it is tempting for ecologically-minded activists to turn to what is unanimous, universal, necessary and undisputable, in order to spur the masses into taking measures at last: namely, the objective knowledge we have of the situation; the global responsibility of humanity; and the indefeasible laws of an indifferent Nature.

I know I should not make this argument but I have to try it nonetheless because eventually it might not be so cruel to have said that it is precisely this temptation, no matter how common sense it sounds, that should be resisted. If ecologists never had the clout necessary to meet the threats they were so good at revealing, it is because they hoped to bypass politics altogether. As I have shown in ***Politics of Nature***, too often ecologists have simply repainted in green the

same grey Nature that had been devised, in the 17th century, to render politics, if not powerless, at least subservient to Science; this Nature that has been given the role of the 'disinterested third party' able, in the last instance, to referee all other disputes; this Nature inside which so many scientists believe still they have to take refuge so as to protect themselves from the dirty business of politics; this Nature which has inherited all the functions of the overseeing and all-encompassing God of olden days, and that is just as unable to bring Her Providence to bear down on Earth! Ecology is not the taking into account of Nature by politics, but the end of Nature as providing the Republic with half of its politics. Thus, between Nature and Politics, one has to choose.

I know this is a dangerous argument, but I will propose to you that we have to suspend those unanimous, universal and global visions in order to fight the temptations to empty ecology of its politics. Without first recognizing that people divided into so many warring parties, no peace is possible, no Republic will ever be built. I beseech you not to conclude that here I am smashing the ideal of universality; I recognize, I share, I cherish such an ideal: I am just trying to find a realistic way to realize it. And for this, first, we have to make sure that we don't think it's realized already. This is why it was so important, in the earlier lectures, to fight against Atlas' malediction and to introduce the scheme of multiple dispersed people assembled under an entity and deploying agencies in their own specific ways. So let us for a brief moment agree to raise the question in the following form: instead of fancying that you have no enemy, *designate your enemies*.

And first what about Gaia? Even if we might be shocked by Lovelock's militaristic metaphors, Gaia is an enemy and we are Its enemy: no doubt about that. The old Nature could be wholly *indifferent* to our human destiny; She could have been a *cruel* stepmother; or She might have been '*red in tooth and claw*' as in the rationalizing dreams of social Darwinism. But in none of those three representations, could Mother Nature really be 'at war with humans' since the fight was settled in advance: She would win; She was the *ultima ratio*. As the saying goes: 'You cannot fool—nor beat— Mother Nature!' Able to play the role of the third party, what She did for or against humans was never more menacing than a police operation — and the best that humans could do was to play the role of the good child, of the reasonable steward, of the respectful gardener. But Gaia is different because It is

no longer *indifferent* to our action; our relation with It is not that of a mother to a child; we are both adults in a fully secular world; the cruelty is equally shared between the two protagonists; the balance of force, calculated nowadays in terawatts, is still uncertain; and both parties share the same fragility. Even though Gaia has a greater chance to going on than does the human race, according to geologists we have become strong enough to push It into such a different state that It would become another being altogether. That's what it means to live in the Anthropocene: we are locked in a *world war* — the Two Hundred Years World War.

But what makes the designation of the enemy even more urgent is that there is of course no sense in speaking, as I have just done, of the 'human race' as being a party in a conflict of just two. The front line divides not only every one of our souls, but it also divides all the collectives with respect to every single one of the cosmopolitical issues we face. The *anthropos* of the Anthropocene is nothing but the dangerous fiction of a universalized agent able to act as one single people. Such a supposition would imply that the State to be built is already there. The Human, capital H, as the giant Atlas-like agent of history, as in so many 19th century myths, is precisely what the Anthropocene has broken down and totally dispersed. Paradoxically, the Anthropocene puts an end to anthropocentrism as well as to *anthropolatry*.

Whether you take the world dispute over genetically modified organisms (GMOs), the calculation of fish stocks, the development of wind turbines, the redesign of coast lines, the making of clothes, of food, of drugs, of cars, the redesign of cities, the transformation of agricultural practices, the protection of wild life, the change in carbon cycle, the role of water vapour or sun spots, or the monitoring of ice packs — in each case you find matters of concern that gather within their many contradictory folds varied groups of folks that are in disagreement and vast amounts of knowledge that are always necessarily in dispute. It would have been amazingly naïve to think that such revolutionary changes in the daily make-up of billions of people on Earth would have been triggered just by producing accurate data! This is why, from the beginning of this series, I proposed to take as *positive* the existence of controversies over climate science. Those controversies prove that the amazing consequences of this knowledge

are finally being taken seriously since they are *denied* so adamantly by so many people: climate deniers have clearly realized that it is indeed an end *of their world*. And they resist it.

And that's good because now, at last, we can see everyone operating under their own flag, defining the shape, dimension, limits, content and composition of their cosmologies. Now that there is a recognized state of war, it is possible for every one of the warring parties to be explicit about their *war aims*. No need to hide behind any appeal to the objectivity of Knowledge, to the undisputable values of human development, to the public good — except for what could be called good old *strategic* epistemology much like the strategic essentialism of feminist politics. Rather, tell us who you are, who are your friends and foes, and who else you want to destroy — and, yes, tell us clearly by which divinity you feel summoned and protected. We have not lost anything (yes of course we have lost hope) by no longer being able to rely on any third disinterested party since, for every one of the ecological issues, such an appeal to a final arbiter made no difference anyway and could not settle the disputes. That's the state of exception. We have to decide. That's why we need politics.

I tremble here to propose something that could be so easily misunderstood, but I have to draw the consequences of the five last talks without flinching: if we wish to have a political ecology, we first have to accept the division of a prematurely unified human race into collectives at war with one another. We have to do away not only with the idea of Nature as indifferent to our plight — unfortunately, She has become amazingly ticklish — but also with *the notion of generic humans*. Remember that, even for Schmitt, war does not need to be waged in blood (As I quoted earlier: '*It does* ***not*** *have to be common, normal, something ideal, or desirable. But it must nevertheless remain a* ***real possibility*** *for as long as the concept of the enemy remains valid*'). War is the state in which we find ourselves when we are forced — by the presence of an enemy who wants our destruction — to decide how we will survive when there is no State, no God, no Nature, no Knowledge to protect us. Thus, it might be better to say, in the end, that 'People of Gaia' meet, assemble, behave in a manner that is not reconcilable, for instance, with those who call themselves 'People of Nature' or with those who pride themselves in being just 'Humans.' Those various people might assemble in the future, but only after war, after diplomacy, after makeshift peace

settlements. Not at the beginning. There are too many matters of concern, too many issues dividing 'us' — an 'us,' to begin with, that does not exist.

To make clear — much too clear for my own good! — in the geostorical situation we have entered with the Anthropocene, I propose to say that Humans are now at war not with Nature, but with, *with whom*? I am at loss to find a name. Science fiction often uses the name 'Earthlings,' but that was the whole of the human race viewed from another planet and in a '*close encounter of the third kind*' with little green men. No, I want to have a label that divides humans, that pits them against one another instead of lumping all of them into one vague 'anthropic' shapeless mass. 'Gaians'? 'Terrestrials'? I have chosen *Earthbound* — 'bound' as if bound by a spell, as well as 'bound' in the sense of heading somewhere, thereby designating the joint attempt to reach the Earth while being unable to escape from it, a moving testimony to the frenetic immobility of those who live on Gaia. I know I should not state things this starkly: Humans and Earthbound should be at war.

Béla Tarr's film, ***The Turin Horse***, offers what is probably the best (and also the most depressing!) definition of what it is to have shifted from humanity to Earthboundedness. In the final tempest of the last days of Earth, father and daughter decide to flee their miserable shack isolated in the middle of a desperately parched landscape. With a sigh of relief, the spectator sees them finally going away, expecting that they have at least a chance of escaping their diet of one potato a day. But then, through a reversal that is the most damning sign of our time, a reversal that I don't think any other film has dared show, instead of moving *forward* to another land, one of opportunity, full of great expectations, full of hopes (remember ***America America***), we see with horror that they come back, exhausted, despondent, bound to their shack, resuming their old even more miserable life until eventually darkness envelops them in its shroud. Those two are Earthbound. They have ceased to be Humans any longer.

To bring this lecture to a close, I want to give you if not a more cheerful, at least a more realistic picture of the various climates of Earthbound by dealing briefly with the last and third topic I had planned to develop, that of *geopolitics*.

Contrary to Earthbound, Humans are not to be completely trusted because you never know where they go, nor what is the principle that delineates the boundaries of their people. It is thus impossible to draw an accurate map of their geopolitical conflicts. Either they tell you that they belong to nowhere in particular, defined only by the fact that, thanks to their spiritual and moral quality, they have been able to free themselves from the harsh necessities of Nature; or they tell you that they fully belong to Nature and its realm of material necessity, but what they mean by materiality bears so little relation with the agencies they have previously de-animated, that the realm of necessity looks just as out-of-Earth as the realm of freedom. In both cases, they seem unable to belong to any cosmos. Because of this lack of localization, they seem to remain indifferent to the consequences of their actions, pushing everything forward, indifferent to where the feedback loops that could render them sensitive and responsible will end up falling. They pride themselves in being rational but they are wilfully not reflexive. Paradoxically, that's what they call being future-oriented.

Earthbound, on the other hand, are sensitive and responsible, not because they possess any supernatural qualities, but because they belong to a *territory* and because the *delineation* of their people is made explicit by the state of exception in which they accept being placed by those they do call enemies. Their territory does not to resemble the nicely coloured geographical maps of our classrooms. It is not made of nation states — the only actors that Schmitt was ready to consider — but of interlocking, conflicting, entangled, contradictory networks that no harmony, no system, no 'third party,' no overall Providence may unify in advance. The territory of an agent is the series of other agents that are necessary for it to survive on the long run, its *Umwelt*, its protective envelope. Of course, such a divide between inside and outside is highly fragile and variable since the series of agents on which any one of us depends and to which we belong, cannot be summed up without establishing instruments, captors, sensors, that are able to draw the loops that make any one of our actions feed back on its consequences. Any weakening of the captors, any limit in the bandwidth of the sensors, and, at once, the agent becomes less sensible, less responsive, less responsible, losing its territory, unable to define to what it belongs. Territories expand or shrink depending on the

controversies that are raging over what is or what is not an item of the series and what is or what it is not an accepted way of distributing agencies. That is what makes this geopolitical map so difficult to stabilize.

If Humans and Earthbound are at war, it might also be the case of 'their' warring scientists. The Human scientist — those who proudly say they are 'from Nature,' is an unhappy impossible figure, forced simultaneously to disappear as a body into his or her Knowledge, or to have a soul, a voice and a place, but then to run the risk of losing his or her authority. When attacked, they whirl endlessly from the Nature-centric view of a knowledge from nowhere to a laboratory-centric view that seems no longer able to reach closure and certainty. Their only solution is to damn the irrationality and the 'relativism' of their fellow Humans and to wait eagerly for the coming back of the days of yesterday when 'everyone' was, at least potentially, a member of their fold.

By contrast, Earthbound scientists are fully incarnated creatures. They are a people. They have enemies. Their knowledge extends as far as their ability to expand, to finance, to survey, to maintain the instruments that render visible the consequences of their actions. They have no qualms confessing the tragic existential drama in which they are engaged. They dare saying how afraid they are, and in their view such a fright increases rather than diminishes the quality of their science. They appear clearly as a new form of non-national power having a stake in geopolitical conflicts. If their territory knows no national boundary, it's not because they have access to the universal, but because they keep bringing in new agents to be part and parcel of the subsistence of other agents. Their authority is fully political since they represent agents that have no other voice and who intervene in the life of many others. They are allowed to have interests and to disclose them to the full. They don't hesitate to draw the shape of the world, the cosmos in which they prefer to live and with what sorts of other agencies they are ready to ally themselves. For them to have allies is not shameful. They no longer try to be the third party lording over all disputes. They are a party, and they sometimes win, sometimes lose. They are of this world. Freed from the damning obligation of being priests of the divinity they don't believe in. They might even proudly say 'we are from Gaia.' Not because they entrust themselves to the final

wisdom of a super entity, but because, at last, they have abandoned the dream of living under the shadow of any super entity. Secular. Fully secular. What for most people could be seen as a catastrophe —that the scientists are now fully engaged into geopolitics — is what I could see as the small, the tiny source of hope —if only hope was still what we need to cling to.

I have tried in the three last evenings to sketch for you the face of Gaia, to draw the consequences of what it means to live in the period called by geologists the Anthropocene and, finally, I have had reluctantly to explore the Time of the End. How I wish I could say that all of this is metaphorical; that when appealing to Nature we don't need to deal with questions of war and peace; that these are so many figures of speech.

I have been told that when, in 1498, Durer launched the costly process of engraving, printing and selling his magnificent series of views of the Apocalypse, he was simultaneously, as a devout Christian, preparing his soul for the coming of Christ in 1500, but also, as a shrewd artist qua investor, betting that he would make a great deal of profit in case he would live to see the dawn of 1501. What a relief it would be to find our selves prey to such an easy contradiction, hedging our bets. How much worse it would be if, this time, the End of the World as we have known it was for good and that the absurdity was not in believing it's coming, but in snuggly reassuring our selves that it's *not* coming.

The only thing I like in the damning arguments I had to present tonight, is the marvellous irony that what might be foreshadowed by Hölderlin's overly commented verse —'*Only a God can save us*' — is not the Last Coming of any Great God, but instead a return to the oldest, humblest, most primitive, shapeless and secular goddess of Gaia, thus bringing geostory full circle. If Humans are at war with It, what about those whom I have proposed to call Earthbound? Can they be artisans of peace?

Version 2013 not to be confused with Facing Gaia 2017