

Defending the Humanities: Metaphor, Nature and Science¹

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My concern here is the humanities in our time: why they matter, what is essential to how they work and its overlap with the natural world, and how to defend them when both are under unprecedented assault. But let me start with something like a joke. A man meets a friend in the street. The friend is obviously depressed. ‘You look terrible. What’s the matter?’ His friend replies that he is indeed feeling wretched, for two reasons. The first is that it looks the end of the road for humanity. ‘The ecological situation is getting worse all the time, climate change is out of control and governments are doing nothing,’ he says. ‘It’s over.’ ‘That’s ridiculous,’ replies the man. ‘The human race is very hardy. Nothing can stop it!’ ‘That’s the other reason,’ says the friend.

Contemporary human-caused ecocide is no joke, however, and it is the ultimate context for what I want to say. Climate change is far from the only issue; equally serious are biodiversity crash, the destruction of remaining wild habitat, ocean acidification, and pollution. The sixth mass extinction of life on Earth, this time caused solely by human beings, is now well underway.² This is what those who propose the term ‘Anthropocene’, presented as a realistic recognition of human power, fail to disavow and perhaps even tacitly celebrate. The meaning of the term is perfectly clear: the age of Man, including both anthropocentrism (human-centredness) and androcentrism (male-centredness), in which competing values go to the wall. And I cannot see that the situation will improve any time soon. It is easier to imagine the end of capitalism than voluntary collective self-restraint.

Another part of the context for this paper is a sense of humility. It is vanishingly unlikely that what intellectuals say – by which I mean anyone who appreciates, respects and works with ideas as such – will be heard or read, let alone acted upon, by CEOs, Presidents or other holders of hands-on power. This is true even of ‘public intellectuals’, who are almost extinct in the Anglophone world in any case. Hear John Ruskin’s poignant disclaimer: ‘Of wanton or ignorant ravages it is in vain to speak; my words will not reach those who commit them.’ And even if our words did prove so influential, the powers-that-be alone would be unable to institute a sane green order. If an Age of the Earth rather than the *anthropos* is ever truly initiated it will come from the bottom up, beginning with independent citizens’ initiatives. Policy can contribute some measure of protection and philosophy some degree of articulation (and maybe we can contribute there), but neither can replace that difficult and complex process. Often all we can do is resist, whether with hope or without it.³

Even with these two caveats in mind, however, there are things intellectuals can and should do, in the space between entrenched global power-elites and the many poor and disenfranchised struggling to survive, to nourish an informed and uncowed progressive citizenry. I want to argue that one of them is to defend the humanities. I don’t mean only the academic disciplines coming under that aegis but also the older, larger and looser traditions of enquiry and learning, outside as well as inside the academy, that extend in turn to humanity *en tout* and beyond. And one reason to do so – my second claim – is that of all the kinds of learning which are our province, the humanities hold the greatest green potential. Third is that the humanities are also, not

coincidentally, the most endangered kind of learning, and prominent among their enemies is much contemporary science (not only scientism, note). Finally, I will argue that the key concept in these contexts is the nature of metaphor.

As befits a living tradition which is itself ecological – complex, evolving, interdependent – what we now call the humanities is a hybrid of the *litterae humaniores* of late antiquity, Renaissance *studia humanitatis*, Wilhelm Dilthey's *Geisteswissenschaften* and Max Weber's *Kulturwissenschaft*, and modern liberal arts. Its contrast-class, always revealing, is the hard, physical or exact sciences and mathematics. One of its most fundamental ideas is that in studying sentient beings of any kind, as distinct from inert physical objects (or purely spiritual beings, for that matter), causal analysis and explanation of their behaviour, considered as objects, is insufficient and/or inappropriate. Rather what is required is empathic, imaginative and narrative understanding of their experience as subjects. Hence the proximity of the humanities to the arts, which both draw upon and intervene in personal experience, and to those parts of religion that depend on subjective apprehension and participation.

Why Defend the Humanities?

Why is it important to defend the humanities, imperilled in the manner of some fabulous beast whose natural habitat is steadily being eaten away, in this time of ecocide? One reason is the attention they are attracting from governments local, regional and national throughout the over-developed world, from the corporations and industries who are calling their fiscal tune, and from the latter's apologists in universities and the media. Such contempt and hostility, reflected in cuts in public funding and forced privatisation,⁴ is not arbitrary but targeted, and thus significant. And since the same institutions are also driving ecocide, it signals not only an elective affinity between their two targets, wild nature and the humanities but also a shared site for resistance.

The positive reason to defend the humanities is their particular ability, among all forms of learning, to encourage ecological awareness and ecocentric values. Consider the following points. As the name implies, the humanities are plural, loosely connected through a family resemblance constellated by the ideals of empathy, imagination and subjectivity. Given the relentless monism of the programme of modernity which it likes to describe as 'progress' – summed up in Margaret Thatcher's notorious mantra, 'There is no alternative' – that is already a big plus.⁵ Second, by the same token, the humanities are inherently relational. Given that relationality is the essence of ecology, we could therefore as well describe them as ecological.

Although in the humanities it is of course humans who are doing the relating, empathizing and imagining, there is no non-arbitrary restriction on who or what is related to, empathized with or imagined what it is like to be. In other words, the other party need not be human. As David Wiggins says, 'The human scale of values is by no means exclusively a scale of human values'.⁶ This aspect of the humanities thus has another affinity, reflected in a shared philological and philosophical source, with the meaning of 'humane'. As Montaigne (perhaps the greatest non-modern humanist, and certainly the most loveable) insists, you are not fully human unless you are humane, and the appropriate recipients of humane feelings and behaviour are not limited to other humans. We might also put it this way: it is just their potential as *ecohumanities* that protects the humanities from becoming simply all about 'us', thereby succumbing to the instrumentalist anthropocentrism that is driving both natural and cultural ecocide.

The potential for reaching out to, respecting and revering other forms of life on this planet is considerable. So too is the corresponding political value: neither unity – that is, complete identification in which all differences, such as those between human and other-than-human, between the sex-genders and so on, are obliterated – nor hyper-separation, an unbridgeable otherness with no evident common ground, but solidarity with other beings and kinds of beings.

I also find it tantalising, even moving, that ‘humanities’, along with ‘humanism’, ‘humane’ and ‘human’ itself, from the Latin *humanus*, come from the Indo-European word for earth, **dhghem*, which also gave us ‘humus’.⁷ The obvious implication needs no etymological essentialism, only ears to hear: in the company of so many others, we too are Earthlings.

These points are what saves the case I am making from being merely special pleading on behalf of a group of academic disciplines. It is that but not only that, for the humanities in this context are rooted in, and extend, what it means to be human. As David Abram says, ‘we are human only in contact, and conviviality, with what is not human.’⁸

A closely-related point is that personhood is not limited to humans.⁹ In important and inalienable ways, nature, the natural world and other-than-human beings, who are among the appropriate subjects of the humanities (both as others and as topics), are themselves subjective, agentic, sentient and wild. Those are their salient characteristics in relation to the humanities and, indeed, what make the ecohumanities possible. A relationship, properly so-called, can only take place between two subjects (I-Thou), not a subject and an object (I-It). As a rule, albeit a non-modern one, when an object usually considered just a thing comes to life in a relationship – in other words, behaves like a subject – it should be considered and treated as one. Behaving otherwise shows an insulting lack of respect; indeed, it is an act of the violence that is part-and-parcel of the modern imperium.

Furthermore, relationship as such rules out absolute control by either or any party, such as is possible when the other is an object. The upshot is that since a subject can act as an agent for and on its own behalf, real relationship entails an irreducible degree of wildness. At the same time, since your actions necessarily affect the other party(s) in the relationship, ethics are inherent and unavoidable. That is why the deep green philosopher Richard Sylvan maintains that ‘the ecological community forms the ethical community’.¹⁰

This also matters because in much scientific discourse a radically different sense of nature obtains, namely as inert and essentially inanimate, such that any apparent subject is merely ‘an incompletely realised object’.¹¹ This version of nature is therefore an appropriate object to analyse, explain causally, predict, control, manage, privatise, commodify, sell and exploit. No relationships in the full sense are involved, or required or even appropriate; nor, therefore, are ethics. This is the *modus operandi* of modernity – defined by Val Plumwood as ‘the rational mastery of nature’, including human nature¹² – that is destroying both living nature, including ours, and the humanities, the natural mode of studying and appreciating it. Which brings me to the question: what or who do the humanities need defending against, and why?

Against What or Whom?

Most obviously, against capital, whose ever-expanding claims throughout the overdeveloped world include managing and instrumentalizing education, directly and indirectly, and extending the dominance of STEM studies (science, technology, engineering and maths) at the direct expense of the humanities.¹³ But for two reasons, I shall concentrate on the sciences. First, a very significant portion of them is now functioning, and has been for some time, as one of three interlocking engines of the ecocidal Megamachine (to borrow Lewis Mumford’s useful term) of modernity. The other two are capital, to which it is ultimately subordinate, and the state, which it works alongside. Examples of such cooperation abound, including GMOs, fracking, the nuclear power industry and techniques for mass surveillance and control: funded by capital investment, developed by technoscience, and protected by the state. (Whether the public actually want these things doesn’t really enter the equation.) Reflecting the extent to which this kind of science has now become inseparable from the technologies it spawns and which drive it in turn, I shall call it ‘technoscience’.¹⁴

The second reason for concentrating on technoscience is that of the Megamachine's three components, it is the one charged with meeting the latter's intellectual and ideological needs. That positions technoscience as directly competitive with, and tendentially hostile to, the humanities.

It is now practically a truism that scientism— that is, the dogmatic assertion that science is a uniquely privileged method of inquiry into the truth – is deeply problematic but science itself is a perfectly valid and honourable method. This view is true as far as it goes. The original and ideally still valid meaning of 'science' is essentially a disinterested enquiry into the nature of reality. There is a close parallel here with the aboriginal meaning of philosophy: a love of wisdom. Of course, the latter is as rare and unpopular in modern academic departments of philosophy as is the corresponding meaning of science in research labs and science 'parks'. But this reflects more than the pressures of forging a career, competing for funding, getting published and so on. It is part of my argument that merely lamenting those pressures, or identifying scientism as a regrettable anomaly, don't go far enough. They fail to identify a systemic or structural tendency of science itself, one with potentially dire consequences. The point is not that all scientists are evil, of course. It is rather that as a result of that tendency, a great deal of contemporary scientific work, being in the service of capital and/or the state, is now destructive.

In its capacity as the motor of modernity that is explicitly concerned with the discovery and application of power-knowledge, technoscience is instrumental to ecocide. Whether directly or indirectly, through universities, its research is overwhelmingly financed by private capital investment and protected by the state for its fiscal share of the profits, for purposes directly related to a return on investment, notably military applications, energy (especially oil companies and nuclear power), pharmaceuticals, the food industry, and new ways to survey and control populations. Technoscience thus contributes directly to the economism, with its cancerous logic of unending growth, that is probably the biggest single direct cause of ecological destruction. When the economy frames all the important debates, money always wins. (This said, though, we should not neglect the relentless pressure, so rarely acknowledged, of explosive population growth.)

It is true that science which celebrates the wonders of the natural world and encourages its appreciation, as opposed to exploitation, still exists. Within the kind that now dominates, however, it is tolerated only as a motivation bringing young researchers into the fold and for purposes of media presentation, e.g. TV documentaries. Otherwise, it survives only as a kind of personal quasi-spiritual practice on the part of individuals and voluntary groups. The vanquishing of natural history in the field by molecular biology and computer modelling in the lab, now almost complete, is both an instance of this trend and a telling symbol.

I also realise that there are many honourable people with high ethical standards, motivated by ideals such as reducing suffering, who are working in scientific research, perhaps especially medical and therapeutic. Nor do I deny the many positive contributions to human welfare that have resulted. Unfortunately, however, that doesn't diminish the point that technoscience has been systemically corrupted by its service to capital and the state to an extent that now affects, even if it falls short of fully determining, all its outcomes. As only one example, consider the distorting effects on medical practice, both in research and in treatments, of the pharmaceutical industry.

Scientifically-informed technology (subtly but significantly different from technoscience) has much to contribute to solutions to some ecological problems, e.g. alternative technology, renewable energy, eco-forestry and so on. And what about the work of the International Panel on Climate Change, for example, in addressing climate change? It has indeed played an important role in increasing public awareness of climate change and even in generating a few positive governmental policies. Against that, however, must be placed the ranks of scientists in the

employment of those industries principally causing climate change, such as geologists and chemists working for oil companies, without whom the latter's work would be impossible. This is to say nothing of the corporate scientific publicists, popular science writers and environmental journalists who are engaged in boosterism. And I would add that those on the sharp end of climate change, living with disappearing ice, submerging islands and ever-increasingly violent storms, need no sophisticated instruments to know what is happening. They have also long had a pretty good idea of the underlying cause: rampant industrial interference in the Earth's natural processes, ingeniously recast as 'resources', 'natural capital' and 'ecosystem services'. (The last always reminds me of 'sexual services', another coyly self-interested euphemism.)¹⁵

The attack on science under the Bush and Trump administrations in America, as well as in Canada and Australia, including deliberately fostering uncertainty about climate change and ignoring, even subverting, science, is double-edged. It confirms the constructive potential of science in this context but also points to domination of science, along with the state, by capital. Equally, it shows that the sciences can resist the Megamachine, with whatever degree of success. That doesn't turn technoscience into a force for good, however. The quietly humming 'science parks', ever larger and more numerous data storage centres, and busy, well-funded research labs carry on regardless.

Given the gravity of this situation, we should be wary of any attempt to downplay the lived reality of technoscience, with its increasingly multiple and destructive impacts on embodied, sensual life on Earth, in favour of a romantic image of science as reaching out through chains of thought to 'the invisible world of beyond', supplying knowledge that is 'spiritual, miraculous, soul-fulfilling, and uplifting' (to quote a paean by one contemporary philosopher of science who should know better).¹⁶ Against this claim I make no apology for crude empiricism; sometimes it is just what is needed. Is this what we actually see in the world now?

Metaphysically, as William James (who rarely puts a foot wrong in these matters) observes, 'the stagnant felicity of the absolute's own perfection moves me as little as I move it'.¹⁷ And haven't we been here before, with the disembodied mind of Newton, in marmoreal tribute to the ideal of pure, disinterested, objective truth, 'forever/ Voyaging through strange seas of thought, alone'? Wordsworth's respectful approbation contrasts strikingly with William Blake's perception of a dire enemy: 'May God us keep/ From Single vision & Newton's sleep!' Blake was not only more uncompromising; he saw more clearly.

Considering technoscience, I see a mode that Teresa Brennan summarizes as 'sadodispassionate'.¹⁸ For example, from this perspective – which, I insist, is demanded by ecocide as a 'matter of concern', not to mention plain honesty in language and thought alike – the countless animals (rats, mice, rabbits, sheep, pigs, cats and dogs) who have suffered and died in labs are not the 'unsung heroes' of scientific research; they are its victims.¹⁹ When the German Green Party approved experiments on animals, Rudolf Bahro, one of its founders, rightly described accepting the infliction of deliberate suffering on other animals in order to extend human knowledge and save human lives as 'the basic principle by which human beings are exterminating plants, animals, and finally themselves'.²⁰ I am also reminded of a remark by Michel Foucault: 'Where religions once demanded the sacrifice of bodies, knowledge now calls for experimentation on ourselves, calls us to the sacrifice of the subject of knowledge.'²¹

I'm afraid the roots of this development are deep in science itself, something that gives the lie to the idea of scientism as merely an unfortunate aberration. The seventeenth-century English philosopher Henry More, writing in horrified admiration to Descartes, saw it coming: 'I recognize in you not only subtle keenness but also, as it were, the sharp and cruel blade which in one blow, so to speak, dared to despoil of life and sense practically the whole race of animals, metamorphosing them into marble statues and machines'.²² Could the contrast possibly be clearer with humanity as an animal who learns, through the humanities among other related ways, to be humane?

But I am more directly concerned with another contrast between the sciences and the humanities. Many have pointed it out. The poet Czeslaw Milosz, for example, muses that ‘we forget too easily the centuries-old mutual hostility between reason, science and science-inspired philosophy on the one hand and poetry on the other...’²³ Then there is Charles Darwin’s disturbing observation, in his ‘Recollections’:

‘Poetry of many kinds,’ he writes, ‘gave me great pleasure, & even as a school-boy I took intense delight in Shakespeare....But now for many years I cannot endure to read a line of poetry: I have tried lately to read Shakespeare, and found it so intolerably dull that it nauseated me. I have also almost lost any taste for pictures or music...My mind seems to have become a kind of machine for grinding general laws out of large collections of facts...’²⁴

I make this point not to register a metaphysical dualism but to confirm a difference, and to say that if and when circumstances force a choice, as I believe they now do, we too – in the humanities certainly, but no less in the social sciences, for the sake of whatever humanity they retain – must be on the side of the poets. How else can we expect to defend nature, including human nature, against its enemies, when these plainly include the ‘science and science-inspired philosophy’ that I am calling technoscience?

The Nature of Metaphor

What is the ‘structural problem’ with the sciences I mentioned earlier, which renders them potentially problematic in the context of ecocide but does not take in the humanities too? The key to understanding it is the differing relationships of the humanities and the sciences with metaphor. I have already stressed the importance of relationship in the humanities, and the ingrained tendency of the sciences to objectify or reify (turning a subject into a thing). The place to begin is therefore to realise that metaphor is fundamentally not a thing but a relation, one that connects, affects and indeed constitutes two or more entities. Its hallmark is the copula ‘is’.

Take a classical example: ‘Achilles is a lion’. (It should really be more like, ‘Oh! Achilles is a lion!’) This isn’t a simile, a kind of domesticated metaphor; it doesn’t mean ‘Achilles is like a lion is certain specifiable respects’. Rather, it both asserts and realises that Achilles, a human being, who is therefore not a lion, nonetheless, at the same time, is a lion. He is both a man *and* a lion. He is therefore also a man and *not* a man.

This is what the great theorist of metaphor, Paul Ricoeur, calls the ‘tensive truth’ of metaphor. It contains, without resolving, a tension between truths that are logically incompatible (‘Achilles can’t be both a man and a lion’). And it tells us something new and important about Achilles which being told that Achilles is a man, or even a man who resembles a lion, wouldn’t convey. The price of this tensive metaphorical truth, part discovery and part creation, is deep paradox.²⁵ Such ‘radical and serious paradox,’ as Philip Wheelwright says, ‘does not hang upon a removable confusion, but is demanded by the complexity and inherent ambiguity of what is being expressed.’²⁶

Now metaphor has an epistemic dimension; that is, it includes knowing something as something else. This knowing-as includes understanding-as, seeing-as, explaining-as and representing-as. By implication, we only know someone or something by apprehending them *as* someone or something else which, in the moment of making the connection, is both revealed as and becomes integral to them. That moment has the paradoxical quality of recognition (‘Ah, I know who you are!’) where the one who is recognised didn’t fully exist before that moment. But

Achilles as simply Achilles – no more, no less and no different – has, in James’s blunt metaphor, no cash value. We cannot get a purchase on him; indeed, he tends to become invisible.

Epistemic metaphor therefore includes, although it is far from limited to, a literary strategy – one which offers tremendous scope but is ultimately unavoidable as such. Even the eponymous anti-hero of *The Man Without Qualities* has, as the price of existing for us at all, the remarkable quality of being (almost) without qualities. Or take, for example, *The Odyssey*. It isn’t just about a journey; it *is* a journey, both as an ‘objective’ answer to the question, ‘What is it?’ – an unavoidably metaphorical answer, which the ‘is’ signifies – and as the more overtly personal answer that unfolds in the experience of reading it, which is another journey. The same is true of Joyce’s *Ulysses*, of course, even if compressed into twenty-four hours; of Proust’s endeavour to recover lost time, which culminates in his discovery of what he needed to know in order to write the book which you have just finished reading but which he is nevertheless about to begin writing; and of Tolkien’s epic quest not to find or recover something but to destroy it.

None of these stories are merely structured by the metaphor of a journey, like pure idea or content poured into a mould; they are analytically distinguishable but inseparable, in the actual practice of both writing and reading, from its metaphoric dimension. (There is a close parallel with the hallowed but pernicious idea that a soul or spirit exists ‘in’, but in its essence unaffected by, a body.) Furthermore, they can only grip and take root, as something beyond merely inconsequential entertainment, to the extent their readers understand their own lives as a journey, thus enabling a further intensifying twist of the metaphoric gyre.

More radically still, however – as these points imply – metaphor is ontic. That is, all effective being, discernible being with consequences (which is the only kind we can say anything meaningful about), is being-as; or in the spirit of Heraclitus, Wheelwright’s model, becoming-as. Everything only exists as someone or something else as well, or rather in the process of being/ becoming something else as well. The idea of anything being solely and wholly itself alone, is the uncashable cheque again. As we say in West London, self-identity is a constitutive impossibility. Or in Brook Ziporyn’s ultra-terse formulation, ‘Isness is asness is metaphoricity’.²⁷ (More on this in the following section.)

I earlier identified a ‘wildness’ about metaphoric relations, with a tremendous scope. Therein is an exhilarating, or frightening, freedom to change. The one thing we are not free to do, however – the price of that freedom – is to know, let alone be, absolutely non-metaphorically. An experience of existential disenchantment, for example, doesn’t count. It only signs up to the metaphor of life, or the world, as meaningless. That is still an ‘as’, and moreover one that depends on standing out against what it is not: an enchanted, that is, meaningful world. Nor does a mystical experience of something as intensely itself: Aldous Huxley’s experience of some flowers as ‘pure Being’, say.²⁸ These were obviously not simply the quotidian roses or carnations or irises one might see any day but not notice; they were intensely special and particular, and, only as such, striking.

Nature as Metaphor

The situation as I have described it is fully ecological. The natural world is nothing if not the sum of its ongoing relationships, including those between living nature and the abiotic elements on which they depend, together with the rest of the so-called environment both ‘internal’ (genes, proteins, cells, organs and so on) and ‘external’ (sun, earth, rain, plants, other animals and other humans), and those of life-forms with each other. All of these are constitutive. These relationships comprise us; in whatever particular combinations, we *are* them. And we can add transformation in time, by which beings remain ‘the same’ while becoming ‘different’. So every being in the great republic of life both is and is not itself. To put it another way, we and all living

beings are embodied and ecological metaphors. And although metaphor is a relation, not a thing, it is not an idealist or spiritualist add-on. Life is metaphor all the way ‘down’ and material all the way ‘up’.²⁹ (This can be very difficult to grasp; practically all our intellectual training goes against it.)

The affinity between metaphor and nature has another pertinent implication which I touched on a moment ago. Ricoeur shows the impossibility of trying to domesticate, let alone eliminate, the metaphorical ‘is’. Simply put, since we can only say what reality is to us at any given moment,

There is no non-metaphorical standpoint...The theory of metaphor returns in a circular manner to the metaphor of theory... If this is so, then there can be no principle for delimiting metaphor, no definition in which the defining does not contain the defined; metaphoricity is absolutely uncontrollable.³⁰

In other words, metaphor is wild, in the same way that the more-than-human natural world – including human nature – is wild. We cannot finally stand outside and control it when we are necessarily not only in but of it. This common ground is what Gregory Bateson was pointing to when he avowed ‘the necessary unity of mind and nature’ and insisted on the validity, for both mind and life, of Charles Peirce’s principle of abduction, a specific kind of metaphor. To borrow Bateson’s favourite example, what he calls ‘the syllogism by grass’: ‘Grass dies. Men die. Men are grass’.³¹ As he knew perfectly well, this is a deductive logical fallacy (‘affirming the consequent’), but that is an important part of its very point.

The poet Wallace Stevens arrived at the same conclusion. Nature’s prodigy, he writes, ‘is not identity but resemblance’ – in other words, not a grand unity but relationships, bridging without erasing differences – and ‘Because this is so in nature, it is so in metaphor’. It also follows, as he points out, that ‘The body is the great poem’ (although it surely makes the Earth a greater poem still).³²

Metaphor is thus fully relational and dialogical. When it occurs, the agency of the other party is obvious, and as is the case in any true relationship, he, she or it is also engaging with and affecting you. By the same token it is plural, because it is ongoing and open-ended. There is and can be no one, single, final, all-encompassing metaphoric entity or event. Not even God, or Gaia. In both contexts, religious or spiritual and ecological, metaphoricity in all these respects argues instead for animism. Animism is a relational and plural practice, mode and way of life; it is not primarily a theory of knowledge, nor does it depend upon a foundational being, beings or Being. I would define it as a disciplined habit of remaining open to subjectivity or agency, wherever and whenever it manifests and regardless of whether or not the other party is technically animate or sentient.³³

Animism is thus twinned with metaphor, whereby a mutually discovered commonality bridges, without erasing, differences and boundaries. This process gives rise to the cardinal political virtue I have already mentioned, solidarity. Why cardinal? Because solidarity with other beings and other kinds of being is at the heart of a green virtue ethics, which is in turn a *sine qua non* for resisting and reversing ecocide.³⁴

Like metaphor, animism is both, and equally, embodied (‘material’) and perspectival (‘mental’ or ‘spiritual’). It thus refuses, or simply fails to recognise as foundational, the split between them that has bedevilled Western metaphysics since Plato, through St Paul and thence Descartes and beyond into modernity. A distinction is still possible, but only in the manner of differing qualities, emphases, or registers of experience. Nor does animism require you to surrender a difference between animate and inanimate, only the theoretical belief that you already know, a priori, what can and cannot be a subject or agent. Note that I don’t say ‘*apparent* agency’ and bring in ‘projection’, ‘anthropomorphism’ or other modernist shibboleths.

Epistemological law enforcement is not our job, nor is there any duty to engage in the laboured epicycles of self-policing ('Oh, I *thought* that mountain/ stone/ tree/ bird was telling me something but *actually* my [my?] unconscious [whatever that is] was *projecting* something onto it, which then...'). *Cui bono?* Who actually benefits from such exercises in disenchantment?

As Bateson recognised (and later Bruno Latour, among others), intelligence is a property of relative wholes or networks rather than their parts – in his systems terminology, 'circuits' rather than 'arcs' – which means it can show up anywhere and is integrally plural.³⁵ And it requires actual encounters, which can neither be predicted nor ruled out, to become real in lived life.

Let me come back to Gaia for a moment. I am not suggesting this concept doesn't have positive potential. Nor should we overlook the problem, however, that its singularity – the very thing that tempts us as a great green unifier – invites that imperium which, whether gross or subtle, attends every monism: 'the effort,' as Barbara Herrnstein Smith says, 'to identify the presumptively universally compelling Truth and Way, and to compel it universally.'³⁶ In the case of Gaia the question is, as Latour asks, 'How to make sure Gaia is not a God?'³⁷ We are already familiar with this mode in the long lineage, beginning with monotheism, that has culminated in modern ecocide. This is reason enough to doubt that a Gaian ecotheology (or even ecotheology, though that would be preferable) is desirable. But secularizing Gaia would be a cure as bad as, or worse, than the disease. There can be no doubt that it would act as the ideological accompaniment to a disastrous programme of geo-engineering, the apotheosis of anthropocentric hubris, to 'tame' and 'manage' the Earth.

The solution to this riddle is realize that spiritual supernaturalism and atheistic mechanism are equally flawed. The latter fails to recognise the sacred as integral to human life, while 'God', in trying to delimit and control it, at best fails to exhaust it. There is nothing supernatural – above or beyond nature – about the emplaced, embodied and relational spirituality at the heart of animism.³⁸ The problem is with Gaia as God, not as *a* god with lower-case 'g'. The difference is crucial. We urgently need to retain and/or reanimate an ability to respect the lives of others, our fellow Earthlings, but also an awareness of the Earth the home and source of all our lives – and as such, sacred. What could be more so? And the sacred, practically by definition, is ultimate, insusceptible of being further grounded, justified or rationalised. It is valuable for its own sake, not for its use-value. It is precisely what is, and must be fought for, as 'not for sale'.

In this context, the fact that 'Gaia' is the name of a divinity, specifically a chthonic divinity, and furthermore a goddess, is no accident. The symbolism of the maternal female as the origin of life, including both males and females, could hardly be more to the point.³⁹ But have we now returned, circuitously, to a monism? Almost, but crucially, not quite. Gaia, not as God but as a goddess, may be first among equals, but she is not alone. We are surrounded by countless instances, differentiated avatars of her chthonic life.

Furthermore, plural and local gods, cults and rituals were never an obstacle to cosmopolitan translation between one set and another. On the contrary, as Jan Assmann makes clear, localism is a prerequisite to cosmopolitan or cosmotheist translation. It was monotheistic universalism, sufficiently entrenched, which put a stop to that.⁴⁰ And why, as William James asks plaintively, 'should we envelope our many with the 'one' that brings so much poison in its train?'⁴¹

Significantly, pluralism is Milan Kundera's principal line of defense of imaginative literature in *The Art of the Novel*. It is also a fundamental value in the work of other defenders of the humanities, notably William James, Max Weber, Wittgenstein and Isaiah Berlin, and more recently Barbara Herrnstein Smith. One of its most succinct formulations is that of Paul Feyerabend, perhaps still our sharpest and soundest critic of scientism: 'The objection that [a] scenario is "real," and that we must adapt to it no matter what, has no weight. There are many ways of thinking and living'.⁴² Why is this principle metaphoric? Because each way entails its own truth, but that truth is dependent on and constituted by other, potentially contradictory truths. There is no way whatsoever to step outside these truths and compare them all, without

contradictions, paradoxes or ambiguity, against a single non-metaphorical meta-principle or truth. (Hence what Kundera called ‘the unbearable lightness of being’.)

Metaphor is the life-blood of the humanities. There can be no empathic, imaginative or narrative understanding without it, and without the tensive truth of being who you are as the reader, viewer, listener or whatever whilst also becoming the other, effectively an animate subject whatever its technical status, whom you are seeing, hearing, reading about or otherwise relating to.

Metaphor and Science

Contrast this perspective with what Weber identified as the ‘fate of our times’ and the hallmark of modern disenchantment, of which science is the most important recent part: ‘increasing intellectualisation and rationalisation’ based on ‘the knowledge or belief...that one can, in principle, master all things by calculation’.⁴³ That in turn requires a single, monological truth or principle, on pain of agonistic incommensurability; multiple, different and potentially incompatible truths, or ones that hold good in some cases, times or places but not in others, are deeply troubling to ‘Single vision & Newton’s sleep’. As with so much of secular modernity, God used to take care of this. The need, and the job, haven’t changed much.

Both the humanities and the sciences are, of course, fully human. Both are also plural, with the particular fields in each involving their own methods and assumptions. Indeed, I believe both depend equally on abductive metaphor. But there is this crucial difference between them: the humanities openly engage in and depend upon metaphor for their insights and knowledge, and that is what unifies them. The sciences, in contrast, although no less dependent upon metaphor, both for discovery, development and communication, are unified by their wariness of and often hostility to it. That entails its part-suppression and part-translation into something else in the process of communicating and elaborating their insights and knowledge. Oversimplifying, we might say that the sciences turn metaphors into facts, whereas the humanities do the opposite.

Of course, the humanities also use, even depend upon, facts and logic. But in such contexts, facts are treated as metaphors and used for their metaphoric meanings. That is their cash value, we might say; or indeed, only value, since uninterpreted facts alone would not even make an adequate historical account. By the same token, logic is used to bring out the implications of metaphoric persons and situations, allowing them to develop. Deductive logic can only produce whatever is already implicit in a set of premises – something the humanities put to work. If something happens that is surprising, we immediately try to work out how it was possible given those premises; if we can’t, we usually conclude that it was random, therefore meaningless and, as such, bad art.

Their complex relationship with metaphor does not mean the sciences have no positive role to play in averting ecocide, for example – as witness the importance of ecology, conservation biology, environmental science and climate science in exposing and delineating its anthropogenic causes, with critical implications for industrialism, consumerism, etc. Indeed, only the sciences can convey originally metaphoric truths in the form of facts, which can then be assimilated by the Megamachine with potentially positive and even subversive effects. So although they are not my focus here, I don’t want to belittle the importance of facts. And if the Megamachine attempts to ignore, belittle and/or suppress them when they are inconvenient, then because they register they can at least resist, gritting up the system’s smooth operation. This is something that the openly metaphoric humanities, arts and religions cannot do. So far as I know, no poem or painting or musical composition, no matter how great, ever stopped a war, for example. The Buddha couldn’t stop the slaughter of his own people, the Shakyas, and as for Jesus, need I say more?⁴⁴

In other words, the sciences and the humanities do not speak the same language, hence their ‘mutual hostility’. As any full account of the history of modern sciences shows, the suspicion of metaphor has present since their formation, and it renders them highly vulnerable to becoming technoscience. The vulnerability is partly ‘push’: an inherited affinity with the mode of monism, originally entwined with monotheism, which finds ultimate value precisely in supposedly non-metaphoric singularity, universality and self-identity. And it is partly ‘pull’: a readiness to meet the need of the Megamachine for ‘hard’, ‘natural’, ‘objective’ data. (I put those in scare-quotes because they are no more free of untested – indeed, untestable – assumptions, unexamined values and unconscious political biases than any poem, say; indeed, probably less so.)

To the extent they satisfy that need, the sciences become technoscience, and thereby potentially sadodispassionate, that is, inhumane. And all the ‘hybrids’ of ‘vibrant matter’ you can imagine and their supposed enchantments, hymned by theorists in the humanities anxious not to appear anti-science or anti-modern, cannot hide the fact that in both formation and continuing self-constitution, technoscience is fundamentally both anti-ecological and anti-metaphorical. Metaphor is present, of course; but it is inadmissible, with all that follows.

I have said that metaphoric connections partly reveal and partly create realities. Lawrence Kushner succinctly summarizes the difference between metaphoric truths and factual truths. ‘A fact,’ he wrote, ‘is always the same. Once you have it you have it forever. But truth is different. Once you understand it, you are forever changed and “the truth” disappears. And because you are now someone else, you must learn it all over again.’⁴⁵ The difference registered here survives all due qualifications. Facts are meaningless without interpretation, a process which opens the door to metaphor; in ‘this means that’, the ‘means’ is another version of the copula ‘is’. And conversely, whatever their differences, one’s selves are not utterly disconnected, any more than is oneself as a relative whole and other selves. Nonetheless, metaphor makes a personal difference – in the case of ‘truth’, openly, and in that of ‘fact’, tacitly.

Let’s turn to some examples. Stephen Jay Gould’s objection to Gaia Theory was that there is no ‘mechanism’ for it. Clearly, even for an intelligent and well-informed scientific thinker like Gould, metaphor is something that exists in opposition to mechanism: a depressing thought, because it isn’t so hard to grasp – absent training to obscure it – that mechanism is itself metaphorical. The assertion that the Earth, the world, the body, the brain or the self is a machine is precisely, not to say obviously, a metaphor.

This is an example of its inescapability I discussed earlier. As Ricoeur points out, the only way to criticise or correct a metaphor is by trying to replace it with a better one. And since the total absence of metaphor is not an option, once this is admitted the discussion can then move on to where it belongs: whether the metaphor in question is a good one, a fruitful one, a constructive one and so on, in terms of what those adjectives mean that themselves cannot escape debate. (‘The selfish gene’ is a pretty unbeatable example of a terrible metaphor by any further defensible criteria. It always was.)⁴⁶

E.O. Wilson avers that ‘the brain is a machine assembled not to understand itself, but to survive.’⁴⁷ Now from a humanities point of view, both are certainly possible. But Wilson is forced, by the formation of his own discipline, into the absurd position that either he is wrong or, if right, then he is wasting his time in trying to understand the topic he is writing about, and ours in reading the result. (The same crippling circularity applies to the risible concept of ‘memes’.) Equally, according to Wilson’s cuddly-sounding ‘biophilia hypothesis’ we value other life-forms because we are ‘hard-wired’ by evolution to do so: a metaphor that not only accords primacy to so-called wiring but instantly downplays the possibility that we value them because as a matter

of fact, they *are* valuable. And isn't that precisely the possibility and perception that in a time of ecocide we most need?

William Hamilton's pseudo-mathematical cost-benefit analysis of altruism, hailed by the sadodispassionately rational heroes of science, it takes what is experienced as love, courage and benevolence and magics them into an unconscious calculation of genetic advantage. It also positions the scientist as one who 'knows', apparently apart from the rest of the human race, who merely 'believe', wrongly, that they are being altruistic. The logic of imperialism remains epistemologically – and in this case, scientifically – impeccable.

The potential of the humanities for an ecological and ecocentric apprehension of nature as living, wild subject is thus inversely mirrored by technoscience's drive to turn it into something inanimate, bounded and inert, to be managed externally by World System Governance or some such apparatus. Ecologically, this development that is already underway under the Orwellian name of 'the new conservation', whose advocates propose to extend scientific management on behalf of private capital to the last remaining places of relatively wild nature.⁴⁸ (A programme for the hyper-control, itself out of control, that is already driving ecocide? Give me more of that!)

Technoscience also depends on pretending that one can observe phenomena from the outside without affecting or being affected by them in any relevant ways, thanks to 'controls' (as if these were somehow exempt). This may work with 'matter' (depending on how it is defined) but where its object are clearly other subjects, human or non-human, its limitations become disabling. Ultimately it is again the inverse of the truth that the humanities acknowledge and try to accommodate: that truth is not something that survives being put in a proposition. It can only be lived – 'proved upon our pulses', as John Keats puts it. It is ultimately ontological, not epistemological, and exceeds and contains us, not the reverse. Truth worthy of the name, as Max Weber asserts, is 'only that which *wants* to be true for all those who *want* the truth.'⁴⁹

Progress as defined by the sciences, and *a fortiori* technoscience, depends in significant part on eliminating overt metaphor and replacing its tensive and ambiguous 'both-and' with an apparently clear-cut 'either-or'. The choice of which alternative is accepted and which rejected then follows from the application of a method to determine truth that has been predetermined by a far-from-scientific process called methodology, whose importance is reflected by its effective status as, to borrow Mary Midgely's brilliant coinage, methodolatry. (More magic: apply the right method and you will necessarily obtain the right result, one which only a replication resulting from applying it again can confirm.) Method here, no matter how algorithmic, still requires a human operator – a persistent cause of scientific regret – and even ideally is only asymptotically reliable, but these limitations hardly touch its revered status.

In the humanities, when they are healthy, methods abound but their undisguised prerequisite is a particular personal, intellectual, axiological (value) and ethical stance or intention. But this is one reason why the sciences and their backers feel entitled to look down on the humanities, confusing, and not always by honest error, 'subjective' with 'arbitrary'.

The social sciences occupy debatable territory. They share some subject-matter with the humanities but are prey to physics envy, and the inroads of methodolatry and its bureaucratic trappings testify to the suzerainty of the hard sciences, paying tribute in the coin of inappropriate quantification, often badly-written abstract and passive language, and an embarrassing eagerness to sign up to the latest scientific fashions, notably neurophysiology and evolutionary psychology, mesmerised by their promises of explanation, prediction and control, and therefore generous funding. (Perhaps it is fitting that so much energy in the social sciences is now absorbed, after helping administer a technoscientific society, in mopping up therapeutically the pathological symptoms that result.)

Every time a social science is practised creatively – which is to say, effectively – it is, in effect, an art, not a science in the sense the scientists mean it. When the founders of Neuro-

Linguistic Programming claimed to have systematised the work of the great hypnotherapist Milton Erikson, having exhaustively analysed videotapes of his sessions with clients, he commented that ‘They have me down to a nutshell. Trouble is, they left out the nut and just took the shell.’ (Significantly, when Bateson wanted to praise Erikson’s skill, he called him ‘the Mozart of communication’.)

One result of this situation is that the scientist who wants to do good or, at least, to not do harm, must work against the grain of the sadodispassionate objectification inherent in the very ‘scientific method’ (singular and sacrosanct, as it is commonly thought of) that is integral to her trade, resisting the impulse to turn everything into an object without any awareness of the limits of that credo, or of the reality of subjectivity that is so obvious in her daily non-professional life, and do so moreover in an institutional context which punishes it and rewards the opposite. Certainly that is still possible, but it’s also a big ask.

Is another kind of science – humane, consciously metaphoric, oriented to intrinsic rather than instrumental value – possible?⁵⁰ Maybe, but how likely is it? When you consider the amount invested, literally and figuratively, in science as power-knowledge, together with its historical record, the answer must be, very unlikely. There seems to be rather a lot of wishful thinking in this regard. The anthropologist David Turnbull, for example, says blithely that indigenous and scientific ways of knowing can work together while respecting their differences as long as science is ‘re-imagined...as performative and local.’⁵¹ We may indeed re-imagine science that way, and it may even finally *be* that way, but neither point is going to shift the way the great majority of scientists see and conduct themselves: precisely as aspiring, whether humbly or ambitiously, to universal truth, in ways to which local knowledge and ‘performance’ are considered irrelevant.

It goes without saying, I hope, that there are scientists of the minority stripe who survive professionally. But I’m quite sure that institutionally, most lesser-known scientists who insist on giving room to openly metaphoric truth in their work simply aren’t hired or published, while middle-ranking ones are ejected from the club as people doing Something Else, viz. Bateson’s version of systems theory, the physicist David Bohm and his ‘implicate order’, Stuart Kauffman and complexity theory, Mae-Wan Ho’s genetics and Francisco Varela’s autopoiesis.⁵² I’m afraid that the same fate awaits the currently most promising attempt to humanise physical science, namely biosemiotics – even though (or if I am right, just because) natural metaphor is the essential insight that biosemiotics develops.⁵³ It would be nice to be wrong.

Truly eminent scientists such as Einstein, dealing in wisdom, *horribile dictum*, are tolerated in the manner of ex-Presidents or ex-Secretaries of Defence musing on the contingencies of power, including their own mistakes, in a way that would be completely unacceptable for active players.⁵⁴ Even potentially subversive theories which have proved impossible to avoid, such as quantum physics and dissipative structures, have failed, thanks to institutional, theoretical and experimental damage-limitation, to alter the dominant research paradigms and directions of technoscience. Their active development is largely restricted to what can be appropriated to generate devices suitable for mechanical application and a return on investment, e.g. quantum computing. The same promise underlies every appeal for funding for still bigger linear particle accelerators to find the ‘God particle’, advance our knowledge of ‘the mind of God’ and all the other leaden clichés of technoscientific cheerleaders.

Science vs. Metaphor (Life)

But why should the sciences have this formative hostility towards metaphor? The answer lies in the structural tendency I mentioned earlier which upholds a perspective that denies it is a perspective, a metaphor that is used to kill metaphor, and a myth that asserts it is mythless. It

survived the seventeenth-century Scientific Revolution and all subsequent ones unscathed – indeed, strengthened – including quantum physics. Assmann calls it the Parmenidean Distinction: a radical distinction between a perfect, unchanging, unmoving world of Truth, a serenely spiritual, disembodied, coolly masculine ‘invisible world’ beyond this one and a sensuous, fecund, material world of generation, growth and decay and multiple particulars, identified as female, in which we live – in short, the Earth – accompanied by the methodological imperative to ceaselessly enquire: is this item, whatever it may be, true or false?⁵⁵ In other words, does it partake of the former world or the latter? And in exhaustively equating divine truth (*logos*) with what is and falsehood, error and delusion (*mythos, demos, doxa, panta rhei*) with what is not, the first world becomes the only real one.

As developed by Platonism, this toxic idea, rightly termed by Val Plumwood a ‘philosophy of death’, is still circulating in the Western metaphysical imaginary, not least that of the sciences. This (let’s give it a name) philothanatology is not only anthropocentric but deeply anti-ecological, and not only androcentric but misogynist, rendering the maternal feminine, the symbolic source of life itself, not only valueless but invisible – indeed, in the final throw, non-existent. What bolder stroke could there be? For make no mistake: ecocide is inseparable from the symbolic matricide inscribed from the start in Western philosophy, and in the scientific reason to which it gave rise.⁵⁶

To recount the trajectory with necessary brevity, Plato incorporated Parmenides’s idea (along with Pythagorean mathematics) into the centrepiece of his philosophy, although he softened the blow by allowing the sensuous world of ‘appearances’ a limited and derivative reality. Plato’s student Aristotle made various adjustments in turn, only one of which concerns us here, namely his logical truths, which later became universal and singular ‘principles of reason’, and three in particular:

1. The principle of identity: P is P.
2. The principle of non-contradiction: not at the same time P and not-P.
3. The principle of the excluded middle: either P or not-P.

Note that that these are actually three aspects of one primary truth, namely that of identity, which expresses Parmenides’s assertion: the self-identity of what is and contrariwise, the non-existence of whatever is not wholly and exhaustively identical with itself. Only the former qualifies as truth, while whatever changes, moves or varies according to time or location, or depends for its identity on what it is not, whether other beings or circumstances – in short, whatever is metaphorical and ecological – is not only false but non-existent.⁵⁷

I shall borrow for a moment Michel Serres’s authority: ‘Aristotle posits the identity principle as the founding necessity of science’.⁵⁸ P is P: so simple, even innocuous, isn’t it? It practically shrugs off any serious consideration. Yet this was the fulcrum for an enduring empire, and all without any need for self- or other-understanding of the kind suggested, and permitted, by ‘P both is and is not P.’ Indeed, such understanding is strongly discouraged. After all, what use is it to mastering, let alone producing or consuming? And anything without a *use* is doubly unwelcome. Celebrated instead is what Theodor Adorno calls ‘the violence of identity’.⁵⁹

Here, then, is the formative dimension of the sciences which has permitted, and arguably even encouraged, their transformation into modern technoscience whose ecocidal role is what concerns me here and should concern us all. Mind you, as Serres reminds us, ‘Behold science, fully developed now, mature, powerful, revelling in its triumphs, celebrated above all else; do you imagine it cares what it looks like, at this stage?’⁶⁰ No, but resistance is still possible.

The Parmenidean Distinction took new forms in Descartes’s dream of a *mathesis universalis*, Galileo’s discarding of sensual, qualitative experience in favour of abstract quantitative formulae

and Newton's mathematico-experimental physics. It remains at work in contemporary biology today, in its drive to ever greater abstraction and quantification.

None of this should surprise anyone acquainted with the history of science. In *Cosmopolis*, for example, Stephen Toulmin shows the extent to which the Scientific Revolution was an attempt to overcome agonism and uncertainty, especially religious, leading to a dogmatic *counter-revolution* against the sceptical, humane and life-affirming humanism of the sixteenth century.⁶¹ Contrariwise, Montaigne, one exemplar of that school, advocated tolerance, abhorred cruelty as the worst vice, respected women (certainly relative to his milieu), defended animals and abhorred European colonialism in the New World. (Descartes's subsequent sleight-of-hand redefinition of scepticism as dogmatic and non-reflexive is still with us, not least in the posturing of the New Atheists.)

The contrast with classical and humane studies could hardly be clearer. In them, the questions don't finally revolve around a method, let alone single method, for isolating the truth, let alone Truth, but a good way to live, or rather ways, and the varying truths each embodies. So the emphasis is on knowing as part of living well, valuing properly, and acting ethically. But all this leaves the humanities as marginal to mastery, the project of modernity.

Oposing the ecocidal values and logic of that project thus requires us to support the humanities – or, more judiciously, the best of the humanities – as a vital part, in John Cowper Powys's words, of 'the cause of the unseen against the seen, of the weak against the strong, of that which is not, yet is, against that which is, and yet is not.'⁶² Yet there is a paradox at work which must also be noted: the humanities cannot fully do their good work unless they are valued for their *own* sake. If they are valued only, even mostly, for their effectiveness in promoting ecological virtue, then one has already slipped into the mode of technoscience *par excellence*: use-value and instrumental reason. And it is that mode, strapped to our necessarily short-term, ignorant and selfish desires, that has become the ruling ideology of our ongoing global ruin.

Questions and Cautions

In calling for a choice between two starkly-posed alternatives, the humanities and the sciences, am I guilty of inconsistency with my advocacy of 'both-and' over 'either-or'? Maybe, but I am at least innocent of the one-size-fits-all dogmatism that characterises triumphalist scientism. And 'Always to be on the side of ever greater pluralism is not to recognize that, even to the question of pluralism, there is more than one side'.⁶³

Am I guilty of naïve antimodernism, something that is apparently to be pitied when we have never been entirely modern? Again, maybe; but if modernity is ecocidal (which for me is not in dispute) – if, to quote Kundera again, 'To be absolutely modern means to be the ally of one's gravediggers' – then we must perforce be antimodern in the best way we can.⁶⁴

Am I guilty of trying to 'turn back the clock'?⁶⁵ Say it softly, but there is no such clock, for three reasons: one, the profoundly problematic teleology of monotheistic eschatology, with History going Somewhere, even when in a secular key; two, the *non*-modern moments of enchantment that happen every day, everywhere, completely ignoring the official linear trajectory;⁶⁶ and third, the inadequacy of a modernist hermeneutics of suspicion that knows all about clocks and time but nothing about such moments, which only offer themselves to a 'second naïveté'.⁶⁷

There are certainly historical conjunctures which have their own metaphorical equivalent of momentum, but in their contingency they are nothing like what the mechanically deterministic metaphor of a clock implies. As Brennan remarks, in the course of a passionate and intelligent prescription to return to local and nonspecialized economies, 'To say that we need to "go back, slow down" will be portrayed as anti-progress. But progress lies in straining the human

imagination to its limits in cleaning up the mess – while retaining the information that mess has yielded'.⁶⁸ *Imagination*, note, not merely more knowledge. And I hope it is clear that this advice is not an argument against modern plumbing, hygiene, anaesthetics, antibiotics, dentistry or surgery. Such obviously good things do not constitute a valid reason to simply accept Big Energy, Big Pharma, Big Data or any of the other hyper-industrial interventions in our and other beings' lives. To what extent it all constitutes an unpickable package remains to be seen, but that is at least partly up to us.

I also don't deny insights from both the physical and social sciences with significant human implications. I only say they shouldn't obscure the contemporary hyper-valuation of science attended by what Feyerabend rightly calls 'disasters in the social domain and...empty formalism combined with never-to-be-fulfilled promises in the natural sciences'.⁶⁹

Such insights are only discovered/ invented, conveyed, and brought to lived fulfilment through metaphor.⁷⁰ For scientists practice metaphor too, of course, and not only as human beings. They haven't much choice in the matter. But they are under great pressure to practise it badly, for the Parmenidean Distinction enshrined in Aristotle's logic acts as a constant imperative to deny and suppress metaphor and its ontological truths, especially when attended by deep paradox. Hence scientists, as scientists, ordinarily tend to engage in metaphor in disguised, inadmissible and unconscious ways. Ironically for professed rationalists, that only makes it harder to evaluate and criticise. The questions which matter – not whether metaphor is present or not but whether the ones in hand are apt, fruitful, enlightening and so on – become that much harder to ask and to answer.

E.O.Wilson's 'consilience', attempting to 'reconcile' the two by absorbing the humanities into the sciences, is thus positioned precisely the wrong way round.⁷¹ The hard sciences are actually a weird, counter-form of the humanities, energised by the same 'antagonistic energy' as the antecedent monotheistic counter-religions which were reacting to the primary, archaic and local religions that remain, like metaphor and animism, the human benchmark.⁷²

The Humanities Beset

Practitioners of the humanities in recent decades have often, wittingly or not, collaborated with their enemies. Afflicted by what Owen Barfield nicely terms 'residues of unresolved positivism', they have fetishised method and methodology, and in so doing not only imitated the sciences but allowed the entire argument to take place on ground owned by science and science-inspired philosophy, namely epistemology.⁷³ (Structuralism is an obvious example but even post-structuralism was sucked into this tendency – as if deconstruction could ever be a method!) Learned idiocies such as asserting the equal value of Shakespeare and a telephone directory were, of course, seized on by the powers-that-be to justify parsimonious philistinism, while research in the humanities has been deliberately pursued and presented in unforgivably scholastic language, arcane when it is not downright obfuscatory.

To a dispiriting extent, the humanities in the academy have thus already sold the pass. With embarrassing eagerness and naïveté, philosophy and literary studies in particular have opened up to brain science, evolutionary biology and cognitive psychology, abandoning their own traditions and practices of independent informed critical judgement by conferring the right upon the hard sciences to 'verify', 'confirm' and even produce the truth. And the results, predictably banal, even fail to nourish the humanities in whose name they speak. 'Literary studies may employ cognitive psychology in its attempt to better understand literary texts, but if it is driven by a psychological question (say, what is the effect of reading on moral sympathy?), then what is being done is psychology, not literary studies (and probably *bad* psychology, since it is carried out by people trained to read novels, not data sets).'⁷⁴

Indeed, such claims to scientific status are commonly downright dishonest. What is involved is a tacit reductionism that converts the kind of questions that the humanities developed in order to be able to ask and, to some extent, at least, answer – questions of quality, personal experience and ‘inwardness’ – into the kind of questions the hard sciences can process, ones of quantity, magnitude, and empirically observable and measurable data. The original questions are then treated as if they had been answered.⁷⁵

Given as well the aggressive scientism of their public professoriate, the sciences have thus come to occupy (without any sense of the irony) the enviable position of medieval theology: queen of the sciences and final arbiter of all knowledge. In that spirit, God save us from the neurohumanities! Yet where is the warrant for this authority that does not already assume, in a circular and question-begging way, science’s ultimate value? As Feyerabend succinctly put it, ‘the choice of science over other forms of life is not a scientific choice.’⁷⁶

To be sure, the image of the humanities I am invoking is an ideal one that is only sometimes realised in practice. Here and there, however, it is still so realised. Some excellent practitioners remain in the academy as well as outside, on its margins and elsewhere. But as the technoscientific and scientistic stranglehold on universities increases, practitioners of the humanities are also starting to return to new forms of their old homes, independent publications. Nor is the independent scholar altogether extinct, as I can attest. In our over-professionalised time even ‘amateur’, a modern term of contempt, might begin to reclaim its original meaning: one who loves the subject. (Who but consummate professionals have given us the Iraq War, Fukushima, the banking crisis and carbon markets?) But over and above all this, the potential of the humanities to develop into genuine ecohumanities endures, and that is something that no amount of betrayal can destroy.⁷⁷

Something else that I feel holds great promise would be to place, as Seamus Heaney says, our ‘love and trust in the good of the indigenous’, humbly learning as much as possible from the equivalent of our humanities as practised by indigenous cultures: the kinds of ‘Amerindian philosophy’ that Eduardo Viveiros de Castro, among others, has opened up to us.⁷⁸ I am not advocating indiscriminately adopting indigenous perspectives, nor am I suggesting that they cannot be tested to destruction; plainly they can. Nonetheless, they are ecological – attuned to local and living nature – to an extent that we in or from the West urgently need to rediscover. The relatively long periods of relative ecological stability and sustainability in many archaic and aboriginal societies (if far from all), before being blind-sided by exogenous colonialism and imperialism, attest to that.

If a contrast-class is needed to sharpen what I am advocating, gene prospecting – technoscientific imperialism par excellence, setting out not to learn from but to appropriate for private profit – will do nicely. Or more generally, the process which (to quote Serres again) has already ‘destroyed a prodigious body of knowledge in the realm of the perceived’,⁷⁹ and which continues in the contemporary disappearing of so many indigenous cultures, languages and particular ways of being human. For these are humanities too.

As part of a counter-process of ‘unravelling the imperium’ whereby, in Sean Kane’s words, ‘civilization feels its way forward to practises of living with the Earth on the Earth’s terms’, the humanities need to feel their way back to something like what our own local, indigenous ecological sensibility would have been and could still be, in terms of new/old ways of seeing-as, being-as and becoming-as.⁸⁰

Metaphor is at the heart of doing so, connecting as it does both the humanities and the more-than-human natural world. By the same token, it is in them that living metaphor flourishes. That is why, in this time of ecocide, we must defend them against their enemies and try to develop them further in local and indigenous cultural idioms. And if we do need a new term for the current geological era, let it be Earth-centred: ‘Geocene’, perhaps, or ‘Ecocene’. Because whatever it’s about, it’s certainly not all about us.

REFERENCES

¹ This paper was prepared for the international colloquium ‘The Thousand Faces of Gaia: From the Anthropocene to the Age of the Earth’ in Rio de Janeiro, 15-19 September 2014, and I am very grateful to the organisers, Déborah Danowski and Eduardo Viveiros de Castro, for their invitation. For their comments on earlier drafts, I would also like to thank Graham Douglas, Stephen Fitzpatrick, Leslie van Gelder, Sean Kane, Ray Keenoy, Simon Schaffer, Wendy Wheeler and Michael Winship. I am also much in debt to Simon Cook of *Rounded Globe* for his perceptive suggestions, as well as to two anonymous reviewers. NB: earlier versions of the present paper, entitled ‘Defending the Humanities in a Time of Ecocide’, are in circulation. In comparison they are unsatisfactory, so I regard them as superseded.

² From a wide array, see G. Ceballos, P. R. Ehrlich and R. Dirzo, ‘Biological annihilation via the sixth mass extinction signalled by vertebrate population losses and declines’, *PNAS* 114:30 (25.7.2017): <http://www.pnas.org/content/114/30/E6089> as well as <http://www.mysterium.com/extinction.html> (accessed 31.8.17). Elizabeth Kolbert, *The Sixth Extinction: An Unnatural History* (London: Bloomsbury, 2014) was anticipated by Richard Leakey and Roger Lewin, *The Sixth Extinction: Biodiversity and its Survival* (London: Weidenfeld and Nicholson, 1996.) (No one listened to them, either.) For a philosophically and politically informed account of ecocide, see the work of Ruth Thomas-Pellicer as well as Teresa Brennan and Val Plumwood (references 14, 45 and 58 below).

³ See my entry in Todd E. MacLean (ed.). *Global Chorus* (Calgary: RMB, 2014): 151; available in a longer version at <http://www.patrickcurry.co.uk/papers/Global%20Chorus%20full%20length-1.pdf> (accessed 31.8.17).

⁴ See, inter alia, <http://www.researchtrends.com/issue-32-march-2013/trends-in-arts-humanities-funding-2004-2012/> -- also, on the funding of STEM studies (including their role in keeping the number of workers up and therefore wages down): <http://www.newrepublic.com/article/114608/stem-funding-dwarfs-humanities-only-one-crisis> -- and for supporting evidence, http://www.humanitiescommission.org/_pdf/hss_report.pdf -- and http://www.britac.ac.uk/policy/Past_Present_and_Future.cfm

⁵ Modernist monism is itself a secular and materialist version of its religious progenitor, monotheism, but that is too much to tackle here.

⁶ David Wiggins, ‘Nature, Respect for Nature, and the Human Scale of Values’, *Proceedings of the Aristotelian Society* XCX, 1-32: 7-8.

⁷ Sean Kane, ‘Humanus’, *Green Letters* 13 (Winter 2010) 22-34: 22.

⁸ David Abram, *The Spell of the Sensuous: Perception and Language in a More-Than-Human World* (New York: Vintage Books, 1997): ix.

⁹ On personhood, see Graham Harvey, *Animism: Respecting the Living World* (New York: Columbia University Press, 2006).

¹⁰ Richard Sylvan and David Bennett, *The Greening of Ethics: From Human Chauvinism to Deep-Green Theory* (Cambridge: White Horse Press, 1994): 91.

¹¹ Eduardo Viveiros de Castro, ‘Exchanging Perspectives. The Transformation of Objects into Subjects in Amerindian Cosmologies’, *Common Knowledge* 10:3 (2004) 463-84: 470.

¹² Val Plumwood, *Feminism and the Mastery of Nature* (London: Routledge, 1993).

¹³ See Mark Slouka, ‘Dehumanized: When math and science rule the school’, *Harper’s Magazine* (Sept. 2009) pp. 32-40, and ref. 3 above.

¹⁴ Something that helped open my eyes to this was Paul Forman, ‘Recent Science: Late-Modern and Post-Modern’, in Thomas Söderqvist (ed.), *The Historiography of Contemporary Science and Technology* (Amsterdam: Harwood Academic, 1997). I very much doubt anything material has changed since then.

¹⁵ Out of an extensive literature see, for a recent discussion and critique, Sian Sullivan, ‘Noting some effects of fabricating ‘nature’ as ‘natural capital’, *The Ecological Citizen* 1:1 (2017): 65-73.

¹⁶ Bruno Latour, *On the Modern Cult of the Factish Gods* (Durham NC: Duke University Press, 2010): 111.

¹⁷ William James: *A Pluralistic Universe* (Cambridge MA: Harvard University Press, 1977 [1909]): 561.

¹⁸ Teresa Brennan, *Exhausting Modernity: Grounds for a New Economy* (London: Routledge, 2000).

- ¹⁹ Bruno Latour, 'Why Has Critique Run Out of Steam? From Matters of Fact to Matters of Concern', *Critical Inquiry* 30 (Winter 2004) 225-248. 'Unsung heroes' – Latour's term in *Modern Cult*: 114 – is rather breathtaking in the way it patronizes the cruelty and suffering actually involved.
- ²⁰ Rudolf Bahro, *Building the Green Movement* (London: GMP, 1986): 210.
- ²¹ From 'Nietzsche, Genealogy, History', pp. 76-100 in Paul Rabinow (ed.), *The Foucault Reader* (Harmondsworth: Penguin, 1984): 96.
- ²² L.D. Cohen, 'Descartes and Henry More on the Beast Machine', *Annals of Science* 1 (1936): 50.
- ²³ Quoted in Seamus Heaney, *Finders Keepers: Selected Prose 1971-2002* (London: Faber and Faber, 2002): 326.
- ²⁴ Charles Darwin: *Evolutionary Writings*, ed. James A. Secord ((Oxford: Oxford University Press, 2008): 421-22.
- ²⁵ Paul Ricoeur, *The Rule of Metaphor: The Creation of Meaning in Language*, transl. Robert Czerny (London: Routledge, 2003).
- ²⁶ Philip Wheelwright, *Metaphor and Reality* (Bloomington: Indiana University Press, 1962): 98. Also see pp. 92, 94-98.
- ²⁷ Brook Ziporyn, *Being and Ambiguity: Philosophical Experiments with Tiantai Buddhism* (La Salle: Open Court, 2004): 173. See also pp. 101-102, 171-73.
- ²⁸ In his account of taking mescaline published as *The Doors of Perception* (1954).
- ²⁹ For more explorations of this section, see my 'Radical Metaphor: or why Place, Nature and Narrative are Each Other but aren't Themselves', *EarthLines* 6 (August 2013) pp. 35-38, and 'Embodiment, Alterity and Agency', pp. 85-118 in Patrick Curry (ed.), *Divination: Perspectives for a New Millennium* (Farnham: Ashgate, 2010), esp. pp. 91-99.
- ³⁰ Ricoeur, *Rule*: 299, 339.
- ³¹ Gregory Bateson, *Mind and Nature: A Necessary Unity* (Cresskill: Hampton Press, 2002); Gregory Bateson with Mary Catherine Bateson, *Angels Fear: Towards an Epistemology of the Sacred*, London: Bantam Books, 1998: 26-27. See the discussion, to which I am indebted, by Wendy Wheeler, 'Gregory Bateson and Biosemiotics: Transcendence and Animism in the 21st Century', *Green Letters* 13 (Winter 2010) 35-54, as well as her more recent *Expecting the Earth: Life, Culture, Biosemiotics* (London: Lawrence and Wishart, 2016); also Deborah Bird Rose, 'Pattern, Connection, Desire: In honour of Gregory Bateson', *Australian Humanities Review* 35 (2005), <http://www.australianhumanitiesreview.org/archive/Issue-June-2005/rose.html> (last accessed 11.9.14).
- ³² 'Nature's prodigy': Wallace Stevens, *The Necessary Angel: Essays on Reality and the Imagination* (London: Faber and Faber, 1960): 73. 'The body is the great poem': Wallace Stevens, *Collected Poetry and Prose*, ed. Frank Kermode and Joan Richardson (New York: The Library of America, 1997): 908.
- ³³ See, *inter alia*, Graham Harvey, *Animism* (New York: Columbia University Press, 2006), Graham Harvey (ed.), *The Handbook of Contemporary Animism* Durham: Acumen, 2013), Tim Ingold, 'Rethinking the Animate, Re-animating Thought', *Ethnos* 71:1 (2006) 9-20, Gary Snyder, *The Practice of the Wild* (Berkeley: Counterpoint, 1990), Val Plumwood, *Environmental Culture* (London: Routledge, 2002) and David Abram (reference 8). Others could, of course, be added. Note that animism differs from both pantheism/ panentheism (no God is needed) and panpsychism (a realist theoretical/ metaphysical assertion).
- ³⁴ See chapters 4 and 12 of my *Ecological Ethics: An Introduction*, 2nd edn (Cambridge: Polity Press, 2011).
- ³⁵ Actor Network Theory, it seems to me, affirms the same animistic point. But the most thorough non-reductive theory of metaphor/ animism to date (of which I am aware) is biosemiotics.
- ³⁶ Barbara Herrnstein Smith, *Contingencies of Value. Alternative Perspectives for Critical Theory* (Cambridge MA: Harvard University Press, 1988): 179.
- ³⁷ 'How to Make Sure Gaia is not a God? With special attention to Toby Tyrrell's book On Gaia', a paper delivered at 'The Thousand Faces of Gaia' colloquium. For an excellent recent discussion, see Déborah Danowski and Eduardo Viveiros de Castro, *The Ends of the World*, transl. Rodrigo Nunes (Cambridge: Polity Press, 2017).
- ³⁸ See my 'Post-Secular Nature: Principles and Politics', *Worldviews: Environment, Culture, Religion* 11 (2007) 284-304, and chapter 10 of my *Ecological Ethics*. See also Val Plumwood, ref. 33.
- ³⁹ See Adriana Cavarero, *In Spite of Plato: A Feminist Rewriting of Ancient Philosophy*, transl. Serena Anderlini-D'Onofrio and Aine O'Healy (New York: Routledge and London: Polity, 1995).
- ⁴⁰ See Jan Assmann, *The Price of Monotheism*, translated Robert Savage (Stanford: Stanford University Press, 2010). Cf. Latour's first Gifford Lecture (Feb. 2013), where he apparently attributes the inability to 'translate' to being 'too local, too ethnocentric, too sectarian', and advocates secularising Gaia.
- ⁴¹ William James, *A Pluralistic Universe* (Cambridge MA: Harvard University Press, 1976): 140-41.
- ⁴² Paul Feyerabend, *Killing Time* (Chicago: University of Chicago Press, 1995): 164.
- ⁴³ H.H. Gerth and C. Wright Mills (eds.), *From Max Weber: Essays in Sociology* (London: Routledge, 1991): 139. (Horkheimer and Adorno brilliantly developed Weber's insight in their *Dialectics of Enlightenment*.)

⁴⁴ Another instance – eccentric, certainly, but to the point: some of us are old enough to remember the attempt to levitate the Pentagon. Great theatre, but either it was literal – in which case, it failed – or a metaphor, in which case, on that account, it also failed.

⁴⁵ Lawrence Kushner, *The Book of Words* (Nashville: Jewish Lights, 1993): 115. I am grateful to Andy Barritt for this gem.

⁴⁶ See longstanding critiques by Mary Midgley, Richard Lewontin and John Gray, among others.

⁴⁷ E.O. Wilson, *Consilience: The Unity of Knowledge* (London: Vintage, 1999): 96.

⁴⁸ See George Wuerthner, Eileen Crist and Tom Butler (eds), *Keeping the Wild: Against the Domestication of Earth* (Washington D.C.: Island Press, 2014).

⁴⁹ Quoted in Lawrence A. Scaff, *Fleeing the Iron Cage: Culture, Politics, and Modernity in the Thought of Max Weber* (Berkeley: University of California Press, 1989): 118. William James's definition of truth is very close; see Robert D. Richardson, *William James: In the Maelstrom of American Modernism* (Boston: Houghton Mifflin, 2006): 511.

⁵⁰ Isabelle Stengers, *Une Autre Science est Possible!* (Paris: La Decouverte, 2013).

⁵¹ <http://indigenouknowledge.org/discussion/native-conversations/big-question-2-reimagining-ways-of-knowing/post/david-turnbull> (accessed 9.10.14)

⁵² I wasn't sure whether to include Rupert Sheldrake's morphogenetic fields but in any case, his faith that the scientific community will admit him if he scrupulously follows its rules, if sincere, is touching.

⁵³ See Wheeler, ref. 31, especially *Expecting the Earth*, and her earlier book *The Whole Creature: Complexity, biosemiotics and the evolution of culture* (London: Lawrence and Wishart, 2006), and Tim Ingold and Gisli Pálsson (eds), *Biosocial Becomings: Integrating Social and Biological Anthropology* (Cambridge: Cambridge University Press, 2013).

⁵⁴ Viz. the horrified reaction when Alex Douglas-Home, during his brief and unhappy stint as Prime Minister, publicly admitted that 'There are two problems in my life. The political ones are insoluble and the economic ones are incomprehensible.' He also reportedly said, 'A man of integrity will never listen to any reason against conscience.' *O tempora o mores!*

⁵⁵ The (originally Greek) Parmenidean Distinction exists alongside and in secret sympathy with the (originally Jewish) Mosaic Distinction, always asking, 'Is this a true or false god?', which drives monotheism. But Assmann should be read in conjunction with Cavarero (see note 39, and 56 below).

⁵⁶ Val Plumwood, *Feminism and the Mastery of Nature* (London: Routledge, 1993), ch. 3; see also her 'Prospecting for Ecological Gold amongst the Platonic Forms: A Response to Timothy Mahoney', *Ethics and the Environment* 2:2 (1997) 149-68. For a brilliant interpretation of the impact on and in philosophy and thence beyond, see Cavarero, *In Spite of Plato*. Also see Genevieve Lloyd, *The Man of Reason: 'Male' and 'Female' in Western Philosophy*, rev. edn (London: Routledge, 1993). In more explicitly ecological context, also see my 'Revaluing Body and Earth', pp. 41-54 in Emily Brady and Pauline Phemister (eds), *Human-Environment Relations: Transformative Values in Theory and Practice* (Dordrecht: Springer, 2012).

⁵⁷ For a good discussion – in addition to Cavarero (ref. 38) – see Henri Bortoft, *Taking Appearance Seriously. The Dynamic Way of Seeing in Goethe and European Thought* (Edinburgh: Floris Books, 2012). With thanks to Christopher J. Moore for the reference.

⁵⁸ Michel Serres, *The Five Senses: A Philosophy of Mingled Bodies*, transl. Margaret Sankey and Peter Cowley (London: Continuum, 2008): 283.

⁵⁹ Joshua Delpech-Ramey, 'Lost Magic: The Hidden Radiance of Negative Dialectics', *Radical Philosophy Review* 12:1-2 (2009) 315-337: 324 (describing Adorno's critique of Hegel).

⁶⁰ Serres, *Senses*: 195.

⁶¹ Stephen Toulmin, *Cosmopolis: The Hidden Agenda of Modernity* (Chicago: University of Chicago Press, 1990).

⁶² John Cowper Powys, *A Glastonbury Romance* (London: John Lane The Bodley Head, 1933): 1174.

⁶³ Eric Griffiths, in the *TLS* (28.5.93).

⁶⁴ Milan Kundera, *Immortality*, transl. Peter Kussi (London: Faber & Faber, 1991): 159.

⁶⁵ Latour, *Modern Cult*: 94-95. For a typically lucid discussion, see Danowski and Viveiros de Castro, *Ends*, p. 120.

⁶⁶ See my 'Enchantment and Modernity', *PAN: Philosophy, Activism, Nature*, Issue no. 12 (2012) pp. 76-89;

accessible at <http://www.patrickcurry.co.uk/papers/Enchantment%20and%20Modernity%20for%20PAN.pdf>

⁶⁷ Paul Ricoeur, *The Symbolism of Evil*, transl. Emerson Buchanan (Boston: Beacon Press, 1967): 351-52. Michael Polanyi's advocacy of a 'post-critical' philosophy proceeds to the same end.

⁶⁸ Teresa Brennan, *Globalization and its Terrors. Daily Life in the West* (London: Routledge, 2003): 165. See also Ariel Salleh, *Ecofeminism as Politics: Nature, Marx and the Postmodern* (London: Zed Books, 1997), and Val Plumwood, *Environmental Culture: The Ecological Crisis of Reason* (London and New York: Routledge, 2002).

⁶⁹ Paul Feyerabend, *Farewell to Reason* (London: Verso, 1987): 61.

⁷⁰ Only metaphor, as distinct from either deductive or inductive logic, can result in a genuinely new discovery. With the former kind, anything known must already be present in the premisses; with the latter, any particular knowledge

is undetermined. (On metaphor in the construction of scientific theories, see Mary Hesse, *Revolutions and Reconstructions in the Philosophy of Science* (Brighton: Harvester Press, 1980.)

⁷¹ E.O. Wilson, *Consilience: The Unity of Knowledge* (New York: Knopf, 1998). His call (or demand) was recently repackaged by Steven Pinker in the *New Republic*. See the excellent discussion by the editors of *The Point* in ‘The New Humanities’, <http://thepointmag.com/2014/criticism/the-new-humanities> (accessed 20.8.14). The relevant contrast is with biosemiotics, which, it seems to me, does genuinely hold out hope for non-reductive syntheses.

⁷² Assmann, *Price*.

⁷³ See Eduardo Viveiros de Castro, ref. 11.

⁷⁴ *The Point* (see ref. 71). Cf. Marilynne Robinson, *Absence of Mind. The Dispelling of Inwardness from the Modern Myth of the Self* (New Haven: Yale University Press, 2010) and Nikolas Rose and Joelle M. Abi-Rached, *Neuro: The New Brain Sciences and the Management of the Mind* (Princeton: Princeton University Press, 2013), although the latter is marred by the extent to which its critique pulls its punches – not surprising, given Rose’s brief for social science.

⁷⁵ See, variously, Barbara Herrnstein Smith, *Scandalous Knowledge: Science, Truth and the Human* (Durham: Duke University Press, 2006), Robinson, *Absence*, and Thomas Nagel, *Mind and Cosmos* (New York: Oxford University Press, 2012).

⁷⁶ Paul Feyerabend, *Against Method* (London: NLR, 1975). Cf. another doughty defender, Mary Midgley, e.g. in *Science and Poetry* (London: Routledge, 2001). This point was also made nearly a century ago by Max Weber, and the same sort of people still don’t want to hear it. Science, he wrote, ‘presupposes that what is yielded by scientific work is important in the sense that it is worth being known. In this, obviously, are contained all our problems. For this presupposition cannot be proved by scientific means. It can only be *interpreted* with reference to its ultimate meaning, which we must reject or accept according to our ultimate position towards life.’ (H.H. Gerth and C. Wright Mills (eds.), *From Max Weber: Essays in Sociology* (London: Routledge, 1991): 143.)

⁷⁷ Although within the academy, once again, some advocates of modernist ‘ecocriticism’ are trying to do just that, thereby replicating the technoscientific takeover of the humanities as a whole that I have described above. For an uncompromised guide, see Laurence Coupe (ed.), *The Green Studies Reader: From Romanticism to Ecocriticism* (London: Routledge, 2000). See also my essay-review ‘From Ecocriticism to Ecohumanities: An Essay-Review’, *Green Letters* 13 (Winter 2010) 95-109; the editorial in the same issue, on ‘Ecophenomenology and Practices of the Sacred’, by Patrick Curry and Wendy Wheeler; and my ‘Nature Post-Nature’, pp. 51-64 in *New Formations* 26 (Spring 2008).

⁷⁸ For a general discussion, see Viveiros de Castro, ref. 11 above. Among many possibilities see also Eduardo Kohn, *How Forests Think: Beyond the Human* (Oakland: University of California Press, 2013), Lesley J.F. Green and David R. Green, *Knowing the Day, Knowing the World: Engaging Amerindian Thought in Public Archaeology* (Tucson: University of Arizona Press, 2013), Robin Wall Kimmerer, *Braiding Sweetgrass: Indigenous Wisdom, Scientific Knowledge and the Teachings of Plants* (Minneapolis: Milkweed Editions, 2014), and Denis Noble, *Biology Beyond Genes* (Oxford: Oxford University Press, 2006). Heaney was quoted in *Poetry Ireland Review* (2013): 27.

⁷⁹ Serres, *Senses*: 253.

⁸⁰ Sean Kane, *Wisdom of the Mythtellers*, 2nd edn (Peterborough: Broadview Press, 1998): 14. ‘Unravelling the imperium’ is from the poet Moya Cannon.