

**PRODUCING ANOTHER WORLD:  
THE POLITICS OF THEORY with some thoughts on LATOUR**

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This is an essay in the politics of theory. It explores the question of how theoretical perspectives in science and technology studies (STS) might be returned to earth. What might a cultural assemblage informed by insights from STS look like? I begin with ontology and develop a contrast between what, following Bruno Latour, I call modern and nonmodern ontological visions: on the one hand, a taken for granted dualism of people and things; on the other, the view from STS, of a decentered and emergent coupling of the human and the nonhuman. I then offer a range of examples of worldly projects and artefacts that, as it were, thematise, stage and act out the nonmodern ontology of STS (in mathematics, robotics, civil engineering, music and architecture). These are, or might be, elements of the ‘other world’ of my title, which I try to recommend in terms of a Heideggerian distinction between ‘enframing’ and ‘revealing.’ My debt to Latour is clear in all this, but in the closing sections of the essay I seek to clarify our political divergence, concluding with a discussion of selves and psychiatry.

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We can begin with a simple ontological contrast. Our pre-eminent natural science, physics, evokes a dualist split between people and things, simply by describing a world of things—

quarks, say — existing completely independently of us. These things have fixed properties and relations that we can know, and — shifting from physics to engineering — through this knowledge we can predict and control their behaviour. The overall ontological vision here is thus an *asymmetric dualism* that echoes Descartes: the world is a knowable machine, while, on the other side, humanity calls the shots as the only locus of genuine agency. This ontological vision is not, of course, entirely special to science and engineering; it is, I think, the natural ontological attitude of modernity, the way we all tend to approach the world.

But then comes the twist. The great discovery of science studies was that in practice the sciences themselves fail to exemplify this ontology. It turns out that in their own laboratories the scientists are far from calling all the shots. They do not dominate their materials through knowledge; instead they engage in rather symmetrical open-ended and performative *dances of agency*, trying this and that in their struggles with machines and instruments, *finding out* what the world will do in this circumstance or that, and responding to what emerges in a process that I call *mangling* (Pickering 1995).

So studies of scientific practice conjure up a new and different ontology, a quasi-biological one, of the world as itself a lively place, itself a reservoir of endlessly emergent agency, that can always surprise us in its performance, and that we always have to *get along with* and accommodate ourselves to, rather than seeing through and controlling. We are always, so to speak, in the thick of things, and history is thus a decentred process of the co-evolution of the human and the nonhuman.

What can we make of this pair of contrasting ontologies? We could say that science studies has learned to read the sciences *against the grain*, refusing to take their ontological vision for granted and coming up with another one, more empirically adequate, in its place. Or, as I am inclined to do, we could say that in a remarkable historical process the sciences have learned to read nature against the grain, organising their still mangle-ish practice around a *telos of making* a clean split between a machine-like nature and humanity as controlling agents. This is the process that Latour (1993) calls *purification*; in practical terms it entails, for example, the production of free-standing machines and instruments that act reliably in the absence of continual human interventions — bubble chambers, cars, computers, bombs.

That scientists and engineers have regularly and spectacularly succeeded in this sort of purification goes a long way to explaining the grip that dualist ontology has on our imaginations. Our made world continually *echoes back* to us this practical separation between

free-standing machines, which we have nevertheless ‘created,’ and ourselves. But appreciating the point this way is what opens up the possibility for a politics of theory, an ontological politics. My idea, very simply, is that put this way the ontological discussion invites us to explore the possibilities of *other ways to go on*. Instead of continually struggling to impose this dualist *telos* on nature, might it be possible to go with the flow—to organise our lives in ways that thematise and take advantage of open-ended performative dances of agency instead of seeking to extinguish and efface them?

I think it is indeed possible, and next I give some examples of the sorts of projects and artefacts I have in mind, which derive from my research into the history of cybernetics in Britain. I have written them up at greater length elsewhere, so here I offer minimal sketches of a few instances. In this essay, my primary goal is to clarify the overall drift of the argument.<sup>1</sup>

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We could begin in the most ethereal realm known to man or woman—mathematics. It is becoming more widely recognised that not only do scientific theories tend to conjure up the dualist ontology I just sketched out but so do the mathematical techniques they drawn upon. The vast preponderance of our mathematical history has to do with rendering systems of abstract entities transparent, calculable, soluble, predictable—the Laplacean fantasy of knowing the future given the present, of the world as never being able to surprise us if only we could learn to do the sums properly. But there is a growing recognition that this fantasy is a fantasy, that the world isn’t like that, and what interests me here is that this realisation is not at all incapacitating; *there are other ways to go on, even in mathematics*. So my first example concerns mathematical systems called cellular automata, CAs, largely developed by Stephen Wolfram (Wolfram 2002, Pickering forthcoming c).

A CA is a set of zeroes and ones defined at points on a line, and these values evolve in a series of time-steps according to some simple rule having to do with the previous value assigned at each point and its neighbours. Wolfram’s great discovery is, as he puts it, that extremely simple rules can generate extremely complex behaviour. While some rules generate

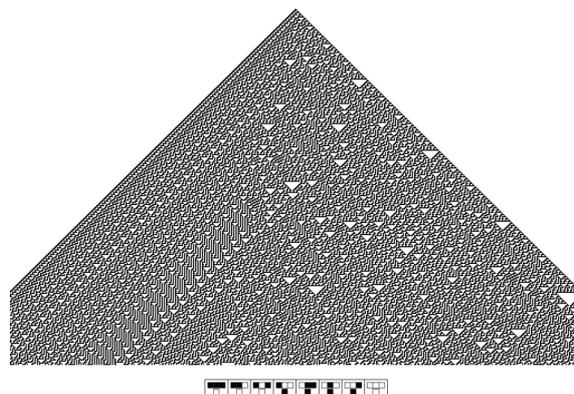
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<sup>1</sup> The fullest coverage is in my forthcoming book, *Sketches of Another Future: Cybernetics in Britain, 1940-2000*, where I discuss examples ranging over psychiatry, brain science, robotics, biological computing, complexity theory, theoretical biology, management, politics, spirituality, the arts, music, architecture and education (Pickering forthcoming a). For a partial (in both senses) survey of the STS literature that assembles a broader range of examples than the present text, see also Pickering (forthcoming b).

entirely predictable patterns in time, others are ‘computationally irreducible,’ meaning that the only way to know what pattern they will generate is simply to run the rule and find out. There are *no shortcuts* that render the pattern predictable in advance; in that sense these CAs will always surprise us.

We can think of these CAs as *ontological theatre*, then, in a double sense. From one angle, they stage for us a vision of the world that matches the ontology of science studies (rather than that of modern physics)—of the world as a place of inexhaustible novelty and becoming. Imagine a world built from CAs and you start to have the hang of this ontological vision. From the other angle, CAs stage for us the possibility of another kind of mathematics and its associated sciences—Wolfram’s catch-phrase is ‘a new kind of science,’ NKS. So this isn’t some kind of opposition to or rejection of maths and science—it is *another way* of doing maths and science.

A mathematics organised around CAs and their kin is thus my first example of this other way of going on that can populate the space opened up by the ontological discussion. It is not, of course, socially or politically striking in itself, though the larger assemblage to which I would assimilate it might be, and it does begin to delineate a realm of nonmodern artefacts, artefacts that remind us of our ontological condition rather than veiling it from us, like bubble chambers or cars.



**rule 30 cellular automaton**

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Next, we can move closer to the real world, with two examples that concern engineering, starting with robotics (Pickering 2002, 2004). The first style of building robots that comes to

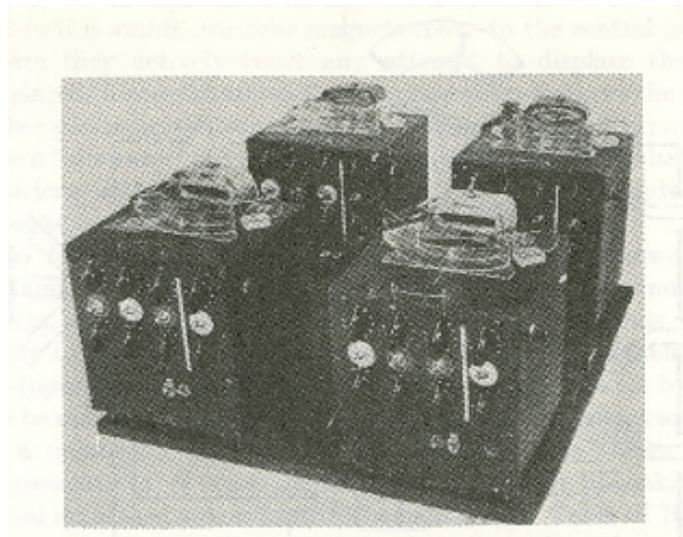
mind, the style dominant in computer science from the 1950s until at least the 1980s, is based upon symbolic AI. Drawing upon its artificial senses, within the robot a computer builds up a symbolic map of its environment and then uses that as the basis for computing how to achieve some predefined goal in the world—moving across a room without bumping into obstacles, say. Those computations are then translated into instructions to the robot’s motor organs and off it goes. The heart of this style of robotics is thus the computation entailed in mapping and processing maps, and this in turn can be seen as a nice piece of dualist ontological theatre. The robot’s world sits there passively, waiting to be represented by the robot; the robot has goals and reason; it is the only genuine agent around.

What interests me here is that there is a contrast class of robots which goes back to the beginnings of cybernetics. In 1948 Grey Walter built his first little robot ‘tortoises,’ autonomous machines that wandered through their environments in pursuit of light sources while bumping into and going round obstacles. The key point about this style of robotics is that it entailed no centralised mapping or computation—the tortoises simply reacted in real time to what they had found, scanning their worlds for lights, going into an oscillating motion when they hit obstructions and so on. Here then we have a style of robot-engineering that moves towards non-dualist ontological theatre—again both conjuring up the overall ontological vision and exemplifying a form of practice that takes advantage of rather than seeking to deny that vision. The robot’s performance was an emergent and decentred joint product of the robot and its environment, which depended on a sensitive back-and-forth between robot’s trajectory and what this turned up in the environment. The tortoises lived in the thick of things, densely intertwined with their environment, rather than trying to escape from it.



### tortoise in action

Ross Ashby's homeostat, also from 1948, took this sort of ontological theatre an important step further (Pickering 2002). The homeostat was a machine that randomly reconfigured its circuitry if its internal currents went beyond some given value. In some electrical environment, a homeostat would thus transform itself again and again until it found an equilibrium configuration in which its internal currents tended towards zero and returned there in the face of perturbations. Importantly, Ashby experimented on multi-homeostat assemblages in which groups of homeostats constituted the environment for the others. These assemblages thus staged genuine *dances of agency* between all of their elements as the whole set-up searched randomly and open-endedly for equilibria, and again we can read them as non-dualist ontological theatre, both conjuring up a mangle-ish ontology—imagine the world as built from homeostat-like entities and you can begin to grasp STS' vision of how the world is—and playing that ontology out constructively in robotics.



#### **four interacting homeostats**

Tortoises and homeostats are thus my next class of examples of projects, now in the realm of robotics, that occupy the space opened up by ontological reflections in science studies—they thematised and took advantage of a symmetric image of the world as a zone of responsive and reciprocal intersection of emergent and performative agencies. I have to concede that these examples, too, are not immediately politically striking, though they begin to have a subversive quality, conjuring up a nonmodern and decentred image of the self on the model of

the homeostat, say (as distinct from the modern self that goes with symbolic AI).<sup>2</sup> My next example of engineering, however, comes from the real world, not the computer science lab.

Most large-scale civil engineering projects so obviously stage an asymmetric dualist ontology that we don't even think about it. Civil engineering aims to reconfigure the environment to human ends. While I was writing this essay, the *New York Times* reported on a new dam, said to be the largest ever in the world, designed to turn the Yangtze river into a massive source of electrical energy for the industrialisation of China (Yardley 2007). Again, and entirely typically, the material world figures here as a passive substrate awaiting the firm hand of human agency—an imposition of the modern *telos*. And, again, it turns out there are other ways of going on, which stage the other sort of ontology. A field known as adaptive ecological management seeks to explore what nature 'wants' to do—via relatively small-scale performative trials such as experimental floods launched from dams and monitored for their downstream repercussions (Asplen forthcoming, Pickering forthcoming d). Again we have an image of a symmetric dance of agency: instead of imposing human plans from the outset, the idea is to tune our plans in the light of such experimentation and vice versa. Here, then, we have, not a nonmodern artefact, but an example of a nonmodern way of organising our worldly practice, and it is especially in respect of doing things differently that the present essay is an essay in the politics of theory.

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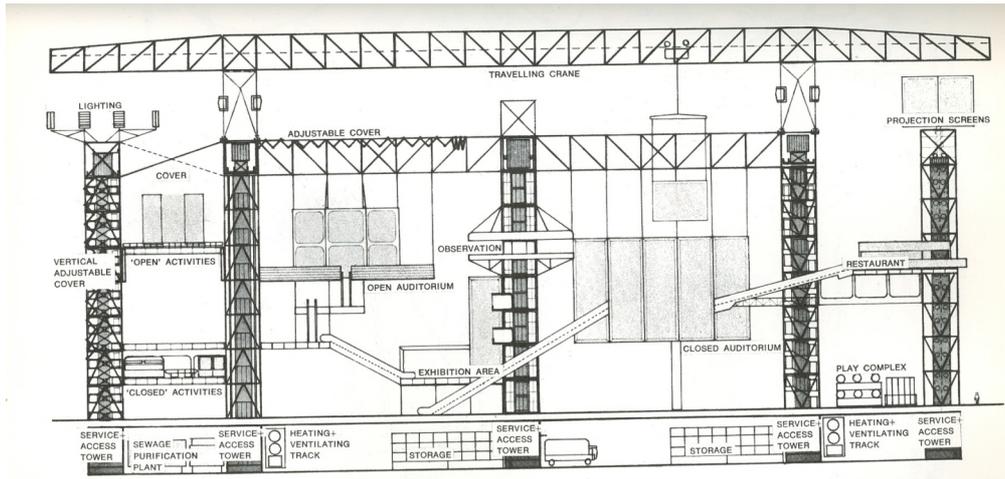
For the sake of variety, my remaining examples concern the arts, music and architecture. Gordon Pask's Musicolour machine is the perfect example here—an inscrutable device with its own inner dynamics that turned a musical performance into a light-show, with which performers could establish a *modus vivendi* without ever reaching cognitive mastery—another staging of the dance of agency without any *telos* of purification, now in the arts and entertainment (Pickering 2007). But I have written about Musicolour too often, so let's try the contemporary musician, composer and artist Brian Eno instead.

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<sup>2</sup> It is worth emphasising that the cybernetic approach to robotics has not gone away. The situated robotics that I associate with Rodney Brooks (1999) and the MIT AI Lab is a continuation of Walter's robotics, and many of the problematics and insights of complexity theory relate rather directly to Ashby's work with his homeostats. The original cybernetic robots were, actually, a key element in an unusual sort of brain science—a science that understood the brain as, in the first instance, an organ of performative adaptation rather than of representation and cognition—and the cybernetic approach is also returning to the forefront of contemporary brain science (Edelman 1992).

Eno himself acknowledges a debt to cybernetics going back to the 1970s, and much of his compositional work in ‘ambient’ and ‘generative’ music since then has consisted in exploring the generative possibilities of different sorts of algorithms, computerised or otherwise (Eno 1996a, b). Here we find a sort of dance of agency now in the ‘design’ phase in the arts, in which some CA-like set of rules figures symmetrically as a partner in the production of sound. Going further in the same direction, in some versions of this system of composition the user/listener also becomes to some extent the composer, being free to vary the parameters of the generative algorithm in a complex dance of agency entailing software engineers, the algorithm, Eno and the user herself. Once more then, and now in the arts, this form of music occupies the space opened up by an ontological reflection beginning in science studies. This is how one might do artistic production if one takes the ontology seriously and puts it into action, instead of carrying on with practices of dualist purification; and this is what artworks would be like. Eno (1996b) understands his work as creating spaces in which one can *try out* a nonmodern ontology.

Finally, we could turn to architecture. In the early 1960s, the radical theatre producer Joan Littlewood conceived a plan for a building in London that became known as the Fun Palace. Cedric Price was the architect for the project and Gordon Pask became the head of the cybernetics committee for its design (Mathews 2007, Pickering 2007). The Fun Palace was intended as a sort of ‘university of the streets,’ open to the public and providing a ‘kit’ of all sorts of resources for all sorts of activities. In the present context, the important thing was that, through all sorts of engineering innovations, the Fun Palace could be reconfigured in use. Pask understood it on the model of his Musicolour machine—as a system that would both respond to its users and also ‘get bored’ with them, as a way of disturbing routines and eliciting new modes of use. Again, we can read the Fun Palace as ontological theatre—staging dances of agency with its users and at the same time exemplifying what architecture might look like if one took the overall ontological vision seriously, refusing to aim at some settled split between the building and the uses to which it was put. The key point to note is that, in contrast to conventional architectural design, the designers of the Fun Palace did not pretend to know in advance what use would be made of it—that had to be found out in practice in a continual process of adaptation, and the business of the designers was to make the building as open-endedly adaptable as they could.



**plan of the Fun Palace**

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As I said, we could carry on this list of examples almost endlessly, but I want to slow down and reflect on what is going on here. I started with some ontological reflections that pointed to a class of objects and projects that abstain from dualist purification and that instead thematise and take advantage of performative and open-ended dances of agency. But still, just what am I doing with this pointing? Am I just listing examples of what already exists? Where can that get us?

The first stage of an answer is to note that, with the possible exception of robotics, all of my examples point to projects that are relatively marginal to their fields; they somehow seem jokey and not quite proper. Wolfram finds himself trying to sustain his new kind of science outside the university departments that might otherwise be their home. Cybernetic robotics was massively eclipsed by AI between the 1950s and 1980s at least. The US Army Corps of Engineers once more has the job of dominating the Mississippi River in the wake of Hurricane Katrina. The strand of 'new music' running from John Cage to Brian Eno was more visible in the 1960s than it is now. The Fun Palace was never built.

So the claim would have to be that an asymmetric dualist ontology holds not an absolute but a *hegemonic* sway over all the fields of endeavour that I have mentioned and many others as well, and that this is part and parcel of its being our natural ontological attitude. And what I am trying to do here is to assemble another culture, to produce another world by drawing together and setting in relation to one another all sorts of elements that share a mangle-ish ontology and that lurk in the shadows of this hegemonic bloc. The hope is that if one puts

enough of these elements together it will encourage one of those Kuhnian gestalt switches. We might suddenly get the hang of thinking about the world in non-dualist terms and, more important than just getting the idea of it, we might grasp that there are an indefinite number of ways to stage a non-dualist ontology *in the future*. I am trying to elicit a novel gestalt that would challenge the hegemony of ontological dualism *in the domains of objects and practices* as well as thought and representation.

But still: why bother? A simple answer is: variety is good. The more ways we have of thinking about and acting in the world the better. Another is what Latour (1993) called the return of the repressed. The unintended and ecologically disastrous consequences of that dam on the Yangtze are already making themselves felt (Yardley 2007). It begins to be imaginable that the dark side of ontological purification is natural and social disaster: we pin nature down in one place and it bursts out on us somewhere else where we weren't expecting it. I think that's right. But here I want to offer a more complicated answer. This has to do with systematic differences between the dualist and non-dualist projects I have mentioned, and it helps me, at least, to think about Heidegger here.

In 'The Question Concerning Technology,' Heidegger (1997) conjured up an image of the contemporary world as characterised by a project that he called 'enframing' — somehow setting up the world as a stock of 'standing reserve' for preconceived human projects. Heidegger saw technology and engineering as the key locus of enframing and the sciences as constructing the technical infrastructure for this stance. I think he was right, at least to a first approximation. Asymmetric dualism, as I have been calling it, is a highly appropriate ontology for enframing, and vice versa. But by describing the dominance of dualism as hegemonic rather than absolute, I want to suggest that Heidegger missed a trick here. As I have been trying to show, there are other scientific and mathematical and technological and artistic, and etc, ways to go on that do not stage any sort of dualist theatre, and we do not have to go back to ancient Greece to find them — we just have to look in the shadows of our own recent past and present.

And, importantly, these other ways of going on are better characterised not as forms of enframing but of Heideggerian 'revealing.' None of the examples I reviewed speak of an asymmetric domination of the world through knowledge; all of them speak instead of a performative openness to what the world has to offer us, for better or for worse. One cannot imagine dominating and controlling a computationally irreducible cellular automaton — one just has to see what it does and try to get along with that. Ashby's homeostats played with

their own inner dynamics for the sake of exploring the dynamics of their environments. Adaptive environmental management explicitly renounces fantasies of domination in favour of exploring what the world will do, given the chance. Eno's generative music is all about finding out what the algorithms and CAs will offer us (and not dictating a sequence of notes to a violin). The Fun Palace was an adaptive space in which to explore what people are like.

So now the political valence of this essay might be clearer. We can see this contrast between two ways of thinking about and acting in the world in terms of the contrast between enframing and revealing. Grim and, it seems to me, increasingly desperate and fraught, projects of dominating nature and humanity, on the one hand; lively and responsive explorations of whatever surprises people and things have to offer us on the other. Given the choice, I know which one I'd pick. Part of the message of this essay is precisely that we do indeed have this choice and that there are other ways to go on—something which is hard even to imagine when we are plunged into so many enormous dualist assemblages all of which echo a dualist ontology back to us.

I should, of course, immediately qualify what I just said about picking and choosing. Is it my argument that the last few centuries of Western history were just a mistake and that we should just abandon their heritage? No. It can hardly be the moral of science studies that the dualist sciences from which we learned our ontological lesson should be exterminated. My idea is more that a gestalt switch between the margins and the hegemonic centre of gravity would be a way of putting dualist ontology and its associated projects *in their place*. If we could accomplish this change of perspective and stance in the world we could both see the world as I think it actually is, and see the dualist ontology and all its works for what they actually are: manifestations of a very specific and counter-intuitive stance in the world. If we retain asymmetric dualism as our natural ontological attitude we have little if any prospect of escape from the world of enframing. If we can get the hang of a symmetric non-dualism then we have the choice whether to indulge in enframing exercises or not. Especially, all those 'unintended consequences' of enframing, however well meant, come into sharp focus thanks to this gestalt switch. Unintended consequences are what we should expect—that's the way world is—not something to be marginalised from our consciousness and blamed on the scientists and engineers and politicians for their lack of omniscient foresight.

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The constructive work of this essay is now over, but it might be useful to connect its themes with other writings on the politics of theory in STS, from Donna Haraway and Bruno Latour.

First, Haraway. The sentiments expressed here are, I think, entirely consistent with her 'Manifesto for Cyborgs' (2004). The figure of the cyborg is intended to conjure up a decentred and emergent vision of the human and the social that escapes the essentialisms of modernity, and the point of the cyborg manifesto, like the communist manifesto, is to suggest that that vision can be played out in worldly practice. What Haraway's manifesto lacks are examples of what the new cyborg world might look like, apart from Haraway's concluding reading of a few science fiction novels. My claim is that the examples discussed above, and others like them might serve to fill in this blank—to put some flesh on the cyborg future that Haraway would like to imagine. 'Cyborg' is, of course, a contraction of 'cybernetic organism' and this shared fascination with cybernetics is not a coincidence. Turning to Haraway's more recent interest in companion species, it is relevant to note that her conception of love is that of relationship (with animals, though it might as well be with people or the environment) precisely as a performative dance of agency (Haraway 2003). There are interesting echoes here of the cybernetician Gregory Bateson, who will return below, and this version of 'love' might also be part of the cultural assemblage I am trying to build up here.

Next, Latour. As I said at the start, my own thinking in STS owes a great debt to Latour's writings. Nevertheless, what strikes me here is a radical divergence in the politics of theory, which I can try to clarify.

Latour's strategy for reading theory back into politics began with his book *We Have Never Been Modern* (1993), where he adopts a two-level schema. At the ground level, we find all the usual worldly going-on: people struggling with disease, building transportation systems, fighting wars, etc. At a meta-level we find people reflecting on what should be done at the ground level, and a set of conventionally political institutions that support that.<sup>3</sup> And then several points are worth noting.

First, Latour defines modernity in terms of the dualist purification we have been talking about all along. Second, while I have been trying to delineate alternatives to purification, Latour values it highly and wants, not to challenge its hegemony at the ground level, but to maintain it in his new political order:

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<sup>3</sup> This style of split-level accounting in Latour's work goes back at least to the discussion of 'primary' and 'secondary' mechanisms in science in Latour (1987). It is, of course, a very familiar way of conceiving the political as a sort of superstructure added on to a productive base.

*What are we going to retain from the moderns? Everything, apart from exclusive confidence in the upper half of their Constitution. . . .The moderns' greatness stems from their proliferation of hybrids, their lengthening of a certain type of network, their acceleration of the production of traces, their multiplication of delegates, their groping production of relative universals. Their daring, their research, their innovativeness, their tinkering, their youthful excesses. the ever-increasing scale of their action, the creation of stabilised objects independent of society, the freedom of a society liberated from objects—all these are features we want to keep.*

Likewise, in a table setting out 'what is [to be] retained' from the moderns, Latour lists 'final separation between objective nature and free society,' and goes on to refer to 'objects whose genesis must no longer be clandestine, but must be followed through and through, from the hot events that spawned the objects to the progressive cool-down that transforms them into essences of Nature or Society.'

'On the other hand,' he continues, 'we cannot retain the *illusion* . . . that moderns have about themselves and want to generalize to everyone: atheist, materialist, . . . *prisoners of an absolute dichotomy between things and signs, facts and values*' (1993, 132-33, 135, emphases added).

So, at the ground level, 'We simply have to ratify what we have always done' (1993, 144), but we should *think about it* differently. Our political processes and deliberations at the meta-level need to be rejigged to reflect the fact that dualist separations of people and things at the ground level are not found ready-made in the world, but are the products of endless and chancy passages of purification. And this gets us to Latour's Parliament of Things, introduced sketchily in the last chapter of *Never Modern* and thought through in great detail in his *Politics of Nature* (2004). In the Parliament of Things, scientists and politicians (and others) would come together on a level playing field to debate technosocial initiatives, acknowledging that neither group possesses any sort of final truth of the human or nonhuman realms and that, indeed, what comes to count as truth in one realm hangs together with what comes to count as right in the other. The Parliament of Things, then, would stage in the insights of actor-network theory at the meta-level.

I think this is an interesting and important and even practical idea. The Parliament of Things would certainly slow down our thoughtless and headlong remaking and enframing of nature,

which is one of Latour's stated aims. But the point I need to stress here is that Latour's politics of theory is not mine. The other world that I would like to produce would exist at the ground level, not the meta-level of conventional politics, while Latour wants to leave the former in the possession of the modern status quo, and only to modify the way we think about that. The key difference, from my point of view, is that I want to read theory back into our ways of going on in the world at the ground level and Latour does not.<sup>4</sup>

Having said that, I could end this essay here. As I said above, variety is good, and here we have two different ways of reading theory back into politics. Each is self-consistent; neither entails any sort of fundamental mistake; there is no straightforward way of settling the matter. And perhaps there is no necessity to choose. From my side, I like the idea of a Parliament of Things. I would be happy if we could have that and also make the sort of gestalt switch in practices and understandings that I have been outlining here—these different elements could easily hang together.

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But one last point fascinates me in this connection. While I can see how my project and Latour's could happily combine, he cannot (1993, 140):

The moderns were not mistaken in seeking objective humans and free societies. . . All concepts, all institutions, all practices that interfere with the progressive objectivization of Nature—incorporation into a black box—and simultaneously the subjectivization of Society—freedom of manoeuvre—will be deemed harmful, dangerous and, quite simply, immoral.

On the face of it, at least, this reads like an almost Orwellian condemnation of just the sort of ground-level politics that I am trying to recommend. I am interested in objects and practices that resist black-boxing, objectivization and subjectivization (ugly words). I have no documentable analysis of why Latour, in particular, should take up this position, but moral indignation is a ubiquitous feature of this landscape, and I want to close this essay with some

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<sup>4</sup> In general I would argue against the split-level image of the world and the base-superstructure model that goes with it (as Latour also does, in other contexts). We should see conventional politics as *part of* the cultural assemblage we inhabit, not as some sort of autonomous controller (see Pickering 1995 for the general form of the argument).

general reflections on why my politics of theory might appear harmful, dangerous and immoral.<sup>5</sup>

In a way, the analysis is obvious. The marginal elements of my nondualist assemblage are just that, marginal and somehow jokey, not entirely to be taken seriously. They are not to be put in the set of heroic Western cultural achievements. Pask's Musicolour machine was not Michelangelo's David. Eno's generative music is not Mozart (or even *Stairway to Heaven*). The Fun Palace was referred to by its critics as the prime example of 'anti-architecture' — as not in the space of the great Western architectural tradition; we can talk about 'anti-psychiatry' in a minute—these condemnatory 'antis' are everywhere attached to the cultural assemblage I am trying to put together.

So admirers of the Western cultural canon are not likely to be enthusiastic about this nondualist world I am trying to produce. So be it—and we begin to see that there is a price to be paid even for thinking about an escape from enframing: it puts us immediately beyond the pale of high culture.

But it gets worse. All we have so far is cultural revulsion; we have not quite got to the harm, danger and immorality yet. Morality is about us, not cellular automata and homeostats, so we need to go back to ontology and the Cartesian divide.

On one side of Cartesian dualism we find the material world and animals, understood as predictable machines; on the other, we find human beings understood as somehow special and different from nature. For Descartes, this specialness resided in the immaterial soul that linked

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<sup>5</sup> In Latour's case, we can note that he has always been more concerned with meta-level issues of representation than with ground-level material practices (Schmidgen forthcoming), so it is perhaps not surprising that his politics of theory focusses on the former. From another angle, Riis (2008) documents very nicely the parallels between Latour's writings on science, technology and society and Heidegger's analysis of technology and enframing, despite their different tones of voice and political evaluations: 'In the end, Latour's philosophy of technology appears as a mirror image of Heidegger's' (2008, 297). We can thus read Latour as arguing that enframing is not as bad as Heidegger made out, while I am trying to set out an alternative here. In a detailed, insightful and generally sympathetic essay review of Latour's *Politics of Nature* (2004), Jensen (2006) includes an interesting section entitled 'Experimenting and Moralising,' which, like the present essay, notices the moralising and intolerant tone of Latour's discussion of the politics of theory. '[O]ne crucial aspect of collective life seems, in fact, to be closed off from negotiation [in the politics of nature]. That is [Latour's] new constitution itself. . . [H]e suggests that failing to take seriously his directives entails losing "the chance to become civilized" (180). Such formulations give a particular, and I think unpleasant, flavor to the statement . . . that "Against the norm dissimulated in the politics of matters of fact, then, we had to be even more normative." . . . [E]verybody seems to be invited into the realm of political ecology, except everybody who *seriously* disagrees with Latour. . . These groups are not viewed as "enemies," later to become friends, but as "others" that may be ignored without loss. . . The weakness of *Politics of Nature* is its overt and covert self-privileging, and its (at times) moralizing rhetoric' (Jensen 2006, 119-20).

man to God. Many of us no longer believe in immaterial souls (or God), but this notion of specialness has echoed down the centuries as a sort of characteristic *human exceptionalism* in philosophy, the social sciences and cultured discourse more generally (Pickering 2008). Even in naturalising and critical mode, one finds an endlessly repetitive meditation on what's so special about us: the soul, reason, representation, cognition, emotion, ideals, language, society, culture. And inevitably this discourse has a moral dimension. It has to do with how we should be; how we should live up to our specialness, whatever it is. Latour, too, has a story about human specialness, which, as we have seen, resides in the *telos* of dualist purification that he admires in modernity and wants to preserve.

I suspect that we have now located the problem. Understanding our ontological condition as a performative dance of agency with human and nonhuman others is precisely *not to dwell on our specialness*—it is to step outside the moralised space of human exceptionalism. Performative dances of agency are just as much what rocks and stones, stars and planets, the plants in my garden and our cat, do, as what we do. Human specialness goes out of focus in this other world that I would like to produce, putting us yet further beyond the pale. Not just bad taste is at stake, then, but also modernity as one long morality play of human specialness.

There are many ways to respond to this observation. One would be to note that the elaboration of the discourses of human exceptionalism has cost us something we once cared about—our immortal souls—and left us with a stripped down vision of bundles of wants and rights devoid of most of what makes life worth living, a vision which, moreover, somehow hangs together rather nicely with a world of enframing. This I think is true. Another response would be that to deny ourselves any profound ontological specialness is not to embargo any discussion of how we differ in specifics from rocks, cactuses, cats and machines. It is to say that we should think about how our finite specialnesses engage with our non-specialness. This takes us back to where we started, with STS. In *The Mangle of Practice* I didn't deny that scientific knowledge, for example, was interesting and important as well as special to us—I just tried to show that we can get to grips with it better by thinking about how it engages with and is transformed in performative dances of agency with the material world.

So to step outside the space of human exceptionalism is not necessarily to become a pig wallowing in a trough.<sup>6</sup> But we have not yet plumbed the moral depths. My instances of other ways to go on have thus far all been pretty respectable ones—I deliberately started with mathematics and engineering because one is disposed to take them seriously. But my research

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<sup>6</sup> I thank Carol Steiner for this accusation.

into the history of cybernetics has taken me into all sorts of strange, unexpected and disreputable places where ideas of the objectivization of Nature and the subjectivization of Society become, shall we say, problematic: weird Eastern spiritualities, magical powers, alchemical transformations, psychedelic drugs, flickering strobes, sensory deprivation tanks, altered states, you name it. To keep the story short, let me just touch on the thread of this story which circles around *madness*.

Michel Foucault (1988a) has told the story of the madman as the moralised—demonised—other of modernity: the man bereft of reason who has lost his specialness and fallen across the Cartesian divide, who has become animal. Even today, the madman is deficient, at best to be restored to a semblance of specialness by the administration of drugs (a very peculiar manoeuvre ontologically).

Gregory Bateson, one of the founders of cybernetics, thought otherwise. Bateson's idea was that schizophrenia in particular could be understood as a form of adaptation to the sort of communicational impasse that he called the double bind—a specific performative move in the dance of agency that is social interaction (Pickering forthcoming e). Furthermore—and now we approach the basis of the moral condemnation of the nonmodern, I think—Bateson thought that perhaps schizophrenia was not all bad. He analogised the double bind to the contradictory instructions given by the Zen master to his disciple, thus suggesting that psychosis might be a very confused and harrowing form of enlightenment (in the Buddhist not the Western sense).

At stake here, then, is the nature of the human *self*. The modern, Western, Enlightenment, self has limits. Beyond them is the animal other, having a strictly negative moral valency. But if one thinks of the world as an open-ended performative dance of agency, who knows how the self will show itself next? If the modern self is in need of policing and enframing—'subjectivization'—well, we could imagine instead a self that is continually revealed, for better and for worse.<sup>7</sup>

This, I suspect, is where the problem lies. The symmetric ontology of STS opens up a space for selves that are not fully 'subjectivized' and not fully split off from their 'objectivized' human and nonhuman environment—that continually become in what necessarily appear to be odd ways—that don't conform to the modern dualist *telos*. The mad really are frightening—out of control and not controllable. They can stand here for all of the odd

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<sup>7</sup> Foucault (1988b) is the place to start thinking about technologies for policing and enframing the self.

figures, including the shaman, the guru, the Beats, the hippies, that threaten ‘harm,’ that constitute a ‘danger’ to the ‘moral’ order of the contemporary world. These are the others that are forbidden entry to Latour’s politics of things.

This is as far as I can go with this line of thought, except to add that Bateson’s ideas about madness did not remain in the realm of ideas. In London in the late 1960s, at a place called Kingsley Hall, where Mahatma Gandhi once stayed, they were put into practice by Bateson’s friend, the psychiatrist R D Laing, and his colleagues. Kingsley Hall was a commune in which mad people and psychiatrists and others lived together more or less on a par (in contrast to the rigidly hierarchical social relations of the mental hospital). And interestingly, Kingsley Hall was structured as a space of revealing, where, as Laing put it, the sane could learn to go mad from the mad, where new sorts of selves could emerge (an idea that also attached to the Fun Palace).<sup>8</sup> Kingsley Hall, and the entire anti-psychiatry movement as it was sometimes called, were endlessly controversial, but I would like to include them too in my counter-hegemonic gestalt, as part of this other world that I would like to assemble, that emphasises and stages becoming and possibility, now at the level of selves, rather than aiming at purity and fixity.

One might question the morality of taking the mad seriously, and it certainly might be dangerous. But living together with them and trying to help them in daily life, and even to learn from them, strikes me as far more admirable than trying to ‘normalise’ them by prescribing a few drugs. I therefore doubt whether human exceptionalism occupies the moral high ground that it arrogates to itself. If we want to produce another world, we should not be too quickly intimidated by moralising critiques that surreptitiously patrol the boundaries of the self.

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<sup>8</sup> Kingsley Hall was also a centre of counter-cultural political activity in London (Pickering forthcoming e).

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