

Denaturalising Nature¹

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Introduction

STS tells us that modernity is not what it seems.

Simply put, from the inside it is neither as coherent, nor as monolithic as it imagines itself to be. Instead, it is **both coherent, and not coherent at all**. This is a thought that offers us possibilities that are simultaneously analytical and political. In this paper we want to push on those possibilities in one particular way. We want to think about how modernity naturalises nature. And then about how the latter might be denaturalised.

The argument is that the both/and practices of modernity naturalise the natural in many different ways as they also go about generating a single nature. That they generate what we might think of as that great and suffocating dualist modernist achievement: nature resilient. And then, behind this, or as a part of this, that they also generate what we might think of as a universe resilient.

Our pitch is that this has important political implications for many post-colonial encounters. There can be no rules. But on the whole we would suggest that instead of re-enacting modernity, its natures, and its cosmologies, as single and coherent, it is usually better, politically, to press on modernity's non-coherences; to denaturalise both the single and the endless multiple natures of modernity²; and to show that they could be different; less obnoxious; and then that they are malleable as well.³

So that's what this paper is about: nature multiple. And the cosmos resilient. But we start very empirically with nature. With Norwegian nature. And with Norwegian nature as it is done in practices that touch on fish farming. We draw, then, on an ethnography and history of salmon farming in Norway, and how this example of culture intersects with, and separates itself from Nature.

Nature Untouched

So here we are in Norway:



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Isn't it beautiful? To see this picture we need to surf to visit norway dot com. Under the heading 'nature attractions in Norway' and a gorgeous photo of what may or may not be Geiranger fjord, this web site tells us that:

² The argument is developed for biomedicine in Mol (2002).

³ The argument is explored in Mol (1999) .

⁴ Sourced from <http://www.visitnorway.com/en/What-to-do/Attractions-Culture/Nature-attractions-in-Norway/>.

‘There are mountains plunging into the sea from hundreds of metres, fjords, tall mountain peaks, northern lights and midnight sun.’⁵

Then it adds that:

‘Twenty-one national parks provide nature lovers the opportunity to enjoy untouched nature. Norway’s glaciers stretch out their white caps across mountain tops ...’

The story is that if we visit Norway, in this imaginary we do so because we will come to, join with, or participate in, nature. We will appreciate the blue green water, the tall mountain peaks, the naked rocks, and the fjords. Note the keywords here. Nature is tranquil; nature is untouched; and nature is untamed. We’re in the presence of the Nature-Culture Big Binary.

This is the imaginary which we need to hold, in our modern heads, as we look to see how nature is actually being done in practice. For our anthropology and our STS tell us that binaries are done. So now let’s change gear. Let’s talk about salmon and how some versions of the Nature/Culture division get done around salmon and salmon farming.

Nature: a world without domesticated salmon

Some statistics: four million salmon escaped from the fish farms of Norway between 2002 and 2011⁶. That’s a lot, but only about one in a thousand. Because in 2011 there were 300+ million farmed salmon in Norway.⁷ So that’s the divide, or one of the versions of it, that we need to look at.

So how are domesticated salmon kept separate from their wild cousins? How is nature being done here? In practice?



One version of an answer takes us to a world of nets, ropes, tanks, walls, pipes and filters, together with a lot of human effort.

⁵ Sourced from <http://www.visitnorway.com/en/What-to-do/Attractions-Culture/Nature-attractions-in-Norway/>.

⁶ Statistics sourced from Norsk Fiskedirektoratet, the Norwegian Directorate of Fisheries, at <http://www.fiskeridir.no/statistikk/akvakultur/oppdaterete-roemmingstall>.

⁷ This figure comes from <http://www.fiskeridir.no/english/content/download/11038/90360/version/16/file/sta-laks-mat-7-utgbeh.xlsx>, last visited on 20th September 2012.

⁸ Photo ref DSC01769



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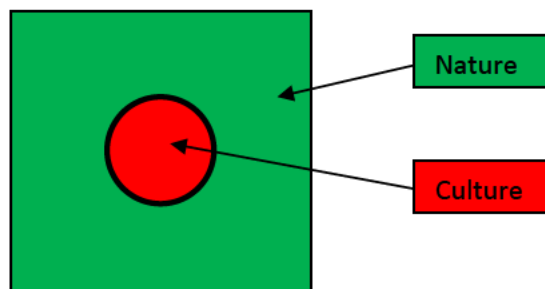
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So there are barriers between farmed fish and nature down on the farm. Between culture and nature. But how to think about these barriers? STS tells us that they are generated in practices, and it has a particular take on practices. These aren't just about people. Instead they are heterogeneous relational patterns that keep on repeating, more or less; patterns of association. So this is what STS goes looking for when it looks at practices. And it treats whatever emerges as a more or less secure or insecure effect of practices of all kinds.

So we're into ontology here: we are into what is being made real¹². We're looking at what there is in the world that is being enacted in practice. So if nature is that which is pristine, untouched, then the bottom line is that this nature is being done here as a world untouched by domesticated salmon; because the latter are being held in by nets. In this particular version of a dualist world, nature is outside, geographically and physically, while culture is kept within. Here's a visualisation.



⁹ Photo ref DSC01697.

¹⁰ Photo ref DSC07475.

¹¹ Photo ref DSC07163.

¹² The argument is fairly standard in material semiotic versions of STS. Sources include: Callon (1986), Latour (1988b), Haraway (2007), Mol (2002), Law (2002) and Barad (2007).

So far so good. But what does nature contain?

Nature: a salmon that didn't come from a farm

Let's talk about another practice: that of salmon fishing. This, says a tourist blurb, is a 'fantastic experience'.



It is also a set of embodied skills and subjectivities. Indeed it is a set of practices that array – and enact – a particular kind of person, a particular kind of river, and a particular version of the salmon:

'The total experience is what matters; from observing river conditions and choosing a fishing strategy and equipment, to actually fooling the salmon into taking your fly. The more difficult the conditions, the bigger the challenge, and the bigger the joy when the take finally happens!'¹⁴

But what are these recreational fisher-people catching? The Norwegian Salmon River Association, which waxes lyrical about what it calls the 'silver-covered nomad'¹⁵, publishes a pocket guide:



Wild salmon or domesticated? This is the question. What have you caught, once you've caught it? The guide tells us that:

'Rounded and often split fins, shortened gill covers and deformed fins and jaws are common characteristics of escaped farmed salmon.'

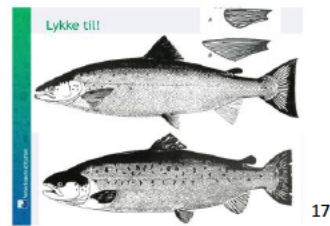
¹³ Jan-Erik Granbo, sourced at <http://www.granbo-flyfishing.no/english-edition/laksens-adferd.html>.

¹⁴ Jan-Erik Granbo, sourced at <http://www.granbo-flyfishing.no/english-edition/laksens-adferd.html>.

¹⁵ Sourced at <http://www.lakseelver.no/Engelsk/The%20incredible%20wild%20salmon.htm>.

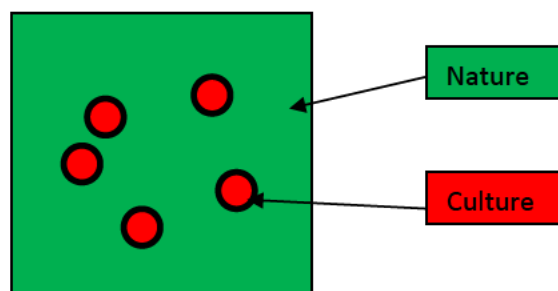
¹⁶ Sourced at [http://www.lakseelver.no/Biologi/minifolder_no_04%20\(oppdatert%20utgave%202011\).pdf](http://www.lakseelver.no/Biologi/minifolder_no_04%20(oppdatert%20utgave%202011).pdf).

‘Split’, ‘deformed’, and ‘shortened’. The language tells us that the benchmark is the wild salmon, pristine, untouched. It is only when it’s touched by culture that this noble fish emerges deformed. So what is farmed salmon to the fisher-person? Here’s a hint:



‘Lykke til!’ says this poster. ‘Good luck’! Why? Because it’s the wild fish at the top you want to catch, not the inferior domesticated specimen at the bottom.

So what have we learned? The answer is that that in this practice we’re watching a second version of nature untouched. For the fishermen, it isn’t nets and pipes that contain culture. In this world you need to create the barrier, fish by fish. First you need to catch your fish. And then you need to look for the signs of culture, the battered fins and all the rest. Only then can you draw the line. Pristine nature is everywhere, but culture is swimming around inside nature too. It’s something like this:



Nature: a world without (many) sea-lice

So now we have two modes of doing nature, of doing the untouched. Two sets of practices. But there are more. Let’s talk, for instance, about sea-lice.



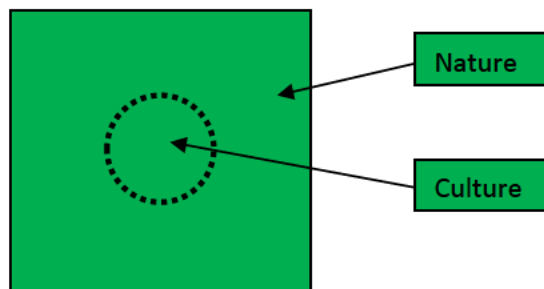
Sea lice breed fast in the crowded pens of salmon farming, and fish with sea-lice suffer irritation and injury. So how to control them? There are various options. Feed; small fish in the pens that eat the lice; and various forms of insecticide. So controlling lice is a third set of practices. But how is nature being separated from culture here? How is the dualism being done? The answer is something like

¹⁷ Sourced at <http://www.tofa.no/tofa/vedlegg/Hvordan-skille-villfisk-og-oppdrettsfisk-revidert%5B1%5D.pdf>

¹⁸ Photo ref DSC006776.

this. Nature is a world with limited numbers of sea lice. Everywhere. Within the farm, and beyond it. And, as a correlate of this, we are talking of a natural world that contains healthy populations of (equally healthy) wild salmon which can swim down the rivers and through the fjords on their way to the ocean without picking up sea lice from the farms.

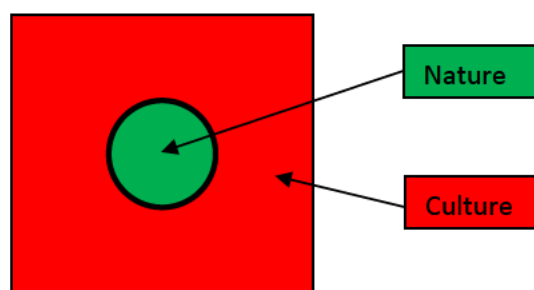
So this is nature number three. And the boundary between nature and culture? It's different again. This time it is both permeable and (as it were) statistical. It has to do with parasite populations. And if everything is going well, it actually isn't there at all.



Nature: a world of thriving populations of wild salmon

Nature number 4 takes us to a world of numbers. State statistics collected from the fish farmers tell us that in 2010 there were nearly 290 million farmed salmon in Norway. Counting wild salmon is a lot more difficult, but the state has a go at this too. The Scientific Council for Salmon Management creates a figure called PFA, or Pre-Fishery Abundance. This is derived in the first instance from river catches of salmon and then a series of assumptions, including the proportion of spawning salmon that are actually being caught. It's all pretty iffy, but the figure for 2009 was 390,000. As against 290 million on the farm.

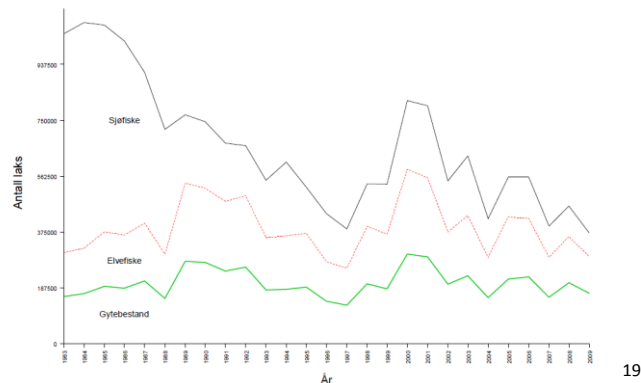
So what do we learn? The answer is that in this apparatus nature and culture are being enacted as populations. In the abstract it is as simple as that. Nature is being enacted within a conceptual statistical space. We'll come to the issue of time in a moment. But synchronically, in this world nature is being dwarfed by culture, in the form of aquaculture. Overall, it is almost as if the fisher-persons' world was being stood on its head. Here, what's being conjured up is a world that is almost entirely culture. Nature, as pristine or untouched, has been rendered small – perhaps vanishingly small. Maybe something like this:



Add in a narrative – for instance about sea lice, or global anthropogenic climate change, or river engineering – and we enter a world in which nature is being progressively squeezed by culture.

Nature: a pre-lapsarian world filled with salmon

So that's a world of populations being divided synchronically. But what about time? Look at this graph:



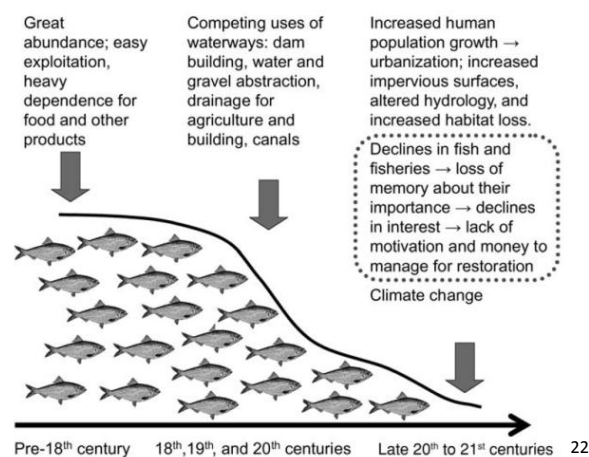
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We're still in the simulated world of PFA, Pre Fishery Abundance, and we're still in statistical space. Here it's the top line that we're interested in. We're being told that in 1983 around a million salmon were returning from the North Atlantic to Norway. In 2008 the estimated figure is around half that: over the last few decades the population has suffered what the scientific literature tells us is a 'slow and steady decline'.²⁰

Why? Partly it's an artefact of the fact there is less sea fishing. Partly it's because of falling sea temperatures in the North Atlantic, and partly it's because people are bad for wild salmon:

'a combination of factors associated with human activities including overexploitation, habitat destruction, salmon aquaculture ... as well as ... changes in the natural environment'.²¹ [all of these are important].

Here is another, and more theatrical, version of the graph of decline:



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¹⁹ Vitenskapelig Råd for Lakseforvaltning (2010, 30).

²⁰ Liu, Olaussen and Skonhoft (2011, 414). A non-academic fly-fishing source says that the fall is steeper: from 1.8 million 40 years ago to 0.2 million now. Sourced at <http://www.karuvaaraflyfishing.com/?id=1&s=1243186195251>.

²¹ Liu, Olaussen and Skonhoft (2011, 414).

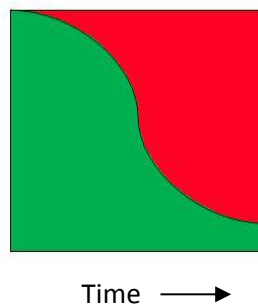
The story is that up until 200 years ago nature was healthy. Salmon populations were stable. Then (though perhaps later in Norway) this started to change as a result of human activity.²³ Messing with rivers. Water pollution, Sea lice from the farms. Diseases from the farms. All of these are important in the story. So, for instance, the scientists tell us that

‘... salmon farming is the main threat to the viability of wild salmon due to spread of diseases, escapees, environmental pollution, etc.’²⁴

So here we have a further kind of narrative dualist nature-culture narrative. Its lapsarian: nature belongs to a receding past. There are no salmon in Lucas’ Cranach’s version of the ‘Garden of Eden’, but the narrative form is entirely familiar:



Before knowledge, before industry, and before proliferation – before culture – the seas and the rivers were filled with salmon. That was nature, nature untouched. But then it all started to change. In 4004 BC, or the eighteenth century, or the 1980s at least in parts of Norway: at any rate the somewhere in the past. That is where nature untouched is to be found. Was to be found. The present – however lively – is only a pale reflection of what once was. And since we’re drawing boundary diagrams, here’s another more mundane representation of this version of the divide between nature and culture. Time flows from left to right:



²² Limburg and Waldman (2009, 963).

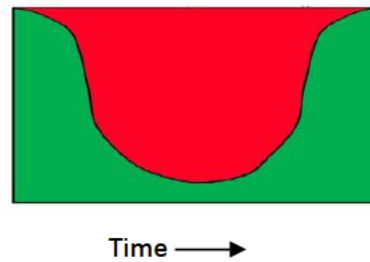
²³ Here is a local Hordaland version of the story. Noting that the salmon population in the river Voss collapsed in the 1980s, we are told that: ‘... a number of anthropogenic factors have affected the population adversely during the last 20 to 25 years; acidification of water quality in freshwater and brackish water, watercourse, road construction, sinking of [the level of] Vangsvatnet, and the effects of sea lice and escaped farmed salmon.’ Direktorat for Naturforvaltning (2008, 10). The fate of salmon is always specific. For other rivers, there are other stories and other interactions. The original is in Norwegian.

²⁴ Liu, Olaussen, and Skonhoft (2011, 415).

²⁵ Sourced from Wikimedia at

http://upload.wikimedia.org/wikipedia/commons/6/65/Lucas_Cranach_d._%C3%84._035.jpg.

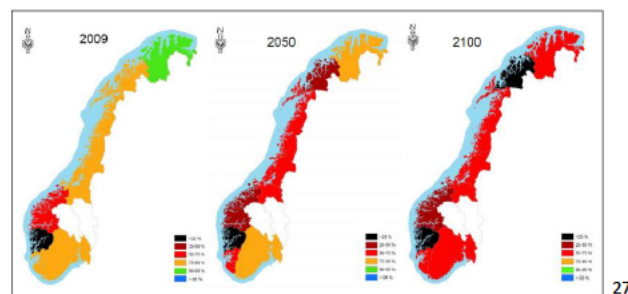
Though, of course, there is always the possibility of redemption, a second coming, if we only act properly and responsibly:



Nature: a genetically and behaviourally unmodified world of salmon

So there are multiple versions of nature and culture; multiple ways of drawing the divide between the two in modernity. Let us tax your patience with one more version of the division. This has to do with genetics and behaviour. There are no genetically modified salmon in Norway, but there is plenty of breeding. The farmers breed for flesh quality. They breed for resistance to disease. And breed for growth. So farmed salmon are genetically different. They're behaviourally different. And (here's the rub), as we know they escape from the farm too.

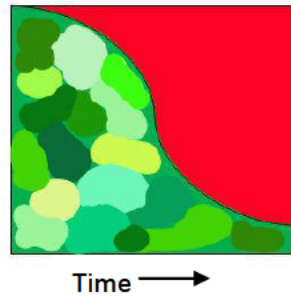
This is what the scientists tell us. One, domesticated salmon don't breed as successfully after they have escaped, as their wild cousins²⁶. But two, they also reduce the breeding success of wild salmon. Three, when they do breed successfully, their offspring are more aggressive, and are more likely to take risks than wild salmon. And, four, since they grow faster they tend to dominate their wild cousins. And, here's the real problem. As a result of all this, domesticated genes are displacing wild ones:



This map is a visualisation which tells us that wild salmon will be in a genetic minority in the rivers of three of Norway's regions by 2050. So the future is dystopian. It's dystopian because in nature genes and behaviours adapt to fit with particular ecological niches. But ill-adapted domesticated genes and behaviours are driving out natural but better-adapted genes and behaviours. And natural genetic diversity is being replaced by a cultural genetic uniformity. That's the story. Perhaps we might visualise the genetic nature/culture boundary so:

²⁶ Sourced from Miljøverndepartementet, Norway's Ministry of the Environment
<http://www.regjeringen.no/nb/dep/md/dok/regpubl/stprp/20062007/stprp-nr-32-2006-2007-/2/5.html?id=442076>.

²⁷ Diserud, Fiske and Hindar (2010, 33).



A final point on salmon, nature and culture.

This is a division that has been written into the Norsk Svarteliste, the Norwegian Black List. Since 2007 the domesticated Atlantic Salmon, *Salmo Salar* has officially been an alien species in Norway.²⁸ Even though it is only forty years on since its ancestors were being caught for breeding purposes from Norwegian rivers.

Reprise

So the argument that we are making is that in modernity there is just one nature, out there, untouched. But at the same time there are also multiple natures. In technoscience. In everyday representation. In wilderness activities.

This, then, is the both-and argument about modernity. It holds tight to a foundational version of nature out there. Untouched. Pristine. Clean. Remote. Non-human. And at the same time it enacts this originary nature in multiple and quite different ways. Indeed, it proliferates what, following Annemarie Mol, we might think of as nature multiple.

And if we go with this 'both-and' story, then what follows?

One response is that it becomes important to explore how different objects – like the different natures – interact with one another. How it is that they hold one another up. Or undermine one another. There is a large story to be told here, but this cannot be explored in this paper.

But if we pose the question politically and in the context of post-colonial concerns, a second response suggests itself.

This, as we briefly mentioned earlier, is that it would make sense to press on the non-coherences and the differences; to play with what Mol calls an ontological politics.²⁹ The reason for this is that non-coherences count as possible points of leverage. It may become possible to work with denaturalised natures. For the hope is this.

One. Some kinds of natures might turn out to be better than others in particular circumstances. For instance a low-louse nature might be more urgent than, say, a nature without domesticated genes, at least in a place like Norway. We're not saying that this is actually the case. We simply don't know. The matter is a contingency. Both politically and analytically. But, here's the point, it becomes

²⁸ Gederaas, Salvesen, and Viken (2007, 17)

²⁹ Mol (1999). See also Stengers (2005) on cosmopolitics. On wildlife see Hinchliffe et al. (2005).

possible to think and debate questions of this kind. To pick between versions of nature. And, to be sure, to extend them to contexts of North-South contact. (Nature, in the form of Chilean feed stocks used to feed northern domesticated animals, is not a topic we have touched on here, but it is certainly a major issue for fish farming).

And then, two, if natures are being denaturalised, then they will presumably start to lose a part of their power; they will start to lose the part of their power that grows out of the mystique of singular necessity. And then the further hope is that we might find ways of avoiding the sticky both-and embrace that generates the dominatory nature-resilient of modernity. Though here too, we need to think very hard about contingencies, and especially political contingencies. In many contexts nature untouched, and the dualism between nature and culture on which it rests, is a powerful impediment to outright exploitation. We do not want to go (and neither am we moving) in the direction of arguing that 'nature is a social construction'. That way lies environmental disaster. We don't know how to think about this at the moment. But often enough we may well need quite robust versions of nature in our politics, even if they also vary between practices.

Separating ontology from cosmology

But there is one more argument to make. This has to do with the character of the cosmos; with cosmology. For once we start looking at modern practices and discover that different versions of what is natural are being enacted, we also begin to see that those practices enact an elision between ontology and cosmology. And this is important, again for both analytical and political reasons. To say it quickly, it is because it does not have to be that way. Because other worlds are possible!

Let's start with ontology. Philosophers tell us that this has to do with the kinds of things that exist; with the character of, objects, times and spaces; with the character of reality. It is, for instance, concerned with the nature of being and becoming; with what entities are; with stuff in general; with how it is; and where it is. It's also concerned with the categories of stuff and, in some versions, with the existence – or otherwise – of God.

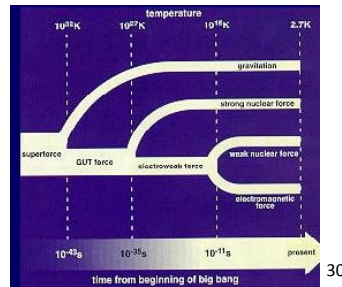
And cosmology? Here the core questions include: what kind of a world, a universe, or a cosmos do we live in? What is it made of? Did it have a beginning, and if so, then what can we say about this? Was it created by God? Or in a Big Bang? If the answer to these questions is yes, then we're in the realm of the cosmogonic, a common tradition in one version or another in the Western tradition. Cosmology also asks what our universe looks like now. Does it go on and out for ever, or does it bend back on itself? Is it expanding? What are the fundamental forces that hold it together? And how do they relate? And then it asks what we might think of as the millenarian questions: about whether the universe will end, and if so how. In the Western tradition the thinking is often eschatological. Will it be sucked back into a gravitational singularity and collapse? Or will it (for instance) be redeemed and transformed at the moment of Christ's Second Coming?

So here's the difference. The character of stuff or entities, that's ontology. What the world or the universe is made of: that's cosmology. The two concerns sound similar, and they readily get confused. But they aren't necessarily the same. And indeed, this becomes obvious if we think about it institutionally. Some people are paid to be cosmologists (they sit in physics departments). And a quite different set of people (mostly sitting in philosophy departments) are paid to be ontologists.

(Not many of either, it's true). In this respect cosmology and ontology are easily distinguishable. So how come they get elided?

A detour into cosmology

To think about this let us skate on thin ice, and first make a brief detour into contemporary cosmology. This argues, or so we understand it, that there are four fundamental forces in the universe (gravitation, the strong nuclear force, the weak nuclear force, and electromagnetism.)



This representation shows that after the Big Bang the temperature in the universe fell, and that the different forces quickly peeled off from one another and became separate. So the representation depicts an origin story (it is cosmogonic), and it is also cosmological, because it describes the basic building blocks out of which our universe is composed. Here is a quote that comes from the same secondary source:

‘There are four fundamental forces within all atoms, that dictate interactions between individual particles, and the large-scale behavior of all matter throughout the Universe.’³¹

Stop and take a look at the language. We are learning: one, that there is a universe; two, that there are four fundamental forces in that universe; three, that they are within all atoms; and, four, that those fundamental forces dictate the behaviour of all matter in that universe.

So what’s important here?

The answer is that the forces being identified don’t belong, as it were, simply to the practice of high energy physics. This is not a local or a practical ontology. Instead it is no less than the universe that is that being described. Everything. We’re all inside it. We’re all being conditioned by it. We’re all an effect of it, in way or another. To put it differently, in this set of practices ontology is being subsumed to cosmology. The two are being rendered indistinguishable. And therefore ontologies are being rendered uniform. All this means that the possibility that there might be different ontologies, different reals, and different forces in different places doesn’t arise. The pluriverse is out, and the directing idea is that if we look deep enough into the fundamentals of the universe we will find that the same sets of forces are at work everywhere.

In this regard it’s exactly the same as the Christian story. In this, to state the obvious, God created order out of chaos. He shaped and animated matter in seven days. Not the four fundamental forces of the universe. But it’s the same difference.

³⁰ Sourced from <http://www.reocities.com/angolano/Astronomy/Images/bigbangtime.jpg>.

³¹ Sourced from <http://www.reocities.com/angolano/Astronomy/FundamentalForces.html>.

So that's what a commitment to the cosmos does for you. It cleans up ontological difference. It naturalises a universe. (We're back with the Big Binary). It turns the differences that remain into matters of perspective. And, very importantly within the Western or the modern imaginary, most of the time it does this without even thinking about it.

Cosmology in nature

To show this, let us return to salmon and to nature. Here's something quite mundane.

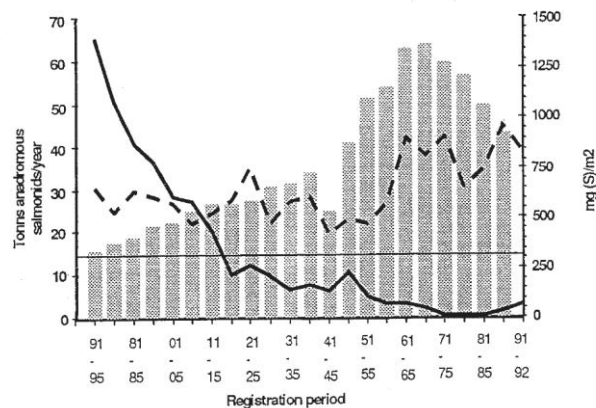


Figure 1. Deposition of sulphur and catches of salmon. Bars: Estimated historical deposition of oxidised sulphur in southern Norway. Continuous line: Catches of salmon in 7 rivers along the south coast. Dotted line: Catches of salmon in 29 rivers on western coast. (From : Mylona 1993 and Kroglund et al. 1994.)

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The continuous line shows the catches of salmon in seven rivers in the south of Norway. And the bar graphs depict estimates of sulphur deposition, again in the south of Norway. We are meant to understand that as SO_2 levels have increased so the number of salmon has decreased.

So what are we learning? (Apart, that is, from the fact that acidification and salmon don't go together?) The response is that it isn't just nature that is being enacted. More generally, a single world is being enacted too. Why? The answer is that this graph can only be created and read if we also take it for granted that there's a single world filled with objects that have determinate properties, and determinate relations including causes and effects; and then, as a part of this, that those causes and effects work across or through space and time. That the world is, as it were, a space-time box that includes objects such as salmon, sulphur dioxide, rivers, fish catches, and geographical distributions, together with the heterogeneous processes that link those objects together. All of this is just being assumed. It's a universe, not a multiverse. A single cosmology, and not just an ontology. The space time box out there? We're back in the realm of that which is beyond human reach. The Big Binary. The universe untouched.

At the same time, it seems unlikely that the scientists doing this work spend much time thinking about any of this. But this doesn't really matter. Indeed, it seems to us that they are doing cosmology and doing it powerfully, precisely because they are doing it by stealth, willy-nilly, and all the time. Indeed, this unexamined and chronic commitment to cosmological singularity is one of the things that holds them – and all the other biologists and environmental scientists – together.³³ They assume that they are all looking at (aspects of) the same world – albeit from different perspectives.

³² Sandøy and Langåker (2001, 1344).

³³ For versions of this argument using different empirical materials, see Law (2009) and Law (2011).

This is a value that they share, but they share it so deeply they aren't aware that it is a value; or, indeed, that it is a commitment that could be otherwise.³⁴

Here's our point. A one-world world is being done in all the practices that we have discussed.³⁵ Along with nature. And it is being done the whole time, by accident at it were, in a quiet and stealthy way. So though ontology, as we know, is endlessly variable in practice, at the same time this is not the case at all. Time, place, space, causality, the possibility of cause and effect, and the singularity of particular objects such as rivers, salmon, and sulphur dioxide, all of these are taken to be uniform, consistent, and coherent.

Even if different times, spaces and causes are also being done.

We are back in the realm of the both-and. But now we are faced with what we might think of as the cosmos-resilient.

Afterword

So we have been arguing that in modernity (and in the Western tradition since at least the Greeks) ontology and cosmology have become more or less indissociable. It has been taken for granted that an ontological inquiry into what exists (or the nature of being) is also, and necessarily, at the same time an inquiry into the character of the cosmos. Indeed, within the Western tradition, teasing them apart has become so difficult that the very idea that this might be possible tends to make little sense.

But, as we discovered when we started to learn a little about Chinese classical philosophy, there are whole traditions in which ontology and cosmology do not go together.³⁶ Questions about what exists in general may be relatively specific (sorry, the English language doesn't quite work here). The character of being, causality and time – that is, the objects of ontology – may be established locally. Instead of framing everything (the cosmos) in the same way, these may vary from practice to practice. This is how it was in the dominant traditions in Chinese classical philosophy, and especially in Confucianism and Daoism. What this tells us is that if ontological matters emerge locally, then the cosmos as a whole (except that there is no whole) is no longer endowed with any specific form. It becomes vague, fluid, indeterminate, multiple, and contextual. Indeed perhaps, to underscore the point, it might be better to say that there is no cosmos: that the world is acosmotic.³⁷

The argument is scarcely novel. Leaving aside the fact that over two millennia ago Chinese classical philosophy was imagining the world this way, parts of Western philosophy have been trying to think this for a hundred or a hundred and fifty years³⁸. And it is also a golden thread that runs increasingly through parts of contemporary academic work including STS, anthropology, feminism and post-

³⁴ We use the word 'value' in a gesture to Kuhn (1970, 184), though he does not talk about commitment to cosmology in his short list of values within his disciplinary matrices.

³⁵ The term 'one-world world' comes from Law (2012b).

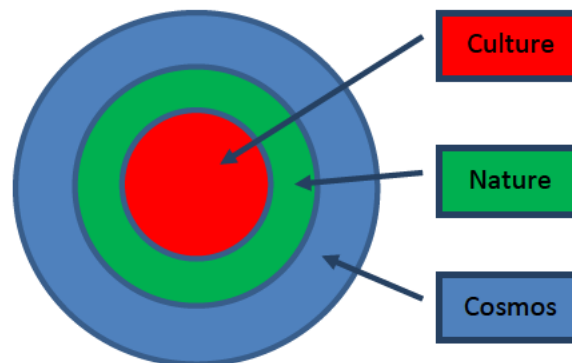
³⁶ See, for instance, Hall and Ames (1995). The argument is also explored in an STS context in Law and Lin (2011) and Law and Lien (2013).

³⁷ This idea is developed in Hall and Ames (1995, 116 ff).

³⁸ See, for instance, discussion of William James notion of the 'pluriverse' in Latour (2004b).

colonialism.³⁹ But even so, most of the time it seems that we are caught in the webs of the cosmos-resilient.

How might we visualise this trap? Here is a possibility:



Starting from the middle, first off, as moderns we know that culture is multiple. We expect it. But as we shift to the second term, that of nature, things start to change in the practices of the modern. For while we practise a nature multiple, we find it difficult to recognise or talk about it. We move, then, to what we have called nature-resilient. But then, the third term, we move again, and this time to the cosmos. This is the general framing, the general ground of everything. As we have just been rehearsing, in the modern Western imaginary this is self-evidently endowed with a particular order and a particular origin, even if these are obscure to those of us who are located within it. To put it differently the cosmos becomes a container, and that container defines the conditions of possibility: realities that include time, space, causality, cosmogony and singularity. Such is the job-lot that comes with the Western, and then with the modern, propensity to subsume ontology to cosmology.

But things are changing. For now, as we attend to practices and start to lever ontology and cosmology apart, we are slowly beginning to learn that the cosmos does not have to be that way. It is not simply that there are multiple both/and natures. It is also that the cosmological assumptions carried by the notion that nature is singular are starting to dissolve too. The cosmos itself is in the process of losing its singularity. For: once we put the practices that do cosmologies alongside one another and start to take them seriously; once we start, in other words, to insist that these are not perspectives; once we start to insist that what the practices do is real in the context of those practices; once we do all of these things, then we start to discover multiple times, multiple spaces, multiple relations, multiple origins, and multiple modes of causality. We discover, in short, that ontologies multiply, and the framing assumption that there is a single cosmos starts to dissolve.⁴⁰

³⁹ See, for instance, Haraway (1988), Haraway (1989), Latour (1993), Verran (1998), Chakrabarty (2000), Verran (2001), Latour (2002), Law (2002), Mol (2002), Thompson (2002), Feit (2004), Haraway (2007), Noble (2007), Escobar (2008), Stengers (2008), Blaser (2009), de la Cadena (2010), Law and Lin (2011), Stengers (2011), Singleton and Law (2012) and Law and Lien (2013).

⁴⁰ '... Heaven and Earth,
And all the space between
Are like a bellows:
Empty but inexhaustible,
Always producing more'
Lao Tzu (2007, Chapter 5, part).

And the fact that reality is not destiny, is not simply an exciting analytical discovery. For it is also a novel political opportunity.

It is something like this. The internal colonisation of modernity by modernity was never complete. And it is time for those subordinate sensibilities, sensibilities embedded in, and enacted by, those of us caught up in the practices of modernity, sensibilities done endlessly within the North, to start asserting themselves again. For other worlds exist. Even within modernity.

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