Matter-ing: Or How Might STS Contribute?[1]

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'The world is an ongoing open process of mattering.'
(Barad: 2003, 817)

Let me start by putting a hyphen into Karen Barad's play of words. 'The world is an ongoing open process of matter-ing.' Here a single word indexes at least three displacements. First, the <u>merging of two worlds:</u> the kingdom of facts, and the kingdom of values. This it the move from what Bruno Latour (2004b) calls 'matters of fact' to 'matters of concern'; and to what Annemarie Mol (1999) calls 'ontological politics'. Second, it indexes the move from stability, things in themselves, to things in <u>process.</u> From object to Ding, to gathering[2]. And then, as a part of this, third it indexes a move to <u>enactment.</u> Barad, Latour, Mol, all of these writers (and many more) insist that worlds are being done, <u>enacted</u> into being. With difficulty, yes. This is not a business of wilful construction – there is nothing quixotic about world-doing, world-redoing. But nevertheless there are (one has to use the word ironically) 'choices' to be made. Making facts is making values is making arrangements that are in one way or another political (the point is most forcefully pressed by Donna Haraway[3]). Such is the context in which I want to talk about 'the business of STS'.

Business, then, in one way or another, is about matter-ing. Making material in a manner that is of concern. If we think in this way, then business includes everything to do with matter-ing. Helen Verran reminds us that Australian aborigines use the same word – indeed translated into English as 'business' – for their commercial and their cosmological negotiations[4]. The benefits or otherwise of the division of labour have not been visited on the Western Desert. But perhaps we might talk of the <u>'cosmercial'</u> too. Cosmerical negotiations are all of a piece, seamlessly woven together. In the Western Desert, yes, but here, too, in Southern England.

So what does mattering mean if we bring it closer to home? The answer is: many things. And this is the issue with which I have been wrestling, together with Annemarie Mol, in my current work on the 2001 outbreak foot-and-mouth disease in the UK[55]. What is matter-ing in foot and mouth? What is being made material, made relevant? What is the business of foot-and-mouth all about? To put it differently, how are 'contributions' made to foot-and-mouth, contributions that matter? And how does what matters get moved about?

What I like about these questions is that they resist simple answers. Foot and mouth is, was, a mess. It isn't very clear what matters and what doesn't. Or to put it differently, a whole lot of different things matter, but they don't add up. A whole lot of contributions are made, but they don't sum up either. There is no overall reality. And what goes on goes on in a lot of different locations. So we also have to attend to questions of space and transportation – inquire into what matters and doesn't matter where, and why. All this makes it a kind of laboratory, then, for thinking about the business of mattering. Or contributing. And in the present context my interest is to try to tease out some of the

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[2] The reference is, again, to Latour (2004b). But see also Law (2004a).
[3] See, for instance, Haraway (1989), and Haraway (2003).
[4] See Verran (2002) and (2005).
[5] There are many publications on the outbreak, academic and otherwise. See, for instance, Foot and Mouth Disease 2001: Lessons to be Learned Inquiry, (2002), or for an overview, Law (2005).

<u>modes of mattering</u> thrown up in the foot and mouth outbreak and its aftermath.

Any list is arbitrary. I can make it longer or shorter. But I'll talk briefly about five, and touch on a sixth. Ways of making realities that matter. Handling matters of concern. Or different modes of concern.

Critique

Some are easy to see, and easy to categorise. For instance, you will recall that there was a major controversy in 2001 about the decision by the government not to vaccinate animals close to afflicted farms. This question defined a high-energy set of concerns. To vaccinate or not to vaccinate: this mattered. It had material effects. It made a difference to animals, farmers, and perhaps to the course of the epidemic. And this configuration of material concerns spoke to, or provided for, at least three different modes of matter-ing. Let's enumerate these:

First, there is <u>critique.</u> There are many examples. Here's one:

> 'It now seems that Foot and Mouth affects Politicians brains far
> more than it harms Animals.
>
> There is only one way out of this mess and that is to vaccinate and
> treat the disease. Even allowing the meat to be used for Human
> consumption as it does no harm.'
> Silent Majority: Creating a New Sense of Community (2001)

This is from an anti-government, anti-EU website. But here are some academic economists at work:

> 'The public interventions, although appearing to work splendidly in the abstract,
> showed little sensitivity to the conditions actually prevailing in modern livestock
> rearing, and as a result their consequences were not merely imperfect but actually
> pernicious.'
> Campbell and Lee (2003)

And there are many more. So what is at stake here? The answer, I think, is that it is a question of <u>re-valuing</u> or <u>re-moralising.</u> This is what matters. Critique enacts a world that poses itself as a contrast, another possibility, an escape. It is a world apart from the one in which we actually live, a world in which the values are better. In the present world they are wrong. So critique trades, then, on a fact-value distinction. The facts are more or less clear, but the values have gone wrong, and outrage is being committed. Critique engages by re-articulating a moral position. Here to do with farming:

> 'Like lemmings our farmers are forced cut their own throats under
> the instruction of the MAFFia, Government Officials, Politicians
> Vets and the Media'.
> Silent Majority: Creating a New Sense of Community (2001)

Here it is farming, but it might, for instance, be animal rights, or local over global. What matters varies from one version of critique to another.

Puzzle-Solving

STS and its friends often do business in the form of critique. Where our traditions are

politically radical, they mesh in with political agendas in other locations, and what matters to us gets itself transported. Critique is a set of circuits that provides for immutable mobility[6]. But we also make things matter in other ways. There are other kinds of concerns. For instance, we are involved in the business of <u>puzzle-solving.</u> Here we enter the realm of technoscience.

> 'Identifying animals that have been infected with foot-and-mouth disease virus (FM DV) is of considerable importance because it is well established that infected cattle and sheep frequently become carriers of the virus and consequently may become the source of new outbreaks of the disease. This situation is compromised by the difficulty in distinguishing infected animals from those that have been vaccinated against the disease since both groups contain neutralizing antibodies in their sera. Moreover, asymptomatic carrier animals can be found in vaccinated herds.'
> Shen <u>et al</u>. (1999, 3039)

This is the opening paragraph of a 1999 paper in the journal <u>Vaccine.</u> Mattering here is Kuhnian in form. In puzzle-solving the concern is to find or make the missing piece in the puzzle, here the ability to distinguish vaccinated from diseased animals. Puzzle-solving deals with missing facts or technicalities, not values; with possible realities, not ethics. So mattering is to make a difference in the real, by <u>doing</u> matters of fact, realities. It is about doing enzyme-linked immunosorbent assays that will enact the non-structural proteins made by viruses, but not by vaccinations. This is technoscience at work. Realities rather than opinions are being made. To repeat, the focus is on facts, not values, for the values are given. If there is heroism, it is technical, not political.

This is the business of normal science, with its technoscience circuits for transport. And while STS talks about normal science, much of it is, itself, also a form of puzzle-solving. It generates contributions that describe the social shaping of this, the configuration of that, or the heterogeneous engineering of the other. These are versions of STS business as normal, matters of fact about science and technology, that move through the journals and sometimes, at least, out to mesh with the puzzle-solving concerns of business.

Balance

But here is a third mode of matter-ing, one that is different yet again. Quote:

> '… the option of vaccination should be a part of any future strategy for the control of FMD. There are hurdles to be overcome: the science is not yet clear enough; many farmers and farming organisations have expressed their opposition; there are concerns about consumer reaction; there are complex EU and international issues. All these must be tackled urgently.'
> Foot and Mouth Disease 2001: Lessons to be Learned Inquiry, (2002, 13)

The excerpt is from Iain Anderson's official <u>Lessons to be Learned</u> Inquiry about the foot and mouth epidemic. What is the concern, here? Answer: it is the lack of an overall view of things that don't want to add themselves up. So what matters? Answer: the making of a <u>balance</u> between things that won't add up in a nice convergent way, that refuse to be

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[6] The term is Bruno Latour's. See his (1990)., and also his (1998).

located within a single calculus of either facts or values. Facts? Yes, for this is not convergent puzzle solving. The facts here cannot be fitted together like pieces in a jigsaw. There is no single reality. Farmers, consumers, vaccines, international trade, and animal slaughter, all these subsist in different realities. They are different realities that exist in different worlds with different facts. But values are also different and non-convergent. The value of exports rubs up against the slaughter of animals. The fears of consumers buts against the Lake District landscape and its flocks of hefted sheep. The worries of vets interfere with the preoccupations of the epidemiologists or those who breed rare species.

The concern, then, is to find a way of patching these non-convergences together and enacting a whole. So we find ourselves in a weary world of imperfect tradeoffs, or, to put it more positively, in the smooth world of policy-making and compromise. And this is balance, the third mode of mattering, a third kind of concern. Here what matters is absence of balance – and balancing. The failure to fit the non-compatible together. So the business at hand is to array realities and values, to find ways of reconciling the irreconcilable, and to smooth away difference. Because difference cannot be dealt with in any other way. It is a matter of 'being reasonable'. Of finding something that will hold, more or less. Enacting compromise. Here there is no room for sharp edges or awkwardness. There is no room for troublemaking or screaming. And neither is there room for (what come to be seen as) the absolutist posturings of critique.

To vaccinate or not to vaccinate: there are three modes of mattering here, and they are all familiar to us in STS. Critique tries to contribute to the world by showing the absence of goodness, a failure to serve the right values. Puzzle-solving searches for facts that lack, and usually with scientific tools. It matters because helps to solve a problem within a set of supposedly shared values. And balance tries to put together facts and values that seemed hard to reconcile: by smoothing away the sharp edges; by setting up some way of calculating, of qualculating, of measuring or evaluating what is most important from an 'overall point of view'.[7]

Three modes of mattering. I think it is clear enough what they do, what matters to them, and why it is that they might matter. Each speaks to an absence: the absence of good values for critique; the absence of just the right piece needed to solve the problem in the case of technical puzzle-solving; or the absence of an overall view in the case of balance. These, then, are three modes of absence recognisable in a range of locations. This is why these contributions to foot and mouth are transportable. Why it is that they matter in a range of different locations. It follows that if STS can matter in these ways then it is, so to speak, in business. It can transport its concerns and its contributions. And this is indeed what it does at least some of the time. It makes critique; it solves puzzles; or it plays at balancing.

But then there are other places where what it does or what it might do matters in less recognisable ways. Or they don't transport with the same ease. And this is my next topic.

Interference

Let me play, then, first, with what I will call interference. Think first of the smoothness of

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[7] On qualculation see Callon and Law (2005).

balance. And then think about its obverse. Think about roughness and awkwardnesses.

> 'The contiguous cull (based on a computer model) appears to have been implemented by officials poring over maps in remote offices so that only holdings were considered, not the topography, the disposition of animals upon it nor the distances between them. One witness described the process as "carnage by computer". In many cases according to farmers and vets the risk of transmission was nil, yet all the animals on contiguous holdings were slaughtered.'
> Mercer (2002, 6)

This comes from the Devon Country Council report on the foot and mouth outbreak, and it's about the strategy of contiguous slaughter. It is also related to that familiar STS trope, the importance of local or situated knowledge[8]. But it can also be read in another way: in which case it not epistemological but <u>ontological difference</u> that is at stake and needs to be enacted, and contributing turns into the form of <u>ontological interference.</u>

This, then, is a fourth mode of mattering. But what does this mean? There are three parts to an answer. One, it says that <u>realities</u> are being done. Not just knowledges, but realities too. Everywhere. This is <u>enactment.</u> We know about this already. Two, it says that they are complex, non-coherent, uncertain, and in interference with one another. This is <u>difference.</u> And three, it says that if we recognise this and work it right, we can interfere and make a difference. This is the <u>ontological politics.</u> So this mode of mattering not only erases the distinction between facts and values. It also washes away the singularity of the real. And in order to do this it needs, very precisely, to undo balance. It needs to detect, enact, and work on the roughnesses and awkwardnesses enacted in <u>specific locations.</u>

Interference is practised in parts of STS[9] though it hasn't really been worked out for foot and mouth. But we can use the work of the STS-influenced geographers Karen Bickerstaff and Peter Simmons (2004) to show what it might look like. This is on the tussle between the epidemiologists and veterinarians about the 2001 culling policy. Yes, culling was necessary: the two professions could agree on that. But did it need to be so ruthless? And who should judge how to apply it in practice? The epidemiologists accused the vets of resisting sound epidemiological science. Bickerstaff and Simmons quote The Royal Society report:

> 'Those whose professional work (for example as farmers or veterinarians) is focused on individual animals can often – understandably – be mistrustful of complex and seemingly abstract mathematical models as guides to effective action on the ground, especially when this seems to contradict field experience. … epidemics caused by the agents considered here are rare. It thus becomes clear that experience and intuition alone are unlikely to be adequate guides to picking the best control strategies.'
> The Royal Society (2002, 57-58)

'Experience and intuition' alone do not count. But the veterinarians saw it otherwise. Thus Bickerstaff and Simmons also quote the Chief Veterinary Officer, Jim Scudamore:

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[8] This comes in a variety of forms. See, for instance, Polanyi (1958), Suchman (1987) and Haraway (1991).
[9] See, for instance, Mol (2002). It is, perhaps, to be understood as a monadology, where the big is located within the small. On sociological monadologies, see Latour (2001), Kwa (2002), Moreira (2004) and Law (2004b).

'The first [epidemiological] models used had been very crude .. and difficult to relate to the situation on the ground. They were not species-specific, contained little geographical information, failed to acknowledge geographical variation, took no account of movement controls and dangerous contacts and did not incorporate the impact of the range of other measures. The quality of data input had not been as good as it could have been.'
Scudamore (2001, 2)

In one way this is a straightforward professional dispute: the two professions were fighting over matters of fact, and over the policies that might follow from those facts. Bickerstaff and Simmons also show that they were fighting, too, over the character of space: is the world relatively homogeneous (as the epidemiologists were assuming) or not (the veterinarians)? Then again, they were also fighting over the <u>character of reality.</u> What matters is to know reality well (different forms of puzzle-solving?) Success is to achieve this. But here there is a crucial framing assumption: this is that there is just one reality, a single real world, that may, indeed, be known well or less well. In this way of thinking some perspectives are better than others: in short the arguments are epistemological. But in interference, mattering looks different. What is at stake is ontological, not simply epistemological. And we have been there already. The argument is that reality is being done in professional (and other) practices <u>(enactment).</u> Crucially, it is being done in different ways in different practices. The consequence is that realities become lumpy and messy (this is <u>difference).</u> Not single, but multiple. And then it becomes possible to imagine enacting other alternative realities (this is <u>ontological politics).</u> The consequence is that STS (and other) practitioners can participate, and perhaps make a difference, in specific and local enactments that do nature-and-values, all hyphenated together, in practice.[10]

How transportable is all this? The answer is, not very. Ravelling up facts and values sits uneasily with both critique and puzzle-solving. But perhaps more important still, interference is a mode of matter-ing that is awkward, rough, and broken. To that extent is the exact opposite of balance. It does not generalise. It does not smooth out. It does not offer general calculative possibilities. In short it is specific, a form of <u>located practice.</u> Mattering in interference is something that is re-done, re-enacted, <u>instance by instance.</u> This is its business. Its contributions are local. So there is no overview. Instead there are specific problems and specific constellations, and specific possibilities. All in specific places. The consequence is that what we think of as 'policy' would have to think itself out of a world of overall balancing if it were to hear that interference has something to say that matters.

Avant Garde

Perhaps, then, interfering is <u>also avant garde.</u>

<u>Avant garde</u> is the fifth the mode of contributing on my list, and I will mention rather than illustrate it, since I have no good example for the specific case of foot and mouth. But to state the argument formally, avant garde works by undoing taken for granted assumptions. It revisits foundations and shows that they aren't foundations at all, that they hold nothing up. Perhaps it seeks to destabilise the foundations that (seem to) hold up the bourgeoisie or the art establishment. But, in the present context, we might add that it also tries to undo

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[10] The argument has been developed in particular in Mol (2002).

the groundings for policymaking, criticism, and puzzle-solving, and to show that these are not really foundations. This means that it proposes the unthinkable, or at least the unspeakable.

STS has a rich history of avant garde intervention. Citation: the outrageous unthinkability of social constructivism. Is scientific knowledge _shaped_ by the social? Surely not! Or, a second citation more relevant to the present context: the self-evident nonsense of ontological interference as it tells us that the real is being _enacted._ Surely you cannot be serious! Realities aren't done! They are real! Or, (a third possibility that follows from the second), the idea that facts and values – natures and cultures – are enacted together, all mixed up, in lots of practices that are all over the place, quite literally[11]. Surely not! Foot and mouth is one thing! Everyone knows that! Nature is natural, even if we don't yet know about it. Viruses are viruses! And, notwithstanding Steve Hinchliffe's wonderfully avant garde suggestions to the contrary, prions are prions and nothing to do with laboratory practices![12]

In short, structurally, from the point of view of puzzle-solving, critique, or balance, avant garde makes no sense. Almost literally, no sense. It may be wrong, ridiculous, self-indulgent, poorly crafted, fanciful, or simply beside the point. But one way or another, it is certainly beyond the pale. Avant-garde never fits with established enactments of the real world. This means that it is inconsistent with the apparatuses of discipline with its journals, its institutions, and its funding bodies. Discipline, let's be clear, restricts the ways in which things that matter can be made. Avant garde circulates between garrets, the garrets of the academy, and rather than through its exhibition rooms. Hanging committees (and RAE assessors) take note!

Inspiration

Enough on the business strategy (or non-strategy) of the avant-garde. A few words on my sixth mode of mattering. I will call this _inspiration._ Listen to these words:

> 'I have to believe this mass sacrifice of animals I love
> Is worth it.
> Or is it the farmers who are the real sacrifice?
> Like the animals, they take it meekly and obediently
> Often thanking me for doing it.
> After I had killed all 356 cattle in one family's dairy herd
> They sent flowers to my wife.
>
> These are the people who are giving up all, in the hope it will save others.
> But don't get me wrong
> I have now seen plenty of this plague
> And it is no common cold.
> The animals suffer horribly, as the skin of their tongues peels off
> And their feet fall apart.
> We must try to kill them quick and clean,
> As soon as it appears in herd or flock.'

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[11] This is well-known in the writing of Bruno Latour (2004a), but would be a position shared by many in this room.

[12] See Hinchliffe (2001).

Frost-Pennington (2001)

This is part of a poem penned early one morning in the middle of the epidemic by a Cumbrian Temporary Veterinary Officer, Peter Frost-Pennington before he went out to condemn yet more animals. It is one of many hundreds, perhaps thousands, of poems, witness statements, photographs, and other forms of artwork, created during and after the foot and mouth epidemic. Now here is a photo:

http://www.devon .gov.uk/fminquiry/finalreport/ramscliffe/photos4.html. (A dog with nothing to do: Ben in the empty farmyard after the slaughter (Copyright © Chris Chapman))

This, as the legend suggests, shows a rather abandoned dog, the only animal still left on the farm after the cull. And here, from the same series, is a second photograph:

http://www.devon .gov.uk/fminquiry/finalreport/ramscliffe/photos3.html. (Vet with the calves prior to their sedation (Copyright © Chris Chapman))

This shows a calf trying to suckle on the fingers of a vet before being sedated for slaughter[13]. So what is relevant here? What is the matter of concern? What is it that these artworks – obviously far removed from STS – are contributing? What is this mode that I am calling inspiration?

I think that there are various answers to these questions and I do not have them properly sorted out. But, my provisional suggestion is that that they are about particular features of lived experience. Or, perhaps, (and this is not necessarily the same thing) they are about particular features of embodiment in particular circumstances. If this suggestion makes sense, then what they are doing is enacting forms of embodiment or lived experience that are not being enacted elsewhere in a publicly transportable form. That, then, is their contribution. And that is what matters about them.

So what was enacted in foot and mouth for those caught up with it? The answer is, heaven knows. But various words do recur time and time again: for instance, 'fear', 'suffering', 'community support', 'friendship', 'loss', 'isolation', and 'silence'. To pick on the last of these, many have written about the silence on the farm after the slaughter and the departure of the contractors[14]. They have written about how a working farm was overnight turned into something entirely different, without daily routines, without the coming and going of the animals, and without the noises of those comings and goings. And this is why I have included the first of these photographs. The picture of the dog, doing nothing in a spotlessly clean farm yard, perhaps disoriented, catches something about silence and the loss of routine. Or so I think.

And the vet-poet? And photo of the vet allowing the calf to suckle minutes before its slaughter? My suggestion is that both these enact a mixture that recognises pain and suffering on the one hand and a matter-of-factness to death on the other. There is no sentimentality here, no romance. That is how life is on the farm. Or death. For the vet, there is always suffering, to be acknowledged, but at the same time to be held at arm's length. This, then, is a mixture that characterises the clinical attitude in health care, whether this has to do with people or with animals. And the poem and the photograph acknowledge and

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[13] These come from Mercer.(2002).

[14] And none more movingly than Sue Wrennall. See here (2002).

re-enact this in a way, and through media, that moves beyond the clinic and the farm. They do so, in short, in a manner that renders them <u>transportable.</u>

Though this takes us beyond the scope of today's talk, I am not saying that lived experience is primary or more authentic than transportable enactments. Everything transports I one way or another. I am not, therefore, thinking that what I am calling 'inspiration' should be considered as a specially privileged form of hermeneutics. My point is much more precise. It is that under certain circumstances artworks may contribute by transporting and enacting features of enacted embodiments and experiences (I stress that they are <u>enacted)</u> that otherwise tend to stay in particular circuits of embodiment and experience, and do not move around[15]. And here my perhaps not very original thought is that the artworks are moving what are taken to be features of the private into the public domain by re-enacting these in other media: which, if it is right, is a very particular mode of mattering or contributing.[16]

In the Devon Country Council Report Ian Mercer, the Chairman, wrote as follows:

> 'Those who have written, those who attended and those who followed proceedings via the media and the Internet are all aware of the emotional atmosphere which surrounded the exposure of personal tragedy. There are also undoubtedly those who have not yet found it possible to express their feelings in writing or in person. What follows is necessarily for the present purpose as objective and pragmatic as we can make it, but none who have suffered should be in any doubt that their experience and their present plight is not diminished in any way by that.'
> Mercer (2002)

Mercer is wrestling unhappily here with an excess, but for him the emotional and the embodied is absent in the 'objective and the pragmatic'. And this is what matters in inspiration, and what it materialises: some very precise realities that are not enacted in other non-embodied ways[17].

The Business of STS

I have briefly touched on six modes of concern or modes of mattering: critique, puzzle-solving, balance; and interference, avant garde, and inspiration. The list is arbitrary. In real world enactments they overlap – and no doubt there are others too. Then again, STS variably enacts them, being better at, or more appropriate to, some than to others. But if STS means business, and I think it does, then this is because it is about <u>contributing</u> in one way or another. It is about enacting cosmercial realities that transport to locations beyond itself. And this is why I have offered you this list.

Some of these modes of mattering are more obviously relevant, clear, and self-evident than others. Puzzle-solving, balance and critique no doubt form the core business of STS as it is currently constituted. In principle, at least, they are fairly transportable, and if STS wants to mean business to business then it will certainly want to make contributions in

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[15] The idea that the body – and its lived realities – may be understood as sets of different enactments is explored in Mol and Law (2004).

[16] For fuller discussion see Law and Singleton (2004).

[17] Latour's (2004b, 243) comment on Whitehead's philosophy is helpful here. The issue is not that (for instance) the pain is more real than the epidemiological statistics. It is rather that we need to find a range of different ways of making matters of concern.

each of these ways.

But at the same time I am also concerned about other modes of mattering. My worry that interference, avant garde (whatever that might mean) and inspiration, tend to matter less to STS itself: they don't even transport very well within the discipline. But if STS indeed means business, then it should, or so I want to say, imagine how such alternative and less obvious modes of concern might be made to matter, both to itself and elsewhere. Interference could, for instance, easily be made to matter. In practice it matters in agriculture, or in health care because the realities that make these up are lumpy and non-coherent. But as things stand the smoothnesses of balance tend to flatten realities, and erase the awkwardnesses of interference. Perhaps inspiration will always stay at the margins of STS cosmerce, though I hope this is not the case. But avant garde, that loose cannon, must be protected. It matters in ways that start out by being unthinkable – and then, at least sometimes, come to matter in quite other, transportable ways.

That, then, is the weight of my argument in this paper: the business of STS should be to enact a wide range of transportable realities. Its ontological politics should be heterodox. It matters in many different ways!

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