Ontological politics. A word and some questions

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Abstract

This is a chapter that asks questions about where we are with *politics* now that actor network theory and its semiotic relatives have reshaped *ontology*. They have reshaped it by underlining that the reality we live with is one performed in a variety of practices. The radical consequence of this is that reality itself is multiple. An implication of this might be that there are *options* between the various versions of an object: which one to perform? But if this were the case then we would need to ask *where* such options might be situated and *what* was at stake when a decision between alternative performances was made. We would also need to ask to what extent are there options between different versions of reality if these are not exclusive, but, if they clash in some places, depend on each other elsewhere. The notion of choice also presupposes an actor who actively chooses, while potential actors may be inextricably linked up with how they are *enacted*. These various questions are not answered, but illustrated with the example of anaemia, a common deviance that comes in (at least) clinical, statistical and pathophysiological forms.

In this chapter I would like to ask a few questions. These have to do with *ontological politics*.[1] They have to do with the way in which 'the real' is implicated in the 'political' and *vice versa*. For even if the traditional divisions between the two have been pulled down iconoclastically, by actor network theory and by its many relatives, it is as yet by no means clear what this might mean for further action. What it might imply for going about life in various sites and situations—state politics, social movements, and technoscience formation. And what it might suggest for handling the interferences between these. For interfering.

Ontological politics is a composite term. It talks of *ontology*—which in standard philosophical parlance defines what belongs to

the real, the conditions of possibility we live with. If the term 'ontology' is combined with that of 'politics' then this suggests that the conditions of possibility are not given. That reality does not precede the mundane practices in which we interact with it, but is rather shaped within these practices. So the term *politics* works to underline this active mode, this process of shaping, and the fact that its character is both open and contested.

To be sure, it has always been assumed that 'reality' is not entirely immutable. Such was the point of technology—and indeed politics. These worked on the assumption that the world might be mastered, changed, controlled. So within the conventions of technology and politics the question of how to shape reality was open: at some point in the future it might be otherwise. But along with this it was assumed that the building blocks of reality were permanent: they could be uncovered by means of sound scientific investigation.

Over the last two decades, however, they have been undermined, these neat divisions between the present and the future; between that which is well-set and that which is still-to-be-formed; between the building blocks that are given and the modes by which they might be differently adjusted. This work—of which actor network theory did quite a bit but that it by no means did alone—has robbed the *elements* that make up reality—reality in its *ontological dimension*—of its alleged stable, given, universal character.[2] It has argued, instead, that reality is historically, culturally and materially located.[3]

Located where? The answer depends on the field in which it is given. In social studies of science it was the laboratory that was redescribed as a sociomaterial practice where reality is transformed and where new ways of *doing* reality are crafted.[4] From there they are exported, not so much in the form of 'theory' but rather—or at least as much—in the shape of vaccinations, microchips, valves, combustion engines, telephones, genetically manipulated mice and other objects—objects that carry new realities, new ontologies, with them.[5]

Ontologies: note that. Now the word needs to go in the plural. For, and this is a crucial move, if reality is *done*, if it is historically, culturally and materially *located*, then it is also *multiple*. Realities have become multiple.

Not plural: multiple. A clarification is required here, a differentiation. For ontological politics is informed by, but does not directly follow from or easily coexist with either perspectivalism or constructivism. Its pivotal term is slightly different: it is performance.

Perspectivalism. As against the singularity of the single truth voiced by the anonymous, objective 'expert', it has been argued that

there are *many experts* with different professional and social backgrounds, or indeed with no specific *professional* background at all: the word 'lay expert' was invented. And since each of these experts is a different person and comes on the scene from somewhere different, none of them is objective. They are instead specific social subjects, each. They bring with them their own particular skills, habits, histories, preoccupations which means that their *eyes* are different. They look at the world from different *standpoints*. This means that they see things differently and represent what they have seen in a diversity of ways. Much of the subsequent discussion has turned around the question of how this diversity must—or might—be valued.[6]

Perspectivalism broke away from a monopolistic version of truth. But it didn't multiply *reality*. It multiplied the eyes of the beholders. It turned each pair of eyes looking from its own perspective into an alternative to other eyes.[7] And this in turn brought *pluralism* in its wake. For there they are: mutually exclusive perspectives, discrete, existing side by side, in a transparent space. While in the centre the object of the many gazes and glances remains singular, intangible, untouched.

A second kind of pluralism took the form of *construction* stories. These show how a specific version of the truth got crafted, what supported it, what was against it, and how its likely alternatives got discredited. Many stories about the support facts-to-be and artefacts-being-shaped require in order to survive, tell about relevant groups of researchers and/or others who are involved (and here constructivism links up with perspectivalism). But in other constructivist stories material rather than social support is foregrounded: the lenses in which the wave theory of light is made durable, or the dissection room with its knives and skills that anchor the *fact* that diseases carve structural changes in the body.[8]

The sting of construction stories is that the alternatives for any currently accepted fact or well diffused artefact were not doomed to lose from the beginning. They got lost somewhere along the way, as a matter of contingency. We might have had another kind of bicycle, keyboard or video system. It just happens that we've come to stick with the ones we've got. And with facts it is the same. The secret of their success lies not in the laws of nature but in the intricacies of history. Thus constructivist stories suggest that alternative 'constructions of reality' might have been possible. They have been possible in the past, but vanished before they ever fully blossomed. So there is *plurality* again. But this time it is a plurality projected back

into the past. There have been might-have-beens, but now they have gone. The losers have lost.

Talking about reality as *multiple* depends on another set of metaphors. Not those of perspective and construction, but rather those of intervention and performance.[9] These suggest a reality that is *done* and *enacted* rather than observed. Rather than being seen by a diversity of watching eyes while itself remaining untouched in the centre, reality is manipulated by means of various tools in the course of a diversity of practices. Here it is being cut into with a scalpel; there it is being bombarded with ultrasound; and somewhere else, a little further along the way, it is being put on a scale in order to be weighed. But as a part of such different activities, the object in question varies from one stage to the next. Here it is a fleshy object, there one that is thick and opaque and in the next place it is heavy. In performance stories fleshiness, opacity and weight are not attributes of a single object with an essence which hides. Nor is it the role of tools to lay them bare as if they were so many *aspects* of a single reality. Instead of attributes or aspects, they are different *versions* of the object, versions that the tools help to enact. They are different and yet related objects. They are multiple forms of reality. Itself.

Let me give an example. It is a story about *anaemia*.[10]

Anaemia is no longer at the centre of heated controversies in front line science. And yet the question 'what is anaemia?' has not been answered in a single or stabilized way. Or, whatever answer one may hear if one asks about it, when one observes what is done in practice, anaemia appears to be *performed* in several different ways. Here I'll separate out three (or rather three genres) of these.

One: in a consulting room a patient tells the doctor that he gets dizzy. Too tired. The doctor asks some more, about when these symptoms come and how they do. And then she approaches the patient and lowers an eyelid, maybe the other one too, to check its colour. How white, or rather red do these eyelids look? What general impression does the skin give? The patient's talk, the doctor's further questions and the observations made on the outside of the body all relate to anaemia. How do they stage it? The answer is: as a set of visible symptoms. As complaints that may be articulated by a patient. This is the *clinical* performance of anaemia.

Two: however in the *laboratory* routines of any hospital other things are being done. Here anaemia equals a low haemoglobin

level in a person's blood. For here blood is tapped from veins and fed to machines which pour out number for each blood sample they receive. (Beware, this is only one of the laboratory techniques used to measure haemoglobin levels. There are others that I won't go into here.) The number generated is then compared with a standard: a normal haemoglobin level. So that is a laboratory way of performing anaemia. But it comes in different versions. For there are different ways of setting the standard for a normal haemoglobin level. Most common is the *statistical* method. This depends on assembling data for a population, the norm being set at, say, two standard deviations from the mean figure of the population. The people whose blood tests reveal a haemoglobin level below this norm are then diagnosed as having anaemia.

Three: the other method is *pathophysiological*. This depends on finding, for every single individual again, the dividing line between the haemoglobin level that is enough to transport oxygen through the body properly, and the abnormal level which, by contrast, is too low.

So there are at least these three performances of anaemia: clinical, statistical and pathophysiological. How do they relate? In textbooks they tend to be described as being linked, as being, indeed, aspects of a single deviance. A haemoglobin level too low to carry oxygen from lungs to organs in sufficient amounts to supply an individual's organs (pathophysiological) is supposed to fall outside the normal range established by calculations based on population data (statistical), and then to surface in the form of symptoms that give the patient so much trouble that he will seek medical help (clinical). But that is not necessarily the way things work out in practice. For in practice sometimes people don't get dizzy or have white eyelids and nevertheless have a haemoglobin level that (if it were measured) would appear to be deviant. Or people's organs lack oxygen because their haemoglobin level has just dropped but it still lies within the normal statistical range. And so on. In practice the three ways to diagnose 'anaemia' each diagnose something different. The objects of each of the various diagnostic techniques do not necessarily overlap with those of the others.

This does not lead to big debates, to attempts to seek consensus or even concern. It is simply how it is. Once in a while a discussion may flare up about which method of diagnosis to use in some specific context. But by and large these three ways of handling anaemia

or, rather, these three different anaemias, have co-existed for decades now. And there is no sign that this situation is changing.

The reality of anaemia takes various forms. These are not perspectives seen by different people—a single person may slide in her work from one performance to another. Neither are they alternative, bygone constructions of which only one has emerged from the past—they emerged at different points in history, but none of them has vanished. So they are different versions, different performances, different realities, that co-exist in the present. This is our situation, one that actor network theory and related semiotic sociologies have articulated for us. And I'll take this situation as an occasion for asking my questions. Questions about the kind of politics that might fit this ontological multiplicity. Four of them:

- *Where* are the options?
- *What* is at stake?
- *Are* there really options?
- *How* should we choose?

Where are the options? On political topoi

If there are various ways to perform a deviance, it might seem that there is, or should be, a *choice* between them. But where, at which *site*, where might this be located?[11] For we should not accept the illusion that most decisive moments are explicit. Take the question of how to organize the *detection* of anaemia. Roughly, there are two alternative models: one is to have a system of professionals available for people who actively seek help. The other is to organize a screening system and try to mobilize the entire population to come for regular check-ups. The first performs anaemia clinically, the second statistically. The outcomes differ: if the detection of anaemia is organized in a clinical manner there will be some people with statistically low haemoglobin levels who go undetected for they either have no complaints or do not take these to be sufficient reason to go and see a doctor.

In most countries the detection of most diseases is organized in a clinical manner. Screening programs have been established in only a very few exceptional cases. Where was this decided? It is important first to recognize that this situation emerged historically. It grew out of a great number of contingencies and forces, but there was never a moment or a place where it was decided. Most current cure and

care provisions are an historical product of the patient-seeking-help model. The other model, that of the state taking its population under control, got embedded in other contexts—for instance in public regulations, water provision, vaccination programmes and other preventive measures.

If there *were* a site, here and now, where this situation was to be reconsidered, or if it were created, there would be arguments available as to why—at least in anaemia—clinical medicine should indeed prevail over the detection of statistical deviance. For screening would yield more false positives than real deviance since (at least in populations that are well fed and not chronically infected) anaemia is very rare. And, different argument: if people have no complaints because of their anaemia, then there is no reason to treat it. Or, different argument yet again: it is not cost-effective—indeed far too expensive—to screen properly for every deviance people may have. I do not here seek to either agree or disagree with these arguments. I want to point to something else. What they do, each of them, is shift the *site* of the decision elsewhere: to move it along. So they displace the decisive moment to places where, seen from here, it seems no decision, but a fact. These places are, respectively: the intricacies of measurement techniques; considerations about good and bad reasons for treatment; and health care budgets.

I hope that this helps to illustrate why the question about *where* the options are is so relevant to the shaping of ontological politics. For as it is, many conditions of possibility are not structured as the outcomes of 'decisions' at all.[12] They happen to be the way they are—or they derive from facts imported from elsewhere. So the question becomes: should they be restructured? Is this what ontological politics must imply, that we make the 'options' more *explicit*? I doubt it. For it would imply an extension of the argumentative format that tends to follow when everything is recast into an option. We need to better investigate what this would imply, intellectually and practically. What it is to live things as *options*.[13] What the goods and bad of this way of living are. And what its practical limits might be. For it might happen that arguments that are mobilized in decision making shift the 'real' options to other sites, and then on again to further and more distant locations. That there *is* no last resort but instead there are 'options' *everywhere*. So that at any given site, they always end up seeming *elsewhere*.

What is at stake? On interference

What is at stake in ontological politics? The organization of the detection of a deviance like anaemia is not a 'merely practical' matter. It also has reality effects. It makes a difference to the way anaemia 'itself' is performed. But it is not only the reality of anaemia that is at stake. Many other realities are involved too. For objects that are performed do not come alone: they carry modes and modulations of other objects with them. Thus: with clinical anaemia comes the reality of conversational interaction, this well investigated ritual of two people trying to insert each other into their own highly specific agendas.[14] With laboratory anaemia comes the needle, the ex-corporation of blood, the controlled infliction of pain. And so on. There's one example I would like to expand upon briefly. It is well suited to present *interference* here, for it shows the linkage between two ways of performing *anaemia* and the performance of a phenomenon that is far more extensively politicised: that of *sex difference*.

The *normal haemoglobin level* can be established in two ways: either statistically or pathophysiologically. Since Hb-levels vary between individuals these two ways of setting norms do not necessarily give overlapping answers. If someone has a high Hb that suddenly drops it may be pathophysiologically abnormal while still lying within the statistically normal range. A statistically deviant Hb, on the other hand, may be pathophysiologically normal since it provides a specific individual with adequate oxygen-carrying capacity. So there is a tension. In current medical text-books there is a preference for the pathophysiological way of setting norms, since this does more justice to the individual. By contrast, in current health care practice the dominant method for setting norms is statistical. There are, again, historical reasons and 'good arguments' for this. And it is not my aim to argue about these. Instead I want to point to a 'side-effect' of the difference between pathophysiology and statistics.

The epidemiologists who make statistical norms differentiate between populations. If statistical norms were made for 'the population' as a whole they would systematically be too high or too low for various groups of people.[15] Therefore different norms are usually set for different groups: for children (of different age groups), men, women and pregnant women. This implies that the members of these groups are compared with better standards than would be

the case if there were no differentiation between populations. But it also implies that 'children' are separated out as a group that differs from 'adults'. And it implies—and it is this I want to consider here—that 'women' are separated out from 'men'. This turns 'women' into a group of people who have more in common with each other than with 'men', however much the two curves happen to overlap. It also performs the category 'women' as one that is biological. For it implies that one of the ways of differentiating it from that other category of 'men' is by comparing this bodily characteristic: the haemoglobin level.

Pathophysiology knows only individuals. Thus it does not require differentiation between the sexes in order to distinguish between normal and abnormal haemoglobin levels. Rather, it involves comparing an individual's Hb-values at a moment of possible deviance with those of the same person at a healthy moment. This provides individuals with a bodily history, a persistent physicality that is a part of their identity. There is a lot to be said about the goods and bads of that. But one of its consequences is that it *doesn't* contribute to dividing humans into *men* and *women*. If medicine were to perform all deviances in individualized ways, a lot of 'undeniable' biological sex differences would simply disappear.[16] Thus the 'decision' about whether it is practically feasible or hopelessly cumbersome to work with individualized norms in medicine not only involves the reality of 'anaemia', but also that of 'women' and 'men'.

The separation of 'pregnant women' is also interesting. From the point of view of treating pregnant women this is sensible: since the blood volume increases when a body gets pregnant, its haemoglobin level tends to decrease. But what I want to point at here, is that this sensible distinction means that laboratory forms differentiate 'pregnant women' from both 'men' *and* 'women'. Thus the very statistical practice that performs the sexes as biologically separate groups, also intriguingly undermines a simple dichotomous categorization of the sexes. For it suggests that 'pregnant women'—of all people—are *not* in fact 'women'.[17]

So this is the phenomenon of interference.[18] Once we start to look carefully at the variety of the objects performed in a practice, we come across complex interferences between those objects. In the ontological politics around *anaemia* it is not just the reality of anaemia that is at stake, but that of the *sexes*, too. And no doubt there is more. If we recognize and analyse these interferences then the question of evaluating performances becomes more and more complex. For while it might just be possible to think of aligning the

arguments around the goods and bads involved in performing any specific single object (for instance anaemia) things become more and more complicated if the arguments around other objects, the sexes, individual identity and so on, must also be balanced simultaneously. Indeed, such balancing will never find a stable end point, there are too many elements. Which implies that *ontological politics* is unlikely to come at rest once the accounts are closed—because they won't be closed. Tolerating open-endedness, facing tragic dilemmas, and living-in-tension sound more like it.[19]

Are there options? On inclusion

I've said that clinical, statistical and pathophysiological ways of handling anaemia do not entirely overlap with one another. And I've argued that rather than simply revealing different *aspects* of anaemia they perform different *versions* of it. Might it be possible to choose between such versions? The notion of ontological politics seems to imply the possibility of 'choice'. But is this the only way of implementing it? So far we've gone into the questions of *where* options might be located and *what* is at stake in the 'decision' between different versions of anaemia. But now we take a step back to ask: but is it the case that there *are* options? The answer is not necessarily, for if realities-performed are multiple this is not a matter of pluralism. What 'multiplicity' entails instead is that, while realities may clash at some points, elsewhere the various performances of an object may *collaborate* and even *depend on* one another.

Let us concentrate on two of the performances of anaemia: the clinical and the statistical.[20] Anaemia may be diagnosed by clinical means or by a laboratory test whose result is assessed against a statistical standard. If the question is how to *detect* anaemia, then the two are in conflict. Clinical rationality demands that doctors be available to all those who have complaints, while if the laboratory and its statistical norm setting were given priority, then the entire population would have to be regularly screened. But this clash about detecting anaemia doesn't mean that there is a *general* clash between clinic and lab.

For instance, in the surgeries of Dutch general practitioners, clinical and laboratory ways of working calmly coexist. First a patient comes to the surgery. There he is interviewed and physically examined. If these two activities suggest anaemia, the patient's blood is

tested—using laboratory techniques. There is no clash. Instead the two performances are put in *sequence*. The clinical performance comes first, but unless the laboratory supports it, no therapy for anaemia results. And there is no clash for a tropical doctor working in a poor region of Africa. She sees a patient, lowers an eyelid, and if this looks too white she prescribes iron tablets. Clinical diagnosis is enough to act on by itself. The lab is expected to agree, but it isn't actually called upon. If there is a lab at all, it is better for it to concentrate on more difficult tasks. Thus, in this situation the clinic *stands in for* the lab.

The relation between clinical and laboratory practices becomes even more entangled at the moment the standards by which the normal and pathological will subsequently be distinguished are established. These standards are not given with clinical and laboratory practice: they are a *part* of these practices. How does this work? Take a statistical norm. In order to set this so called *normative data* are assembled. These are the haemoglobin levels of, say, a hundred men, women, pregnant women and children of different age groups, drawn from the region where the laboratory will recruit its patients. But who should be picked out of each of these populations? Usually laboratories try to assess *healthy* people. But since they are in the process of establishing their normal values, they have no laboratory norm in order to differentiate between healthy and deviant haemoglobin levels. They have, and use, clinical means to differentiate normal and deviant people. They ask people to participate only if they feel well. Thus: when laboratory standards are established, clinical diagnosis is *included*.

But the clinical means mobilized in one context are in turn contested and adapted elsewhere. There are occasions when clinical signs are reopened for investigation. For instance, some Dutch general practice researchers started to doubt the usefulness of the many (negative) Hb-tests done by general practitioners. They wondered whether all these tests were really indicated. What were the clinical signs that prompted general practitioners to have their patients' Hb tested?[21] The researchers discovered that 'tiredness' was a frequent reason for ordering an Hb test. But was this a good reason? To assess this, the researchers compared the Hbs of a hundred patients who had come to their doctor with complaints of 'tiredness' with the Hbs of the hundred random patients coming after them in the doctors' schedule of ten minute visits. And it turned out that there was no difference. The conclusion was that 'isolated tiredness' is not a clinical sign of anaemia. Which reveals that laboratory measure-

ments are in turn *included* in the process of establishing clinical orientation.

Studying the performances of anaemia reveals their multiplicity. But this multiplicity does not come in the form of pluralism. It is not as if there were separate entities each standing apart in a homogeneous field. So anaemia is multiple, but it is not plural. The various anaemias that are performed in medicine have many relations between them. They are not simply opposed to, or outside, one another. One may follow the other, stand in for the other, and, the most surprising image, one may include the other. This means that what is 'other' is also within.[22] Alternative realities don't simply coexist side by side, but are also found inside one another. But this is a situation that does not easily fit our traditional notions of politics. Which means that new conceptions of politics need to be crafted. But which ones? What kind of politics is implied here—or required?

How to choose? On styles of politics

In health care there has recently been a lot of noise to do with *choice*. The idea is that if medical interventions do not necessarily follow from nature, if there are choices to be made, then patients should make these. There are various ways for shaping such choosing. Roughly they may be divided into two models: a market model and a state model. The market model takes health care to be divisible into discrete activities, discrete *goods* that may be bought and sold on the market. It configures the patient into the role of customer who represents his or her desires in the act of buying. In the state model the patient is configured as a citizen. Health care becomes something to be governed. This time there are no discrete goods, but an *organization* with appropriate rules and regulations. This means that patient-citizens should represent themselves in the places where health care organizations are managed, and rules and regulations get their shape. There is a lot to explore here, a lot to ask about the advantages and disadvantages of these two different ways to model self-representation in the complex context of health care.[23] An urgent task.

But there is more to do. For both these models assume that *information* is available and may be provided to the patient. It should be provided willingly and fully by the professionals who have it, to lay people who need it in order to make good decisions. However, if we think in terms of *ontological politics*, then information is no longer given—to anyone. The stories professionals might tell have

lost their self-evidence. And what is more, it is not only the representations of reality in information circulating as words and images that have become contestable, but also the very material shaping of reality in diagnosis, interventions and research practices. So if it is important to attend to the way patients *represent* themselves (as customer or as citizen), it is at least as important to ask how they *are represented* in knowledge practices. Which parameters replace and denote our troubles? What are the endpoints marking an 'improvement' or a 'deterioration' of one's condition through the course of time? A clinical trial in which the *effectiveness* of various interventions is assessed, can no longer be taken at face value. For another question must come first: what are the *effects* that we should be seeking? Answers to that question are incorporated in the information, but also in the techniques, we currently live with. They tend to be implicit, entangled and inextricably linked up with the various performances of any one disease. Thus it is a fairly superficial matter to choose 'after the facts', given the information and the techniques that have helped to generate these. But what if we seek to be less superficial? Who, then, might *do* ontological politics, how to handle *choice incorporated*?

Afterword

The word 'ontological politics' suggests a link between the real, the conditions of possibility we live with, and the political. But how to conceive of this? In this text I've not laid out a response to this question, but rather articulated some of the problems that come with a specific interpretation of politics, one that is posed in terms of deliberation or choice. We may list these. One: if we think in such terms then we risk the ramification of options everywhere—with the consequence that they end up always seeming to be elsewhere. Two: the interference between various political tensions is such that each time one thing seems to be at stake (say: anaemia) an unquantifiable number of other issues and realities are involved as well (say: sex difference). And three: the various performances of reality in medicine have all kinds of tensions between them, but to separate them out as if they were a plurality of options is to skip over the complex interconnections between them. And then there is a fourth problem. Who is the actor who might decide between the options? Might, or should, this be a patient-customer making choices between discrete goods available on a market; or should it be a patient-citizen trying to organize the health care system for the benefit of all? Or, again,

are the crucial moments not those where 'patients' act as an agent, but rather those where they (we) are defined, measured, observed, listened to, or otherwise *enacted*?

These, then, are my questions. I have noted them down here, for while they may be mine, they are not mine alone. These are questions that follow from a semiotic analysis of the way reality is done, from studying performances, from making a turn to practice. They come with and therefore *after ANT*. And what comes after *them*? Answers, maybe. Or perhaps practical explorations of the political styles that seem to be called for. But it is also possible that these questions will evaporate and we'll enact and undergo, yet again, a shift in our theoretical repertoire, finding other ways of diagnosing the present.

Notes

1 The term 'ontological politics' is an invention of John Law. I thank him for pushing me to develop, as well as question it. See also: John Law, *Aircraft Stories: Decentering the Object in Technoscience*. Mimeo, Keele, 1998.

2 Crucial in the ancestries of many of the intellectual articulations of ontological politics is the work of Michel Foucault. See in English, eg, P. Rabinow, ed. (1984), *The Foucault Reader*, New York: Pantheon Books. Foucault is also present in the analysis made here: terms such as 'conditions of possibility' or 'diagnosis of the present' come straight out of his work, while my concern with the articulation of 'politics' is clearly informed by what he has written about the topic.

3 With this trope of 'locatedness' metaphors in which to articulate spatiality gain in importance. See on this the work of Michel Serres, eg, M. Serres (1979), *Le Passage du Nord-Ouest*, Paris: Les Éditions du Minuit; and M. Serres (1994), *Atlas*, Paris: Julliard. And for an example in an actor-network theory (or after?) mode, see: A. Mol and J. Law (1994), 'Regions, Networks and Fluids. Anaemia and Social Topology', in: *Social Studies of Science*, 24, 641–671.

4 But in, eg, Queer Theory other places (such as gay and lesbian subcultures) were pointed to as sites where new realities are being made. See: J. Butler (1990), *Gender Trouble*, New York: Routledge; M. Warner, ed. (1993), *Rear of a queer planet? Queer politics and social theory*, Minneapolis: University of Minneapolis Press; S. Dudink (1994), 'Het privilege van de democratische grensoverschreiding. Radicale seksuele politiek en grensoverschreiding', in: *Krisis*, 14, 50–64, 1994.

5 See for the vaccinations: B. Latour (1984), *Les Microbes*, Paris: Métaillié, 1984; and for the mice: Donna Haraway (1997), *Modest_witness@Second Millenium.FemaleMan©_Meets_OncoMouse™*, New York: Routledge.

6 A huge pile of literature, again, alluded to in just a few lines. But see for the social studies of science version of this line the classical: B. Barnes (1977), *Interests and the Growth of Knowledge*, London: Routledge and Kegan Paul; and for the text where the visual imaginary reaches its 'logical end point': M. Ashmore (1989), *The Reflexive Thesis. Wrighting Sociology of Scientific Knowledge*, The University of Chicago Press. For some good examples of perspectivalism in the sociology of

medicine, see: S. Lindenbaum and M. Lock (eds) (1993) *The Anthropology of Medicine and Everyday Life*, Berkeley: University of California Press. And for a version in which perspectives are linked up with belonging to one sex or rather the other: S. Harding (1992), *Whose Science? Whose Knowledge? Thinking from Women's Lives*, Ithaca: New York University Press.

7 For an astute situation of perspectivalism in the way kinship is done in late twentieth century western/english culture, see: M. Strathern (1992), *After Nature. English kinship in the late twentieth century*, Cambridge University Press.

8 Another library to refer to. But see the book that made its title shift between the first, social, and the second, sociomaterial, version of constructivism: B. Latour and S. Woolgar, *Laboratory Life. The Social Construction of Scientific Facts*, London: Sage, 1979; which became in its second edition: B. Latour and S. Woolgar, *Laboratory Life, The Construction of Scientific Facts*, Princeton University Press, 1986. And for another classic: K. Knorr-Cetina (1981), *The Manufacture of Knowledge. An Essay on the Constructivist and Contextual Nature of Science*, Oxford: Pergamon Press.

9 Performance stories link up with literatures as diverse as I. Hacking (1983), *Representing and Intervening*, Cambridge University Press; and E. Goffman (1971, or 1959), *The Presentation of Self in Everyday Life*, London: Pelican. They radicalize the notions of the former by spreading them out to other sites than experimental research alone and rob the latter of any notion of a 'back stage'. See, eg, C. Cussins, 'Ontological Choreography: Agency for Women Patients in an Infertility Clinic', in: M. Berg and A. Mol, *Differences in Medicine. Unravelling Practices, Techniques and Bodies*, Duke University Press, 1998, 166–201; or A. Mol, 'Missing Links, Making Links: The Performance of some Atherosclerosis', in the same volume, pp. 144–165.

10 There is nothing specific about anaemia that turns it into a better example of a multiple identity than any other object. Its advantage is simply that I've taken time to study it. I have reported on this study in various articles. For more background the reader may turn to these, I have made footnotes to all of them. Here I do not pretend to do justice to the material: my only aim is to articulate some wide questions that, I think, we face—or should face.

11 For the trope of locating performances of a deviance, with details on anaemia, see: A. Mol, 'Sekse, rijkdom en bloedarmoede. Over lokaliseren als strategie' in: *Tijdschrift voor Vrouwenstudies*, 42, 1990, pp. 142–157; and A. Mol, 'Topografie als methode van kennisonderzoek. Over het naast elkaar bestaan van enkele bloedarmoedes' in: *Kennis en Methode*, 1991, pp. 314–329, the last one translated as: A. Mol, 'La topographie comme méthode d'investigation des savoirs. De la co-existence de diverses anémies' in: *Culture Technique*, 25/26, 1995, 285–305.

12 This may be compared to Bruno Latour's quest after the moment where the 'decision' was made to stop Aramis, where Aramis failed, or was killed. This moment/site remains elusive, despite all the efforts to capture it. See: B. Latour, *Aramis ou l'amour des techniques*, Paris: Éditions de Découverte, 1992.

13 Michel Callon asks a related question when wondering how a market is practically made, see 'Actor-Network Theory—The Market Test', this volume.

14 For an example, see: D. Silverman, *Communication and Medical Practice. Social Relations in the Clinic*, London: Sage, 1987.

15 For the question how to separate out populations and how to delineate the region from which they are taken, see: A. Mol and R. Hendriks, 'De hele wereld één Hb? Universaliteit, lokaliteit en bloedarmoede' in: *Krisis*, 58, 1995, 56–73.

16 Epidemiology doesn't necessarily produce 'sexes'. It might also separate out populations in other ways, as to the percentage of their fat mass, their height, the time they spend doing sports, or some other parameter. Such classifications might coincide better or less well with measured haemoglobin levels. Historically, however, two sexes have been epidemiology's favourite way of splitting up the world. Most forms around have M/V boxes and thus allow for making this division.

17 See for the complexity of 'making the difference' also: I. Costera Meijer, 'Which difference makes the difference? On the conceptualization of sexual difference' in: J. Hermsen and A. van Lenning, *Sharing the Difference. Feminist debates in Holland*, London: Routledge, 1991.

18 For a technical philosophical version of the notion of interference, see: M. Serres, *Interférence*, Paris, Les Éditions de Minuit, 172. For a more political mobilization of this metaphor, and others related to is, see Donna Haraway, *Simians, Cyborgs, and Women. The Reinvention of Nature*, London: Free Association Books, 1991.

19 For the related notion of knowing in tension see J. Law, 'After Meta-Narrative: on Knowing in Tension', in Robert Chia (ed.), *Into the Realm of Organisation: Essays for Robert Cooper*, London: Routledge, 1998, pp. 88–108.

20 For the co-existence of the various performances of anaemia, see: A. Mol and M. Berg, 'Principles and Practices of Medicine. The co-existence of various anaemias' in: *Culture, Medicine and Psychiatry*, 1994, 18, 247–265.

21 This was complicated by the fact that patients do not only have deviances, but theories about these as well. When we interviewed them, general practitioners told they often measure in response to these, and not because they presume a low haemoglobin level to be present. See: A. Mol, 'Van wie is de theorie? Bloedarmoede en de meta-positie' in: *Gezondheid. Theorie en Praktijk*, 1, 1993, pp. 5–16.

22 Images such as that of mutual inclusion are being developed in sites where spatiality is a persistent concern. A good case in point is Soja's depiction of Los Angeles as a city that has spread out its image everywhere—so Los Angeles is everywhere—while it also assembled pieces of the rest of the world inside it—so that everywhere is also in Los Angeles. See: E. Soja, *Postmodern Geographies. The reassertion of space in critical social theory*, London: Verso Books, 1989. See for a thoroughly theorized handling of complex spatial images also: M. Strathern, *Partial Connections*, Savage, Md.: Rowman and Littlefield, 1991.

23 Such questions are currently being explored in a variety of ways in political theory. See for a good recent collection of essays, that take up the (state oriented) political question par excellence, that of handling difference: Seyla Benhabib, ed., *Democracy and Difference. Contesting the Boundaries of the Political*, Princeton: Princeton University Press, 1996. For an attempt to relate issues in economy to the shaping of 'good lives' see: M. Nussbaum and A. Sen, eds, *The Quality of Life*, Oxford: Clarendon Press, 1993.