



## OPINION PIECE

### *How to deploy STS to re-imagine sustainable ways of instituting climate expertise?*

By Anders Blok

In one of many recent reflections on the politics of the Anthropocene, anthropologist, philosopher, and science and technology studies (STS) eminence Bruno Latour (2014) asks us to consider if one can speak in a disengaged and dispassionate way about the objective measurement that industrial civilization in 2013 passed 400 parts per million of CO<sub>2</sub> in the atmosphere. Is this science-based statement, he ponders, more like “water boils at 100 degrees” or like “there is a cat on the bus seat (you are about to sit on)”, or perhaps akin to “the Reds are threatening us with nuclear holocaust”? When those very scientists who are supposed to talk dispassionately about the objective facts of climate change are also those most worried and passionate about them, this speaks, Latour argues, to the unexpected confusion of geology and human action that now confronts us. A situation in which climate scientists speak about geo-historic events of which they, and all of us, are parts and parcels – much as was the case for so-called ‘social’ situations – and for all of the socio-cultural sciences, in the recent past.

Latour’s assertion forms an interesting backdrop, I think, against which to consider the more specific and practical question concerning the many forms and types of engaged climate expertise that seems to exert itself these years all over the world. My native Denmark is a case in point: here, in the late spring of 2018, 301 climate researchers (myself included) drafted and signed a joint public statement of concern, published in one of the country’s leading newspapers (Lund et al. 2018), calling for rapid, concerted, and ambitious political action. In an alarmed (but not alarmist) tone, the statement called for a reconsideration of societal priorities in which sustainability would trump economic growth in the hierarchy of public concerns. As such, it anticipated and joined similar public efforts by concerned researchers in other European countries, including Scientists4Climate in Belgium and the ‘Climate SOS’ from 700 scientists in the French Liberation newspaper on September 7 2018, not to mention the public face of the latest, dire report by the Intergovernmental Panel on Climate Change (IPCC 2018). The circle of concerned climate researchers ready to take a public stance seems widening.

Based on my joint familiarity with the 2018 Danish case and STS research on the topic, I would like to use this case as an opportunity to briefly revisit and invite discussion on the question of science-based advocacy and its interface with public debate and policymaking. This topic, of course, has been empirically studied and conceptually debated in STS for the past 40 years, often in reference to environmental issues. Given this terms’ currency in

such debates, I want in particular to raise a few questions about the adequacy of ‘post-normal science’ (PNS) as an analytical lens with which to conduct such inquiries. This lens is interesting, I think, in part because it enjoys some life outside of narrow STS circles. However, I will argue that the lens underestimates the extent to which initial problem framings – akin to the space of performative utterances traced by Latour’s example – involves value-laden and contested processes in *both science and politics*, necessitating a more thorough rethinking of their interface. This is a rethinking to which, in turn, a publicly engaged STS ought to consider itself obliged.

In essence, Silvio Funtowicz and Jerome Ravetz (1993: 739) coined the notion of post-normal science with a view to how “science is now called on to remedy the pathologies of the global industrial system of which it forms the basis”. As such, ecological destruction and contestation, and the search for more sustainable alternatives, was integral to PNS from the very start, as also signaled in how ecological economics acted as an epistemic home-base for the argument. While this remained implicit, the backdrop to the PNS argument here resembles closely what German sociologist Ulrich Beck (1999) termed the advent of ‘world risk society’: a society now confronted, in Beck’s terminology, with the unwanted side effects and manufactured uncertainties stemming from the techno-economic prerogatives of industrial society. In risk society, science is at once de-legitimated by its involvement in ecological destruction and attains new political significance as the authoritative source of problem – and often solution – framing. PNS is best read as one interesting attempt to grapple with this twin conundrum.

The main tenets of post-normal science are fairly simple. In a diagnostic sense, the approach is well-known through its ‘mantra’ that with today’s sustainability challenges, science no longer functions according to its ‘normal’ Kuhnian discipline-based and epistemic problem-solving mode, but rather must contend with how “facts are uncertain, values in dispute, stakes high and decisions urgent” (Funtowicz & Ravetz 1993: 744). While this will require new and interdisciplinary procedures, Funtowicz and Ravetz insist (*ibid.*: 751) that “post-normal science is indeed a type of science, and not merely politics or public participation”. Nevertheless, in its prescriptive sense, PNS is known for suggesting a process of ‘extended peer communities’, whereby scientists invite “all those affected” by a situation and those who desire to participate in the resolution of an (un-)sustainability issue to enter into conversations on ‘quality’ in problem resolution



(Funtowicz & Ravetz 2003: 6f). The 'normal' knowledge base of value-free, universal facts are no longer enough.

As many have noted (e.g. Wesselink & Hoppe 2011), taken in a broad and rather undemanding sense, such commitments to new and more inclusive procedures tend to find support amongst experts in sustainability-related policy arenas. Similarly, several key commentators, among them Mike Hulme (2007) in *The Guardian*, have suggested that global climate science as instituted in the IPCC is *already* an example of post-normal science. The exact sense in which this is the case remains unclear in Hulme's analysis, however. He seems to find evidence in the way the process of science – who gets funded, who evaluates quality, who has the ear of policy – are now matters of dispute, and he criticizes the way matters of social values, such as over confidence in technology and the distribution of obligations, masquerade as disputes about scientific truth and error. Hulme is right on both accounts, I believe, but it is unclear how that has much to do with extended peer communities discussing a new sense of scientific quality – as opposed to the observation that *everything* about climate policy is contested.

The basic trouble here, I would argue, is the way a conversation framed around post-normal science is liable to proceed *as if* the definition and socio-political position of 'normal' science was itself unproblematic, and *as if* the role of scientific knowledge in policy making (whether 'normal' or 'post-normal') was already well defined. Neither is the case, as 40 years of STS inquiry and discussion has shown. First, Paul Edwards (2010) and many others have shown time and again how bits of modern science, including climate modelling, exert enormous powers of socio-material re-composition, in that they help co-constitute and change rather than simply 'represent' the environment around us. As Gert Goeminne (2011) argues, this means that value-laden questions about what has been taken into account in such scientific composition work and what has not are *already* at work under 'normal' circumstances.

Far from a purely philosophical issue, the consequence for climate knowledge is palpable. As David Demeritt (2001) and others show, values of global homogeneity and prediction capacity in the global climate modelling community writ large have led to a narrow focus on universal physical and aggregate economic properties to the exclusion of all the more unwieldy social, cultural, and political relations that drive greenhouse gas emissions. Small wonder that, as Sheila Jasanoff (2010) argues, people, publics, and institutions everywhere find themselves struggling to accommodate the radically uprooted global view precipitated by climate science within more humdrum concerns of everyday life and society. Beyond the narrowly construed problems of the global role of anthropogenic greenhouse gasses in heating up the atmosphere on the one hand, and the economic costs and benefits of doing something about it on the other, climate expertise arguably remains surprisingly disorganized. Where is the scientific forum for

debating what the framing concerns should be in the first place?

Here, the lens of PNS arguably presumes too much by way of its own problem framing – that of the inherent un-sustainability of industrial society – which in the actual world of climate science for policy can hardly be taken for granted as shared by all parties. Indeed, that such is *not* the case, and that *other* framing commitments to things like 'green growth' and 'decoupling' tend to shape elite approaches to climate change in a country like Denmark (e.g. how such frames are instituted in dominant expert institutions like this country's Climate Council) arguably forms the backdrop to the 2018 advocacy initiative of the 301 concerned scientists. Here the researchers proposed, albeit in subdued ways, an alternative problem framing, one in which 'economic growth' as such would stand in the way of sustainability efforts. Unlike the well-structured problem of anthropogenic warming, however, this is clearly a much more unstructured problem, one that is very far from any agreement on knowledge *or* values. If anything, the subsequent debates and contestations served to make this point apparent.

Rather than focusing on sweeping statements to the effect that some undifferentiated Science with a capital S either is or is not 'political', or either is or is not 'post-normal', it seems to me more prudent to start from acknowledging the multiplicities of *sciences* relevant to the climate problem and their *varying* roles in relation to policy-making. Corresponding to how Michel Callon (2009) portrays anthropogenic global warming as a complicated 'stem issue', divided into all sorts of sub-problems to do with economic growth models, development policies, justice requirements, financial mechanisms, agricultural production modes, urban transitions and so on, one should ask how climate expertise is and could be instituted in relation to such more well-defined problem-spaces. In doing so, one would start acknowledging the *many* important roles played by scientific expertise, depending on the wider politics of policy-making – as problem recognizer, as mediator, as analyst, as advocate and, sometimes, as problem solver.

In light of such an ideal of pluralism in climate expertise and its ways of connecting to policy-making and public debate, the Danish case of public advocacy by concerned climate researchers strikes me mostly as a symptom of just how far we still have to go, as a society, in instituting climate expertise in democracy-enhancing and sustainable ways. *In place of* a widespread and informed public debate involving civic learning networks, NGO-science collaborations and other such practices of democratized expertise, a small group of concerned scientists took it upon themselves to act as problem recognizers when it comes to the role of present-day economic growth commitments in perpetuating un-sustainability. They did so, presumably, out of frustration with the narrow and technocratic ways in which climate expertise has become instituted in Danish society, itself shaped by the constrictions of the IPCC. However, the manner in which they did so – placing a statement of concern in a newspaper – hardly, on its own, lives up to ideals of



extending and democratizing expertise, based as this would be on informed and sustained debate across the many divides separating sciences from public life.

What might one learn from such an experience, and what alternative routes ahead for instituting climate expertise in sustainable and democratic ways does it suggest? In particular, might some kind of STS imagination on the variabilities of the science-policy interface help generate new and publicly committed proposals? I will end this short opinion piece by exercising a little bit of that politics of the imagination that, in my view, ought to be integral to a viable, democracy-enhancing climate expertise – and for which STS writ large provides ample fodder. Two suggestions come to mind, to which I remain practically committed, and around which I hope to spur critical and constructive debate also among publicly engaged STS scholars.

First, in a shifting political setting in which new coalitions of green NGOs and grassroots groups of climatically concerned citizens are emerging, the time seems ripe for concerned climate experts to start re-imagining their own commitments as oriented more durably and strongly towards a democratic politics of *joint* civic-science issue articulation and problem framing. Presumably, such an alliance might come about via new forms of organizing and committing interdisciplinary climate expertise, roughly based on 'reversing' the commitments of the Danish Climate Council and similar existing institutions upholding rather narrow and technocratic frames. Here, climate expertise would make itself accountable to the concerned climate public in place of the government. Rather than centering on economic expertise, it would re-frame itself as truly interdisciplinary. And rather than concerning itself with a narrow national perspective, it would orient itself towards elaborating and democratically testing versions of global climate justice in situated social settings. With colleagues, I dub this *The Climate- and Transitions Council*, simply to give imaginative institutional shape to a proposal yet to be fully realized.<sup>1</sup>

Second, and perhaps on a more utopian note, questioning the science-policy interface might well lead climate experts to take up the more far-reaching role of proposing new ways of not only re-instituting science, but also of re-instituting how politics is done. Proposals are nowadays on the table for augmenting representative democracy through a return to ancient practices of sortition-based decision-making. Imagine that we decided to augment, say, the Danish parliament with a second, sortition-based chamber oriented to screening all lawmaking from the point of view of its long-term compatibility with global sustainability goals. In such a situation, present-day bureaucracy would need to be supplemented with some version of experts exercising their civic duty by submitting assessments at the request of citizen lawmakers. Once again, this time in more fundamental ways, such an initiative would serve to make climate- and sustainability expertise accountable to democracy in new ways, while at the same time empowering such knowledge through a process of civic learning. Such a *Sustainability Chamber*, as I would call it, would thus seriously reconfigure the whole science-policy interface.<sup>2</sup>

I know these are just ideas that have yet to be subject to more demanding tests of reality, let alone informed debate and critique. My point, however, is a wider one: to put it with Latour (2014) again, once we liberate ourselves from the strictures imposed by an ill-conceived notion of science-*against*-policy – which, in my view, the lens of post-normal science still risks perpetuating – then we are free to debate what kinds of science-*with*-policy we might need and want. Put more strongly, I argue that STS scholars in particular ought to consider this task one of their core professional duties in a world of imminent climatic threats. By doing so, we might come up with more sustainable notions of climate expertise to work on, especially now that the climate sciences writ large have come to share in the predicament of inevitable 'social' participation that seemed, until recently, restricted to their socio-cultural colleagues.

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<sup>1</sup> I refer interested readers to the following building site (in Danish), which contains also information about the collegial, interdisciplinary nature of our initiative: <https://www.klimaogomstillingsraadet.dk/>.

<sup>2</sup> For an arts-based beta-version of what such a chamber might look like (to which the author of this text also contributed), visit the following (Danish-language) site: <http://kunstklimademokrati.dk/>.



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