

## Tackling Climate Change, Breaking the Frame of Modernity

For over twenty years the Conference of the Parties (COP) to the United Nations Framework Convention on Climate Change (UNFCCC) have been discussing and negotiating over who should do what about the ever-increasing emissions of greenhouse gases (GHGs). This year the COP meeting in Paris will see another attempt to reach a binding international agreement on the reduction of GHG emissions, along with deciding on measures to respond to the now inevitable damages from human induced climate change. Policy failure is perhaps most evident in the designation of 2°C as an acceptable target for global warming, associated by the UNFCCC with stabilising GHGs at 450 part per million (ppm) CO<sub>2</sub> equivalent, a level which has in fact already been exceeded.<sup>1</sup> Response now means substantive adaptation (Shockley and Light 2014), and that raises issues of compensation for those having costs imposed upon them including dislocation (Light and Taraska 2014). Things have moved much faster than many scientists, or environmentalists, expected. Only a few decades ago the enhancement of the greenhouse effect by humans was discussed as an issue for future generations and a matter only concerning those philosophers working on intergenerational ethics. That indeed was used as a criticism of anyone paying attention to the problem because, the argument went, there were far more urgent issues to be addressed, such as global poverty.

Decades of failure to address poverty cannot, however, be blamed on environmentalists and neither can the concerns and struggles of the poorest be so easily divorced from the need to maintain a healthy environment (Martinez-Alier 2002). The readiness of states to fund military expenditures over and above all else stands in stark contrast to the efforts to address either social or environmental problems. As far as poverty is concerned, the redistribution of wealth has simply failed to occur. The majority of rich countries have never met even the modest international commitments they made in 1970 to allocate 0.7% of gross national income to official development assistance.<sup>2</sup> This does not bode well for a serious and direct response to climate change, especially at a time when Western democracies increasingly violate international law and human rights if this is felt to serve their own interests. Post-World War II multilateralism is in disarray. Following the new vogue for unilateralism, the Warsaw COP in late 2013 agreed that Parties should submit Intended Nationally Determined Contributions (INDCs), which means non-binding individual targets and considerable variety in what is seen as meaningful.

1. According to the World Meteorological Organisation as of 2012 the total radiative forcing by all long-lived GHGs corresponded to equivalent CO<sub>2</sub> concentration of 475.6 parts per million. [http://www.wmo.int/pages/mediacentre/press\\_releases/pr\\_980\\_en.html](http://www.wmo.int/pages/mediacentre/press_releases/pr_980_en.html) Accessed 3rd May 2015.
2. Luxembourg, the Netherlands, Norway and Sweden are the exceptions.

Underlying this approach is the continued global promotion of capital-accumulating growth economics as the best way forward to address both poverty and human induced climate change (GCEC 2014). This position is based upon a strong belief in technology achieving the decoupling of the tight relationship between traditional economic growth and the throughput of energy and materials. Such throughput has long been recognised as creating ever more pollution because energy and mass remain the same after resources have been transformed into high entropy waste by the industrial process (Georgescu-Roegen 2009 [1975]). Burning low entropy fossil fuels is what our modern economies excel at doing and nothing less than a total revolution in their structure and function will change that. Such action may be in the best interests of the global majority but is unlikely in a world where the majority go unheard and a minority benefit from an imperial mode of living (see Brand and Wissen 2012).

This issue opens with a paper by Blue that addresses the problem of how the world public can be given a voice in the international arena of climate action. For some years now, the Danish Board of Technology has been pioneering approaches for public participation that seek consensus. In the build-up to the 2009 UNFCCC COP, held in Copenhagen, they organised an international public engagement exercise that was meant to 'close the widening democratic gap between policy-makers and citizens'. The process involved 44 regions convening groups of approximately 100 people each. However, rather than opening up the decision space to alternative public views and concerns, Blue explains how the process actually closed down the discourse and produced a message in line with the global elite position. She describes this outcome as resulting from a narrow framing, lack of opportunity for deliberation and restricted means for expressing opinions.

Amongst the framing issues was the pre-loading of information using a purpose designed booklet based upon the Intergovernmental Panel on Climate Change (IPCC) fourth assessment report and the Stern review. Economics and science were merged as the defining means for understanding climate change in terms of risks, costs and consequences. Blue notes, as a result: 'Risk was implicitly imposed as a natural, objective and unquestioned starting point', and she criticises the reductionism of Stern's metrics (see also Spash 2007). Blue relates such framing to Bryan Wynne's concern that science needs to be accountable and contestable and should inform but not dominate public policy. Natural science (unlike economics) on climate change has been heavily contested, not least due to corporate funding of climate denialism (Spash 2014b). In the end, science answers to reality and is not some convenient story serving vested interests that can be told, formed and reformed regardless of what happens in practice. However, there is still much room for critical reflection over how science-informed policy has been and is being framed and presented as unquestionable. Too often policy options are specified, described and presented as the only practical or 'realistic' alternatives.

## EDITORIAL

Blue wants a more open approach that enables questioning of the dominant science-policy discourse. That is, a means to break an approach that has framed an adequate response as being GHG mitigation that might (or might not) avoid the risk of a global average 2°C temperature rise above pre-industrial levels. Even the UNFCCC state that, if implemented, their plans for the 2°C target (i.e., stabilisation at 450ppm CO<sub>2</sub> equivalent) are only meant to offer a 50 per cent chance of avoiding the worst effects of climate change.<sup>3</sup> The ultimate aim of the UNFCCC was meant to be the ‘stabilization of GHG concentrations in the atmosphere at a level that would prevent dangerous anthropogenic interference with the climate system’ (Article 2), not to aim at a 50:50 chance of disaster.

Dominant discourses, and their framing of issues, raise concerns over epistemic justice. As Blue notes ‘Processes of agenda-setting, framing and enumeration can ultimately determine which knowledge, and by implication whose voices, are rendered legible and admissible’. The unification of public debate, whether by Stern’s risk and monetary reductionism or the simplified summary scientific ‘facts’ of the UNFCCC, means exclusion of alternative discourses and prevents engagement with the many potential futures humans could pursue. Participation then becomes a technical administrative exercise where the dominant forms of knowledge are presented for uncritical acceptance and reaffirmation.

This concern over epistemic justice is seen by Mabon and Shackley (this issue) as adding a third dimension to the normal concerns for distributional and procedural justice (i.e. outcome and process orientations). As they state: ‘Even if fair *procedures* are in place, claims to epistemic injustice may still arise if people feel marginalised in deciding what questions to ask in the first place, and in accessing the knowledge used to guide the field of questioning and possible outcomes’. Their discussion is conducted in the context of carbon capture and storage (CCS).

Mabon and Shackley argue that CCS could be regarded as a form of geo-engineering (see Gardiner 2011; Preston 2011), and subject to the same ethical criteria. They then present two arguments. First, such technological fixes may be regarded as the ‘lesser of two evils’. For example, in the UK, CCS garners support from environmental non-governmental organisations (e.g. WWF, RSPB) because they frame the alternative as being the supply of base load electricity using nuclear power, which they regard as worse than fossil fuels. Second, the criteria might be put forward that human wellbeing should be prioritised over any concerns about environmental intervention. For example, CCS might then be justified as allowing alleviation of energy poverty through the continued use of fossil fuels. Mabon and Shackley contrast the logic of these theoretical background positions with concerns expressed by various stakeholders and members of the general public as reported by their empirical evidence.

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3. [http://unfccc.int/essential\\_background/basic\\_facts\\_figures/items/6246.php](http://unfccc.int/essential_background/basic_facts_figures/items/6246.php) Accessed 3rd May 2015.

Calling upon a set of interviews from three different projects, they reveal how the CCS issue has been framed to avoid dynamic and systemic impacts. That is, as an end-of-pipe technology the approach maintains business-as-usual rather than promoting a needed change to alternative social and institutional arrangements. Research and development is then concentrated on a short-term technological ‘solution’, and the necessary infrastructure to be put in place for CO<sub>2</sub> transportation and storage, rather than on avoiding pollution production in the first place. CCS then becomes a delay of the inevitable socio-economic structural change implied by the end of modern industrial society based upon fossil fuels, and that delay is seen by some as justified because they fear social transformation. There is then a failure to imagine more sustainable ways of living and governing, and avoidance of the explicit contestation of what constitutes a good or meaningful life and for whom the pursuit of modernity is being maintained.

This narrowing of perspectives is inherent in the desire for technology to provide ‘solutions’, because it seems to offer an easy way out of problems that leaves the structure of the economy and society unchanged. Technological advance is then the means for simple substitutes for production inputs and processes that prove dangerous, damaging or dependent upon disappearing resources. Biofuels have been one such business-as-usual substitute, promoted as a clean Green technology that could reduce CO<sub>2</sub> emissions. Germany took this option most seriously and became the largest producer and consumer of liquid biofuels for cars in Europe. Selbmann (this issue) reveals how supporters formed coalitions around the potential contribution of biofuels to energy security, economic growth, rural development, ecological modernisation, Green markets, and reducing energy poverty. Yet, the discourse in Germany has changed and over time critical voices have gained ground. Thus, discourses have evolved that emphasise concerns over justice, social inequity and exploitation of developing country producers, conflicts with food production, ecological impacts of deforestation, and the spread of industrial agriculture and monocultures. A moderate discourse is also present where certification is meant to address problems and further research is expected to clarify impacts. In the end Selbmann concludes that policy discourses, their story lines and the associated perceptions will be judged by their ‘ability to meet the expectations of sustainable development’. This implies an ultimate reality check in terms of how biofuels operate in practice, but also implies the assessment of how a technological innovation performs can actually be undertaken and conducted in an open and critical way on the basis of some agreed societal goals. Instead, we may suspect that a more likely approach is to assess technology on technical grounds that try to ignore broader social and ethical criteria.

Such is the juxtaposition highlighted by Evensen (this issue) who explores the need for ‘sound moral thought’ to be placed on the policy agenda rather than an overemphasis on ‘sound science’. Shale gas development, more commonly called fracking, in the USA and Canada is analysed by Evensen based upon over

1000 newspaper and 100 academic articles. The calls for science-based decision making and allowing 'the facts', not emotions or politics, to determine decision, can be found at all levels from President Obama, to New York State Governor Cuomo, to local newspapers and activists. Once again the modernist problem framing is central. This contrast with the findings of Jaspal, Turner and Nerlich (2014) who explore how high profile YouTube videos have provided an outlet for expressing the threats from fracking in terms of intrinsic environmental values and social and individual identity.

The idea that science can provide value-free information and that this can objectively determine policy lies behind the calls for 'sound science'. That facts cannot be divorced from values, and least of all in public policy, seems to have eluded the promoters of science as decision-maker. From this there is a short step to modern advocacy of American technocracy, where expert scientists and engineers are meant to rule society in the best interests of others (see Spash 2015).

Evensen points out how values are hidden and included along with the framing of the fracking issue. Newspapers articles pay little explicit attention to normative issues, with some minimal coverage relating to distributive and procedural justice, and human rights. Academic publications on fracking are found to favour welfarism to the exclusion of other ethical approaches. Moral concern functions through proxies such as benefit, harm and risk, where the language is seen as rational and objective rather than the embodiment of a specific consequentialist philosophy. Managing risk then supplants explicit considerations of what should be protected and at whose expense, while values are easily reduced down in a narrow framing of perspectives. Fracking framed as risk-benefit analysis has clear aspects of epistemic injustice.

The problem of the paucity of ethical debate seems clear enough here, but what should be done to counter this? The traditional fact-value dichotomy argues in favour of removing normative claims as unscientific, and Evensen is able to identify such meta-ethical bias in the fracking discourse. Yet there is a large gap between pointing out the implicit meta-ethical basis of arguments and demanding that all scientific work identify when and where it becomes normative. The call for (well intentioned) researchers to distinguish better between their scientific results and their normative claims assumes that this is always feasible and can be undertaken in a routine and meaningful way. Typically an emphasis on good or sound science creates overconfidence in the neutrality of appealing to data and writing in technical language. This overlooks the value loading of technical reports due to what is left out in order to appear scientific, let alone the tendency towards self-censorship due to the fear of accusations of unscientific practice.

Evenson maintains the belief that good science can be distinguished from normative claims on the basis of employing appropriate institutional arrangements. This is evident in his reference to policy-makers creating open fora for discussing ethical issues and consulting ethical experts. The aim appears to be to

extend the traditional expert role in policy. Thus, he states that ‘experts in moral argumentation and ethical reasoning exist who can review normative claims and determine the degree to which the claims capture and/or ignore important considerations’. However, this raises concerns over the extent to which experts in moral philosophy would be any less susceptible to (unintended) bias than experts in any other field (e.g., fracking technologies) in framing the issues. How do these experts fit into democratic process? For example, philosophy is often far removed from everyday thought and language and can employ examples that abstract so far from the topic at hand as to have no relevance for the general public. If ethical judgment is to be placed to the fore in public policy then why should it be left in the hands of experts? Indeed, a typical response from science and technology studies when confronting the role of experts in normal science is to appeal to deliberative, inclusive, participatory approaches and transdisciplinarity. One reason for such appeals is to break the modernist reduction of everything to a closed technical and expert framing.

The idea that shale gas is even necessary involves ignoring the big picture. Countries like the UK, USA and Canada are engaged in exploitation of additional unconventional fossil fuels that merely add to the existing reserves of unburnable carbon fuels (unburnable, that is, if preventing GHG emissions is to be any priority at all). Whether the latest IPCC (2013) report is taken as the benchmark, or some far more lax assumptions made about what can be emitted (Raupach et al. 2014), there is no room for more fossil fuels to be discovered and added to the existing toxic financial assets of the fossil fuel industry (Spash 2014a). Unilateralism is the only reason for bringing these unconventional fuels online. In a divided and individualised world, the argument runs that ‘if you don’t burn the fossil fuels then somebody else will’, so why not grab the benefits for yourself?

This is the argument that if an action makes no difference to the outcome then how can it be ethically wrong? For a start the argument is embedded within a consequentialist philosophy that can itself be criticised. Yet, accepting that consequentialism is a dominant mode of thought (e.g. in mainstream economics), we can pose the question: how might the argument be countered within its own terms? This is the problem that Rendall (this issue) sets out to explore. Rendall employs the analogy of taking a job in an industry that knowingly creates harm and reveals how difficult consequentialists find saying this is wrong because somebody else will do the job if you don’t (i.e., no change in consequences). If this position was valid then there would be nothing wrong with wilfully working in the gas chambers of the Third Reich. Rendall tries to salvage the approach by claiming the rewards for the action may be condemned as unjust, but all this does is require that the unjust gains should be redistributed, not that the act itself should be condemned. The reasonably just individual slips into the functionary role that has been associated with the ability of humans to partake in and perpetuate the worst of atrocities. There is no coincidence that such a role is easily associated with the military and security forces.

Applying such consequentialist reasoning to climate change appears rather unhelpful in guiding action. The philosophy as explored by Rendall is restricted to individualism, so climate action is reduced to the basis for holding an individual responsible, while only individuals are attributed moral standing. One inadequacy disallows consideration of harm to groups (e.g., asserting the importance of individual identity in moral considerability). Another denies the role of structure in societal decisions, how relationships of structural power cannot be reduced down to individual responsibility, and how addressing structural moral wrongs requires more than considering the consequences of isolated individual actions. When addressing GHG mitigation, perhaps there is more to be gained from considering the potential of and justification for acts of civil disobedience on grounds of fairness and justice (Kyllönen 2014).

Human induced climate change is set to become a major focus for attention and debate over the meaning of value in late modernity. At present that debate remains heavily restricted in both academia and mainstream media. The international policy framing by both industrially developed and developing nations remains embedded in concerns over the risk to economic growth without much consideration as to the basic contradictions entailed in maintaining this growth. As a result, the GHG mitigation goalposts have been repeatedly moved (e.g., the base year for reductions was originally 1980, then under the Kyoto Protocol 1990, and now in the new INDCs 2005). The drive to grow and remain competitive means governments and corporations increase their use of oil, coal and natural gas and bring on-line new unconventional sources while also expanding renewable energy. The hope of salvation remains in technology, future substitutes and end-of-pipe fixes. The role of consumerism (Green or otherwise) remains central to the acquiescence of the masses in pursuit of an ever illusive happiness. This is the imaginary of the modernity in which we live, which must be broken to get real action to change the economic and social mechanisms that turn humans into functionaries in the perpetual exploitation of others and harm of the innocent, both human and non-human.

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