



What might Evans-Pritchard have made of two degrees?

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Guest Editorial by Steve Rayner

In psychology and politics, the term 'magical thinking' is sometimes invoked to describe someone's belief that their thoughts or words are sufficient to bring about an effect, or that thinking about something amounts to doing it, even when the instrumental means to bring it about are absent. Recently, anthropologists were among the authors of a *Guardian Science* article (Kruger et al. 2016) that described the December 2015 Paris Agreement on climate change as 'magical thinking'. Here I reflect further on the anthropological thinking behind that criticism.

* * *

The Paris Agreement, generally hailed as the first ever universally binding global climate deal, was the culmination of two decades of annual negotiations among the parties to the 1992 United Nations Framework Convention on Climate Change since their first meeting in Berlin in 1995. For participants and most observers alike, its high point was the commitment to holding the increase in the global average temperature to well below 2°C above pre-industrial levels and to pursue efforts to limit the temperature increase to 1.5°C.

Few, if any, paused to contemplate the fact that the Nobel Prize-winning Intergovernmental Panel on Climate Change (IPCC), which is widely regarded as the scientific authority on matters climatic, offers only one greenhouse gas emissions pathway by which the world might manage to limit warming to 2°C and none capable of meeting a 1.5°C aspiration (Collins et al. 2013):

Critical to this pathway, known rather unprepossessingly as RCP 2.6 (Fig. 1 inner cover), is the assumed rapid deployment on a truly massive scale of an, as yet, untried technology known as BECCS: biomass energy with carbon capture and storage (Fig. 2 inner cover). This involves growing biomass, which is used to generate power, and geologically sequestering the carbon dioxide produced. While the individual steps of this process have been demonstrated, there are but a few, small examples of the attempt to combine them and only one demonstration plant in Decatur, Illinois.

The feasibility and implications of a widespread deployment of BECCS have never been assessed, but it is reasonable to assume that it would require huge investments to develop new plantations and infrastructure. The estimated land area required would exceed 500 million hectares, mostly in the tropics. Growing biomass to feed thermal power plants on such a scale would inevitably have significant implications for global biodiversity, food security, and freshwater use.

There is also cause for concern about the carbon capture and storage (CCS) end of the process. Despite a great deal of hype over the past decade, the track record of efforts to develop CCS technology for fossil fuelled power stations is not encouraging. Public opposition to the idea of long-term waste storage, analogous to that required for nuclear waste, has led to it being outlawed in some jurisdictions, while spiralling costs have led to the cancellation of major pilot projects. Furthermore, no government has yet shown an inclination to fund the research and development (R&D) and environmental assessment costs for any kind of technology designed to draw down and sequester carbon from the ambient atmosphere. Without a significant and stable carbon price there is little incentive for the private sector to develop BECCS.

However, while delegates at Paris willingly embraced the IPCC's warnings of the undesirable consequences of

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exceeding 2°C, they seem to have remained impervious to that same body's conclusion that this can only be achieved through the deployment of a currently non-existent, potentially highly controversial technology to remove carbon from the atmosphere.

Perhaps the most obvious explanation is simply that delegates see 2°C as a stretch goal: setting the target will stimulate technological innovation leading to the implementation of non-carbon emitting technologies beyond what is currently considered technically feasible by experts. After all, the US motor industry famously resisted statutory fuel economy standards in the 1970s arguing that they were not technically feasible. Yet when the legislation was enacted, the manufacturers managed to achieve the impossible. However, this analogy is not a sound one. Improving the performance of internal combustion engines was a relatively simple problem that could be tackled by well-resourced engineers. Furthermore, the industry's claim was a self-interested strategy designed to fend off the legislation. The IPCC's identification of only one possible pathway to 2°C can hardly be seen as a deliberate obstruction to the goal of climate stabilization which is, after all, its *raison d'être*.

So, how can we understand the Paris delegates' disregard of their own scientific advisory body? While the boundary between ambition and delusion may be not be entirely sharp, assuming away 600-800 billion tonnes of carbon dioxide (equivalent to 15-20 years of current annual emissions) is clearly more than a stretch goal (Kruger et al. 2016): hence the critique of the Paris conference for 'magical thinking'.

* * *

In his *Witchcraft oracles and magic among the Azande*, Evans-Pritchard (1937) describes the Azande act of lodging a stone in the fork of a tree, accompanied by the recitation of a spell, to delay the setting of the sun until after he has returned home. Similarly, Lienhardt (1961) tells of the Dinka who ties a knot in a piece of grass to ensure that he will get home in time for dinner. But, in these cases, the actor does not then leisurely saunter home, confident that his magic will ensure the desired outcome. Rather he hastens his pace. The magical actions are, at least in part, expressive of the individual's determination to get home in time, rather than the instrumental means to reach his goal. The expressive and practical actions reinforce each other, leading to the desired outcome.

An anthropologist might, therefore, be inclined to interpret the Paris conference's 1.5°C-2°C goal as primarily expressive of the importance that negotiators attach to the task of achieving global emissions reductions. But, unlike the Azande and Dinka, climate policymakers are not taking the necessary instrumental action to accompany their expression of concern. At a minimum, this would consist of funding R&D to explore the technical feasibility of negative emissions technologies, such as BECCS, accompanied by a serious assessment of the potential environmental and social impacts of the large-scale deployment of such technologies. In the absence of any such programme, policymakers are merely wedging a stone in a tree or tying a knot in the grass while continuing to dawdle home – a position that the Azande and Dinka would surely have considered untenable. Unless policymakers fund the necessary R&D and impact assessment for BECCS, the 1.5°C-2°C target is not merely magical thinking, but profoundly flawed magical thinking.

Perhaps the blame lies with the IPCC for slipping a currently non-existent technology into the models. Surely we should not expect policymakers to interrogate the details of the alternative emissions scenarios – after all, they are not technical experts! But this is too easy. There were plenty of scientific experts at the negotiations and much discussion of technical issues. How is it that the scientists and diplomats overlooked or disregarded such 'uncomfortable knowl-

edge'? Most modellers ignore the social context. If it is possible in purely technical terms to grow huge quantities of biomass or capture and store huge amounts of carbon, social constraints are simply ignored. But how is this achieved?

Again, I turn to Evans-Pritchard – particularly his description of how the Azande theory of witchcraft transmission elided the implications of its supposedly hereditary nature. Azande seemed surprised when Evans-Pritchard asked why, since they were all intermarried, everyone was not a witch. To recognize this would have undermined the use of witchcraft accusation as a form of social accountability. Equally relevant to this phenomenon of the social construction of ignorance when knowledge would undermine institutional effectiveness, is his subsequent account of the missing generations of Nuer genealogies, which had to be forgotten lest their recollection disrupt the established principles of cattle rights (Evans-Pritchard 1940). Both illustrate the processes by which institutions edit out information that would make it difficult, even impossible, to function. As Mary Douglas put it: 'The Azande case illustrates institutionalized blocks to curiosity. The Nuer studies further illustrate principles of rejection that automatically send some information to oblivion' (Douglas 1980: 78).

* * *

Following the collapse of the Kyoto Protocol at the Copenhagen Conference of the Parties in 2009, many, if not all, participants saw agreement at Paris to be the last chance to forge any kind of agreement. Having repeatedly anchored themselves to the proposition that any global warming above 2°C would constitute 'dangerous climate change' as proscribed in the 1992 Framework Convention, delegates and their scientific advisors simply could not publicly recognize that the world is already committed to exceed that limit in the absence of some sort of climate engineering, such as BECCS. Given both the track record of CCS and the fact that even the suggestion of climate engineering has proved to be highly controversial, recognizing this would probably have scuppered the hard-won agreement that many saw as the last chance to secure a workable treaty. So it seems that, following the example of the Azande and the Nuer, the negotiators and their scientific advisors remained actively oblivious to the practical implications of their commitment to 2°C, let alone 1.5°C.

An anthropological account of magical thinking and the social construction of ignorance around the implications for the 2°C global warming target has implications for the discipline of anthropology and for the wider policy world.

For anthropology, it demonstrates that the relevance of anthropological thought to understanding climate change is not confined to the local impacts of climate change on actual communities or local efforts to reduce carbon emissions. It can cast light also on global climate discourse and the processes of international decision-making. It also serves as a timely reminder that the origins of the burgeoning interdisciplinary concern with the 'social construction of ignorance' (Gross & McGoey 2015) has its roots in anthropology and continues to be informed by it.

For the wider policy world, the anthropological sensibility sensitizes us to the use of magical thinking and the social construction of ignorance in contemporary mainstream political discourse. It exposes the weakness of purely expressive aspirations without the instrumental commitment to achieving them. Arguably, we could have done with a bit more of it in the recent Brexit referendum campaign. The immediate practical implication for climate policy is that either policymakers need to fund the necessary R&D to develop BECCS and other technologies for taking carbon out of the ambient air, or the scientists need to take these technologies out of the scenarios that they offer to policymakers. ●

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