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Climate science, truth, and democracy

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ABSTRACT

This essay was written almost ten years ago when the urgency of America's failure as a nation to respond to the threats of climate change first came to preoccupy me. Although the essay was never published in full, I circulated it informally in an attempt to provoke a more public engagement among my colleagues in the history, philosophy, and sociology of science. In particular, it was written in almost direct response to Philip Kitcher's own book, *Science, Truth and Democracy* (2001), in an attempt to clarify what was special about Climate Science in its relation to truth and democracy. Kitcher's response was immensely encouraging, and it led to an extended dialogue that resulted, first, in a course we co-taught at Columbia University, and later, to the book *The Seasons Alter: How to Save Our Planet in Six Acts* (W. W. Norton) published this spring. The book was finished just after the Paris Climate Accord, and it reflects the relative optimism of that moment. Unfortunately events since have begun to evoke, once again, the darker mood of this essay. I am grateful to Greg Radick for suggesting its publication.

1. Introduction

An impasse of credibility currently prevails in the US around the issues of climate change that threatens to paralyze citizens and experts alike. Confidence in the expertise of scientists is at an all time low, with much of the internet, radio talk shows, and popular television deluged with challenges to the credibility and trustworthiness of climate scientists. In an effort to adhere to their traditional ethic of "balance," even our most prestige newspapers and journals have contributed to the confusion by spreading the widespread misimpression that climate scientists are deeply divided about both the extent of the dangers we face and the relevance of human activity to global warming. Not knowing who or what to believe, the natural response for most people is to do nothing.

Meanwhile, evidence of the seriousness of the problem continues to mount, as does the apprehension of so many climate scientists. Yet notwithstanding their concern, most of these have been reluctant to weigh in on (often acrimonious) public debates, instead seeking recourse in the particular authority granted them by "peer review." Their concern is two-fold: first, anxiety about overstepping the traditionally accepted boundary between science and politics, and second (and closely related), fear that going beyond the reach of peer review would undermine their scientific credibility. The consequence is that the debate that rages in the public domain goes largely unchecked for intellectual or scientific reliability, and even the most discerning of non-expert readers are left without any basis for assessing the costs of continuing inaction.

Expert predictions imply costs that few if any of us would be willing to accept, yet a pervasive atmosphere of skepticism drains these warnings of virtually all effective force. What makes the situation particularly dire is that, living as we do in a democratic state, the very possibility of putting the efforts of our scientists to beneficial use depends on the response of a public willing and able to take their warnings seriously. Furthermore, given the critical role of the US in what is unavoidably a global issue, what is an impasse for the US is also an impasse for the world. The questions I want to pose are therefore of two kinds: First, on what basis can lay readers decide who and what to believe? And how does the answer to this question affect their ability to responsibly participate in policy decisions that depend on expertise they do not share? Second, what are the nature and limits of the climate scientist's particular responsibility in this current political and social situation? More specifically, what role ought experts play in the world beyond their particular expertise when their findings have the dramatic social and material consequences for that larger world that follow from the findings of climate scientists?

One might also ask, what is the place of expertise in addressing these issues? And which experts? There exist many different kinds of literature that, directly or indirectly, bear on the questions I raise. They come from philosophers, from political scientists, from students of science and policy, and they are extensive. But they tend

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not to focus on the particular problems of climate change quite so directly as I would wish. I am not an expert in any of these fields, but I will draw on all of them in the effort to bring them to bear more directly on the issues at hand. I do so out of my belief that the magnitude of what is at stake places a moral imperative on all of us to find a way out of this impasse. Even though no expert, I feel compelled to do what I can.

In the end, I will argue that, with regard to the problem of global warming as with so many other issues, there is no escaping our dependence on experts; we have no choice but to call on those (in this case, our climate scientists) who have the necessary expertise. Yet just as in any other endeavor, our confidence in their expertise – our trust – needs to be earned; it requires more than the evidence of a union card. Furthermore, for the particular task of getting beyond our current impasse, I also suggest that climate scientists may be the only ones in a position to take the lead. Finally, given the tacit contract between scientists and the state which supports them on the other, I will also argue that climate scientists are not only in a position to take the lead, but also that they are obliged to do so.

2. Science and politics: some general considerations

2.1. Facts and values: the traditional view

Traditional views about the proper relation between science and politics are founded on the assumption of a strict separation of facts and values, with the former belonging to the realm of science, and the latter, of politics. The task of scientists is to determine (or make positive claims about) what *is*, while the task of politics to decide (or make normative claims about) what *ought* to be – in other words, what follows from what *is* the case that we *ought* to do.

This divide has many ramifications, and has provided the framework for a wide range of discussions about the role of science in a democratic society, about the nature of scientific responsibility, about the proper relation between scientists and the larger public. It under girds the view of science as the domain of truth and objectivity, and of scientific inquiry as untarnished by any moral, political, or religious agenda. Thus, e.g., it is often said (as Andrew Dessler and Andrew Parson write in their recent book on debates about climate change),

> "First, if a positive claim is sufficiently well posed – meaning that all the terms in it are defined clearly and precisely enough – it has right and wrong answers. Similarly, well posed positive claims are either true or false. Second, the answer to a positive question, or the truth or falsity of a positive claim, does not depend on who you are: it does not depend on what you like or value, your culture, your political ideology, or your religious beliefs." (p. 20)

The assumption of such separability of fact from value similarly buttresses the widespread view that the proper role of scientific experts in policy making must be limited to providing the unadorned facts, straight and simple, and this requires, as Roger A. Pielke Jr., former Director of the Center for Science and Technology Policy Research in Boulder, Col., puts it, that we 'put into place mechanisms that somehow ensure the purity of science, so that scientists might deliberate unaffected by external values, pursuing only the truth." (2006: 33). The same view also implies that the appropriate response to conflicts between science and society (should they arise) is more effective dissemination of information, better communication from scientists to the public, increased scientific literacy.

Such clear cut divisions may provide us with an enormous sense of security, but however much comfort they give, they are extremely difficult to defend: First, as most scientists well recognize, few of the questions they actually deal with lend themselves either to answers that are absolutely right or wrong, or to claims that are absolutely true or false (they may, e.g., be true under certain assumptions or circumstances, not under others). Second, even if such answers might in principle be available, in practice their truth can almost never be fully established. Finally, much of the content of scientific claims depends on what, and how, questions are posed, and it is here that tacit assumptions and values are most likely to enter. Indeed, most students of the subject today no longer consider a strict separation between facts and values, or for that matter, between science and politics, to be possible. The record (both historical and contemporary) has clearly shown not only that facts play an important role in the formation of values, but also that values play an important role in the formation of facts. In the real word, it is virtually impossible to avoid the entanglement of fact and value. While the distinction may be of use in some contexts as a rough guide, the expectation that one can draw a clear line between the one and the other is certain to be disappointed.[1]

Nevertheless, the assumption of a clear separation of fact from value persists, and it continues to buttress much of the popular vision of science, perhaps especially in the US. Take, e.g., belief in the purity of science. As a number of historians have demonstrated, the very idea of a "pure science" – separable not only from moral and political values but also from its uses – has often been invoked for purposes that are themselves far from pure – i.e., for conspicuously ideological, political, or practical purposes. Perhaps the most striking example can be found in the particularly vigorous defense of the idea of pure science (alongside that of a value-free science) that came on the heels of the atomic bomb. Vannevar Bush, Director of the Office of Scientific Research and Development, writes in his 1945 report *Science, The Endless Frontier*, "As long as … scientists are free to pursue the truth wherever it may lead, there will be a flow of new scientific knowledge to those who can apply it to practical problems in Government, in industry, or elsewhere."

Examples of more conspicuous breaches of an ideal boundary between science and politics – and bearing considerably closer resemblance to the problem of immediate concern here – also abound. Take, for example, the controversy that has prevailed in the U.S. over the efficacy of mammograms for women in their 40's, and more specifically, the debate that followed the 1993 decision by the National Cancer Institute (NCI) to withdraw its earlier recommendation to begin mammography screening at the age of 40. This decision was based on the report of an international review of breast-cancer screening data (which the NCI had sponsored), from which they concluded, "There is insufficient evidence to make an informed decision regarding efficacy of screening as measured by reduction in breast cancer mortality in women aged 40–49 years" (see Fletcher, 1997). However, the decision was met by widespread controversy, and some three years later, the director of the NCI requested that the NIH convene a "consensus panel" of experts to review the data in an effort to resolve the dispute. The panel issued its report on January 23, 1997, reaffirming the 1993 conclusion that available data did not warrant a universal mammography-screening recommendation for women in their 40's. This time around, the reaction was truly explosive, with accusations against the panel members – of incompetence, of irresponsibility, and even

[1] My focus is on climate science, but I take the arguments I put forth here to be in close sympathy with the more general arguments developed by Heather Douglas in her rich and highly commendable philosophical account of *Science, Policy, and the Value-Free Ideal* (2008).