



**25-26 MAY 2018**

# **CLIMATE SCIENCE AND PUBLIC INTERESTS**

**Leibniz Universität Hannover  
Philosophy Department  
Rooms B313 (Fr) and B410 (Sa)**

Central empirical findings of climate science are beyond reasonable doubt and many climate change impacts are increasingly being observed. Yet, significant proportions of the general public in many countries still resist accepting these findings, or appear to be unaware of their existence. The diagnosis from science studies is that this situation pertains to at least three kinds of problems: the complexity of the issue, a strategic manufacture of doubt, and climate information that is incompatible with decision-making processes. However, it is largely unclear how scientists should behave given the situation. The workshop addresses the questions how they should react to the spread of misinformation, handle dissent, and make scientific information more readily available and usable.

## **Program**

### **25 May 2018**

14:00-14:30	Coffee
14:30-15:30	Gregor Betz
15:30-16:30	David Hopf
16:30-17:00	Coffee
17:00-18:00	Erin Nash
18:00-19:00	Anna Leuschner
20:00	Dinner

### **26 May 2018**

10:00-10:30	Coffee
10:30-11:30	Rafaela Hillerbrand
11:30-12:30	Markus Dressel
12:30-13:00	Coffee
13:00-14:00	Mathias Frisch



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Hannover

# Abstracts (in alphabetical order of speakers)

**Gregor Betz (Karlsruhe)**

## **Scientific Policy Advice in an Epistemically and Democratically Dysfunctional Society**

What are the obligations of scientists in a society where democratic decision making is hampered by severe knowledge deficits and institutional shortcomings? This is a hard problem. I will try to address it as follows. First, I sketch an ideal of scientific policy advice in a democratic society. Second, I identify ways in which a given societal and political situation can deviate from that ideal. Third, I present and evaluate different options for action under such non-ideal circumstances. Finally, if time permits, I discuss, as a mini case study, the way WBGU handled imprecise probabilities in the context of the budget approach.

**Markus Dressel (Hanover)**

## **Between Scylla and Charybdis: Can Climate Science be Ethical and Non-Prescriptive at the Same Time?**

Climate scientists find themselves in a dilemma: Having access to expert knowledge about the climate system, they are aware of the potentially devastating effects of anthropogenic climate change. Being aware of a threat implies an ethical obligation to communicate it. In potentially disastrous cases like climate change, this obligation might even go beyond mere communication and include the duty to promote political change. This is where the other side of the dilemma kicks in: Because scientific knowledge does not – and cannot – by itself imply normative judgements, the epistemic authority of the scientist does not – and cannot – imply any political authority. In the political arena, however, the scientist's normative claims are easily mistaken for factual statements. This can corrupt the political process and undermine public trust in science. Ironically, the result might be climate policy deadlock, aggravating the climate problem even more.

In my talk, I will assess the scientist's dilemma and scrutinize the traditional way to solve it. This traditional solution, famously promoted by Max Weber, consists in a role separation: When communicating research findings, the scientist's claims are authoritative; when it comes to (his or her own) value judgements, the scientist ought to either stay silent or characterize them as those of an ordinary citizen. I will argue that, while the stay-silent-attitude is ethically inappropriate, the ordinary-citizen-attitude suffers from feasibility deficits. However, no better solution seems available. Therefore, I argue, we have no better choice than to accept the dilemma and interpret it as a delicate balancing problem; while this is clearly a second-best solution, it at least safeguards us from dangerous biases to one or the other side of the dilemma.

## **Mathias Frisch (Hanover)**

### **Uncertainties, Values, and Climate Targets**

In this talk I defend a version of the argument from inductive risk against a recent criticism.

Defenders of the value-free ideal have argued that the argument from inductive risk can be blocked, if we insist that scientists commit only to suitably hedged claims and restrict themselves to reporting the strength of evidential support for a hypothesis rather than accepting or rejecting hypotheses. I argue that this defense is unsuccessful, since deciding on a concrete climate policy requires more fine-grained and more precise judgments about the future state of the climate system than the hedging strategy allows. Providing policy makers with advice on an appropriate climate target, such as the two-degree goal, requires that climate scientists 'stick their necks' out, just as the argument from inductive risk concludes they should.

## **Rafaela Hillerbrand (Karlsruhe)**

### **How the IPCC is its own worst enemy. The limits of communicating scientific uncertainties and how they impact on the composition of scientific expert committees**

Since the 1970s the ballpark figure of the predicted temperature increase due to manmade greenhouse gas emission is roughly the same and ranges around 2 °C over the twenty-first century. Despite this fact it seems overwhelmingly difficult to draw political decisions from that. The vast majority of scientists agree that we need to take immediate action in order to prevent unforeseen and unprecedented damages to many areas essential for human life, from changes in growing seasons to changes in coastlines. The IPCC, the Intergovernmental Panel on Climate Change, can be seen as a forum that articulates the view of the scientific community and explicitly addresses policy makers. But why then is making a decision so hard when scientific evidence is overwhelming? There is a vast literature that addresses this question from various angles, from moral psychology explaining the occurrence of free riders to political theory with its focus on injustices in current political climate negotiations.

In this paper I want to look at the question as to why decision making in the face of global warming is so difficult from the perspective of philosophy of science. I want to argue that the current scientific policy advice offered by the IPCC goes astray due to its too narrow disciplinary approach that excludes non-scientists from the panels. Communicating the uncertainties associated with model results is essential in climatology and other areas of applied sciences. It is argued that there are certain limits in communicating uncertainties to people outside one's own narrow discipline. This, I contend, necessitates a more interdisciplinary setup of expert committees that also includes decision makers and experts from social sciences, humanities and possibly theology.

## **David Hopf (Hanover)**

### **Climate Change and the Trustworthiness of States of Research**

The debate about climate change is one of the most prominent controversies where the trustworthiness of science has been publicly challenged. Climate skeptics have argued that climate science – either because of the views of the scientists themselves or the influence of some green lobby – has come to be dominated by the political left, distorting its results and thereby leading to an overemphasis of both climate change and the contribution of human factors. Defenders of climate science more convincingly argue that, quite to the contrary, doubts about the integrity of scientists and the extent of anthropogenic climate have been manufactured by lobbyists who represent industry interests standing to profit from unrestricted carbon emissions.

In this talk I will discuss an often overlooked feature concerning the role of science concerning public deliberation which is illustrated by the climate change debate: trust in science should not be solely tied to the integrity of individual results and the scientists that produce them. Instead, the trustworthiness of science as a provider of information also depends on the comprehensiveness and balance of the state of research.

I present two arguments for this: firstly, especially in public discussions, the level of consent within the scientific community on certain issues is an important metric for outsiders to find out which expert opinion to trust when they cannot themselves assess the quality of the scientific data, evidence, and arguments. The overwhelming consensus on the existence of anthropogenic climate change versus the isolated positions of skeptics is one of the prime examples.

Secondly, even if we doubt the validity of consent in the community as an epistemic metric, we have to consider another important aspect of the state of research: when discussing complex problems such as climate change, it is not one single research question such as “does man-made climate change exist?” which is of importance. Research on many issues, spanning across disciplines and addressing the manifold causes, effects and possible countermeasures can and should affect individual and policy decisions addressing climate change. Which options the state of research is able to support, heavily depends not only on individual findings but on the balance of research available concerning each course of action.

I will conclude with a discussion about what this means for the role of individual scientists who might find themselves confronted with what they consider gross misrepresentations of the state of research. While scientists can help to make some issues transparent, it is less clear how competent they are in giving comprehensive accounts of the state of research, which, at least concerning climate change, transcends disciplinary perspectives.

**Anna Leuschner (Hanover)**

### **The Dilemma of Climate Change Communication**

Empirical evidence indicates that the strategic manufacture of doubt and attacks against climate scientists have not only affected public opinion on climate change but also climate science itself: scientists have displayed significant conservatism in their choices of hypotheses and concepts and in the characterization and interpretation of data. Taken with anecdotal evidence from scientists who report feeling too intimidated to freely discuss what they think, it appears likely that this extreme conservatism is, at least to some extent, the result of an anti-scientific atmosphere nudging climate scientists, as Raymond Bradley (2011, 137) put it, to “keep a low profile and go with the flow” (Lewandowsky et al. 2015).

This will be illustrated by two examples:

First, via a historical look at the five ‘reasons for concern’, five key groups of risks related to climate change, known most prominently from the 3rd and 5th IPCC assessment reports. It will be demonstrated how the risk estimations in the reports have worsened increasingly, which can (at least partly) be explained by scientists being constantly overly cautious (Leuschner 2016).

Second, via the concepts of ‘climate change’ and ‘global warming’. Republican strategist Luntz once made the recommendation to the George W. Bush administration to use the term ‘climate change’ instead of ‘global warming’ since ‘global warming’ generates a greater sense of certainty in the public than ‘climate change’ that human-caused environmental damage is in fact occurring. However, it is in fact scientists who prefer to use the term ‘climate change’, while 9 of 12 conservative websites refer to ‘global warming’ more often than to ‘climate change’ (Leiserowitz et al. 2014). This likely relates to the fact that it is easier to discredit the term ‘global warming’ since it “focuses on temperature increases, for which seemingly contradictory evidence abounds—for example, record snowfalls in the Eastern U.S. in 2010” (Schuldt et al. 2011, 116).

Thus, I argue that climate scientists face a dilemma. If they choose to be conservative in their estimates and present their work in a technical manner—focusing on details, ambiguities, and uncertainties—their findings are marginalized by denialists portraying them as vague and doubtful and characterizing the situation as being ‘not so bad’. On the other hand, if scientists choose to be more engaging—clearly articulating problems and urgent dangers associated with climate change—they are discredited as hysterical alarmists driven by a political agenda.

With recourse to an argument by James Brown (2004) from a different context, namely a discussion on affirmative action programs, I will conclude that climate scientists should choose political engagement in public communication contexts. Such politically engaged climate change communication does not necessarily include participation in political campaigns, but can simply mean less reliance on technical terminology (Hassol 2008) and clearer event attribution (cf. Lloyd and Oreskes’s contribution to the symposium as well as Hassol 2016). This could lead to an increase in the credibility assigned to climate science by the public and, thus, cripple the strategies of climate change deniers.

**Erin Nash (Durham)**

### **The Probability Argument**

Philosophers of science and science studies scholars seem to agree that dissenting speech within science, and about scientific findings, can sometimes have ‘problematic’ consequences (e.g. de Melo-Martin and Intemann 2014, 596 & 609; Biddle and Leuschner 2015). However, there is currently deep disagreement among scholars about how we ought to respond to the expression and transmission of such dissent within our public knowledge systems. Opinions diverge over whether certain kinds of responses to dissent perceived to be problematic facilitate progress towards certain goals, or undermine it. One particularly fraught issue is the relevance and worth of quantifying and drawing attention to an expert consensus about particular empirical features. For instance, philosophers and science studies scholars such as John Beatty (2006), Inmaculada de Melo-Martin and Kristen Intemann (2014; Intemann 2017), and Warren Pearce et al. (2017) argue that doing so is at best misguided and ineffective, and at worst, dangerous and harmful. On the other hand, science historian Naomi Oreskes (2004; 2017; Oreskes and Conway 2010) and cognitive scientists John Cook (et al. 2016; 2017) and Sander van der Linden (et al. 2014; 2015; 2017a), among others, argue that clarifying and drawing attention to the degree of scientific consensus can be effective and is warranted, because, they maintain, the public’s misperceptions of these features are consequential for policy.

My aim in this paper is to offer a less polarized perspective that integrates, rather than sets into competition, insights from both sides of the debate. However, because I think some scholars have been too quick to dismiss the importance and legitimacy, in some contexts, of consensus messaging, I will also be providing a qualified defense of this practice. I do so by developing what I call the ‘Probability Argument’. This argument focuses on the consequences—in democratic societies—of non-experts having distorted perceptions of the probabilities that pertinent empirical hypotheses are correct. The Probability Argument also accounts for a number of considerations that have generally been overlooked in the literature to date, such as the impact of the communication of misinformation, the place of higher-order evidence (i.e. evidence about putative experts, and the processes they have used to arrive at their first-order claims), and the role that intermediaries, rather than scientists, play in the communication of both first- and higher-order evidence.

I conclude that the Probability Argument provides us with a *prima facie* case, and a *pro-tanto* reason, for providing non-experts with an indication of the degree and spread of an expert consensus associated with an empirical claim. I sketch a set of considerations to guide reasoning about whether and when we ought to emphasize a consensus position. I then defend consensus messaging about the existence of anthropogenic climate change, and raise an objection to the deployment of consensus messages that claim there is an expert consensus that anthropogenic climate change is ‘dangerous’. I offer reflections on how the content of consensus messaging could be improved to reduce confusion and enhance its relevance and legitimacy.