

The origins and roles of 'two degrees of warming' as a boundary object

A wide range of scientific, political and social actors have converged around the idea that limiting global warming to no greater than 2°C above the pre-industrial temperature is desirable. Originally adopted by the EU Council in 1996 as a driving climate policy goal, 'two degrees' was endorsed by the G8 in July 2009 as an aspiration which should guide international climate negotiations. 'Two degrees' is deployed routinely by campaigners, artists and scientists as a threshold around which narratives of urgency, concern or collapse are constructed. By functioning in this way 'two degrees' acquires many of the properties of a 'boundary object', as originally proposed by Star and Griesemer (1989). That is, it has become a socially constructed entity which is powerful and has endurance both because it has credibility in many different worlds and because it works to stabilise discourse across the boundaries of these worlds. One account of the origins of the 'two degrees' target has been offered by Tol (2007), but this account is far from exhaustive (e.g. see Boykoff & Randalls, 2010) and remains largely descriptive and anecdotal. The legitimacy of 'two degrees' is frequently traced to scientific claims and analysis of what might constitute dangerous climate change, but the role of scientific analysis in such construction has rarely been examined (see Dessai et al., 2004 for an exception). And if the origins of 'two degrees' as a universal target are still to be critically investigated, also lacking is careful and empirical examination of the ways in which 'two degrees' functions as a 'boundary object' in different institutional, political and cultural settings.

The aim of this PhD project is to understand the origins of 'two degrees' in climate change discourse, how it came to be adopted as an organising principle for climate change narratives, and to illuminate the different ways in which it continues to function as a boundary object. The study will draw upon ideas from science and technology studies, including the concepts of 'boundary objects', 'anchoring devices' (Van der Sluijs et al., 1998) and the 'co-production of knowledge' (Jasanoff, 2004) to develop for the first time a detailed history of the 'two degrees' target. This account will attend carefully to the relationships between knowledge, power and ethics (Hulme, 2009). A number of different lines of investigation may be pursued in the study: an examination of the scientific literature (close-reading, content analysis, citation analysis); an analysis of contemporary discourses around 'two degrees' (using media content analysis); a series of detailed case studies to show how 'two degrees' has been used in research, policy and advocacy by selecting an organisation to investigate - through document analysis and interviews - in each of these worlds (e.g. possibly Hadley Centre, Defra, Greenpeace).

The results from the study will contribute to emerging histories of climate change and will illuminate the necessity of 'boundary objects' in the contested spaces of climate change politics. The results will be of interest to social studies of science scholars, to environmental organisations and movements and to other actors in climate politics. The project would suit students from geography, environmental history, science and technology studies or related social science disciplines.

References and Reading:

- Boykoff, M.T., Frame, D. and Randalls, S. (2010) Discursive stability meets climate instability: A critical exploration of the concept of 'climate stabilization' in contemporary climate policy **Global Environmental Change** (in press)
- Dessai, S., Adger, N.W., Hulme, M., Köhler, J., Turnpenny, J. and Warren, R. (2004) Defining and experiencing dangerous climate change **Climatic Change** 64, 11-25.
- Hulme, M. (2009) **Why we disagree about climate change: understanding controversy, inaction and opportunity** Cambridge University Press, Cambridge, 393pp.
- Jasanoff, S. (ed.) (2004) **States of knowledge: the co-production of science and the social order** Routledge, London, 317pp.
- Star, S.L. and Griesemer, J.R. (1989) Institutional ecology, translations and boundary objects - amateurs and professionals in Berkeley's Museum of Vertebrate Zoology, 1907-39 **Social Studies of Science** 19(3), 387-420.
- Tol, R.S.J. (2007) Europe's long-term policy goal: a critical evaluation **Energy Policy** 35, 424-432.
- Van der Sluijs, J., van Eijndhoven, J., Shackley, S. and Wynne, B. (1998) Anchoring devices in science for policy: the case of consensus around the climate sensitivity **Social Studies of Science** 28(2), 291-323.