Available online at www.sciencedirect.com
ScienceDirect
Global Environmental Change 18 (2008) 204–219
Global Environmental Change
www.elsevier.com/locate/gloenvcha

Experiences of modernity in the greenhouse: A cultural analysis of a physicist "trio" supporting the backlash against global warming

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Received 18 March 2007; received in revised form 5 October 2007; accepted 29 October 2007

Abstract

This paper identifies cultural and historical dimensions that structure US climate science politics. It explores why a key subset of scientists—the physicist founders and leaders of the influential George C. Marshall Institute—chose to lend their scientific authority to this movement which continues to powerfully shape US climate policy. The paper suggests that these physicists joined the environmental backlash to stem changing tides in science and society, and to defend their preferred understandings of science, modernity, and of themselves as a physicist elite—understandings challenged by on-going transformations encapsulated by the widespread concern about human-induced climate change.

Keywords: Anti-environmental movement; Human dimensions research; Climate change; Controversy; United States; George C. Marshall Institute

1. Introduction

Human Dimensions Research in the area of global environmental change tends to integrate a limited conceptualization of culture. It commonly conceives of it as just one factor among others, a non-pervasive factor separate from central social processes associated with environmental change, including scientific understanding. However, a growing area of scholarship stresses the need to also study the role of culture and politics in the very production of scientific knowledge and associated adjudications (see, among many, Fischer, 2003; Jasanoff and Wynne, 1998; Jasanoff and Long Martello, 2004; Lahsen, 1999, 2005a, 2007; Rayner and Malone, 1998; Shapin and Schaffer, 1985; van der Sluijs et al., 1998; Wynne, 1994). Such research continues to be scarce in the area of Human Dimensions Research focused on global environmental change, despite efforts to change this fact. In a 1998 article in this journal, Proctor (1998) argued in favor of a conceptualization of culture as a pervasive factor structuring also scientific understanding of global environmental change itself, what he termed a "strong theory of culture." Arguing that the essential role of science in our present age only can be fully understood through examination of individuals' relationships with each other and with "meanings sedimented in institutions and other perennial forms" (ibid.), Proctor concluded the article by commenting on the importance of considering how cultural contradictions and experiences of modernity relate to global environmental change:

> One crucial object of human dimensions inquiry thus ought to be the differentiated condition and experience of modernity […]. Modernity is full of cultural contradictions—the professed mastery of nature juxtaposed against the burgeoning environmental movement, for example. How do these contradictions influence and respond to global environmental change, and what future implications exist? (p. 243)

Nearly 10 years later, analyses of climate science controversy still tend to ignore its deeper socio-cultural roots and the extent to which it involves a debate about wider social values, as also recently noted by the founding

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doi:10.1016/j.gloenvcha.2007.10.001

director of the UK Tyndall Centre for Climate Change Research (Hulme, 2007).

Integrating a strong theory of culture and attending to experiences of modernity, this article highlights socio-cultural and political dimensions underpinning divisions among US scientists on the issue of human-induced climate change. Informed by ethnographic research among US climate scientists from the period 1994–2000, it analyzes the involvement of an influential group of physicists in light of their personal and professional backgrounds. It explains these physicists' engagement with the backlash as a response to broader social transformations with which they, in many respects, are at odds—transformations in understandings of the interrelationships between nature, society, science, and technology. It portrays their attitudinal inclinations and understandings of techno-scientific risks in terms of cultural factors, including, among other things, their professional socialization among nuclear physicists and their important and prestigious roles as science-policy advisors.

Since the late 1980s, scientists have fueled public fears that humans might be dangerously interfering with global climate patterns. A series of assessment reports produced under the auspices of the United Nations Intergovernmental Panel on Climate Change (IPCC) (1990, 2001, 2005, 2007) have helped consolidate these fears by concluding that a continuation of present global greenhouse gas emissions trends threatens ecological and social systems worldwide. The success of scientists and environmentalists in raising concern about the issue provoked an "anti-environmental" backlash in the US, advanced by an influential, interconnected network of industry representatives, conservative political groups, politicians, and sympathetic scientists aversive to climate policy action (Brown, 1996; Gelbspan, 1995, 1997; Lahsen, 1999, 2005a; McCright and Dunlap, 2003; Rowell, 1996; Stevens, 1993).[1] This network of "backlash actors" challenges scientific evidence supporting the theory of anthropogenic warming and attacks the objectivity and procedural integrity of the IPCC (Lahsen, 1999; Edwards and Schneider, 2001). Backlash actors claim that "sound science" does not support the theory of human-induced climate change, and suggest that human emissions of greenhouse gases benefit rather than harm nature and humans (Robinson and Robinson, 1997). Furthermore, the coalition of backlash actors claims that internationally binding climate policy is unnecessary, unreasonable, overly expensive, and destructive of US economic competitiveness in the world economy (see, among many examples, Michaels, 1992; Robinson and Robinson, 1997; Seitz, 1996; Science and Environmental Policy Project, 1992; Singer, 2003).[2]

Despite indications that "an overwhelming majority of the US public embraces the idea that global warming is a real problem that requires action,"[3] US policy action has lagged (Sarewitz and Pielke, 2000), in part because of the powerful efforts of the backlash coalition. Democrats and Republicans alike have contributed to the gridlock that has undermined preventive national climate policy, but Republicans have been particularly vehement in their opposition to the Kyoto Protocol in particular, and to preventive policy on the issue in general. Throughout the 1990s, Congressional Republicans gave backlash views important play in Congressional hearings (Brown, 1996; Gelbspan, 1997; Lahsen, 1999). Republican opposition to preventive policy action on the climate issue culminated in President W. Bush's rejection of the Kyoto Protocol soon after entering office (March 2000), citing scientific uncertainties and economic imperatives. The continued skepticism among members of Congress, and in particular among Republicans, was also established by a recent survey. Asked whether they believed it to have been "proven beyond a reasonable doubt that the Earth is warming because of man-made pollution," only 23% of Republicans answered in the affirmative, by contrast to 98% of the Democrats.[4] Yet other evidence of the continued impact of contrarian arguments can be found in a 2003 Congressional report prepared for Congressman Henry Waxman,[5] a 2004 report by the Union of Concerned Scientists,[6] books such as Chris Mooney's *Republican War on Science* (2005) and popular magazines such as *Newsweek* (Begley, 2007), and in scholars' analyses in academic journals (e.g., Jacques, 2006; Krosnick et al., 2006; Leiserowitz, 2006; McCright and Dunlap, 2003; Oreskes, 2005). A 2005 peer-reviewed study of US media coverage (Antilla, 2005) identified a large amount of articles which framed climate change in terms of debate, controversy, or uncertainty. It found some major news outlets to repeatedly favor and rely on climate skeptics for definitions of the science and dangers related to human-induced climate change. Recent surveys found that most Americans lack "vivid, concrete, and personally-relevant affective images of climate change" (Leiserowitz, 2006, p. 55) and that the US public as a whole is less concerned about the issue compared to the scientific establishment (Krosnick et al., 2006). The studies link the US public's lower sense of urgency to the relatively low

[1] Following Austin (2002), I define "antienvironmentalism" as a collection of ideologies and political practices designed to advance capital accumulation and manage the discontents stemming from industrial production and mass consumption.

[2] See McCright and Dunlap's (2000) analysis and description of the counter-claims made by the conservative movement regarding global warming.

[3] The two 1998 polls were conducted by the Program on International Policy Attitudes (PIPA), which researches public attitudes on international issues by conducting nationwide polls, focus groups and comprehensive reviews of polling conducted by other organizations. PIPA is a joint program of the Center on Policy Attitudes (COPA) and the Center for International and Security Studies at Maryland (CISSM), School of Public Affairs, University of Maryland.

[4] Congressional Insiders Poll, National Journal, 1 April 2006, accessible at: http://www.envsci.rutgers.edu/~weaver/national_journal_2006_04_01_insiders.pdf.

[5] http://democrats.reform.house.gov/features/politics_and_science/pdfs/pdf_politics_and_science_rep.pdf.

[6] www.ucsusa.org/scientific_integrity/interference/reports-scientific-integrity-in-policy-making.html.