



## Reviewing the climate change reviewers: Exploring controversy through report references and citations



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### ABSTRACT

There is a growing need to analyse the knowledge controversies about climate change. Human geography has a role in understanding of the motivations and sources of the participants in the debate. In this study, we explore the scientific background of the contrarian arguments, using *Climate Change Reconsidered* published by the conservative think tank Heartland Institute, in comparison with the Fourth Assessment Report of the Intergovernmental Panel on Climate Change *The Physical Science Basis*. Firstly, we surveyed the reference lists, which showed that in general the contrarian report used the same journals, as their most important sources. However, the differences are in the details: journals dealing with paleo-issues are more important for the contrarian report. Further, it is noteworthy that we found only 262 identical references (4.4% of all references) in the reports and their contextual analyses revealed that the rhetoric can be remarkably different, as can the way in which an article is used. These results indicate that we cannot state that the opponents use completely different sources, but the complementarity of their reference list raised some questions which are discussed in the last section of the paper. Should we take the 'contrarians' and their arguments seriously or not?

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### Introduction

The Intergovernmental Panel on Climate Change (IPCC) accepted the Fifth Assessment Report *The Physical Science Basis* at the end of September 2013, but only the draft version was accessible on its webpage for several months. At the same time well-informed insiders might have noticed that a US policy think tank, the Heartland Institute, had already published the final version of its own counter-report (*Climate Change Reconsidered II*, CCR2) demonstrating the position of the 'climate sceptics' on anthropogenic global warming.

When climate change became a relevant question in the 1970s, reviewing and assessing the current state of climate science was an obvious consequence. One of the first assessments was published by the Massachusetts Institute of Technology (SMIC, 1971) before the UN Conference on the Human Environment in Stockholm

(Weart, 2010). After the IPCC was established in 1988, it became more influential through its scientific reports on climate change both in scientific and public discourses and in shaping climate policy. Hence, its work at the science-policy interface became highly reviewed after the year 2000 (e.g. Edwards and Schneider, 2001; Dahan-Dalmedico, 2008; Hulme and Mahony, 2010; Bjurström and Polk, 2011a, 2011b; Beck, 2012). Interest in the IPCC grew, particularly after the UN Climate Change Conference in Copenhagen and the Climatic Research Unit (CRU) email incident at the University of East Anglia ('Climategate') at the end of 2009, when hackers released thousands of emails, many of which were written by leading climate scientists. These events put climate science and climate policy generally under scrutiny (e.g., Berkhout, 2010; Prins et al., 2010; IAC, 2010; Grundmann, 2012; Maibach et al., 2012; Lahsen, 2013a).

There are several calls in the literature to analyse climate change from the various viewpoints of social sciences and particularly geography and science studies. Perhaps Hulme first noted that here is an important and timely research task for geography:

"The [...] geographical project I propose as urgent is to scrutinize the knowledge claims made by science about climate change, most notably the various assessments of the IPCC" (Hulme, 2008, p. 8).

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“Revealing the local and situated characteristics of climate change knowledge thus becomes central for understanding both the acceptance and resistance that is shown towards the knowledge claims of the IPCC. It is a task for physical and human geographers to take seriously, and a task for them to do together” (Hulme and Mahony, 2010, p. 714).

Whatmore (2009, p. 596) argued that, in relation to environmental issues, “an interest in knowledge controversies as generative events in the socialization of scientific knowledge claims and technologies” is a common feature of geography and science and technology studies. Thus, geography has a potential role not only in interpreting the events at the interface between science and policy, but in understanding and mapping environmental controversies.

Lahsen (2013a) made a similar call in the wider context of social sciences. “[S]ocial scientists and scholars often explicitly posit ACC [anthropogenic climate change] as uncontested, objective reality” and “analysts tend to lump climate scientists into two polarized camps, and to subsequently dismiss the non-IPCC side”. While social science research has focused overwhelmingly on backlash actors “[t]here is a reticence to shed similar, critical light on the extra-scientific dynamics shaping IPCC science” (Lahsen, 2013a, p. 551).

Despite the carefully built and widely argued consensus of the IPCC reports (see also e.g. Oreskes, 2004; Anderegg et al., 2010; Rosenberg et al., 2010; but cf. Bray, 2010), the counter-movement to the ACC idea emerged in parallel with the publication of the first IPCC reports in the 1990s, and its participants intensified their activity particularly after the global climate policy negotiations in Kyoto in 1997 about the reduction of carbon dioxide emissions (Oreskes and Conway, 2010; Dunlap and McCright, 2011). Hence, climate change became highly contested in society and politics (Hulme, 2009). However, the climate debate has different effects in different places (Grundmann and Scott, 2012). Due to the distance in minds and kilometres there was hardly a single report about Climategate in the mass media of the authors’ country.

In the US, where the controversy continues to be most intense, a great amount of research has addressed the so called ‘climate sceptics.’ (There are several different, sometimes misleading terms, like climate change ‘deniers’, ‘dismissers’, ‘contrarians’ or ‘mainstream sceptics’ – Kemp et al., 2010; O’Neill and Boykoff, 2010; Lahsen, 2013b.) Accordingly, several studies aimed to unveil the ‘denial machine’, pointing out the various methods used by the sceptics to discredit the mainstream science (e.g., Edwards and Schneider 2001; McCright and Dunlap, 2010; Nerlich, 2010; Oreskes and Conway, 2010; Ceccarelli, 2011; Dunlap and McCright, 2011). Further, the backgrounds and the motivations of the contrarian scientists are explored (Jaques et al., 2008; Lahsen, 2008, 2013b), and the linkages and attitudes of the oil economy are identified (Kolk and Levy, 2001; van de Hove et al., 2002).

However, the scientific sources of the contrarian arguments, according to our present knowledge, are barely known. For this reason, we analysed a ‘sceptic’ report on climate change to get a deeper insight into how contrarian views are constructed and legitimized using scientific material. Because the opposing assessment criticises the main findings of the IPCC, it was logical to review it by contrasting it with the IPCC Fourth Assessment Report, *The Physical Science Basis*, by the Working Group I (IPCC AR4 WGI). Thus, our study has two parallel goals: to understand the ideas of the contrarians of the ACC idea by revealing the nature of their report and also to show the scientific basis of the IPCC (similarly as Bjurström and Polk, 2011a, 2011b did in terms of the IPCC Third Assessment Report, TAR).

“Climate Change Reconsidered” (CCR), the previous version of the CCR II, was published in 2009 under the umbrella of the

Nongovernmental International Panel on Climate Change (NIPCC), by the Heartland Institute, an influential conservative think tank (Idso and Singer, 2009). Although this report was widely publicised in the US and abroad, it is barely reviewed in the scientific literature (but see Van der Sluijs et al., 2010a: 44–45; or Hamilton, 2012: 38–39).

The NIPCC, a group of international scientists, was founded by the Science and Environmental Policy Project (SEPP) in Milan in 2003 and got active after the publication of IPCC AR4. The Heartland Institute was founded in 1984 and turned its attention to global warming particularly after 2000. Using different resources, from newsletters to media campaigns, it became the most active participant in the debate. It organises climate conferences and mobilises hundreds of scientists with its branches (e.g. Centre for the Study of Carbon Dioxide and Global Change, SEPP) in the world. The failure and the consequences of the recent billboard campaign in Heartland’s hometown of Chicago showed that local incidents may have a global effect on the rearrangement of the network of climate change deniers. When Heartland portrayed the Unabomber as saying “I still believe in global warming. Do you?” there was a strong protest against comparing global warming advocates to the terrorist. The campaign was stopped after one day and many supporters and employees left the Institute following the incident. Another recent example, the Peter Gleick case (‘Fakegate’), when the scientist used fraudulent means to reveal the financial background of the Institute, showed that the opponents sometimes use similar efforts (cf. the hackers’ attack in case of Climategate).

## Scientific background and theoretical considerations

To analyse the reports we used the simple but laborious method of bibliometrics, and also applied contextual analysis in contrasting identical references, suggested by the field of rhetoric of science in science and technology studies (Gross, 2006; Sismondo, 2010). In this section we give an overview about the overlapping research interest of geography and science studies in climate change to show the trends in scholarly work and to make our theoretical and methodological background clearer. After placing our research in a scientific context, we present our detailed research questions.

### *Science studies, geography and climate change*

Philosophy and sociology of science offer some simple starting points to explore and understand the debate over climate change. The ‘scientific field’ concept of Bourdieu (2001) presents the controversy as mainstream science protecting the field of climate change from the attacks of the contrarians. According to the concept it may be suggested that the ‘field’ of climate change is not homogeneous; it has a changing structure, its agents have different amounts of scientific capital, and the boundaries of the field are continually being re-demarcated (cf. Hoffman, 2011). Relatedly, several papers have focused on the demarcation problem between mainstream science and climate-sceptic or non-science (Demeritt, 2001, 2006; Berkhout, 2010), although this polarised view of the debate could be criticised (Bray, 2010; Lahsen, 2013a, 2013b).

There is a similar but overly simplified perspective, when we see mainstream climate science as normal science in the Kuhnian sense, working within the anthropogenic paradigm of climate change (cf. Hulme, 2009; Goeminne, 2011), while its opponents are trying to debunk it. The post-normal theory of science, where facts are uncertain, values in dispute, stakes are high and decisions are urgent, offers an alternative view for climate science; it was applied to and tested on climate science by many scholars (Bray and von Storch, 1999; Saloranta, 2001; Glover, 2006; Hulme, 2009, 2010a; Hulme and Mahony, 2010; Friedrichs, 2011; Krauss

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