Global Environmental Change 23 (2013) 1018–1027

Contents lists available at SciVerse ScienceDirect

Global Environmental Change

journal homepage: www.elsevier.com/locate/gloenvcha

Public climate-change skepticism, energy preferences and political participation

Anita Engels [a,*], Otto Hüther [b], Mike Schäfer [a], Hermann Held [a]

[a] Universität Hamburg, KlimaCampus, Germany
[b] Universität Kassel, Germany

ARTICLE INFO

Article history:
Received 27 August 2012
Received in revised form 29 March 2013
Accepted 12 May 2013

Keywords:
Skepticism
Energy preferences
Political participation
Low-carbon society
General population survey
Germany

ABSTRACT

Many studies have shown a general decline of public concern about climate change or vice versa a rise in public climate-change skepticism, in particular in the U.S. and other Anglo-Saxon countries. There is a vivid debate on whether this is a global phenomenon, on which factors explain the decline, and on the broader societal implications of these trends in the context of the transformation toward a low-carbon society. We add to this literature by presenting the results of a recent general population survey in Germany in which we looked for systematic linkages between public climate-change skepticism on one hand, and energy preferences and political participation on the other. Germany is an interesting testbed as it is currently involved in a large-scale restructuring of its system of energy supply toward renewable energy sources (the "Energiewende"). Our results indicate that climate-change skepticism has not diffused widely in Germany, but that it correlates with less support of renewable energy sources. However, skepticism correlates negatively with political participation, and there is no strong political outlet for public climate-change skepticism in Germany. Alternative potential barriers for the successful implementation of the "Energiewende" are also discussed.

1. Introduction

Public perceptions of climate change build the foundation for decisions on carbon-reduction policies. There is a strong interest in the social sciences in understanding the relationships between climate perceptions – in particular, public climate-change skepticism – and support for carbon-reduction policies. The correlation among public skepticism, energy preferences and political participation is a crucial field of analysis for any country that strives to transition toward a low-carbon society. We present results from a recent general social survey on public perceptions of climate change in Germany. With the concept of public climate-change skepticism we refer to a range of dimensions along which the broader public casts doubt on the mainstream risk assessment on anthropogenic climate change as expressed, e.g., by the reports of the IPCC. Someone can have serious doubts about the existence of climate change, about its causation by human factors or about potential negative impacts of anthropogenic climate change. More indirectly, someone can also seriously question that there is consensus among scientists. In this study we refer to these different dimensions to employ an inclusive concept of skepticism rather than a single item factor. We assess the diffusion of public climate-change skepticism in Germany and seek for factors, which might affect the diffusion.

It is widely believed that a transition toward low-carbon lifestyles or the introduction of low-carbon policies are difficult to achieve in the face of wide-ranging public climate-change skepticism. To achieve a more systematic understanding of these potential linkages, we evaluate the correlations among public skepticism, the preference for different energy sources and political participation. We address a missing link in the current research on the transformation toward a low-carbon society. In this paper, we focus on answering the following questions: Compared with Anglo-Saxon countries, how widespread is public climate-change skepticism in Germany? Which socio-demographic and attitudinal factors are related to skepticism? How does skepticism relate to perceptions of different energy sources and energy preferences? And, finally, is skepticism related to political participation? The wider implications of the results are discussed in the concluding section.

2. Background: climate-change skepticism and beyond

Ratter et al. (2012) and Scruggs and Benegal (2012) recently pointed to a general decline in major industrialized countries in public concern about climate change over the past few years.

* Corresponding author. Tel.: +49 40 428383832; fax: +49 40 428386404.
E-mail address: anita.engels@wiso.uni-hamburg.de (A. Engels).

0959-3780/$ – see front matter © 2013 Elsevier Ltd. All rights reserved.
http://dx.doi.org/10.1016/j.gloenvcha.2013.05.008

Others have shown that public skepticism about climate change has become a mainstream phenomenon in the U.S. and to a lesser extent in other major industrialized countries (McCright and Dunlap, 2011a; Poortinga et al., 2011; Leiserowitz et al., 2011; Washington and Cook, 2011; Weber and Stern, 2011; Schmidt, 2010; Hamilton, 2010; Hoggan and Littlemore, 2009). To date, studies have focused on evaluating the diffusion of public skepticism and have sought to identify factors explaining when and why the public turns toward skepticism. Some authors link the growing skepticism to political campaigns (Dunlap and McCright, 2011), others to the economic crisis and high unemployment rates (Scruggs and Benegal, 2012). In addition, several studies have analyzed the dynamics and the effects of organized skepticism, i.e., lobbying efforts to discredit climate scientists and their research results (McCright and Dunlap, 2010; Inman, 2012). Also, knowledge about climate change among laypeople has not diffused or grown substantially over the past few decades, in spite of a tremendous knowledge accumulation in the scientific community (Reynolds et al., 2010). Most of these studies have a strong focus on the Anglo-Saxon part of the world, with only a few, and purely descriptive, comparisons with other (European) countries (Eurobarometer, 2011).

Therefore, only few studies analyzed whether climate change skepticism has grown in countries outside of the Anglo-Saxon cultural and political realm, and how a respective growth would influence voters' readiness to support carbon-reduction policies. The comparative analysis is important because factors explaining skepticism in Anglo-Saxon countries might be irrelevant or non-existent in other countries. In Germany, organized political campaigns to discredit climate scientists and to cast doubt on the science of climate change have been largely absent. Germany is a country in which pro-environmental attitudes are part of the cultural mainstream (e.g., Eurobarometer, 2009; Kuckartz, 2008), and since the 1990s, climate change has had strong affirmative repercussions in politics and the mass media (Weingart et al., 2000). One indicator of this is that all major political parties represented in the national parliament relate in some positive way to environmental and climate protection goals. The political parties are extremely unlikely to launch campaigns in favor of climate-change skepticism, and climate-change skeptics have no strong political outlet in the current political landscape of Germany.

In addition to the question of an expansion of climate-change skepticism, several studies have attempted to test the correlations between the inclination to adopt a skeptical stance on climate change and socio-demographic and attitudinal variables in often complex statistical models. Several authors have tested to what extent a person's level of education, level of income, political orientation and general attitudinal background correlates with being skeptical about climate change (McCright and Dunlap, 2011a; Poortinga et al., 2011; Whitmarsh, 2011). These studies show that climate-change skepticism is embedded in general cultural values and attitudes. In the tested models of these studies, low scores of general environmental concern correlate with skepticism. Other factors such as sex, education and age also correlate with different degrees of skepticism in most statistical models.

For the U.S., social scientists have predicted a growing divide between liberals and conservatives rather than the emergence of a social consensus (Hoffman, 2011a; McCright and Dunlap, 2011b). There, the probability of holding skeptical views on climate change is significantly higher among white male respondents who identify with the conservative party than among any other group. For the U.K., Poortinga et al. (2011) found a positive correlation between climate-change skepticism and low social status, old age and support for a conservative political party. However, they were not able to show the "white male" effect in their study. These differences already demonstrate that in spite of some general factors, the specific composition of factors correlating with climate-change skepticism depend strongly on the political and cultural context in which the model is tested. We assume that countries which differ stronger from the U.S. and the U.K. in terms of culture and the political system will need other models, or other combinations of factors in these models, to understand the country specific dynamics of climate-change skepticism. These differences can be observed at various levels of society: they can be deeply rooted in the conception of the individual vis-à-vis the state (Eisenstadt, 2000), they can concern the complex institutional settings which structure economic and political life (Thelen, 2009), and more specifically the different regulatory styles and traditions with which environmental problems have been treated so far. The precautionary principle is, to give an example, firmly rooted in the German culture and also institutionalized in its political and legal approach to environmental protection, whereas this is less so in the US (Schreurs, 2003).

Cultural and institutional differences should become particularly visible if it comes to the correlation between skepticism and attitudes, racial background and socio-economic status. For example, public attitudes and political debates are not organized along racial divides in Germany so that "race" as a variable is typically not even addressed in public surveys. The German political spectrum is also much different from the polarized pattern of conservatives versus liberals in the U.S.: traditional conservative milieus have undergone cultural changes, and the five to six relevant political parties form various and changing coalitions, depending on the specific electoral situation in a given government at the national, state or communal level.

Other ongoing scientific debates focus on the questions how climate-change skepticism should be measured, how skepticism can be differentiated into several dimensions (Whitmarsh, 2011; Rahmstorf, 2004; Poortinga et al., 2011; McCright and Dunlap, 2011a) and how skepticism, denial and contrarianism relate to each other (see the debate in O'Neill and Boykoff, 2010; Kemp et al., 2010; Ryghaug et al., 2011). Several dimensions of skepticism are discussed in the literature, e.g. a person's doubts regarding the reality of climate change, the anthropogenic origin of climate change or the possibility of adverse effects on society. Not only the science of climate change, but also the scientists working in this field have come under close scrutiny, and they have been faced with a loss of trust in the integrity of their work (Nerlich, 2010; Leiserowitz et al., 2010).

But why is climate-change skepticism a significant object of social science research in the first place? Different forms of skepticism have been acknowledged as a major reason for the lack of support for government policies on climate change and for low public engagement in carbon-reducing activities (Ding et al., 2011; Whitmarsh et al., 2011). Widespread public skepticism about climate change can produce strong political and cultural barriers that hinder a government's domestic climate change policy agenda, especially in the case of carbon-reduction policies. It is generally assumed that a growing number of skeptics create an important political barrier against carbon-reduction policies or against a switch toward renewable energy sources. This is linked to the often untested assumption that skeptics are active participants in the political process, or that they have a strong political voice through which they can transport their opposition. We go beyond these studies in that we test the correlations among public skepticism of climate change, energy preferences and political participation. Energy preferences are important because in any major industrialized country seeking to reduce carbon emissions, energy policies will be a key tool that can be used to achieve this goal. Political participation is an indicator of influence and of the