

The Ivory Lighthouse: communicating climate change more effectively

An editorial review essay

William R. L. Anderegg

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Why do we disagree about climate change? It's an audacious question, to say the least. Nonetheless, two recent books—James Hoggan's *Climate Cover-Up* and Mike Hulme's *Why We Disagree about Climate Change*—seek to tackle just this question. Given the intensity of the media tempest that has surrounded climate change in the public discourse, both authors' timing could not have been better. Both books are deeply engaging and paint a fuller picture of the widespread disagreement around climate change and what to do about it. But ultimately, grand questions like this do not have essay-length or even book-length answers. The authors illuminate anecdotes that are only just scratching the surface, a few notable waves on a vast and turbulent ocean. Both authors make preliminary but unsatisfying gestures about where to go from here. Put simply, they provide little guidance about the critical follow-up question—what do we do about this disagreement?

Hoggan and Hulme wrestle with this cumbersome and multifaceted issue in entirely different ways and to different degrees of success. In this review essay, I first synthesize the main points of *Climate Cover-Up* and *Why We Disagree about Climate Change*, focusing especially on barriers to effective climate change communication. I then build upon Hoggan and Hulme to discuss behavioral shifts within the academic community and broader pathways to communicate climate change more clearly and more effectively.

Climate Cover-Up opens by promising “a story of betrayal, a story of selfishness, greed, and irresponsibility on an epic scale.” James Hoggan, the cofounder of DeSmogBlog.com, delivers just this – a sojourn into the shadowy and interconnected world of climate change denial. Hoggan provides a sobering perspective of how public relations strategies can be used to propagate uncertainty and politically motivated messages into public understanding of climate change, even as the science itself accumulates evidence and certainty. While targeted at a lay audience and written in the style of a journalistic exposé, his message is quite useful to scientists

W. R. L. Anderegg (✉)
Department of Biology, Stanford University, Stanford, CA 94305-5020, USA
e-mail: anderegg@stanford.edu

and other academics trying to bridge the gap in public understanding of climate change. The message is three-fold, simple, and worth remembering: entrenched forces have created deliberate deceptions of climate science aimed at stopping or delaying societal action on climate change; they have been quite successful; and the denial continues to this day. While Hoggan describes provocative anecdotes of climate change denial, his account falls short in setting the climate change deniers in perspective with the preponderance of the scientific community and in elucidating how citizens and scientists can inoculate themselves and counter such future viral media and relations campaigns.

Climate Cover-Up suffers slightly from a lack of guiding structure and organization, but the book can be roughly divided into three sections. The book opens with climate and public relations background. Hoggan presents a useful metaphor about trusting experts as “lifeguards”, but explains that not all lifeguards have the public’s best interest at heart. Some lifeguards are willing to conveniently ignore the cliff in front of them and the rocks at the base of cliff and urge a society of lemmings onward. The second section, the bulk of the book, broadly tackles the methods and strategies of the delinquent lifeguards. Hoggan relates anecdotes and traces the interconnections and motivations of individuals and groups in this section. He concludes in the third section by offering his thoughts on persistent barriers to climate change action and how citizens can take action.

Building on the public relations field he knows well, Hoggan first discusses tactics used effectively by the tobacco industry for years to confuse the public about the relationship between smoking and cancer, thereby delaying regulation. The similarities to the climate change contrarian strategies are striking and, as Hoggan notes, some of the same “experts” involved with the tobacco industry’s campaign have been prominent in the global warming contrarian movement. A recent book by Oreskes and Conway (2010) captures this in more detail.

He then moves on to describe the deliberate “astroturf” campaigns, where well-funded special interests create (fake) grassroots campaigns to disseminate information and sway policy. Such campaigns proliferated in the 1990s, funded by corporations such as ExxonMobil and General Motors. The goals of these campaigns were to cast doubt and uncertainty on the emerging science, especially through dissenting “experts,” and to ensure that this confusion was widely broadcast to the media and public. This was first brought to the public attention by Ross Gelbspan’s landmark book *The Heat Is On* (Gelbspan 1998). Hoggan highlights that these campaigns were (1) deliberate in goal, (2) clear in motivation from the funding organizations, and (3) tactically brilliant in communication strategy and rhetoric.

Conservative think tanks provide another gear in the machinery of climate change denial. Jacques and colleagues document in the journal *Environmental Politics* that over 92% (130 of the 141) of English-language books espousing environmental skepticism were published by conservative think tanks, or written by authors affiliated with those think tanks (Jacques et al. 2008). These think tanks, often substantially funded by industry interests, have played a prominent role in climate change denial as well. Hoggan points out that in addition to commissioning reports by and publicizing the message of vocal climate change contrarians, these think tanks play a critical role in organizing the denial movement. As recent as March 2009, the Heartland Institute funded the second *International Conference on Climate Change* and offered \$1,000 honorariums for any scientist willing to “help generate international media attention

to the fact that many scientists believe forecasts of rapid warming and catastrophic events are not supported by sound science.”

In addition to media tactics by astroturf campaigns and conservative think tanks, the denial campaign employs a third tactic of compiling petitions of immense numbers of researchers who “dissent” from the mainstream consensus assessed by the IPCC. Hoggan deftly punches holes in these petitions, illuminating that when examined closely, the signatories are predominantly not qualified climate scientists. A full quantitative examination of the climate change skeptical researchers in context of the larger climate research community would certainly provide a valuable communication tool to clear the air in the climate change debate, which I shall return to below. Hoggan notes, “The target audience for the endless flow of ‘petition science’ isn’t the community of climate scientists. The target audience is the increasingly confused general public, and politicians who are either similarly bewildered or beholden to special interests.”

Especially interesting to both the lay person and academics, Hoggan concludes the section of strategies of the denial movement with a look at how successful the movement has been in manipulating the mainstream media and politicians. He first highlights the critical importance of public support in passing any US climate policy. Such public support is currently flagging and remains sharply divided across partisan lines, especially among better informed and more educated voters, which implies the consumption of media has played a strong role in shaping public perception of climate change (Dunlap and McCright 2008; Pew Research Center 2009). Two studies examine and confirm this “balance as bias” tendency of the US prestige press to cover “both sides” of the climate debate, regardless of credibility and weight of evidence (Boykoff and Boykoff 2004; Antilla 2005). Interestingly, in a follow-up study, this biased coverage seems to have declined over time (Boykoff 2007). Hoggan suggests media polarization and the selection by media organizations of stories that tend to reaffirm the established bias of their audience may have filled this role of perpetuating uncertainty and confusion in public opinion (see also McCright and Dunlap 2003). He acknowledges that all media organizations have the right to fill their opinion pages with outspoken partisans, but argues that those organizations are responsible with providing consumers with (1) a fair reflection of the writer’s credibility in an issue, (2) any pecuniary self-interest the writer may have in connection to their viewpoint, and 3) any corrections to statements given as “facts” within a viewpoint. Here is one of Hoggan’s most important contributions—the media must present a given experts’ credibility and self-interest, as well as the summed weight of evidence and credibility of all experts behind an argument, to communicate climate science effectively.

Climate Cover-Up is an insightful gem documenting the ongoing subtle changes in strategy of the denial movement. Hoggan profiles the new, more subversive and more dangerous tactic of the movement—a careful shifting of the argument “from denial to delay.” He focuses his criticism on the Bjorn Lomborg-style of logic that other global issues like reducing poverty trump climate concerns and argues that this strategy is not truly designed to help address other pressing global issues (e.g. reducing world poverty or malaria), but instead a carefully calculated scheme to avoid doing anything about climate change. The absurdity of the climate mitigation versus reducing poverty trade-off posed by Lomborg has been examined by many others as well (e.g. Schneider 2009).

The final two chapters of *Climate Cover-Up* tackle what we can do as citizens to play an educated and active role in the climate change conversation. “First, and most critically, you must inform yourself,” Hoggan urges. In a democracy, the vigilance of a well-educated citizenry provides the best defense against active campaigns to sow confusion and uncertainty. With this vigilance comes a social movement of citizens demanding that their leaders address this daunting problem. Finally, he argues that we need courageous leadership and the support of citizens to affect change.

In stark contrast, Mike Hulme’s *Why We Disagree about Climate Change* presents itself as a book much larger in scope and more academic in nature. If Hoggan’s account of climate change controversy is a gritty and mud-stained field journal, Hulme presents a ponderous tome tracking all facets of climate change from the Bible to present. Also written for the lay-person, it is an enlightening read. The book provides a broad introductory background to many facets surrounding climate change, from scientific underpinnings to economics debates to religious engagement with the issue. Hulme takes a postmodern approach of focusing on “the idea of climate change,” not just the physical phenomenon of climate change itself, which expands the field of debate but leaves the reader mired and frustrated, with few practical suggestions for how to move forward.

Why We Disagree about Climate Change is meticulously organized and skillfully interconnected. Hulme spends the first two chapters laying out the societal context of the idea of climate and climate change and the scientific discovery of recent anthropogenic climate change. His third chapter focuses on the role of science in society and is the high point of the book. This chapter provides insightful commentary about scientific epistemology and the concept of expertise, and it dovetails well with Hoggan’s work. After covering Bayesian beliefs, consensus building in science, and models of how science interacts with society, Hulme concludes with the strengths and limitations of scientific knowledge in the climate change discussion. He highlights three limitations: climate science has and will always have large uncertainties; scientific knowledge is always in the context of and shaped by the society it is in; and that there are many things in climate change that science cannot tell us, such as what is a “dangerous” level of atmospheric greenhouse gases.

Subsequent chapters examine the many facets of climate change. Hulme guides the reader through the economic debates from discounting to the Stern Review, the engagement of religious organizations with climate change, and the psychology of risk and fear. To his credit, he tackles the vast and difficult issues around media and the communication of climate change, development goals and population, and strategies of climate governance from the Kyoto Protocol and beyond. Each of these chapters provides a relevant and easy-to-read overview of these dimensions and could be the introductory chapter to a textbook in each of these areas. Ultimately, Hulme argues, we will not make significant strides in the societal discourse around climate change until we acknowledge that we disagree about climate change for so many diverse and fundamental reasons.

Certainly, Hulme’s argument reminds us of the immense difficulty and complexity of addressing anthropogenic climate change. He correctly highlights the many disciplines that must be involved in understanding the discourse around climate change and negotiating actions such as limiting greenhouse gas emissions. The social sciences and humanities have a much larger role to play in understanding what

climate change means for humans than they have been playing. And perhaps more importantly, Hulme illuminates how climate change touches on many other extant tensions of the human predicament—persistent social inequities, historical legacies, and political paradigms, among others. His conclusion is that we should view climate change not as a ‘problem’ to be ‘solved,’ but as a vehicle to realize many of these underlying tensions.

The strength of Hulme’s book is also its largest weakness. Just as he offers that climate change is much more than the physical phenomenon studied by science, he makes a postmodern argument that “there is no single perspective or vantage point from which this kaleidoscopic idea of climate change can be understood.” As the kaleidoscopic chapters spin, the argument of the book starts to feel uninspiring at best, paralyzing at worst. His claim in each chapter can be summarized by, as is often written in bold print, we disagree about climate change, because we disagree about values, beliefs, risks, progress, politics, governance, or any number of things. In essence, Hulme’s postmodern answer is that we disagree about climate change because we *are* (insurmountably) different, though it’s unclear who exactly “we” signifies throughout the book. Thus, by the end he leaves the reader with little hope for finding agreement about climate change. Unlike Hoggan, who ends with a list of things the common citizen can do, Hulme concludes without any concrete suggestions of how to move beyond the tangle of disagreement he has highlighted.

Both Hoggan and Hulme view their books as illuminating the hidden and dangerous rocky waters around climate change. Both books end by presenting the need to move beyond this confusion and disagreement. How do we do this? How do we, as interdisciplinary researchers, foster this desperately needed education, engage the public, acknowledge and work with the inherently interdisciplinary challenges of the climate issue, and communicate the state of scientific understanding with clarity and urgency in a time of confusion?

I argue that climate scientists and academics need to be better participants in a discourse that extends beyond science and beyond climate change. I present here three concrete behavioral shifts and four larger and more fundamental changes that build upon the complexities of Hoggan and Hulme to communicate science more effectively. The behavioral shifts directly apply to climate scientists, but are relevant to all researchers involved in any facet of climate change.

Be proactive and open Transparency has always been a hallmark of the scientific method. Accusations of hiding any aspect of research only damages societal trust of science in climate change. Being open and transparent both about process and source data (within reason, of course, because dealing with endless requests for data under freedom of information can destroy productivity, progress, and rights to intellectual property) upholds ethical standards of the profession and ensures that when any allegations do occur they can be swiftly addressed.

Be engaging A recent Pew Poll of the American public and Times poll of the British public demonstrate that the percentage of citizens who think humans are behind global warming has fallen substantially (Pew Research Center 2009; Webster and Riddell 2009). At a time with ongoing international climate treaty negotiations the impact of a collective and resounding voice of the scientific community to the public and to policy-makers cannot be overstated. While IPCC assessment reports provide

a forum to communicate the state of climate science formally, scientists should also engage the media and the public more directly as well.

React quickly Recent incidents concerning the IPCC and Himalayan glacial melt underscore the need for both the IPCC and the larger community to react quickly and set any issues in the proper context (Anonymous 2009; Gleick et al. 2010; Yohe et al. 2010).

To be more effective in the long-run, however, we must come to terms with what Hulme captures in his third chapter about the role of science and academic research in society. Put simply, we must learn to operate effectively in a multi-directional and multi-participant discussion of scholars, media, political figures, and the public. I provide four broad avenues to be more effective which are by no means exhaustive.

Improving interdisciplinary collaboration and participation. Equally as important to projecting beyond the ivory tower of academia is drawing on the resources and fields within it. Many climate scientists do not necessarily have training in communication, the psychology of behavior change, or the nuances of risk assessment, for example. This makes cross-disciplinary collaboration and communication imperative to be effective in reaching diverse audiences. A recent report by the Center for Research on Environmental Decisions at Columbia University group highlights the contributions and tools of linguistics, communication, and social psychology in communicating all aspects of climate change (Center for Research on Environmental Decisions 2009). The report outlines eight key points in communicating climate science to a lay audience and provides useful lists of often-confusing words or phrases and more effective substitute words.

Improving incentives for academics to engage in public discourse. The academic environment and quest for tenure and publications do not often value good citizenship and engagement with the public, policy-makers, or media. We will ultimately see a better interaction between scholars and society if we reposition what comprises a top-notch professor by giving greater weight to dimensions such as public talks, popular articles, congressional testimonies, and teaching ability.

Including communication and epistemology training of graduate students. Few graduate students are exposed to the full breadth of complexity around climate change that Hulme depicts. Perhaps even fewer still are prepared to deal with the turbulent waters of media and climate contrarians that Hoggan illuminates. Including a basic course of scientific epistemology and of communication in all natural science and social science graduate programs provides first steps to preparing tomorrow's scholars with the ability to think across boundaries, communicate, and lead.

Presenting expertise in the media. The October 2009 Pew poll also points out that only 56% of respondents believe that scientists generally agree that the planet is getting warmer because of human activity (Pew Research Center 2009). This suggests that this message of climate contrarians (scientists themselves don't agree) has been successful, and it opens another avenue for addressing propagated misconceptions about climate change. Direct assessments of scientific agreement and expert credibility provide deliberate counters to these misconceptions and valuable communications tools to scientists and activists in addressing the media and the public. As Hoggan points out, the public is constantly barraged on all sides by "experts" and the average layperson is both incapable of assessing the relative merit of the scientific arguments, but also relatively uninformed in assessing the credentials of

the experts. Who are the experts? What do these experts believe? While the answers to these questions contain some inherent normative judgments, these questions can nonetheless be answered semi-quantitatively and within a scientific framework (Anderegg and Harold 2009).

Two studies provide excellent snapshots of the level of agreement within the scientific community and the proportion of researchers who support the IPCC conclusions about climate change. Oreskes (2004) classified the abstracts of all 928 articles in an academic database pertaining to “global climate change” and did not find a single abstract that disputed recent anthropogenic climate change. Doran and Zimmerman (2009) polled over 3,100 members of the American Geophysical Union and found that 97% of actively publishing climate scientists agreed with the statement that “human activity is a significant contributing factor in changing global mean temperatures.” Both Hoggan and a Union of Concerned Scientists report take this a step further by documenting the funding sources of many of the climate change deniers, but this is difficult to do rigorously and compare to those of non-denier researchers.

What’s missing is a sense of the scope of expertise. A recent analysis demonstrates this clearly and quantitatively. Even when considering hundreds of the most prominent climate change skeptics, the skeptic group is typically comprised of ~80% researchers who have published little on climate science. When considering those that have published on climate, skeptics have on average less than a half the number of climate publications and citations than do authors of the IPCC AR4 Working Group I (Anderegg et al. 2010). Combined with other quantitative assessments like Oreskes’s work, these results provide valuable communications tools to clarify and further the public discourse about climate change.

Ultimately, the media must report and acknowledge the expertise of those who make arguments, as well as any conflicting interests they may have. As Hoggan points out, an informed citizenry is the best way to prevent such wide-scale deceptions of science, but an informed media serves as a critical link between scholars and the public. This underscores the need to maintain science and environment reporters as those trained to discern the weight of experts, even as much of the mainstream media is undergoing a transition.

The conversation advanced in *Climate Cover-Up* and *Why We Disagree about Climate Change* and continued here is only a beginning. Communicating the risks and impacts of climate change will require multipronged and multidisciplinary strategies across diverse media. As Al Gore said in his Nobel Prize acceptance speech, “The way ahead is difficult. The outer boundary of what we currently believe is feasible is still far short of what we actually must do. Moreover, between here and there, across the unknown, falls the shadow.” Scholars will continue to push into and illuminate that shadow. Hoggan’s delinquent lifeguards continually seek to obscure the cliff and rocks below, but the ivory tower of academia is capable of cutting through and dispersing the fog. We must take care that the light reaches the public as well.

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