

Public Enemy No. 1? Understanding Media Representations of Outlier Views on Climate Change

American Behavioral Scientist
57(6) 796–817

© 2013 SAGE Publications

Reprints and permissions:

sagepub.com/journalsPermissions.nav

DOI: 10.1177/0002764213476846

abs.sagepub.com



Maxwell T. Boykoff¹

Abstract

Outlier voices—particularly those views often dubbed climate “skeptics,” “denialists,” or “contrarians”—have gained prominence and traction in mass media over time through a mix of internal workings such as journalistic norms, institutional values and practices, and external political economic, cultural, and social factors. In this context, the article explores how and why these actors—through varied interventions and actions—garner disproportionate visibility in the public arena via mass media. It also examines how media content producers grapple with ways to represent claims makers, as well as their claims, so that they clarify rather than confuse these critical issues. To the extent that mass media misrepresent and/or gratuitously cover these outlier views, they contribute to ongoing illusory, misleading, and counterproductive debates within the public and policy communities, and poorly serve the collective public. Furthermore, working through mass media outlets, these outlier interventions demonstrate themselves to be (at times deliberately) detrimental to efforts seeking to enlarge rather than constrict the spectrum of possibility for varied forms of climate action.

Keywords

media, climate change, outliers, contrarians, skeptics, deniers, cultural politics

¹University of Colorado, Boulder, CO, USA

Corresponding Author:

Maxwell T. Boykoff, Cooperative Institute for Research in Environmental Sciences, Center for Science and Technology Policy Research, Environmental Studies and Geography, University of Colorado, UCB 488, Boulder, CO 80309, USA.

Email: boykoff@colorado.edu

What Happened to Global Warming? “Bring the (Signals and) Noise”

Numerous events in recent years have recalibrated “contrarian” considerations in the public arena. For example, in October 2009, possibilities for “global cooling” (echoing claims made in the 1970s) permeated mass media accounts. The news hook was that the U.K. Met Office’s Hadley Centre reported that the last decade had seen a sputtering rather than a steady increase in global temperatures. Despite that the Met Office commented that “warming is set to resume quickly and strongly” (Hudson, 2009), the report spun out a flurry of associated news reports and web activity (Pew Center Project for Excellence in Journalism [PEJ], 2009).

An iterative back-and-forth took place in the news pages and blogs in the following days and weeks. First, Paul Hudson covered the Met Office findings in a piece on *BBC News* titled “What Happened to Global Warming?” where he commented “for the last 11 years we have not observed any increase in global temperatures” (Hudson, 2009). Then, an Associated Press piece took a different view, noting that since a high point in 1998, global atmospheric temperatures “have dipped, soared, fallen again and are now rising once more.” Author Seth Borenstein (2009) quoted climate scientist Ken Caldeira, who asserted, “To talk about global cooling at the end of the hottest decade the planet has experienced in many thousands of years is ridiculous.” Nonetheless, a few days later, in a piece called “The Earth Cools, and Fight Over Warming Heats Up” in the *Wall Street Journal*, Jeffrey Ball (2009) then claimed that the Met Office Report “has reignited debate over what has become scientific consensus: that climate change is due not to nature, but to humans burning fossil fuels.” Through traditional (or “legacy”) media coverage and blog posts, what began as a mundane report became a lightning rod for larger battles to make sense of the science and politics of climate change.

Careful media consumers might have pointed out the misguided and binary logic of the *Wall Street Journal* piece, but such details were swamped by the attention it drew to questions such as whether humans play a role in climate change and whether the climate is changing at all. In short, accuracy was displaced by effective argument. In this example, public perception of the potential evidence for global cooling—fueled by media reports and commentaries—illustrated how outlier perspectives quickly and capably populated, constructed, and influenced public discourse in the high-stakes, highly contentious, and highly politicized milieu of climate science and governance.

To-and-fro arguments covered in media accounts such as these also generate considerations of “who to trust”: in science, in media, in experts, in authority. And levels of trust have been shown to have been fickle in the public citizenry. Although outlier views come in many shapes, sizes, and intensities—from “alarmist” discourses to those commonly referred to as “skeptics,” “contrarians,” or “denialists”—the focus here is on the latter group. This article therefore explores how media representations of these particular outlier interventions have effectively worked against efforts seeking to enlarge rather than constrict the spectrum of possibility for mobilizing the public to appropriately address ongoing climate challenges.

COP15 and “Climategate”：“Don’t Believe the Hype”

Events following the October 2009 U.K. Met Office Hadley Centre report of possible “global cooling” served to continue to fuel contention in the media. In the ensuing weeks and months, contrarian claims makers visibly shaped ongoing climate science and governance narratives in the public space. For instance, in November 2009, thousands of emails and documents were stolen from a server used by the Climate Research Unit (CRU) at the University of East Anglia and posted to various other places on the Internet. The scandal—swiftly dubbed “climategate”—involved how some of these emails raised questions about the integrity of scientific practices and revealed efforts to stave off dissenting views from dominant perspectives on climate science. Immediately, journalist Christopher Booker of the *Telegraph* named it the “worst scientific scandal of our generation” (Booker, 2009), whereas *Guardian* journalist George Monbiot wrote in an opinion piece, “the emails are very damaging,” while calling for CRU director Phil Jones to resign (Monbiot, 2009). However, after 6 months of multiple independent investigations into possible wrongdoing by data manipulation and the violation of U.K. Freedom of Information laws, Phil Jones and the other climate scientists involved in the email discussions were cleared of the legal charges (Adam, 2010). Nonetheless, in the meantime media coverage of the unfolding “climategate” story fed into reporting on the UN Framework Convention on Climate Change (UNFCCC) 15th Conference of Parties (COP15) meeting in Copenhagen, Denmark. Despite the many months and years of preparations for UNFCCC COP negotiations, media attention swiftly shifted to coverage of how the “climategate” conflict was straining negotiations. For example, a *New York Times* front-page story went with the headline “Facing Skeptics, Climate Experts Sure of Peril” (Revkin & Broder, 2009, p. A1).

Moreover, “climategate” continued to provide news hooks aplenty for ongoing stories on climate change even beyond the exoneration of Phil Jones and colleagues. For example, a July 2010 article in the *Financial Times* covered a new report by the National Oceanic and Atmospheric Administration (NOAA), and began, “International scientists have injected fresh evidence into the debate over global warming, saying that climate change is ‘undeniable’ and shows clear signs of ‘human fingerprints’ in the first major piece of research since the ‘climategate’ controversy” (Harvey, 2010, p. 1). The article continued with a back-and-forth between those such as Jane Lubchenco and Bob Ward, who commented that “climategate was a distraction” and “prominent climate sceptic(s)” such as Pat Michaels and Myron Ebell who continued to claim, “It’s clear that the scientific case for global warming alarmism is weak. The scientific case for [many of the claims] is unsound and we are finding out all the time how unsound it is” (Harvey, 2010, p. 1). In media accounts such as this *Financial Times* piece, by flatly reporting the many claims that were associated with the “climategate” affair—without some assessment of their veracity relative to their wider peer communities—a gestalt “climate change debate” was perpetuated in the public arena.

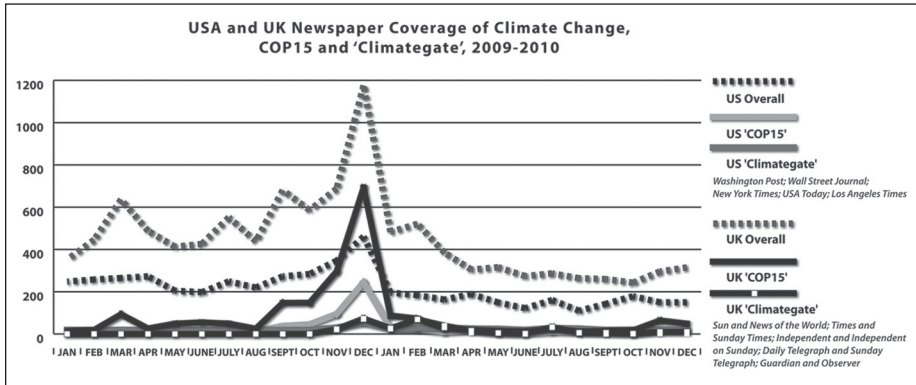


Figure 1. The amount of coverage of climate change and global warming over the period of January 2009 through December 2010 in five US and five UK newspapers.

Figure 1 shows coverage of climate change and global warming over the period of January 2009 through December 2010 in five U.S. and U.K. newspapers.¹ This figure also then compares this general coverage with more specific coverage of “climate-gate”² and “COP15.”³ Although “climategate” was a hot button issue during this time, it quantitatively emitted a relatively weak “signal” over this period amid the “noise” of overall climate change or global warming coverage. This brings light to two questions: How might the *amount* of coverage shape and/or sustain doubts or skepticism in the public arena on various aspects of climate change? How might this correspond with the *content* or *prominence* or *timing* of coverage? Media consumers shape perspectives via claims made by “authorized speakers” in the media—such as contrarians—not necessarily through a steady stream of media attention, but perhaps instead through select prominent and resonant media narratives (Kahan, Jenkins-Smith, & Braman, 2010). These complexities in the interactions among the production of media texts, images and narratives, and public awareness, attitudes, intentions, and actions also shape the composition of considerations of possible mitigation and adaptation actions, or lack thereof.

Although the total amount of coverage of climate change or global warming has diminished since COP15, a number of media accounts—such as coverage of Himalayan glacier melt rate claims—contained similarly contentious issues in climate science and governance. Furthermore, in 2010 the InterAcademy Council (IAC) conducted an independent review of Intergovernmental Panel on Climate Change (IPCC) processes and ultimately released a report with recommendations for reforming the management structure and assessment procedures of the IPCC (Shapiro et al., 2010). During this time, in July 2010, it was revealed through new media coverage that IPCC chair Rajendra Pachauri circulated an email to UN IPCC Fifth Assessment Report authors stating, “My sincere advice would be that you keep a distance from the media,” and

included a document assembled by the group “Resource Media” providing “tips for responding to the media” (Brainard, 2010). Although the email or document were not underhanded, they nonetheless served to demonstrate a rather archaic view of science in society (see Moser & Dilling, 2007). They also served to inflame rather than assuaged concerns regarding IPCC openness, transparency, effective communications, and dialogue in the public view (Revkin, 2010b). Moreover, this advice indicated that scrutiny over climate science following “climategate” had a discernible chilling effect on science–media–public interactions. However, when the stakes are high and non-nation-state actors from across the ideological and political spectrum recognize the power of mass media in legitimizing and amplifying particular viewpoints, this action by Dr. Pachauri appeared to be an inopportune time to guard the “experts” from the public.

Journalists need quotes to meet their unforgiving deadlines. Without consistent access to climate scientists such as those associated with the IPCC, they are forced to find them elsewhere. This has an inevitable agenda-setting effect, where the propensity to then report on outlier views grows. And journalist Dale Willman, a veteran correspondent and field producer with CNN, CBS News, and National Public Radio, has commented, “In terms of agenda-setting . . . the media don’t tell people what to think, but they tell them what to think *about*” (quoted in Boykoff, 2009, p. 444). This also demonstrates that responsibility for disproportionate media attention cannot be placed on journalists and editors themselves. Gratuitous attention paid to outlier and contrarian views derives from collective challenges within and between science, policy, media, and public citizens, and amid expanded contextual considerations of political economy, culture, and society. Although this article focuses mainly on journalism, these other dimensions and interactions must not be overlooked (see Boykoff, 2009, for more). This article now briefly considers the wider terrain of cultural politics.

Cultural Politics and Contemporary Mass Media: “Fight the Power”

Few things are as much a part of our lives as the news. . . . It has become a sort of instant historical record of the pace, progress, problems, and hopes of society. (Bennett, 2002, p. 45)

Through a lens of cultural politics, one can effectively consider claims and claims makers, as well as capture the processes and effects of media representational practices. Cultural politics refers to dynamic and contested processes behind how meaning is constructed and negotiated and involves not only the portrayals that gain traction in discourses but also those that are absent from them or silenced. Moreover, assessments of discourses are tethered to material realities and social practices (Hall, 1997). For example, many organizations, government agencies, and companies involved in the 2010 Gulf of Mexico oil spill have actively sought to “name the disaster” to minimize damage to their interests and shift blame (Soraghan, 2010). Among them, BP,

Transocean, and Halliburton attempted to scrub their name from the disaster title: These efforts demonstrated how these carbon-based industry actors placed great importance on the desire to avoid negative repercussions through such naming and shaming.

Exploring things in this way opens up questions about how power flows through the capillaries of our shared social, cultural, and political body, constructing knowledge, norms, conventions, and (un)truths (Foucault, 1980). The cultural politics of climate change lurk in a multitude of spaces (recreational centers, neighborhoods, pubs, workplaces, schools, and town centers). “Actors” in this discursive and material theater—from climate scientists to business industry interests and environmental activists—are ultimately all members of the “public citizenry.” The cultural politics of climate change are situated, power-laden, mediated, and recursive in an ongoing battlefield of knowledge and interpretation (Boykoff, Goodman, & Curtis, 2009).

Mass media link these varied spaces together, as powerful and important interpreters of climate science and policy information. Amid these dynamics resides a set of questions regarding who—through media quotes and comments—are permitted to make sense of, translate, and speak on behalf of climate change. Which voices gain access to and are amplified through mass media—as well as how—are shaped by related elements of access and influence. Thus, mass media give voice to climate change itself by articulating it via selected “experts,” “claims makers,” or “authorized definers” (Carvalho, 2007). Together, these factors shape how a heterogeneous public citizenry consider possible responses. Moreover, deliberately raising the broad perception of uncertainty and climate change—from uncertainty in the basic science to uncertainty regarding the implications of policy action—has been shown to distract as well as potentially destabilize public support for climate mitigation and adaptation endeavors (Revkin, 2010a). Deliberate strategies have ranged from deceptive disinformation campaigns and initiatives (Hoggan & Littlemore, 2009) to subtle scientific certainty argumentation methods (Freudenburg, Gramling, & Davidson, 2008).

For example, in 1998 the *New York Times* published a leaked draft report of a proposal compiled by industry opponents of climate mitigation action. Industry players from big oil companies, conservative policy research organizations, and trade associations were reported to have met in the American Petroleum Institute’s Washington office to assemble a plan that

would be directed at science writers, editors, columnists and television network correspondents, using as many as twenty “respected climate scientists” recruited expressly to inject credible science and scientific accountability into the global climate debate, thereby raising questions about and undercutting the “prevailing scientific wisdom.”

The document revealed a

campaign to recruit a cadre of scientists who share the industry’s views of climate science and to train them in public relations so they can help convince

journalists, politicians and the public that the risk of global warming is too uncertain to justify.

Indicating their recognition of the power of mass media, the group planned to measure success “by counting, among other things, the percentage of news articles that raise questions about climate science and the number of radio talk show appearances by scientists questioning the prevailing views” (Cushman, 1998, p. A1).⁴ In this case, the media were both the target for such actions and the vehicle through which the plans were leaked to the public.

There are many further cases where such movements have targeted the power of media to amplify certain views, and where mass media have exposed initiatives to manipulate public perception of climate change (Hoggan & Littlemore, 2009). For instance, in July 2006, ABC News revealed that the Intermountain Rural Electric Association paid \$100,000 to climate contrarian Patrick Michaels to downplay humans’ role in climate change and confuse public understanding of anthropogenic climate change (Sandell & Blakemore, 2006). In another case, a report by the *Guardian* newspaper in 2007 revealed an American Enterprise Institute call that “offered payments for articles that emphasise the shortcomings of a report from the UN IPCC . . . travel expenses and additional payments were also offered” (Sample, 2007, p. A1).

Yet connections between media information and attitudes, perspectives, intentions, and behavioral change are far from straightforward. Coverage certainly does not determine engagement; rather, it shapes their possibilities (Boykoff, 2008b; Carvalho & Burgess, 2005). Media representations—from news to entertainment—are critical links between people’s everyday realities and experiences and the ways in which these are discussed at a distance among science, policy, and public actors. From regulatory frameworks (bounding political opportunities and constraints) and institutional pressures (influencing political and journalistic norms) to individual decision making about what becomes “news,” these interactions are dynamic and contested spaces of meaning making. These articulations may take on varied roles over time, from watch dog to lap dog to guard dog (Boykoff, 2009). Some have pointed to how recent twists and turns in the high-profile, highly contentious science, policy, and politics around climate change have enabled contrarians to gain increased footholds in battles for public understanding and engagement regarding the causes and consequences of climate change (e.g., Owen & Bignell, 2010). But to get at reasons *why* this has happened, we must also trace their traction through ongoing and chronic institutional challenges in mass media.

Exaggerating Outlier Views in Mass Media: “Rebel Without a Pause”

“Is it safe to describe you as a skeptic on the subject of quote-unquote global warming?” asked Howie Carr at the top of his Chump line interview with

Richard Lindzen, Atmospheric Scientists from MIT. “Maybe not, I actually am a denier,” replied Lindzen. “I actually think the evidence is pretty overwhelming that [global warming] is not the case and so I don’t think that is pure skepticism.” (WRKO, 2009)

This section focuses on two key challenges facing mass media: First, media representations have often collapsed messenger viewpoints, interventions, and perspectives, into an overly homogenized term of “climate skepticism”; and second, media have often overlooked the texture within climate change issues, instead providing broad-brushed treatments of discussions and debates therein.

Conflating the Messenger

Questions regarding “who speaks for the climate” often involve considerations of how various outlier views influence public discussions on climate change. In mass media, these claims makers may be quoted sources or the journalists themselves, and their claims can derive from a variety of factors. For example, Dr. Stephen Schneider (2009) has observed how there is a great deal of difference between skepticism derived from ideology and skepticism derived from scientific evidence. Over time, by developing more exacting definitions some authors have sought to provide greater texture to the motivations behind and implications from varied influences of skepticism, contrarianism, and denialism regarding climate change. Although many have pointed out that “skepticism” forms an integral and necessary element of scientific inquiry, its use when describing outlier views on climate change has been less positive. The term *skeptic* has been most commonly invoked to describe someone who (a) denies the seriousness of an environmental problem, (b) dismisses scientific evidence showing the problem, (c) questions the importance and wisdom of regulatory policies to address them, and (d) considers environmental protection and progress to be competing goals (Jacques, Dunlap, & Freeman, 2008).⁵ McCright (2007) defines “contrarians” as those who vocally challenge what they see as a false consensus of mainstream climate science through critical attacks on climate science and eminent climate scientists, often with substantial financial support from fossil fuels industry organizations and conservative think tanks. O’Neill and Boykoff (2010a) further develop a definition of “climate contrarianism” by disaggregating claims making to include ideological motives behind critiques of climate science and exclude individuals who are thus far unconvinced by the science and individuals who are unconvinced by proposed solutions, as these latter two elements can be more usefully captured through different terminology. This article focuses mainly on climate contrarians in the media.

However, broad-brush representations of climate contrarianism, skepticism, and denialism are readily found in media accounts. For instance, the views promoted by both Dr. James Hansen—NASA Goddard Institute scientist—and Dr. Calvin Beisner—national spokesman for the Cornwall Alliance for the Stewardship of Creation—on U.S. federal cap and trade legislation run counter to many other views on the subject,

but in quite different ways. In a 2009 talk at Columbia University, Hansen critiqued the Obama-proposed cap and trade plan, saying, "I hope cap and trade doesn't pass, because we need a much more effective approach" (Gronewold, 2009). Meanwhile, at the "Values Voters Summit" in 2009, Beisner commented,

Cap and trade is about more than saving the planet. It's the biggest tax hike in American history . . . its ascendancy marks the rise of a new, more subtle challenge to the culture of life. Ultimately, climate change hysteria rests on an unbiblical view of God, mankind, and the environment. (Benjamin, 2009)

However, when mass media have covered very different strands of outlier perspectives like these, these important distinctions have often been collapsed into unified mentions as skepticism or contrarianism. Media treatments then serve to overlook these distinct views, and consequently hold the potential to skew policy maker and public understanding of the issues, stakes involved, and spectrum of possible actions to take. As another example, in a 2009 feature article in the *Guardian* had the title "Hellbent on Sabotage or Just Misguided? Meet the Climate Sceptics" (Randerson, 2009). The article was an exposé of a variety of claims makers and a wide range of claims, but all combined under the common "sceptics" term. This did little to illuminate arguments and instead simply demonized individual claims makers, from Bjørn Lomborg to Lord Viscount Monkton, and from Stephen Leavitt and Stephen Dubner to Senator James Inhofe (R-OK).

There are many reasons why media accounts have failed to provide greater nuance regarding these heterogeneous views. Among them, processes behind the building and challenging of dominant discourses take place simultaneously at multiple scales. Large-scale social, political, and economic factors influence everyday individual journalistic decisions, such as how to focus or contextualize a story with quick time to deadline. These issues intersect with processes such as journalistic norms and values, to further shape news content. These include "objectivity," "fairness," and "accuracy" (Cunningham, 2003).

It may be tempting to assemble a taxonomy of contrarianism, skepticism, or denialism, and by extension trace the amount of media coverage of certain claims makers in mass media. However, this approach risks underconsidering context and excessively focusing on individual personalities at the expense of political economic, social, and cultural forces. Further complexity arises when drawing conclusions based solely on evident ties between carbon-based industry, contrarian lobbying, and climate policy. The important issue is not necessarily the funding sources, but whether these ties influenced the content of the claims made by funding recipients (Oreskes, 2004). Moreover, this approach cuts both ways, in that it risks dismissing legitimate and potentially useful critiques out of hand by way of dismissing the individual rather than the arguments put forward. Treatment of individuals through denigrating monikers does little to illuminate the contours of their arguments; it actually has the opposite obfuscating effect in the public sphere. In other words, placing blanket labels on claims makers overlooks

the varied and context-dependent arguments they put forward. Media portrayals that pay attention to these subtleties frankly help citizens better understand and engage with climate science and governance.

Conflating the Message

In the contemporary political, economic, and cultural context outlined above, media reports have a tendency to conflate the vast and varied terrain as unified issues: from climate science to governance and from consensus to debate. To the extent that mass media fuse all these issue into one, they enhance bewilderment rather than understanding. Media coverage of disagreement and dissention has clear value in (re)shaping understanding for the public citizenry. However, when coverage is not effectively placed *in context* with the larger currents of scientific views, public awareness suffers (Boykoff, 2008b). Context helps to sort out marginalized views from counterclaims worthy of consideration on various aspects of environmental challenges. Without context, it becomes more (rather than less) challenging for citizens and policy actors to make sense of how climate change shapes their everyday lives and livelihoods.

There are facets of climate science and policy where agreement is strong and convergent agreement dominates, whereas in others contentious disagreement garners worthwhile debate and discussion in the media. But conflation of these distinctions into one sweeping issue contributes to confusion and sets up a breeding ground for manipulation from outlier viewpoints. In short, all aspects of climate issues should not be treated equally. Figure 2 is a two-panel schematic, designed to portray the distribution of relevant expert-based agreement or disagreement on selected examples of climate science and governance issues.⁶

First, consider Panel A in Figure 2, “humans contribute to climate change.” Over the past two decades, IPCC endeavors have improved understanding of attribution to climate change through ongoing climate research. With increasing confidence, reports and findings have signaled a broad scientific consensus—despite lingering uncertainties regarding the *extent* of attribution—that humans have been contributing to modern climate change. A steady flow of IPCC reports since 1995 have solidified this story line. However, research has found that when mass media report on this particular issue, excessive attention has been paid to the tails in this schematic: the outlier viewpoints rather than those under the bell curve that converge on agreement. It was found that minority views—such as contrarian, skeptical, or denialist discourses—earned more attention than was warranted (Boykoff, 2008a; Boykoff & Mansfield, 2008). Previous research had attributed this disconnect in part to the deployment of the journalistic norm of balance, thereby perpetrating informational “bias as balance” in the U.S. context (Boykoff & Boykoff, 2004). Boykoff and Boykoff (2007) also argued that this phenomenon in the United States created spaces for policy actors to defray responsibility and delay action regarding climate change in the 1990s.

Second, Panel B of Figure 2 considers a schematic distribution of relevant expert-based views on the statement that “U.S. federal cap and trade legislation will have an

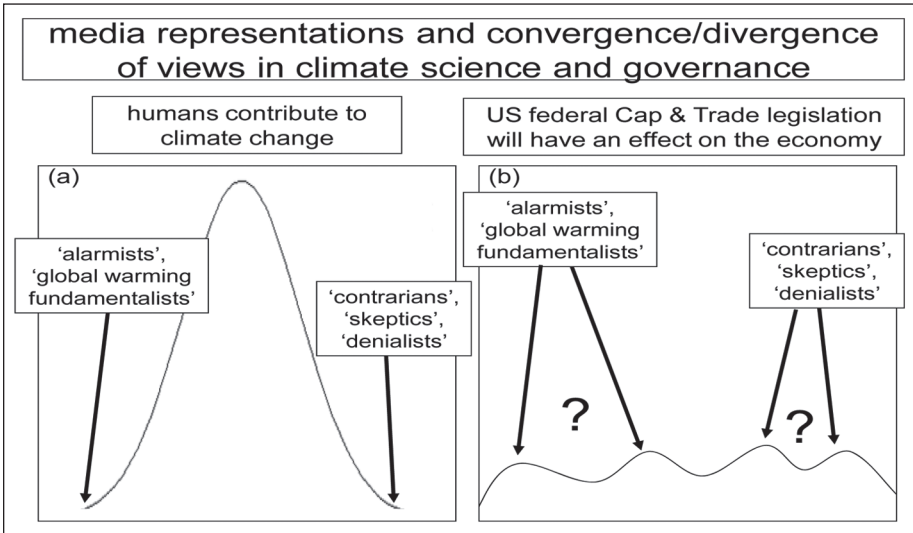


Figure 2. The distribution of relevant expert-based agreement or disagreement on selected examples of climate science and governance issues, where curves illustrate the relative strength or weakness of agreement/disagreement.

effect on the economy.” A more wavy line may most accurately depict the relative strength of agreement from “positive effect” through “no effect” and to “devastating effect” in relevant expert-based communities. In other words, there are a variety of legitimately divergent views on the potential effects that the implementation of cap and trade legislation may have on the wider U.S. economy (Pielke, 2010). However, in research specifically on Senate Bill 2191 (the Lieberman–Warner Climate Security Act of 2008), Eric Pooley (2009)—former managing editor of *Fortune* and national editor of *Time* magazine—argued that mass media

misrepresented the economic debate over cap and trade. It failed to recognize the emerging consensus among economists that cap and trade would have a marginal effect on economic growth and gave doomsday forecasts coequal status with nonpartisan ones. In other words . . . the press allowed opponents of climate action to replicate the false debate over climate science in the realm of climate economics. (pp. 4-5)

Pooley conflated consensus from science to economics, and thus mistakenly characterized a range of views more like Panel A.

The lessons drawn from the distinctions between Panels A and B can move extensively into other related climate (and other science) issues. In addition, there remain a number of sticky and complex political questions regarding the most effective policy

mechanisms (from a mandatory carbon tax to more voluntaristic approaches). Overall, gestalt treatments of varied and distinct climate issues can further confuse rather than clarify issues where there is strong or weak agreement in relevant expert-based communities. By extension, broad-brush treatment by mass media of an overarching “climate change debate” can then both unduly dismiss legitimate claims and privilege outlier views as legitimate. For example, local television coverage of climate change illustrates these challenges. R. J. Heim hosted a show by framing the session in this way:

Today, on *Ten News Conference Special Assignment*, global warming—fact or fiction. If it is happening, what’s the cause and what effect will it have on coastal areas like here in Southern New England. . . . If you listen to the proponents, the atmosphere is warming, the glaciers are melting and sea levels are rising because of pollutants like carbon dioxide [that] man [*sic*] is putting into the air, and if we don’t act now they say that changes to civilization will be catastrophic. . . . If you listen to the opponents, they say man’s not the cause of global warming, it’s the sun. And all the hype and hysteria is to keep scientists awash in their \$50 billion of research grants they receive from governments and corporations over the past two decades. What’s really going on? . . . We have both sides covered. (WJAR, 2009)

In this case, the nuance of evidence in the climate science to expert-based opinions on the efficacy of various policy measures and the urgency of action were inaccurately reduced to a mere two sides: proponents and opponents. In the debate that followed a geologist and sociologist were cast as “proponents” and the local weathercaster was put forward as the “opponent.” Some of this confusion and conflation can also be attributed to the dynamic mix of science, policy, and values that these climate issues stir in us individually, as well as collectively. Andrew Hoffman (2011) has pointed out that “the debate about climate change is as much a cultural debate as it is a scientific debate” (p. 20). But overall, when media representations reduce variegated issues like this, they effectively squander opportunities to help the public engage in the nuance involved in dealing with complex contemporary climate challenges.

Appraising Ongoing Trends: “Power to the People”

In the name of efficiency, reporters increasingly cover a vast range of beats, making it ever more difficult to satisfactorily portray the complexities of climate change. Moreover, journalists, editors, and organizations surviving newsroom cuts and short-falls have been left to cover the contours of climate change along tighter deadlines, and with increased multiplatform demands (video, audio, and text, along with Weblogs, Facebook, Twitter, YouTube postings, etc.). Put simply, journalists and editors striving for fair and accurate reporting are getting swamped by these larger scale pressures (Boykoff, 2009). Meanwhile, media institutions and practices have produced content by seeking refuge in journalistic tendencies of personalization and

drama, privileging conflicts and contentions among messengers over treatment of arguments and assertions (Weingart, Engels, & Pansesgrau, 2000). Boykoff and Boykoff (2007) have outlined and examined the journalistic norms of personalization, dramatization, novelty, authority-order bias, and balance, as they shape both what becomes news and how that news is portrayed.

Adherence to these norms contributes to “episodic framing” of news, which means framing that fails to place stories into sufficient context (Iyengar, 1991). For example, during coverage of COP15, popular *Fox News* program *The O’Reilly Factor* pitted the comments of former U.S. vice president Al Gore against those of former U.S. Alaska governor Sarah Palin, with a segment titled “The Climate Feud” (O’Reilly, 2009). Sarah Palin’s authority to speak on the climate derived from an opinion piece she wrote in the *Washington Post* the day before. In that piece, she confused and conflated weather and climate, among other issues, where she opined,

While we recognize the occurrence of these natural, cyclical environmental trends, we can’t say with assurance that man’s activities cause weather changes. We can say, however, that any potential benefits of proposed emissions reduction policies are far outweighed by their economic costs. (Palin, 2009)

These error-laden claims apparently circumvented editorial correction by the weight of her episodic importance and personality-driven arguments. This case also illustrates the gulf that can emerge between accuracy and affect.

Media coverage of the heavy snowfall in the northeastern United States in the winter of 2009–2010 provides a second useful illustration of these interacting factors shaping media representations of climate change. In particular, a *New York Times* article—titled “Climate Fight Is Heating Up in Deep Freeze”—linked the record snowfall to ongoing climate legislation, and debates therein. Featured in the front-page story was U.S. Senator James Inhofe (R-OK),

a leading climate skeptic in Congress [who] built a six-foot-tall igloo on Capitol Hill and put a cardboard sign on top that read “Al Gore’s New Home.” The extreme weather, Mr. Inhofe said by e-mail, reinforced doubts about scientists’ conclusion that global warming was “unequivocal” and most likely caused by human activity. (Broder, 2010, p. A1)

The story then shifted to a response by Joseph Romm (“a climate-change expert and former Energy Department official who writes about climate issues at the liberal Center for American Progress”) saying this was “nonsense.” However, Romm’s comments were picked up in the continued story on page A18, leading readers and analysts to wonder what editors considered was the most appropriate “front-page thought.”

Contrarian claims feed journalistic pressures to serve up attention-getting, dramatic personal conflicts, thereby drawing attention toward decontextualized individual claims making and away from critical institutional and societal challenges regarding

carbon consumption that calls collective behaviors, actions, and decisions to account. To illustrate, concurrent coverage in the *Daily Mail* in the United Kingdom went with the news hook, “Donald Trump has called for Al Gore to be stripped of the Nobel Peace Prize he was awarded for campaigning on climate change,” saying, “Record-breaking snow storms proved that the former US Vice-President was wrong on global warming” (“Donald Trump,” 2010). Critics have posited that this shift toward a focus on arguing personalities is part of larger movements in a “new green order” where commodified and highly individualized solutions actually are seen to move citizens further from considering their role in requisite collective institutional shifts toward decarbonization (e.g., Luke, 1999). This has also been referred to as a shift to “responsibilization,” where climate change becomes the responsibility of the individual *in place of* governments or regulators who might affect significant policy changes through altering production and distribution (Littler, 2009). Furthermore, focusing on individual claims makers often subsumes deeper structural or institutional analyses and downplays explicit treatment of enduring problems, instead attending to surface-level movements of individual debates and duels.

As the 21st century unfolds, the stakes involved in possibilities for climate mitigation and adaptation action are high. In the United States, this can be evidenced by a “climate change lobby explosion” in Washington, D.C., since 2005. The Center for Public Integrity (2009) documented that there had been a 300% increase in climate change lobbyists (up to 2,340) roughly over the course of U.S. president George W. Bush’s second term in office. These activities were calculated to add up to approximately \$90 million in expenditures. Meanwhile, political economic pressures (described above) continue to clamp down on the news industry. As a result, these issues have become more, not less, challenging to cover. Nonetheless, media representations continue to have multifarious implications on relations among science, governance, and public understanding/engagement. It is clear that climate issues themselves shape media reporting; however, it is also true that journalism shapes ongoing conceptions of climate change as a “threat,” “problem,” “opportunity,” and so on (Hulme, 2009). Through mass media, various actors—such as contrarians—(re) shape the dynamic landscape of perceptions and discourse on climate action (Nisbet & Mooney, 2007). Through journalistic norms and values, events become news stories, shaping public perception (Gamson, Croteau, Hoynes, & Sasson, 1992). Asymmetrical influences also feed back into these social relationships and further shape emergent frames of “news,” knowledge, and discourse. This is a complex, dynamic, and messy process.

In the past decade, there has been a significant expansion from consumption of traditional mass media—broadcast television, newspapers, radio—into consumption of new/social media, such as various uses of the Internet, and through mobile phone communications. This movement has signaled substantive changes in how people access and interact with information, who has access, and who are content producers. At present, new/social media offer a platform for people to more democratically shape the public agenda.⁷ These communications are a shift from broadcast “one-to-many”

communications to interactive “many-to-many” webs of communications (O’Neill & Boykoff, 2010b; Van Dijk, 2006).

In January 2009, PEJ began monitoring the content of the weekly “news hole” in the United States, distinguishing between traditional coverage (television, newspapers, radio) and new/social media (Internet Weblogs, Twitter). Through weekly content analysis, PEJ has shown how topics involving global warming have earned a much greater share of the news hole in new media.⁸ The topic has been one of the top five blog stories 10 times since January 2009, but did not figure nearly as prominently during that time in traditional media (PEJ, 2010). For example, the Met Office Hadley Centre report in October 2009 mentioned above garnered overwhelming treatment on the blogs, whereas health care and the economy drove the bulk of coverage in traditional press. This may be in part the result of the flexibility and potentially infinite nature of the news hole in new media. But the comparatively small space that such issues take up in traditional mass media may be another indicator of diminishing traditional news room capabilities. But does increased visibility of the issue translate to improved communication or just more noise (as Gavin, 2009, p. 133, calls it, the “rantsphere”)? Do these spaces provide opportunities for new forms of deliberative community regarding questions of climate mitigation and adaptation? Or has the content of this increased coverage shifted to polemics and arguments over measured analysis? In this democratized space of content production, do new/social media provide more space for contrarian views to circulate? And through its interactivity, does increased consumption of news through new/social media further fragment a public discourse on climate mitigation and adaptation, through information silos where members of the public can stick to sources that help support their already held views? Many questions such as these remain open at present.

Journalist Matt Ridley (2010) has argued that blogging on climate change represents a positive development for public understanding. In February 2010, he wrote that when the “climategate” scandal unfolded, “It was amateur bloggers who scented the exaggerations, distortions and corruptions in the climate establishment; whereas newspaper reporters, even after the scandal broke, played poodle to their sources.” In addition, George Brumfiel has noted that blogs have become a more prominent source for stories, and a greater influence on public discourse. He found that the percentage of journalists who have found stories on a scientist’s blog has gone up to 63% from 18% in 2004 (Brumfiel, 2009, 276). However, Cass Sunstein (2007), among others, has warned of the likelihood of the “echo chamber” effect where this interactivity actually walls off users from one another by merely consuming news that mesh with their worldview and ideology.

The U.S.-based group Americans for Prosperity (AFP) provides an example of how an organization espousing outlier views has deliberately sought and gained an amplified presence of climate contrarianism through producing their own media content online and by garnering media attention for the events they covertly have sponsored in the public arena (Mayer, 2010). Through Internet organizing—mass emails, web announcements, Tweets, Facebook communications, YouTube clips, blog posts—AFP

has assembled a number of influential anticlimate legislation campaigns (Lean, 2009). Among them was the 2008 “Hot Air” tour. In 2009, AFP also began a web-based campaign called “No Climate Tax,” where constituents could send emails to their elected officials to encourage them to send a “No Climate Tax Pledge.” In addition, AFP hosts ongoing web-based campaigns called “Stop the Power Grab” to contest U.S. Environmental Protection Agency actions to regulate carbon dioxide emissions without the explicit support of the U.S. Congress.

AFP organizers have repeatedly touted the organization to be a “grassroots group” (Fifeld, 2009). Although current manifestations of AFP activities can be argued as such, the “roots” of the organization tell a much different story of Astroturf campaigning, where carbon-based industry interests lurk behind the community-based facade (Mayer, 2010; Mulkern, 2010). The group is registered as a nonprofit conservative think tank based in Washington, D.C., and receives ongoing funding from conservative foundations such as the Koch Family Foundation (Media Transparency, 2009). The Koch Family Foundation and its connected organizations have provided funding for the creation of a number of other conservative organizations, including the Cato Institute and Freedomworks. The Koch Family Foundation has generated funds from the success of Koch Industries, which is the largest privately owned U.S.-based energy company. At present, Koch Industries generates energy from fossil fuels, and has a large stake in oil refining processes (Fifeld, 2009; Mayer, 2010).

New/social media coverage of climate change has demonstrated that the boundaries between who constitute “authorized” speakers (and who do not) and who are legitimate “claims-makers” are consistently being interrogated and challenged in mass media (Gieryn, 1999). Leiserowitz (2005, p. 1433) has written that these arenas of claims making and framing are “exercises in power. . . . Those with the power to define the terms of the debate strongly determine the outcomes.” As such, contrarians have harnessed the power of both traditional and new media to amplify their claims on issues from climate science to governance. In addition, the newsroom pressures and norms have confused rather than clarified the various issues involved, thereby keeping members of the news-consuming public safe from the burdens of serious thought about climate change mitigation, adaptation, and energy decarbonization. These trends have all woven into fundamental psychological tenets of cultural cognition (see Kahan et al., 2010).

This article has sought to provide more textured understandings of how and why gratuitous media visibility has been provided to particular outlier views in climate science and governance. Ultimately, disproportionate coverage of outlier contrarian, skeptical, and denialist claims—communicated through mass media—has challenged efforts that seek to expand rather than constrict the spectrum of possibility for varied forms of climate action. Fair, precise, and accurate media coverage of climate science and politics will not be the panacea for challenges associated with anthropogenic climate change. But improvements in reporting on claims and claims makers will help. The fossils of climate science and policy decision making as well as communications may choose to continue along with the status quo. But to more effectively inform and

engage—rather than confuse and bewilder—the public, 21st-century journalists and editors, as well as researchers, scientists, policy actors, and other non-nation-state actors, need to acknowledge the disproportionate influence of these outlier voices in mass media and communicate climate change with greater specificity and context. Such a path is in our long-term and collective self-interest.

Acknowledgments

I thank Riley Dunlap for organizing this special issue as well as a special session on “Understanding Climate Skepticism” at the 2010 American Association for the Advancement of Science Conference, where I presented an early draft of this work. I also thank fellow session panelists William Freudenberg, Naomi Oreskes, and Stephen H. Schneider. Thanks also to Diana Liverman, Tracey Osborne, and Monica Boykoff for commenting on earlier versions of this article.

Declaration of Conflicting Interests

The author declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

Funding

The author received no financial support for the research, authorship, and/or publication of this article.

Notes

1. This figure also compares general coverage with more specific coverage of two issues: A. ‘climategate’, using the Boolean string ‘climate change’ (major mentions) OR ‘global warming’ (major mentions) AND ‘climategate’ (anywhere) OR ‘Climatic Research Unit’ (anywhere) OR ‘Phil Jones’ (anywhere); and B. The UN Conference of Parties meeting in December 2009 in Copenhagen, Denmark, using the Boolean string ‘climate change’ (major mentions) OR ‘global warming’ (major mentions) AND ‘Conference of Parties’ (anywhere) OR ‘COP15’ (anywhere) OR ‘Copenhagen’ (anywhere).
2. The search terms used here were “climate change” (major mentions) OR “global warming” (major mentions) AND “climategate” (anywhere) OR “Climatic Research Unit” (anywhere) OR “Phil Jones” (anywhere).
3. The search terms used here were “climate change” (major mentions) OR “global warming” (major mentions) AND “Conference of Parties” (anywhere) OR “COP15” (anywhere) OR “Copenhagen” (anywhere).
4. McCright and Dunlap (2000, 2003) examined how contrarian opposition movements operated during this period.
5. These authors discuss “environmental skepticism”; however, these attributes can be ascribed to “climate skepticism” as well.
6. This figure is adapted from a *Nature Climate Reports* commentary by Boykoff (2008a) and comments by Andrew Revkin at the 2006 Society of Environmental Journalists.

7. There are current challenges to such democratic equality or “net neutrality.” U.S. legislation sponsored by AT&T, Verizon, Comcast, and Time Warner proposes creating a tiered system of access speeds based on what consumers pay and whether they use their content and services, or those of a competitor. The loss of “net neutrality” could have a detrimental impact on the ability of new/social media users to access a variety of sources and perspectives on climate science and governance.
8. The Pew Center Project for Excellence in Journalism uses the term *global warming* rather than *climate change*.

References

- Adam, D. (2010, July 7). Climategate review clears scientists of dishonesty over data. *Guardian*. Retrieved from <http://www.guardian.co.uk/environment/2010/jul/07/climategate-review-clears-scientists-dishonesty>
- Ball, J. (2009, October 30). The earth cools, and fight over warming heats up. *Wall Street Journal*, p. A21.
- Benjamin, Y. (2009, September 19). Republican talking points, memes, gotchas and new conservatism. *San Francisco Chronicle*. Retrieved from http://www.sfgate.com/cgi-bin/blogs/ybenjamin/detail?entry_id=47968
- Bennett, W. L. (2002). *News: The politics of illusion*. New York, NY: Longman.
- Booker, C. (2009, November 28). Climate change: This is the worst scientific scandal of our generation. *Telegraph*. Retrieved from <http://www.telegraph.co.uk/comment/columnists/christopherbooker/6679082/Climate-change-this-is-the-worst-scientific-scandal-of-our-generation.html>
- Borenstein, S. (2009, October 26). Impact: Statisticians reject global cooling. *Associated Press*.
- Boykoff, M. (2008a). Lost in translation? United States television news coverage of anthropogenic climate change, 1995–2004. *Climatic Change*, 86(1), 1–11.
- Boykoff, M. (2008b). The real swindle. *Nature Reports Climate Change*, 2(2), 31–32.
- Boykoff, M. (2009). “We speak for the trees”: Media reporting on the environment. *Annual Review of Environment and Resources*, 34, 431–458.
- Boykoff, M., & Boykoff, J. (2004). Bias as balance: Global warming and the U.S. prestige press. *Global Environmental Change*, 14(2), 125–136.
- Boykoff, M., & Boykoff, J. (2007). Climate change and journalistic norms: A case-study of U.S. mass-media coverage. *Geoforum*, 38(6), 1190–1204.
- Boykoff, M., Goodman, M., & Curtis, I. (2009). Cultural politics of climate change: Interactions in everyday spaces. In M. Boykoff (Ed.), *The politics of climate change: A survey* (pp. 136–154). London, UK: Routledge/Europa.
- Boykoff, M., & Mansfield, M. (2008). “Ye olde hot aire”: Reporting on human contributions to climate change in the UK tabloid press. *Environmental Research Letters*, 3(2), 1–8.
- Brainard, C. (2010, July 12). Mediaphobia at the IPCC. *Observatory—Columbia Journalism Review*. Retrieved from http://www.cjr.org/the_observatory/mediaphobia_at_the_ipcc.php
- Broder, J. (2010, February 11). Climate fight is heating up in deep freeze. *New York Times*, pp. A1, A18.
- Brumfiel, G. (2009, March 19). Supplanting the old media? *Nature*, 458, 274–277.

- Carvalho, A. (2007). Ideological cultures and media discourses on scientific knowledge: Re-reading news on climate change. *Public Understanding of Science, 16*, 223-243.
- Carvalho, A., & Burgess, J. (2005). Cultural circuits of climate change in UK broadsheet newspapers, 1985–2003. *Risk Analysis, 25*(6), 1457-1469.
- Center for Public Integrity. (2009). *Climate lobby explosion*. Washington, DC: Author.
- Cunningham, B. (2003). Re-thinking objectivity. *Columbia Journalism Review, 42*, 24-32.
- Cushman, J. H. (1998, April 26). Industrial group plans to battle climate treaty. *New York Times*, p. A1.
- Donald Trump: Climate campaigner Al Gore should be stripped of Nobel Peace Prize after record snow storms. (2010, February 15). *Daily Mail Online*. Retrieved from <http://www.dailymail.co.uk/news/article-1251283/Donald-Trump-Climate-campaigner-Al-Gore-stripped-Nobel-Peace-Prize-record-snow-storms.html>
- Fifeld, A. (2009, November 3). US rightwing activists curb efforts to cut CO2 emissions. *Financial Times*. Retrieved from <http://www.ft.com/cms/s/0/1d650e00-c8b7-11de-8f9d-00144feabdc0.html#axzz2KhOkKQQ5>
- Foucault, M. (1980). *Power/knowledge*. New York, NY: Pantheon.
- Freudenburg, W. R., Gramling, R., & Davidson, D. J. (2008). Scientific certainty argumentation methods (SCAMs): Science and the politics of doubt. *Sociological Inquiry, 78*, 2-38.
- Gamson, W. A., Croteau, D., Hoynes, W., & Sasson, T. (1992). Media images and the social construction of reality. *Annual Review of Sociology, 18*, 373-393.
- Gavin, N. (2009). The web and climate change politics: Lessons from Britain? In T. Boyce & J. Lewis (Eds.), *Climate change and the media* (pp. 129-144). London, UK: Peter Lang.
- Gieryn, T. (1999). *Cultural boundaries of science: Credibility on the line*. Chicago, IL: University of Chicago Press.
- Gronewold, N. (2009, May 4). Hansen hopes lawmakers approach to climate will fail. *Energy and Environment Reporter*. Retrieved from <http://www.eenews.net/climatewire/2009/05/04/archive/6?terms=Hansen+hopes+lawmakers+approach+to+climate+will+fail>
- Hall, S. (1997). *Representation: Cultural representation and signifying practices*. Thousand Oaks, CA: Sage.
- Harvey, F. (2010, July 28). Research says climate change undeniable. *Financial Times*, p. 1.
- Hoffman, A. (2011). Talking past each other? Cultural framing of skeptical and convinced logics in the climate change debate. *Organization & Environment, 24*(1), 3-33.
- Hoggan, J., & Littlemore, R. (2009). *Climate cover-up: The crusade to deny global warming*. Vancouver, Canada: Greystone Books.
- Hudson, P. (2009, October 13). What happened to global warming? *BBC News*. Retrieved from <http://news.bbc.co.uk/2/hi/8299079.stm>
- Hulme, M. (2009). *Why we disagree about climate change: Understanding controversy, inaction and opportunity*. Cambridge, UK: Cambridge University Press.
- Iyengar, S. (1991). *Is anyone responsible?* Chicago, IL: University of Chicago Press.
- Jacques, P. J., Dunlap, R. E., & Freeman, M. (2008). The organization of denial. *Environmental Politics, 17*, 349-385.
- Kahan, D. M., Jenkins-Smith, H., & Braman, D. (2010). Cultural cognition of scientific consensus. *Journal of Risk Research, 9*(2), 1-28.

- Lean, G. (2009, November 6). American economists recognise the climate change threat. *Telegraph*. Retrieved from <http://www.telegraph.co.uk/earth/earthcomment/geoffrey-lean/6515182/American-economists-recognise-the-climate-change-threat.html>
- Leiserowitz, A. (2005). American risk perceptions: Is climate change dangerous? *Risk Analysis*, 25, 1433-1442.
- Littler, J. (2009). *Radical consumption: Shopping for change in contemporary culture*. London, UK: Open University Press.
- Luke, T. W. (1999). Environmentalism as green governmentality. In É. Darier (Ed.), *Discourses of the environment* (pp. 121-151). Oxford, UK: Blackwell.
- Mayer, J. (2010, August 30). Covert operations: The billionaire brothers who are waging a war against Obama. *New Yorker*. Retrieved from http://www.newyorker.com/reporting/2010/08/30/100830fa_fact_mayer
- McCright, A. M. (2007). Climate contrarians. In S. C. Moser & L. Dilling (Eds.), *Creating a climate for change: Communicating climate change and facilitating social change* (pp. 200-212). Cambridge, UK: Cambridge University Press.
- McCright, A. M., & Dunlap, R. E. (2000). Challenging global warming as a social problem: An analysis of the conservative movement's counter-claims. *Social Problems*, 47(4), 499-522.
- McCright, A. M., & Dunlap, R. E. (2003). Defeating Kyoto: The conservative movement's impact on U.S. climate change policy. *Social Problems*, 50(3), 348-373.
- Media Transparency. (2009). *Bridge Project*. Retrieved from <http://mediamattersaction.org/transparency/>
- Monbiot, G. (2009, November 25). Pretending the climate email leak isn't a crisis won't make it go away. *Guardian*. Retrieved from <http://www.guardian.co.uk/environment/georgemonbiot/2009/nov/25/monbiot-climate-leak-crisis-response>
- Moser, S. C., & Dilling, L. (2007). *Creating a climate for change: Communicating climate change and facilitating social change*. Cambridge, UK: Cambridge University Press.
- Mulkern, A. C. (2010, August 17). Oil group, climate bill supporters clash in summer campaigns. *Energy and Environment*. Retrieved from <http://www.eenews.net/Greenwire/print/2010/08/17/1>
- Nisbet, M., & Mooney, C. (2007). Framing science. *Science*, 316, 56.
- O'Neill, S. J., & Boykoff, M. (2010a). Climate denier, skeptic, or contrarian? *Proceedings of the National Academy of Sciences*, 107(39), 151. doi/10.1073/pnas.1010507107.
- O'Neill, S. J., & Boykoff, M. (2010b). The role of new media in engaging the public with climate change. In L. Whitmarsh, S. J. O'Neill & I. Lorenzoni (Eds.), *Engaging the public with climate change: Communication and behaviour change* (pp. 233-251). London, UK: Earthscan.
- O'Reilly, B. (2009, December 9). The climate feud [Television series episode]. In *The O'Reilly Factor*. New York, NY: Fox News.
- Oreskes, N. (2004). Science and public policy: What's proof got to do with it? *Environmental Science and Policy*, 7, 369-385.
- Owen, J., & Bignell, P. (2010, February 7). Think-tanks take oil money and use it to fund climate deniers. *Independent* (London). Retrieved from <http://www.independent.co.uk/>

- environment/climate-change/thinktanks-take-oil-money-and-use-it-to-fund-climate-deniers-1891747.html
- Palin, S. (2009, December 8). Sarah Palin on the politicization of the Copenhagen climate conference. *Washington Post*. Retrieved from <http://www.washingtonpost.com/wp-dyn/content/article/2009/12/08/AR2009120803402.html>
- Pielke, R. A., Jr. (2010). *The climate fix: What scientists and politicians won't tell you about global warming*. New York, NY: Basic Books.
- Pooley, E. (2009). *How much would you pay to save the planet? The American press and the economics of climate change* (Discussion Paper Series No. D-49). Cambridge, MA: Harvard University, Kennedy School, Joan Shorenstein Center on the Press, Politics, and Public Policy.
- Pew Center Project for Excellence in Journalism. (2009, October 12-16). *Global warming and a balloon drama drive the online conversation*. Retrieved from http://www.journalism.org/index_report/global_warming_and_balloon_drama_drive_online_conversation
- Pew Center Project for Excellence in Journalism. (2010, March 29-April 2). *Bloggers focus on two favorite subjects: Health care and global warming*. Retrieved from http://www.journalism.org/index_report/bloggers_focus_two_favorite_subjects_health_care_and_global_warming
- Randerson, J. (2009, December 7). Hellbent on sabotage or just misguided? Meet the climate sceptics. *Guardian*, p. A1.
- Revkin, A. (2010a, February 10). The distracting debate over climate certainty. *Dot Earth New York Times*. Retrieved from <http://dotearth.blogs.nytimes.com/2010/02/10/the-distracting-debate-over-climate-certainty/>
- Revkin, A. (2010b, July 10). Climate panel struggles with media plan. *Dot Earth New York Times*. Retrieved from <http://dotearth.blogs.nytimes.com/2010/07/10/climate-panel-struggles-with-media-plan/>
- Revkin, A., & Broder, J. (2009, December 7). Facing skeptics, climate experts sure of peril. *New York Times*, p. A1.
- Ridley, M. (2010, February 3). Global warming guerillas. *Spectator UK*. Retrieved from <http://www.spectator.co.uk/essays/all/5749853/the-global-warming-guerrillas.shtml>
- Sample, I. (2007, February 2). Scientists offered cash to dispute climate study. *The Guardian*, p. A1.
- Sandell, C., & Blakemore, B. (2006, July 27). Making money by feeding confusion over global warming. *ABC News*. Retrieved from <http://abcnews.go.com/Technology/GlobalWarming/story?id=2242565&page=1>
- Schneider, S. H. (2009). *Science as a contact sport: Inside the battle to save earth's climate*. Washington, DC: National Geographic.
- Shapiro, H. T., Diab, R., de Brito Cruz, C. H., Cropper, M., Fang, J., Fresco, L. O., & Zakri, A. H. (2010). *Review of the IPCC: An evaluation of the procedures and processes of the Intergovernmental Panel on Climate Change*. Amsterdam, Netherlands: InterAcademy Council.
- Sorghagan, M. (2010, September 9). Companies play "name that disaster" with an eye on posterity. *Energy and Environment*. Retrieved from <http://www.eenews.net/public/Greenwire/2010/09/09/1>

- Sunstein, C. (2007). *Republic.com 2.0*. Princeton, NJ: Princeton University Press.
- Van Dijk, J. (2006). *The network society*. London, UK: Sage.
- Weingart, P., Engels, A., & Pansesgrau, P. (2000). Risks of communication: Discourses on climate change in science, politics, and the mass media. *Public Understanding of Science, 9*, 261-283.
- WJAR. (2009, November 14). *Global warming: Fact or fiction?* Providence, RI: Author.
- WRKO. (2009, July 2). *Richard Lindzen: Global warming denier. Interview with Howie Carr*. Retrieved from <http://audio.wrko.com/m/audio/24111309/richard-lindzen-global-warming-denier.htm>

Author Biography

Maxwell T. Boykoff is an assistant professor in the Cooperative Institute for Research in Environmental Sciences at the University of Colorado, Boulder. He teaches in the Environmental Studies program and is adjunct faculty in the Geography Department. In addition, he is a senior visiting research associate in the Environmental Change Institute at the University of Oxford. He continues research in the areas of climate adaptation, cultural politics and environmental governance, science–policy interactions, and political economy and the environment.