BioOne COMPLETE

Talking about the Weather

Author: Jamieson, Dale

Source: BioScience, 60(8) : 639-642

Published By: American Institute of Biological Sciences

URL: https://doi.org/10.1525/bio.2010.60.8.10

BioOne Complete (complete.BioOne.org) is a full-text database of 200 subscribed and open-access titles in the biological, ecological, and environmental sciences published by nonprofit societies, associations, museums, institutions, and presses.

Your use of this PDF, the BioOne Complete website, and all posted and associated content indicates your acceptance of BioOne's Terms of Use, available at www.bioone.org/terms-of-use.

Usage of BioOne Complete content is strictly limited to personal, educational, and non - commercial use. Commercial inquiries or rights and permissions requests should be directed to the individual publisher as copyright holder.

BioOne sees sustainable scholarly publishing as an inherently collaborative enterprise connecting authors, nonprofit publishers, academic institutions, research libraries, and research funders in the common goal of maximizing access to critical research.

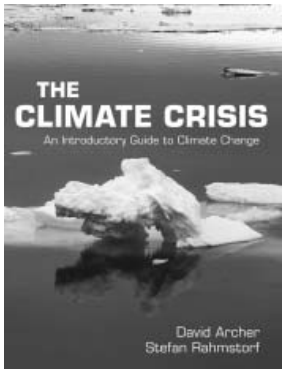
Downloaded From: https://complete.bioone.org/journals/BioScience on 29 Mar 2024
Terms of Use: https://complete.bioone.org/terms-of-use

Talking about the Weather

Climate change is occurring, and little is being done to mitigate, manage, or adapt to it. The international consensus, forged in the heady days of Rio and encapsulated in the Framework Convention on Climate Change, which commits virtually every country in the world to the objective of stabilizing "greenhouse gas concentrations in the atmosphere at a level that would prevent dangerous anthropogenic interference with the climate system," is in tatters. The US government, which has the power to invade countries halfway across the world in defiance of international opinion, seems unable to impose more than token restrictions on the energy-consuming habits of its own population, many of whom reject the reality of anthropogenic climate change, despite the scientific consensus. Meanwhile, global carbon dioxide emissions increase about 2 to 3 percent each year, and atmospheric cabon concentrations grow by 1 to 2 parts per million. The underlying causes—population growth and large increases in consumption—are hardly discussed in polite company, except perhaps as "other people's" problems. Against this backdrop it is becoming increasingly difficult even to define the problem of climate change, much less to determine a solution.

Into these murky seas more and more books are being launched each year. Every book I discuss in this article is valuable, instructive, and worth reading. However, the issue they address is, by their own lights, so urgent and important that it is reasonable to hold these books to a very high standard. This is no time for modest contributions and polite self-congratulation. We need a game changer, wherever we can get it.

A little Internet surfing shows how prevalent crank views about climate science really are. *Climate Change: Picturing the Science,* by Gavin Schmidt and Joshua Wolfe, and *The Climate Crisis: An Introductory Guide to Climate Change,* by David Archer and Stefan Rahmstorf, aim to do something about this. Schmidt, Archer, and Rahmstorf are distinguished scientists who regularly contribute to *RealClimate* (*www.realclimate.org*). All have done yeomen's work in trying to explain climate science to anyone who will listen, and they continue their efforts in these books.



In *The Climate Crisis,* Archer and Rahmstorf condense the nearly 3000 pages of the 2007 IPCC (Intergovernmental Panel on Climate Change) report into a book of less than 250 pages. They do an excellent job, with better writing than anyone has a right to expect of such a project. The book is amply illustrated with well-chosen graphs and figures. When they must, the authors go beyond the IPCC reports to make their points. The book really comes alive in the last chapter when they state their own views about climate policy. However, the discussion is short and oversimplified (e.g., someone who says "an ethicist would say" doesn't know many ethicists, the discussion of discounting on p. 219 is provocative but hardly satisfying, etc.). Although good as far as it goes, the discussion would have been much improved by citations guiding the reader to the literature on these topics. A related issue arises earlier in the book when the authors assert that ocean acidification is enough reason "to halt the further rise of atmospheric CO_2 [carbon dioxide] concentrations, even if CO_2 did not also cause climatic changes" (p. 148). This is an important claim, but the authors simply state their opinion. The problem is not that they make such claims but that they fail to develop or defend them, or even guide readers to more extensive discussions. The result is a truncated account of what the authors call "the climate crisis."

Gavin Schmidt and Joshua Wolfe have coedited a beautiful book that does an excellent job of explaining the diversity of activities that constitute climate science, giving the reader a sense of how complicated this science really is. One strength of *Picturing the Science* is that most of the contributors emphasize the tentativeness of their findings and how little is really known in their fields. This is terrific for conveying the feel of really doing science, but it plays into one of the deniers' favorite tropes: Simply repeat in a loud voice and with a bad attitude the uncertainties that already have been identified in the mainstream literature. Jeffrey Sachs (who contributes a foreword) praises the book "as a tour de force of public education," but he doesn't say who exactly this book is meant to be educating. Because of the beautiful photographs, short essays, and first-person accounts, the book poses as a coffee table book, but I doubt that many of the people who would display this book would actually understand much that is in it. The real audience for this book, in my opinion, is a particular variety of science geek and not the "general," "educated," or "attentive" public. The book does an excellent job of "picturing science," which is

doi:10.1525/bio.2010.60.8.10

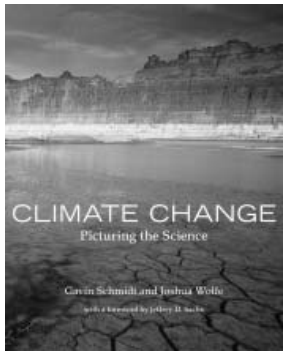
Downloaded From: https://complete.bioone.org/journals/BioScience on 29 Mar 2024
Terms of Use: https://complete.bioone.org/terms-of-use

its main purpose, but for those who simply want to know whether climate change is going to kill us or is really a conspiracy of the elite against the masses, the book will be frustrating.

For decades, more than any other two Americans, Stephen H. Schneider and James Hansen have been working the science and alerting the public to the dangers of climate change. Now they have each written moving, personal accounts of their work as climate change scientists and advocates. Both Schneider and Hansen are controversial figures, and their books, *Science as a Contact Sport: Inside the Battle to Save Earth's Climate* and *Storms of My Grandchildren: The Truth about the Coming Climate Catastrophe and Our Last Chance to Save Humanity*, respectively, will give their fans and enemies more reasons to love or hate them. These are books that will harden attitudes, not sway them. I loved them both.

In *Science as a Contact Sport,* Schneider gives us an up-close and personal look at the development of the climate change issue from the time he entered the scene (around 1970) to the present. There is no pretense of this being an objective history. Some meetings are made to sound more important than they were, and some people who matter to the story barely get a mention, but that's all OK. What we get from Schneider is the feeling of what it is to do this kind of science in the public eye (especially in his discussion of the "global cooling" episode). He also provides a remarkably insightful look at the struggle to establish a new interdisciplinary field within the hidebound institutions that constitute the scientific establishment. Schneider (famously) was a quick learner, shrewd observer, and talented storyteller. There are provocative discussions on a wide range of topics, including balance versus perspective in the media and the limits and biases of orthodox microeconomic theory. And although most of us know that the IPCC is a political institution, Schneider's account is eye opening and often distressing. His book takes on special meaning in light of his sudden death on 19 July 2010.

While Schneider focuses on the international context, Hansen writes in *Storms of My Grandchildren* from the perspective of a US government scientist. Hansen is concerned mainly with events occurring from 2001 to 2009, though there are digressions that take us back further in time. The stories of Bush administration political appointees attempting to censor him are by now familiar. What is more surprising is Hansen's access to senior officials in the administration. In 2001,



Hansen briefed Vice President Cheney along with several cabinet officers. High-level contact continued, though becoming less frequent, throughout the Bush years. I wish I could have been a fly on the wall when the (self-described) "shy," "awkward," and "tactless" Hansen was attempting to convince high-level members of the Bush administration of the seriousness of climate change. Rather than coming to agreement during those years, Hansen and the Bush administration moved steadily in diametrically opposed directions. While Hansen was radicalizing, the administration was hardening. The political independent from Iowa with a conservative streak came to see coal trains as "death trains" after visiting the graves of his parents (p. 239), and he subsequently became involved in direct-action campaigns against coal producers (there are important lessons here for activists). Meanwhile, the Bush administration went from promising to regulate CO_2 under the Clean Air Act to flirting with climate change denial.

Schneider and Hansen were colleagues for a short time at the Goddard Institute for Space Studies, and their books invite comparison for this and other reasons. Both books are conversational in tone, but Schneider's is centered on events while Hansen's revolves around his scientific papers. Schneider introduces the science with a deft touch, but only when it is necessary to the story he is telling. Hansen is so in love with the science that he can't resist lecturing us. Schneider is intensely interested in planet Earth and all of its inhabitants. Hansen is also interested in Earth, but he is more interested in planets (plural) and their long-term histories. Both Schneider and Hansen are deeply value committed, but in very different ways, and neither with sufficient reflection in my view. Schneider is sensitive about the roles that values play in the climate change issue, but he often speaks of values as if they were entirely subjective: We all have our own personal values, we should make them clear and put them on the table. Schneider tells us that he values equity and the avoidance of irreversible changes. I agree with these values, but there are a variety of different concepts implicit in these words, and some people would say that they do not share these values in any form. Is there nothing we can say to them? The challenge is not just to announce our values, as if they were preferences for one flavor of ice cream over another, but to mobilize resources of reason, temperament, and shared perspectives to show how we can make progress in resolving our deepest differences. Hansen often writes as if values can simply be read from the science (e.g., "The science demands a simple rule: Coal use must be prohibited…" [p. 174]). But science tells us what to believe, not what we ought to do. Science can show the consequences of our actions, but we must decide, guided by our values, what to bring about. Perhaps because of their different attitudes toward values, Schneider seems more politically astute than Hansen. Hansen sometimes seems astonished that political

Downloaded From: https://complete.bioone.org/journals/BioScience on 29 Mar 2024
Terms of Use: https://complete.bioone.org/terms-of-use

leaders have not adopted the policies that he thinks are required by science. His explanation is the dominance of "special interests," and corporate "greenwashing." But these explanations, at least in this form, do not go very far. Everyone (even scientists) is a member of "special interest groups," and corporate "greenwashing" can also be seen as a market response to rising environmental consciousness.

If you really want to know why we have failed to act on climate change, read *Merchants of Doubt: How a Handful of Scientists Obscured the Truth on Issues from Tobacco Smoke to Global Warming*, by Naomi Oreskes and Erik M. Conway. (Full disclosure: I am a principal investigator on a multiinstitutional grant from the National Science Foundation with Oreskes.) Although there are other accounts of the politics of climate change, they do not display the same depth of historical or scientific understanding as this book. Oreskes and Conway situate climate change denial against the broad background of the antienvironmental backlash that began in 1980 with the Reagan administration and has led the political right into ever more strident attacks on science. Oreskes and Conway show how climate change denial is connected to acid rain and ozone depletion denial, denial about the effects of secondhand smoke, and the promotion of the Strategic Defense Initiative. Not only are the same rhetorical and political strategies deployed in all these cases but many of the same people are involved in deploying them. Oreskes and Conway locate the roots of this denial in the actions and attitudes of a small group of influential scientists, mostly physicists, who came to prominence during the cold war.

While *Merchants of Doubt* is essential reading and takes you most of the way there in explaining what we have been living through, some of the specific claims can be queried and some of the explanations need to be supplemented. In my view, political ideology does too much of the work in their account, and other explanations, some in terms of other social categories (e.g., disciplinary rivalries and personal prestige), do too little. Moreover, the cold war physicists at the center of the story come off as a little too cardboard, with fixed attitudes and beliefs that fail to develop through time. Nevertheless, this book has the potential to reboot the debate over climate change, shedding new light on where we are and how we got here.

Many people involved with climate change are sounding increasingly desperate, especially after the failure of the Copenhagen climate conference. The idea of geoengineering climate, which has been discussed since at least the 16th century, is being taken more and more seriously. The advocates typically argue in favor of research rather than deployment, but to some extent this is misleading. Large, mission-driven projects (e.g., the Strategic Defense Initiative) are typically marketed as research programs, but once a large investment has been made and interest groups activated, deployment often becomes irresistible. Eli Kintisch and Jeff Goodell are science writers who have each written well-informed books on this subject that cover much of the same material.

Both *Hack the Planet: Science's Best Hope—or Worst Nightmare—for Averting Climate Catastrophe*, by Kintisch, and *How to Cool the Planet: Geoengineering and the Audacious Quest to Fix Earth's Climate*, by Goodell, are useful introductions to the projects and players involved in this discussion. They mention some of the concerns that have been raised about geoengineering, including governance issues, unintended side effects, and the possibility of moral hazard, but their hearts are not really in critical engagement with the difficult issues. To varying degrees both books suffer from the usual flaws of science journalism: too much human interest and "gee whiz" science, with too little sober analysis of scientific institutions and the social consequences of technological innovation.

Reading *Hack the Planet* feels a little like being inside the head of an overcaffeinated kid who likes to invent words (you can almost hear the soundtrack). However, once you get used to this, you begin to see how the book hangs together. Each chapter begins with a short tale as various as fish stocking in Queensland, mesquite introduction in Kenya, and managing agricultural runoff in the San Joaquin Valley. At first these stories seem irrelevant to geoengineering, but then you come to see them as cautionary tales. Kintisch is a sophisticated observer of the scientific and political milieux and a reliable guide to some of the proposed technologies and their champions. His discussion of how geoengineering figures in the conservative political narrative about climate change is especially canny and illuminating.

Goodell is a writer with whom it is easy to feel comfortable. He likes people, and it is easy to feel that he likes you, too. But this human virtue can be an occupational vice. One would like more critical distance between the author and those who are exploring the possibility of intentionally remaking climate. In *How to Cool the Planet*, Goodell describes a key advocate as one of a group of scientists who are "likely to be the superheroes of the geoengineering world" (p. 40). While listening to this scientist talk about a device that he has built, Goodell "marvel[s] at…the high-powered imagination it took to build a contraption like this" (p. 28). Goodell's first encounter with the future "superhero" was in "[a] quick telephone conversation [that] convinced me that he knew as much about the moral, political, and engineering complexities of this idea [geoengineering] as anyone" (p. 22). This tone is all too familiar from the business press writing about one or another captain of industry just before one or another collapse, and it is distracting at best in a book that is supposed to be helping us to think through proposals to geoengineer climate. When Goodell is not engaging in hagiography, he has smart and interesting things to say about the history of attempts at

Downloaded From: https://complete.bioone.org/journals/BioScience on 29 Mar 2024
Terms of Use: https://complete.bioone.org/terms-of-use

climate modification, the technologies being considered, and the problems that they might pose.

David W. Orr, with *Down to the Wire: Confronting Climate Collapse*, and Bill McKibben, with *Eaarth: Making a Life on a Tough New Planet*, have written eloquent, thoughtful books that are valuable resources for living meaningfully in the 21st century. In his 1989 book, *The End of Nature,* McKibben helped bring climate change to popular attention, and his work with *Step It Up* and *350.org* has inspired people all over the world. McKibben and Orr agree that in some sense the game is over and climate change has won. Forget about saving the Earth and instead think about what it is to be human in this world of our own making. Rather than putting their hopes in superheroes, these authors are concerned with how we can live with hope, grace, and dignity in the world that we are bringing about.

Although both authors have wise and interesting things to say, it is something of a disappointment that their prescriptions for the future are so like the advice that they have given in the past. In *Down to the Wire,* Orr does suggest a range of structural reforms. Some are attractive (e.g., revoking corporate personhood), others are romantic (e.g., a council of elders to advise the president), some are downright scary (e.g., calling a constitutional convention), and all are underdeveloped. While recognizing the ambiguous importance of globalization, both writers primarily celebrate the value and importance of localism. Their enthusiasm jumps off the page when they describe small farms in a proposed greenbelt around Oberlin, Ohio, or eating at the Farmers Diner in Quechee, Vermont. They know as well as I do that whatever the virtues of life in a small Ohio or Vermont town, this is not the whole story. In 1800, only 3 percent of the world's population was urban; by 2050 the proportion will be 70 percent, and most of them will be in the developing world.

Climate change is, among other things, a global and intergenerational collective action problem. Our prevailing ethical norms and political institutions are not adequate for addressing such problems. What we need is all the thinking that these authors have brought to us, and more besides. We need an ethics and politics as rigorous as the science that has revealed our predicament. This requires serious work, some of which is already going on in comparative obscurity. Such work does not lead naturally to coffee table books or riveting descriptions of "the smartest guys in the room." Yet it is the kind of work that is required if we are to reason together about the most serious problem that humanity has ever faced.

DALE JAMIESON

Dale Jamieson (dale.jamieson@nyu.edu) is professor of environmental studies and philosophy, and affiliated professor of law, at New York University, where he also directs the environmental studies program. His most recent book, Climate Ethics: Essential Readings*, coedited with Stephen Gardiner, Simon Caney, and Henry Shue, was published by Oxford earlier this year.*

References cited

Archer D, Rahmstorf S. 2010. The Climate Crisis: An Introductory Guide to Climate Change. Cambridge University Press.

Goodell J. 2010. How to Cool the Planet: Geoengineering and the Audacious Quest to Fix Earth's Climate. Houghton Mifflin Harcourt.

Hansen J. 2009. Storms of My Grandchildren: The Truth about the Coming Climate Catastrophe and Our Last Chance to Save Humanity. Bloomsbury.

Kintisch E. 2010. Hack the Planet: Science's Best Hope—or Worst Nightmare—for Averting Climate Catastrophe. Wiley.

McKibben B. 2010. Eaarth: Making a Life on a Tough New Planet. Holt.

Oreskes N, Conway E. 2010. Merchants of Doubt: How a Handful of Scientists Obscured the Truth on Issues from Tobacco Smoke to Global Warming. Bloomsbury.

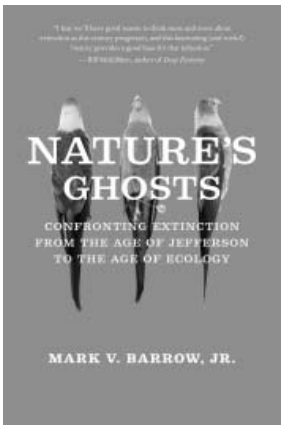
Orr DW. 2009. Down to the Wire: Confronting Climate Collapse. Oxford University Press.

Schmidt G, Wolfe J. 2009. Climate Change: Picturing the Science. Norton.

Schneider SH. 2009. Science as a Contact Sport: Inside the Battle to Save Earth's Climate. National Geographic Society.

DOCUMENTING DISAPPEARANCE

A reader will draw two inescapable conclusions from these two well-researched volumes about extinction: We know an impressive amount about human-caused extinctions, and we have done little to stop them. Both of these books, *Holocene Extinctions* and *Nature's Ghosts: Confronting Extinction from the Age of Jefferson to the Age of Ecology*, examine the toll taken by extinctions in removing innumerable species, many of them beautiful, extraordinary, and large. For all who admire diversity, these books document and illuminate the tragedy—and



the history of species extinction is, in fact, a tragedy. Merriam Webster's definition is apt: "a serious drama typically describing a conflict between the protagonist and a superior force (as destiny) and having a sorrowful or disastrous conclusion that excites pity or terror." Here, Earth is the protagonist and the superior force is humanity, whose devastating impact was already clear in 1864 to George Perkins Marsh when he wrote in *Man and Nature*: "Man is everywhere a disturbing agent. Wherever he plants his foot, the harmonies of nature are turned to discords."

To put extinctions into perspective, it is important to remember that even before the evolution of humans,

doi:10.1525/bio.2010.60.8.11

Downloaded From: https://complete.bioone.org/journals/BioScience on 29 Mar 2024
Terms of Use: https://complete.bioone.org/terms-of-use