



The Climate of Climate Change

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Climate change is inescapable. Whatever is actually happening in the atmosphere, the hubbub of politics and media ensures that the topic is always in the air—and the past few years have seen the winds of climate-change talk swirl into a tempest and then blow away. In June 2008, Barack Obama, upon effectively securing his party's nomination for the presidency, predicted that Americans would look back and see that "this was the moment when the rise of the oceans began to slow and our planet began to heal." Both he and John McCain, his Republican opponent, favored some form of carbon-reducing legislation, and momentum seemed to be building toward an international treaty.

Since then, things have changed, to put it mildly. Fishy e-mails were leaked from one of the world's leading centers of climate research at an English university. The much-anticipated 2009 Copenhagen climate summit failed to produce any substantial achievement. President Obama and the Democratic-controlled Congress

were unable to pass large-scale climate legislation. And green movement hero Al Gore has done his cause no favors with his recent marital and legal woes.

A Rasmussen tracking poll found that in May 2008, 48 percent of American voters believed that recent global warming was primarily caused by human activity while 34 percent cited planetary trends unrelated to mankind. By April 2010, those numbers had flipped, with 48 percent pointing to natural trends and only 33 percent of the respondents believing that we are the primary culprit. Still, politics and polls aside, the first decade of the 2000s was, according to researchers, the warmest since the advent of modern thermometer-based record keeping.

Four recent books explore the dynamics of the climate debate. British scientist Mike Hulme explores the history and the current state of the debate from a scholarly perspective in *Why We Disagree About Climate Change*. Stanford's Stephen Schneider offers an intensely personal reflection

on his four decades researching climate in *Science as a Contact Sport*. TV-weatherman-turned-talk-radio-host Brian Sussman rails against an eco-Marxist conspiracy in *Climategate*. And Texas Tech geosciences professor Katharine Hayhoe joins her pastor husband Andrew Farley in calling upon fellow believers to focus on the science and then act in *A Climate for Change*.

All of these works affirm that, in one way or another, climate change is a profoundly *human* phenomenon. By that I do not simply mean that these authors accept (as all but Sussman do) the anthropogenic theory asserting that humanity's carbon dioxide emissions are largely to blame. No, climate change is best described as a human phenomenon because it cuts across (and sometimes into) deeply held understandings of culture, including our capacities for

knowledge, progress, and purpose; our relationship to the natural world and each other; and our relationship to the divine. Disagreements may sometimes masquerade as scientific disputes, but often this is just a proxy war while the real interests driving the fight remain behind the scenes.

Mike Hulme did the bulk of his writing before the recent shift in American sentiment about global warming, but *Why We Disagree About Climate Change* remains very useful for understanding the current debate. Hulme, who was the tenth-most-cited scientist in the climate-change field for the period of 1999 to 2009, is a professor at the University of East Anglia, the center of the e-mail leak. Although Hulme was not involved in the controversial e-mails, he has proven more prescient than most in the science world when gauging

*Why We Disagree About Climate Change:
Understanding Controversy,
Inaction and Opportunity*

By Mike Hulme

Cambridge ~ 2009 ~ 432 pp.

\$29.99 (paper)

*Science as a Contact Sport: Inside the
Battle to Save Earth's Climate*

By Stephen H. Schneider

National Geographic ~ 2009 ~ 304 pp.

\$28 (cloth)

*Climategate: A Veteran Meteorologist
Exposes the Global Warming Scam*

By Brian Sussman

WND ~ 2010 ~ 240 pp.

\$25.95 (cloth)

*A Climate for Change: Global Warming
Facts for Faith-Based Decisions*

By Katharine Hayhoe
and Andrew Farley

FaithWords ~ 2009 ~ 224 pp.

\$22.99 (cloth) \$14.99 (paper)



the scandal's impact. Even though nothing in the "Climategate" e-mails directly supports the claim that the anthropogenic theory is a vast hoax, more people believe that now than did before. As Hulme argues in his book, public perceptions of truth can be more consequential than the truth itself.

In *Why We Disagree About Climate Change*, Hulme says hardly a word pro or con about the potential merits of alternative explanations, like volcanoes and sun cycles, seemingly central to the minority scientific view. Instead, he pulls up the underlying cultural, psychological, and sociological roots of our climate disagreements—the factors that he believes give rise to much of the passion associated with this topic—and lays them on the table in a calm and workmanlike fashion.

While openly acknowledging his own predispositions—as a Prius-driving professor, an orthodox Anglican Christian, and a member of the Labour Party, to name a few—Hulme works to maintain the stance of a neutral and nonjudgmental observer. In this he largely succeeds. Indeed, at times he may succeed too effectively, as the book occasionally drags for lack of either a clear villain or a prescriptive thesis—although his cool, methodical approach is a plus in a genre too often beset by activist hyperbole on all sides.

Hulme opens with a brisk tour of the history of *climate* as a concept, high-

lighting the shift from the integration of climate and daily life in pre-modern societies (think of the lessons communicated through Old Testament droughts) to modernity's cleaving of culture from nature. Climate has also been tied to theories of cultural superiority and historical determinism, from the ancient Greeks (who gave us the word *klimata* to distinguish their productive zone on earth from the perils to the frigid north and torrid south) to Immanuel Kant (who saw the benefits of a temperate climate as the key to explaining why certain "peoples have educated the others and controlled them with weapons") to Jared Diamond (whose recent book *Collapse* chronicles the fall of civilizations that apparently overstrained their ecosystems).

Hulme's second chapter follows the "discovery of climate change," highlighting the work of and scientific culture surrounding such scientists as John Tyndall, who formulated the theory of greenhouse gases in the 1860s, and Svante Arrhenius, who in 1896 first calculated by hand, with impressive accuracy, the climate sensitivity associated with a doubling of carbon dioxide. Though several of these early pioneers saw the modification of the atmosphere as a positive potential insurance against the return of an Ice Age, that view shifted over time. By the 1980s, Wallace S. Broecker of Columbia University was advancing the idea of very negative physical "tipping points" that

now dominates much of the academic and popular thinking. Hulme emphasizes that each era's scientists operated in a culture with its own paradigms, its own "ways of seeing the world; ways of believing."

The meat of the book is in seven chapters, each dedicated to one of our own era's belief structures—the fears, cultural factors, and value judgments that drive our responses to theories of climate change and possible remedies: first, we disagree about the role of scientific knowledge and the role of scientists in policy discussions; second, we disagree about the ways we value things (our economics); third, our religious and ethical outlooks differ, or as the author puts it, "our duty to others, to Nature, and to our deities"; fourth, we have disparate personal and corporate approaches to risk; fifth, we respond differently to mixed messages communicated about those risks; sixth, we have differing views of "development" for the global poor; and seventh, we disagree about how issues of global importance should be governed. There is, of course, much overlap between these categories—our views about science will influence our understanding of risk, for example, and our religious and economic convictions can influence our opinions about development for the poor and the proper role of government. Hulme acknowledges these overlaps even as he works to illuminate each category on its own; the effect, however, is a repetition

that leaves the reader wondering whether the book could have been considerably shorter.

The central issue Hulme raises is that we fundamentally disagree about what we, knowingly or unknowingly, hold most dear, and that our disagreement can produce a host of secondary conflicts. If we differ on first principles we will usually differ on much that comes after.

Though Hulme ably covers topics as diverse as international treaties, the social cost of carbon, and environmental theology, he is at his best when dealing with the role of science in society. He argues that the scientific norms of skepticism, universalism, communalism, and disinterestedness are difficult to apply to public problems where "facts are uncertain, values in dispute, stakes high, and decisions urgent"—what Silvio Funtowicz and Jerry Ravetz have termed "post-normal science." Hulme notes this not to disparage the traditional norms but to help scientists and the public see the situation more clearly. He calls for humility and transparency, and recognition of the important but limited role for science when facing difficult ethical decisions. All sides of the climate policy debate—both those who argue that the science is currently settled (and assume that the need for vigorous government intervention is unquestionable) and those who argue that the policy status quo must not change unless and until all doubt is

removed—would be wise to remember that, as Hulme puts it well, “Certainty is the anomalous condition for humanity, not uncertainty.”

While Hulme’s treatise attempts to illuminate the human element of the debate, the late Stephen Schneider’s memoir illustrates it personally. As a child, Schneider was fascinated with hurricanes, and he grew up with a desire to make a difference in the world. During a long career in atmospheric modeling where he was a central figure in battles over global cooling, nuclear winter, ozone-layer depletion, and global warming, Schneider found himself dueling with a pre-*Penthouse* Bob Guccione in the *New York Times*, receiving smuggled documents from the Soviet Union, going off-script on Johnny Carson’s *Tonight Show*, fishing for trout with Dan Rather, verbally sparring with congressmen on Capitol Hill, receiving the Nobel Peace Prize along with other climate scientists and Al Gore, and talking global warming with rapper Snoop Dogg and the (aptly named?) band Widespread Panic at a summer music festival.

Undoubtedly, it was an interesting ride—and it makes for a surprisingly good read, a bit like sitting on the porch and listening to a cantankerous but lovable old uncle recount his war stories. There are backs to be patted, scores to be settled, apologies to be made, lessons learned, and perhaps an embellishment or two. It

may not be history exactly as it was, but it is certainly one man’s personal sense of history as it was felt.

Schneider rose to fame due to some solid scientific chops, a lot of being in the right place at the right time, and a knack for producing a great quote. In 1973, when mute uncertainty reigned over whether competing anthropogenic effects might produce a net cooling or warming, he quipped, “Mark Twain had it backwards. Nowadays everybody is doing something about the weather, but nobody is talking about it.” Nice line—and the *New York Times’s* science writer agreed.

But he who lives by the sword sometimes suffers self-inflicted wounds. Schneider’s most famous quote, one that still regularly pops up in books and columns and online today, comes from a 1989 interview with *Discover* magazine: “[Scientists] have to offer up scary scenarios, make simplified, dramatic statements, and make little mention of any doubts we might have.... Each of us has to decide what the right balance is between being effective and being honest.”

Schneider spends several pages expressing his frustration at having his views misrepresented and only partially quoted. To be fair, let us here provide the full quotation:

On the one hand, as scientists we are ethically bound to the scientific method, in effect promising to tell the truth, the whole truth, and nothing but—which means

that we must include all doubts, the caveats, the ifs, ands, and buts. On the other hand, we are not just scientists but human beings as well. And like most people we'd like to see the world a better place, which in this context translates into our working to reduce the risk of potentially disastrous climate change. To do that we need to get some broad-based support, to capture the public's imagination. That, of course, means getting loads of media coverage. So we have to offer up scary scenarios, make simplified, dramatic statements, and make little mention of any doubts we might have. This "double ethical bind" we frequently find ourselves in cannot be solved by any formula. Each of us has to decide what the right balance is between being effective and being honest. I hope that means being both.

Though still rightly disturbing for those of us who would prefer the whole truth all the time, this is quite a bit more nuanced than the *we make up what we need* caricature of Schneider's comments that one often sees.

It is also noteworthy that Schneider stood up for scientific truth even when the facts ran counter to his personal policy preferences and friendships. The most notable example in the book is his disagreement with the über-activist-scientist Carl Sagan in the early 1980s over nuclear winter—the theory that a large nuclear war would plunge the planet into a period of extreme cold. With Schneider's access

to more advanced atmospheric modeling systems, he could see that Sagan's doomsday predictions of a nuclear winter that could wipe out humanity were vastly overblown. Sagan had earlier been a friend (he had helped get Schneider on the *Tonight Show*), but Schneider felt compelled to advocate against Sagan's winter scenario with what he (ever quotable) dubbed a "nuclear fall" theory—a far milder and more temporary scenario. He describes his falling out with Sagan as "one of the most unpleasant chapters in my life." They did not reconcile until years later, when the climate-policy fight eventually brought them together again.

One of Schneider's aims is to set the record straight on what he and his allies said and did, but it must be noted that he sometimes distorts the record of those with whom he disagrees. He blithely labels President George W. Bush and most Republicans as global-warming deniers. Clearly President Bush, who refused to support the Kyoto Protocol or major domestic climate-change legislation, did not take policy positions that Schneider would have preferred. But in 2001, President Bush affirmed his belief in the reality of global warming and favorably noted the National Academy of Sciences conclusion that the increase was due in large part to human activity. Toward the end of Bush's presidency, his administration took pains to highlight its achievements on the issue, including

the establishment of the Asia-Pacific Partnership on Clean Development and Climate, an initiative intended to be much more practicable than Kyoto. Contrasting Schneider's nonchalant criticism of conservatives with the angst he felt in disagreeing with Sagan reminds us that, in science as in life, we usually want to take it easier on our friends.

Schneider, who unexpectedly passed away in July 2010 on an airplane returning from a scientific conference, operated in the center of what Hulme calls the "co-production" model of public policy formation, wherein scientists and policymakers engage in a complicated dance. His book reveals to us the late-night negotiations and P.R. brinksmanship that occur when science and politics are forced together in the creation of consensus documents, such as those from the Intergovernmental Panel on Climate Change (IPCC). Schneider was truly a man on a mission, as the subtitle of his book, *Inside the Battle to Save Earth's Climate*, makes clear. At times, his arrogance and hubris are jarring. Nevertheless, one also sees a sympathetic figure who clearly loved his wife and faced his own mortality in fighting lymphoma. Those who either deify or demonize activist-scientists like Schneider may benefit from this glimpse of the complex, gifted, but imperfect man he was.

Squarely on the other side of the climate debate from Schneider is

Brian Sussman, who now spends his mornings on conservative talk radio in the liberal bastion of San Francisco. His prior claim to fame was being the backup weatherman for the CBS *Early Show*. His new book *Climategate* actually has little to say (just some four pages) about the e-mail scandal whence its title comes. During an event at the conservative Heritage Foundation in Washington, D.C. in June 2010, Sussman acknowledged that the title was changed at the publisher's suggestion for marketing purposes. At the same event, he pronounced his book "bulletproof."

Bullets and revolutions are apparently on Sussman's mind as he smells a grand Marxist conspiracy at work. Indeed, the book opens with these words: "Global warming's story begins with a diabolical bastard named Karl Marx." It seems that almost every page thereafter contains some reference to the bearded one, or Lenin, or Hitler, or "Marxist scientists," or "eco-Marxists," or the like. Brazen statements like "the earth's entire temperature record is rigged" and not-so-subtle suggestions that "Barack Hussein Obama" is a handmaiden of the U.N. "oneworlders" and was never properly sworn in as president (because there was no Bible at the swearing-in do-over after Chief Justice John Roberts publicly flubbed the oath) are commonplace as well.

The primary value of *Climategate* comes in having all of the major arguments of the "it's a hoax" crowd

together in one volume. Some of the anecdotes are indeed concerning. It certainly does not inspire confidence in our temperature record to see an official weather station five feet from an old trash-burning barrel. Yet it is difficult to know how much to extrapolate from the things that Sussman highlights because, upon even a cursory investigation, this “bulletproof” book is full of holes.

For example, Sussman’s list of the “Twenty Hottest Years” includes data only from the contiguous United States, not the world, which one might expect from a book on *global* warming. The author does not clue the reader in to this distinction, but it becomes readily apparent if one follows the cryptic footnote to NASA’s Goddard Institute for Space Studies. This is important particularly because in the lower 48, extremely hot years from the Dust Bowl of the 1930s appear frequently on the list, with the year 1934 coming in at the top. But that regional heat wave was not a worldwide event.

Nevertheless, the author is silent about that crucial distinction, even as he castigates Al Gore for his words about the recent clustering of the world’s ten hottest years. Sussman checks Gore’s quote against his U.S.-only graph and taunts, “I honestly don’t know where Gore obtains his data.” Actually, the Goddard Institute graph labeled “Global Land-Ocean Temperature” seems to match Gore pretty well. Even M.I.T.’s Richard

Lindzen (a favorite of the skeptics) agrees with Gore’s assessment of the top ten warmest years, reluctantly observing at another Heritage Foundation event that “there’s no way out of that.”

Sussman’s fun with words and numbers continues as he describes the year 2008 as “the coldest of the new millennium.” Never mind that it was still one of the ten hottest in the modern era of recordkeeping and quite consistent with the long-term warming trend predicted by the majority scientific view.

One could go easily go on and on, but a final example will suffice. *Climategate* highlights a British court case dealing with teaching materials used in the classroom. In its decision, the court identified several discrepancies between Gore’s *An Inconvenient Truth* and the reports of the IPCC. Sussman attributes the words “political brainwashing” to the court, but the judge never uses those terms or anything similar—a fact easily checked by simply reading the decision. *Climategate* also neglects to inform readers that the judge noted that he had “no doubt” that “Al Gore’s presentation of the causes and likely effects of climate change in the film was broadly accurate.” In the end, *An Inconvenient Truth* was approved for classroom use.

In a final bit of unintended irony, *Climategate* closes with a spy-movie-style scene in which a Silicon Valley venture capitalist helps Sussman to

follow the money—Gore’s money. Legitimate questions can and should be asked about the former vice president’s green technology ties. Certainly at one level, though, it makes sense that Gore would put his money where his mouth is. Sussman’s mole instead tells us that Gore, despite his years of government work on the issue, does not believe the earth has a fever, he just “believes in money.”

The book concludes with Sussman and his rich friend bemoaning the fate of their country. They vow never to give up the fight to save this nation, and in *Climategate’s* penultimate sentence the mole says, “That’s why I want this book to be a huge seller.”

Money and patriotism can go hand in hand for Sussman, but apparently not for Gore, who is deplored for being a Marxist on one page and a capitalist on the next. This is emblematic of the sloppy logic in *Climategate* overall. Upon finishing the book, I could not help but wonder why an otherwise reputable and scholarly think tank like the Heritage Foundation would lend its stamp of approval to a book that is seemingly based on such a limited amount of rational thought.

A nice antidote to the venom of *Climategate* is *A Climate for Change*, by Texas Tech climate scientist Katharine Hayhoe and her husband Andrew Farley, a pastor, author, and also a professor at Texas Tech. While they share a Christian

faith with Sussman, their approach to global warming could hardly be more different. The couple would likely concur with Mike Hulme that our disagreements about climate change are often grounded less on the actual science (the general knowledge of which rarely rises above sound bites and rumors) than on a host of other factors.

In addition to being a very useful primer addressing the basic science of climate change and the major counter-arguments made by climate-change skeptics, *A Climate for Change* also highlights theological issues related to the care of God’s creation and the demonstration of love to one’s global neighbors. Hayhoe and Farley provide examples of apparent climate-change impacts from the Arctic of Alaska to the tropical island of Tuvalu, and offer concrete steps towards reducing one’s carbon footprint.

Perhaps the book tries to do a little too much, and at times the topics are covered in too cursory a manner as the authors seek to address the full gamut of frequently asked questions they have received over the years. Generally, though, their explanations are both accessible and well documented. The book is enhanced by color charts, graphs, and other figures, many of them created from raw source data by Hayhoe herself. Dealing with a topic that can engender both passionate activism and opposition, *A Climate for Change* provides a unique perspective at the

intersection of religion and science, finding a diagnosis in the material world of science and a call to respond in the realm of faith.

Mike Hulme approaches the same intersection from a similarly spiritual perspective in “Beyond Climate Change,” the final chapter of *Why We Disagree*. Describing climate change with Horst Rittel’s term “wicked problem”—one in which resolving one aspect may well tear open another—Hulme recasts our current array of reactions within four biblical myths (using the term “myth” non-pejoratively to mean deeply assumed truths).

The myth of Eden laments for the loss of a pristine creation. The myth of Apocalypse channels our fear that we have unwittingly doomed the world. The myth of Babel brings forth the prideful hope that we will solve the problem with a new wave of technology and massive geo-engineering. And the myth of Jubilee calls for “climate justice” on a massive scale to redress years of energy and pollution inequality.

Hulme does not argue that one particular myth holds the solution. Instead, he acknowledges that, notwithstanding the hype surrounding each new major report or hurricane or heat wave or election, with each promising to provide *the* turning point in the fight against global warming, no solution can emerge from today’s dominant systems of thought. He only finds hope in the

possibility that the problem of climate change will spur new “modes of knowing” that will press beyond our current “science-saturated and spiritually impoverished wisdom.” Climate change may “do work for us” by waking us from a deep spiritual slumber. For Hulme, the four religious myths offer a starting point from which to explore larger questions about “how and why we live on this planet.”

Hulme’s last chapter feels like it should be the first of a different book—and, in a sense, he hopes it will become just that. By jarring humanity beyond the material worlds of science, economics, and politics, Hulme sees the possibility that climate change may help direct society away from a fate where, as he quotes playwright Tom Stoppard, “When we have found all the mysteries and lost all the meaning, we will be alone, on an empty shore.” The answer, as Hulme sees it, will be something like ecologist Jesse Ausubel’s pithy summary of medieval history: “Great sins can elicit great cathedrals.” This seems a lot to ask from climate change. But Hulme’s challenging vision suggests that, in ways we can barely begin to imagine, the human phenomenon of climate change and our current disagreements about it may yet turn out to be a blessing in disguise if we can look beyond the atmosphere and see the heavens.

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