

Scientific Orthodoxies, Politicized Science,
and Catastrophic Global Warming:
Challenges to Evangelicals Navigating
Rough Waters in Science and Policy

E. Calvin Beisner, Ph.D.
Associate Professor of Historical Theology and Social Ethics
Knox Theological Seminary
Ft. Lauderdale, Florida

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The year 2006 has seen a major division among evangelicals over a strange, multifaceted issue: whether human action is causing potentially catastrophic global warming and what, if anything, should be done about it. That division quite possibly had enormous political consequences in the mid-term elections just completed, contributing to both diminished voter turnout among evangelicals and a decline in their support for Republican candidates from 75 percent in 2000 and 2004 to about 50 percent in 2006. Regardless whether one considers that outcome good, bad, or indifferent, it is certainly significant, and the likelihood that many involved would not have wished it¹ illustrates how political action on such matters can bring about unintended consequences.

Part of what makes this division among evangelicals so strange is that it is hardly the sort of issue that has tended to preoccupy evangelicals in the past. Certainly no one on either side can point to a scripture text, or even a concatenation of texts, and say, “See, my view follows by good and necessary consequence from the very Word of God”—as they have tended to do in their debates over such things as form of baptism, predestination, the extent of the atonement, the possibility of apostasy, or even questions of socialism versus free-market economics. Yet their passions run high. I do not pretend neutrality myself. As national spokesman for the Interfaith Stewardship Alliance, I am an outspoken critic of claims of largely manmade and catastrophic global warming and that we should respond to it by mandatory cuts in fossil fuel use to reduce carbon dioxide emissions so as to reduce future temperatures. I believe the issue is important largely because I am persuaded that the attempt to reduce future warming that way will have no significant effect on temperatures but will have serious negative economic consequences for everyone, especially for the two billion people who still await such basics of economic development as pure drinking water, sewage sanitation, and electrical heating, cooling, and cooking for their homes—lack of which, according to data from the

¹Richard Cizik, vice president for governmental affairs for the National Association of Evangelicals, regularly proclaims himself a pro-life, pro-free-market, low-tax, strong-national-defense conservative, all positions more consistent with Republican than with Democratic views, yet has pushed hard for a view of climate change policy that finds far more support among Democratic than Republican members of Congress.

World Health Organization, causes 5 to 6 million premature deaths (mostly of women and children) and hundreds of millions of serious diseases annually in the developing world—and all of which depend in large part on abundant energy that can be most cheaply supplied now and at least for the next few decades by fossil fuels.

My purpose in this paper, however, is not principally to discuss the scientific and economic data and arguments related to the reality, extent, effects of, and comparative benefits and costs of mitigation or adaptation to manmade global warming—though for illustrative purposes I do some of that along the way. I focused on that with three co-authors—climatologist Roy Spencer, environmental economist Ross McKittrick, and energy policy analyst Paul Driessen—in “A Call to Truth, Prudence, and Protection of the Poor: An Evangelical Response to Global Warming,” available at www.interfaithstewardship.org and at the ISA display here at the ETS meeting. That paper offers extensive data, explanation, and reference to solid scientific and economic sources in support of the view that climate change over the past couple of centuries is largely or entirely natural, is within the bounds of historic variability, is more likely to be beneficial than harmful on balance, is not susceptible of significant mitigation by any kind of energy policy, and should be responded to by adaptation rather than mitigation.

My purpose here, in contrast, is to discuss some of the difficulties evangelicals face in dealing with such controversies and how we may respond to them. There are other ways these problems could be categorized, but for now I will list them under five categories: illegitimate import of moral certitude; oversimplification and politicization of science; unwarranted appeal to scientific consensus; neglect of comparative cost-benefit analysis; and the unintended consequences of political alliances.

Illegitimate Import of Moral Certitude

The Evangelical Climate Initiative in February 2006 issued “Climate Change: An Evangelical Call to Action” (<http://www.christiansandclimate.org/statement>), which stated as one of its subheads, “Christian Moral Convictions Demand Our Response to the Climate Change Problem.” Bulleted points below that subhead declared, “Christians must care about climate change because we love God the Creator” and “Christians must care about climate change because we are called to love our neighbors.” Each of these bulleted points could be reproduced in hypothetical form: “If you love God the Creator, you must care about climate change,” and “If you love your neighbor, you must care about climate change.” Indeed, if it is specifically “Our Response”—that is, the response of the Evangelical Climate Initiative—to climate change that is *demand*ed by “Christian moral convictions,” then it follows that if you love God and neighbor, you must embrace the very response to global warming offered by the ECI.

The logical implication of these claims (by *modus tollens*) is that those who don’t care about climate change or, even if they do, don’t embrace the ECI’s response to it, don’t love God and don’t love their neighbors. Granted that these are the two Great Commandments, that is a pretty serious charge against brothers and sisters, whether explicit or implicit.

The principal problem with the claims is that they beg the question. If everyone agreed that

catastrophic manmade global warming were real and imminent and subject to significant reduction by mandatory carbon dioxide emission reductions at a better cost/benefit ratio than alternative responses, there might be some justification for such judgments. But not everyone agrees, and it would be difficult to argue that people on either side don't love God or neighbor—such people as the now 101 signers of the Evangelical Climate Initiative's "Call to Action" and 120 (evangelical) signers (plus 20 non-evangelical scientists with relevant expertise) of the ISA's "Call to Truth"—pastors, missionaries, Christian college presidents and faculty members, as well as scientists and economists of various specialties.

I would not argue that we must leave aside all moral judgment on such issues. But I would argue that we need to distinguish carefully between the moral implications of the view we think is true and the objective moral duty of everyone who considers the issue. As the *Cornwall Declaration on Environmental Stewardship* (<http://www.interfaithstewardship.org/pages/cornwall.php>) puts it, "God's Law—summarized in the Decalogue and the two Great Commandments (to love God and neighbor), which are written on the human heart, thus revealing His own righteous character to the human person—represents God's design for shalom, or peace, and is the supreme rule of all conduct, for which personal or social prejudices must not be substituted." Better yet, Scripture defines sin as "transgression of the law" (1 John 3:4)—not as failure to use the current best techniques of contour plowing or no-till planting or low-emission energy production.

If the ECI's "Call to Action" had said, "If these things are true, then . . .," that would have been preferable. Instead, the absolutist language of the ECI runs two great risks: (a) the diminution of legitimate Biblical and pastoral moral authority if it turns out that the ECI's perspective on the complicated issues of climate change science, effects, and policy turn out to have been mistaken, and (b) the tendency to demonize those who disagree.

Oversimplification and Politicization of Science

Over the past sixteen years of studying this issue, and especially in the past fifteen months, I have read more than a dozen full-length books on the science of global climate change by climatologists and other scientists specializing in the subject, plus chapters in more than twenty other books, and hundreds of articles, refereed and popular. These include works by leading proponents of the catastrophic human-induced global warming (CHIGW) hypothesis like Oxford University's John T. Houghton (former chairman of the Scientific Assessment Working Group of the U.N.'s Intergovernmental Panel on Climate Change) and NASA's James Hansen, and leading opponents of it like MIT's Richard Lindzen and the University of Virginia's Patrick Michaels. Last week I finished reading yet another such book, Taken By Storm: The Troubled Science, Policy, and Politics of Global Warming, by University of Western Ontario applied mathematician and physicist Christopher Essex and University of Guelph environmental economist Ross McKittrick, both of whom have specialized in global climate change studies for many years. I found it the most fascinating book on the subject I've read yet—indeed, the best example of science education in writing that I've ever read.

If there is anything I can say as a generalization in light of all this reading it is that the science of climate change and the economics of its effects and possible responses to it are far, far more complex

than most non-specialists in the field can imagine—and, I might add, often even many specialists whose studies are insufficiently interdisciplinary. Essex and McKittrick’s book in particular has opened my eyes to dimensions of the physics of fluid dynamics, turbulence, and chaos theory that make it not just very difficult in practice but impossible even in theory to make credible predictions about global climate reaction to such things as changes in atmospheric carbon dioxide concentration. To offer just one example of the kind of problem that Essex and McKittrick raise, the very idea of average temperature—whether of this room or of Earth’s atmosphere as a whole—is a category mistake, because temperature is not a measurement of quantity but of the physical state of a given bit of material, and in any given fluid in disequilibrium (which is what our atmosphere and oceans are), no matter how large or small, there are infinite numbers of temperatures in infinitely divisible fields that are always changing chaotically through turbulent convection as well as chemical processes. Consequently we can’t speak of “global average temperature” not only because our samples are hopelessly too few and too unrepresentative but more importantly because the concept itself is irrational.

Now, although I am convinced of this after reading Essex and McKittrick’s book, I recognize that there are climate scientists and others who reject it. I think they’re mistaken, and I wonder how many have actually carefully read *Taken By Storm*, or at least the portion that discusses the physics of fluid dynamics. But I’m in no position to pass judgment and say, “They’re crackpots to whom no one should listen.” But neither, I venture, are the authors of the Evangelical Climate Initiative’s “Call to Action” competent to pass the opposite judgment and say, “Essex and McKittrick are crackpots to whom no one should listen.” But that, all too often, is how proponents of CHIGW treat critics of the hypothesis.

Several writers have addressed the problem of oversimplification of science in public debates, particularly when there are political ramifications to the debates. Nearly fifteen years ago Patrick Michaels, in *Sound and Fury: The Science and Politics of Global Warming*,² raised questions about the perverse incentives involved in government funding of scientific research—and I predict that my even mentioning Michaels in this regard will raise cries from some CHIGW alarmists that he should be dismissed on this point because he writes for, and his books have been published by, the Libertarian Cato Institute—a guilt-by-association fallacy that forgets that an actual argument must be mounted. But much more importantly, the recognition of how politics can badly prejudice the focus and results of scientific research goes back long before Michaels’s observations. The Soviet government’s ideological preference for Lysenkoism for decades frustrated genetic research in the Soviet Union, and sociologist of science Robert K. Merton, writing in the journal *Philosophy of Science*, showed how government interference corrupting scientific practice in Nazi Germany—in a famous article published, not recently, but, presciently, in 1938.³ Evangelicals of all people ought to be particularly sensitive to how government sponsorship of scientific orthodoxies can corrupt the scientific process, for we have observed it for generations now in the conflict between creation and

²Patrick J. Michaels, *Sound and Fury: The Science and Politics of Global Warming* (Washington: Cato Institute, 1992), chapter 10, “Political Science.”

³Robert K. Merton, “Science and the Social Order,” *Philosophy of Science* 5:3 (July 1938), 321-337.

evolution, in which creationists are flatly barred from publication in refereed journals, no matter how good their work is, if it threatens the Darwinian status quo. As just one example of that, consider what happened to Robert Gentry, the world's leading researcher on polonium halos in primordial granites and coal, whose work at the Oak Ridge National Laboratories generating articles published in numerous refereed journals had been supported for over a decade by National Science Foundation and other grants, but whose grants and job disappeared as soon as he testified on behalf of balanced education in creation and evolution in *McLean et al. v. Arkansas Board of Education*, in 1981. Regardless which side of the creation/evolution debate one embraces, it should be clear that such exclusion of good scientific work from journals impoverishes the scientific world, stifles debate, and deprives even the orthodoxies of stimulus to needed refinements.

Essex and McKittrick observe that “[d]espite our huge scientific achievements and technological advancements, we live in what the great 20th-century physicist Richard Feynman called an ‘unscientific age’ . . . because there has been a retreat from popular scientific learning . . .” It might be difficult to find a better illustration of that than megachurch pastor and now Christian Coalition president Joel Hunter’s claim, in explaining why he had endorsed the Evangelical Climate Initiative, “We need to do this regardless of what the science of it is. We need to take care of the earth and do what we can to stop the pollution and accumulation of greenhouse gases, because it’s just the right thing to do.”⁴ Yet the ECI’s “Call to Action” itself said, “everything hinges on the scientific data.” Likewise, I was stunned to hear the ECI’s main writer, David Gushee, tell me just before he and I debated this topic at Union University October 30, that his studies in preparation for the debate had shown him that the scientific issues were far more nuanced than he’d realized—something one wishes he had discovered *before* he penned the urgent claims of the “Call to Action.”

Essex and McKittrick go on to outline some of how things go wrong in politicized science. The mass media bear a share of the blame. “Richard Feynman describes what an encounter with a reporter is often like: ‘. . . when it comes to science, for some reason or another, they [reporters] will pat me on the head and explain to dopey me that dopey people aren’t going to understand it because he, dope, can’t understand it,” and consequently journalists adopt what they call the “grandmother test”: “Unless ‘a grandmother’ would understand the story and want to read it, it won’t be printed. [Essex’s] reply, that he knows some very bright grandmothers, fell on deaf ears.” Facing this problem, scientists often resort to metaphors: if the medium won’t convey the explanation of the real thing, give it a substitute that is more or less similar, like calling the effect of some gases on atmospheric temperature the “greenhouse effect” when in fact it works in a completely different way. (Greenhouses trap heat by preventing *convection* of heated air from inside to outside the greenhouse. So-called greenhouse gases affect not convection but *radiation* of heat, and the two simply do not work in the same way.)

The price of using the metaphors is twofold: “derailing public understanding of science” and suggesting that things are so simple that basic research doesn’t need to continue. “Why do we need to spend money on complex climate models and arcane theories if the climate problem is so simple?”

⁴Mark Bergin, “Greener Than Thou,” *World*, April 22, 2006, online at <http://www.worldmag.com/articles/11745>.

It's hot in a greenhouse, isn't it? Why didn't you scientists get to the point from the beginning? The point of reaching out to explain was to show the public that the scientific thinking matters. What we get instead is the opposite conclusion, because simpler metaphors seem to dispense with all the scientific fuss." The result is often the public perception of "certainty" or "consensus" among scientists—what Essex and McKitrick call "official science"—when there really isn't any. When politicians and their staffers responsible for allocating public funds to research come to believe in the "official science," funding for research that furthers it balloons, while funding for research that challenges it shrinks. But not just politicians are susceptible to such group think; so are editors of major scientific journals. An editorial in *Nature* denounced critics of CHIGW for "unscrupulous determination to deny the facts," called them stooges of industry without proper scientific credentials, and added:

Right from the outset, the approach of certain industrial lobby groups in the United States has been to resist, resist and resist again the mounting evidence that the consumption of fossil fuels is producing emissions that change the makeup of the atmosphere and may endanger the future of the planet. The industry groups in question are accustomed to the untrammelled purchase of political power in the United States and have consistently sought to distort the climate change debate for their own purposes.

To this end, they have championed specious scientific findings and worked to establish a bogus scientific debate between their own "experts"—many of whom are not even atmospheric scientists—and the consensus view of climate researchers. In doing this, they have deliberately set out to take maximum advantage of media gullibility, ensuring that stories on the problem include both 'sides' of the debate.⁵

Such *ad hominem* is hardly worthy of scientific discourse. One wonders how *Nature* would respond to the president of the sea level commission of the International Union for Quaternary Research, Nils Axel Mörner, who in reviewing the IPCC's chapter on sea level pointed out that not one of the thirty-three scientists who contributed to it was an expert on sea level rise, adding that the sea level experts with INQUA "would never give these statements, figures and interpretations" and that the IPCC's chapter was "a very inferior product" that substituted model results for the empirical data, which conflicted with the modelers' expectations.⁶ But even more important than these specifics is the impact of such editorializing in scientific journals on scientific discourse. Essex and McKitrick comment,

Imagine now that you are a scientist who has done some work that is not very supportive of global warming. Would you send your manuscript to *Nature* for their decision to publish? Of course not. The editors have stated in black and white what they think of such work—a brazen flouting of the institutional impartiality essential to the health of normal science. . . .

⁵*Nature*, July 12, 2001, 103, cited in Essex and McKitrick, *Taken By Storm*, 32-33.

⁶Cambridge Conference Correspondence, Nils Axel Mörner to Benny J. Peiser, April 27, 2001, online at <http://abob.libs.uga.edu/bobk/ccc/cc042701.html>.

. . . Before long, someone from the [IPCC] will note that there haven't been many papers challenging the Doctrine in a prestigious journal like *Nature* lately, which will then be adduced as further evidence of the high level of scientific certainty on the matter.⁷

Further, government agencies involved in such scientific projects frame their grant offers in terms that prejudice the results of research. Thus, for example, the Canadian government, under a research program called the Climate Change Action Fund, invited various research projects, all “intended to support early actions to reduce greenhouse gas emissions” and to “increase understanding of the benefits of the Kyoto Protocol.” As Essex and McKittrick point out, “That the gases are harmful and need to be reduced is beyond discussion. The only purpose of the science now is to advise on how to do it.” Researchers whose findings might undermine those predetermined conclusions need not apply—and so will not get funding. Likewise, the U.S. government regularly announces grants available for climate change research with words like these: “Reviewers will consider the significance of the threat posed by climate change and variability, on (a) water quality, and/or (b) aquatic ecosystems and the importance of the threatened resource.”⁸ Should anyone who thinks climate change might be *beneficial* bother to apply? Obviously not.

For just such reasons “the majority of regular scientists [whom Essex and McKittrick contrast with “official” scientists] in the world want nothing to do with this debate anymore. They are keeping their heads down and dropping out.”⁹

I could go into much more detail explaining the perversities of politicized science (and, for that matter, economics) that are epidemic to environmental, and especially climate change, research, but time does not permit. Those who want to learn more may read Essex and McKittrick’s book—which is a sheer delight simply for the elegance of its scientific pedagogy, regardless what one thinks of their views on climate change.

Unwarranted Appeal to Scientific Consensus

Reflecting popular opinion, the ECI claimed, “Since 1995 *there has been general agreement* [emphasis added] among those in the scientific community most seriously engaged with this issue that climate change is happening and is being caused mainly by human activities” But there are problems with this claim.

First, unlike politics, but like truth, science is not a matter of consensus but of data and valid arguments. Second, as Thomas Kuhn so famously pointed out in *The Structure of Scientific Revolutions*, great advances in science, often involving major paradigm shifts, occur when small minorities patiently—and often in the face of withering opposition—point out anomalies in the data and inadequacies in the reigning explanatory paradigms until their number and weight become so large

⁷Essex and McKittrick, *Taken By Storm*, 33.

⁸Cited in Essex and McKittrick, *Taken By Storm*, 49.

⁹Essex and McKittrick, *Taken By Storm*, 50, 51.

as to require a wholesale paradigm shift, and what once was a minority view becomes a new majority view. Indeed, skepticism is essential to science, as Merton pointed out: “Most institutions demand unqualified faith; but the institution of science makes skepticism a virtue”¹⁰—though in today’s discourse, “climate skeptic” has become an insult.

Third, the popular belief that there is such a consensus is dubious at best. In 2004 *Science* published the results of a study by Naomi Oreskes claiming that “without substantial disagreement, scientists find human activities are heating the earth’s surface.”¹¹ Global warming alarmists seized on that as proof of the overwhelming consensus they had claimed since the late 1980s. But an attempt at replicating the study both found that she had made serious mistakes in handling data and, after re-examining the data, reached contrary conclusions. Oreskes claimed that an analysis of 928 abstracts in the ISI database containing the phrase “climate change” proved the alleged consensus. It turned out that she had searched the database using *three* keywords (“global climate change”) instead of the *two* (“climate change”) she reported—reducing the search results by an order of magnitude. Searching just on “climate change” instead found almost 12,000 articles in the same database. Excluded from Oreskes’s list were “countless research papers that show that global temperatures were similar or even higher during the Holocene Climate Optimum and the Medieval Warm Period when atmospheric CO₂ levels were much lower than today; that solar variability is a key driver of recent climate change; and that climate modeling is highly uncertain.” Further, even using the three key words she actually used, “global climate change,” brought up not 928 but 1,247 documents, of which 1,117 included abstracts. Of those

- only 1 percent explicitly endorsed what Oreskes called the “consensus view”;
- 29 percent implicitly accepted it “but mainly focus[ed] on impact assessments of envisaged global climate change”;
- 3 percent “reject[ed] or doubt[ed] the view that human activities are the main drivers of the ‘the [sic] observed warming over the last 50 years’”;
- 4 percent focused “on natural factors of global climate change”; and
- 42 percent did “not include any direct or indirect link or reference to human activities, CO₂ or greenhouse gas emissions, let alone anthropogenic forcing of recent climate change.”¹²

¹⁰Robert K. Merton, “Science and the Social Order,” *Philosophy of Science* 5:3 (July 1938), 321-337, at 334.

¹¹Naomi Oreskes, “The scientific consensus on climate change,” *Science*, vol. 306, issue 5702 (December 3, 2004), 1686, at <http://www.sciencemag.org/cgi/content/full/306/5702/1686>.

¹²Benny J. Peiser, Letter to *Science*, January 4, 2005, submission ID: 56001. *Science* Associate Letters Editor Etta Kavanagh eventually decided against publishing the letter, or the shortened version of it provided at her request by Peiser, not because it was flawed but because “the basic points of your letter have already been widely dispersed over the internet” (e-mail from Etta Kavanagh to Benny Peiser, April 13, 2005). Peiser, a scientist at Liverpool John Moores University, replied: “As far as I am aware, neither the details nor the results of my analysis have been cited anywhere. In any case, don’t you feel that SCIENCE has an obligation to your readers to correct manifest errors? After all, these

So the strongest evidence for such a consensus turned out to be badly mistaken.

But there is also evidence *against* such a consensus. Since 1998 over 19,700 scientists have signed a petition saying, “There is no convincing scientific evidence that human release of carbon dioxide, methane, or other greenhouse gasses is causing or will, in the foreseeable future, cause catastrophic heating of the Earth’s atmosphere and disruption of the Earth’s climate. Moreover, there is substantial scientific evidence that increases in atmospheric carbon dioxide produce many beneficial effects upon the natural plant and animal environments of the Earth.” The signers include “2,660 physicists, geophysicists, climatologists, meteorologists, oceanographers, and environmental scientists who are especially well qualified to evaluate the effects of carbon dioxide on the Earth’s atmosphere and climate” and “5,017 scientists whose fields of specialization in chemistry, biochemistry, biology, and other life sciences make them especially well qualified to evaluate the effects of carbon dioxide on the Earth’s plant and animal life.” Dr. Art Robinson, an evangelical scientist who managed the project and keeps the signature list up to date, reports that additional scientists continue to sign the petition regularly, and almost none have removed their signatures in the nine years the petition has been in existence.¹³

On April 6, 2006, sixty well-qualified scientists working in the field of climate change sent an open letter to Canadian Prime Minister Stephen Harper, saying, “Observational evidence does not support today’s computer climate models, so there is little reason to trust model predictions of the future.” The scientists went on to reject the vision of catastrophic human-induced global warming and oppose the Kyoto Protocol.¹⁴ Shortly afterward a group of leading New Zealand climatologists and meteorologists skeptical of catastrophic human-induced global warming formed The New Zealand Climate Science Coalition.¹⁵ And on April 20, 2006, the British Broadcasting Corporation aired a radio program, “Overselling Climate Change,” in which many scientists, including those who believe global warming is a serious problem, decried exaggerated claims about it that undermine confidence in science.¹⁶ As Lindzen testified,

errors continue to be employed by activists, journalists and science organizations Are you not aware that most observers know only too well that there is absolutely *no* consensus within the scientific community about global warming science?” He went on to cite a survey of “some 500 climatologists [that] found that ‘a quarter of respondents still question whether human activity is responsible for the most recent climatic changes,’ and other evidence. Peiser, e-mail to Kavanagh, April 14, 2005. The whole correspondence, including much more evidence of the lack of scientific consensus on anthropogenic global warming, is online at www.staff.livjm.ac.uk/spsbpeis/Scienceletter.htm.

¹³See the Oregon Petition Project at <http://www.oism.org/pproject/s33p37.htm>. For a complete list of signers, separate lists of those with specialized qualifications, and refutation of attempts to discredit the Petition, see <http://www.oism.org/pproject/s33p357.htm>. Similarly, since 1995 over 1,500 topic-qualified scientists have signed the Leipzig Declaration opposing the Kyoto Protocol (<http://www.sepp.org/leipzig.html>). Forty-seven topic-qualified scientists who reject the hypothesis of catastrophic human-induced global warming are listed at http://www.envirotruth.org/myth_experts.cfm, complete with contact information and notes on their subjects of expertise.

¹⁴<http://www.canada.com/components/print.aspx?id=3711460e-bd5a-475d-a6be-4db87559d605>.

¹⁵<http://www.climate-science.org.nz/Index.php>. For a news report on it, see http://www.nzherald.co.nz/section/story.cfm?c_id=1&ObjectID=10379768.

¹⁶“Overselling Climate Change,” audio online at <http://www.bbc.co.uk/radio4/thebattleforinfluence/pip/abkim/>.

Indeed, the whole issue of consensus and skeptics is a bit of a red herring. If, as the news media regularly report, global warming is the increase in temperature caused by man's emissions of CO₂ that will give rise to rising sea levels, floods, droughts, weather extremes of all sorts, plagues, species elimination, and so on, then it is safe to say that global warming consists in so many aspects, that widespread agreement on all of them would be suspect *ab initio*. If it truly existed, it would be evidence of a thoroughly debased field. In truth, neither the full text of the IPCC documents nor even the summaries claim any such agreement. Those who insist that the science is settled should be required to state exactly what science they feel is settled.¹⁷

The idea of scientific consensus on anthropogenic global warming is an illusion.¹⁸

Neglect of Comparative Cost/Benefit Analysis

Responsible discussion of a proposed policy to deal with any problem requires comparing its costs and benefits with those of alternative policies to deal not just with the same problem but also with other problems. That kind of study has been undertaken by the Copenhagen Consensus. In that process, commissioned studies by specialist authors and respondents were submitted to eight expert economists, including three Nobel Laureates, who then prioritized major problems facing mankind and alternative solutions to them and then ranked the solutions from most to least effective. The alternatives were divided into four categories—Very Good, Good, Fair, and Bad—and listed in descending order of cost effectiveness (how many people would experience how much benefit at what cost) within each category. Of the seventeen options, the *three worst* all had to do with attempting to reduce global warming.¹⁹

When I debated ECI main author David Gushee October 30, we addressed three resolutions, all of which he was to affirm and I was to deny: first, that human emissions of carbon dioxide and other greenhouse gases are the cause of most (i.e., more than half) of the global warming that has occurred in the past thirty years and is projected to occur in the remainder of this century; second, that human-induced global warming is likely to have catastrophic consequences for humanity and the rest of the biosphere if not mitigated; and third, that mandatory reductions in CO₂ emissions would mitigate human-induced global warming sufficiently to make its consequences non-catastrophic at a cost that

¹⁷“Testimony of Richard S. Lindzen before the Senate Environment and Public Works Committee on 2 May 2001,” online at http://epw.senate.gov/107th/lin_0502.htm.

¹⁸It is ironic that many supporters of the ECI rely heavily on the claim of scientific consensus to buttress their view of global warming. The role of the IPCC in climate studies is similar to that of the Jesus Seminar in New Testament scholarship in the 1990s and Darwinism for the past century. It is a self-selecting group with a narrow point of view favored by the political left and mainstream media, and it tends to respond to critics with derision or dismissal rather than collegial engagement. Evangelicals have been quick to criticize the process behind the Jesus Seminar and Darwinism. They have resisted the idea that complex scholarly issues could be decided by a majority vote among club members. Those same critical instincts need to be kept in place when evaluating claims of consensus on global warming.

¹⁹Bjørn Lomborg, *Global Crises, Global Solutions* (Cambridge: Cambridge University Press, 2004), 606; <http://www.copenhagenconsensus.com/Default.aspx?ID=675>.

would be preferable to the costs of adaptation. Dr. Gushee stood by and defended the first; he reduced the second and defended the result; and he partially conceded the third, acknowledging that he was beginning to see that adaptation might be the more promising response to global warming than mitigation. That is significant, because it is the point at which we actually must make choices. The first two resolutions asked only what has happened and why; the third asked what we must do about it.

The ECI had claimed, “The basic task for all of the world's inhabitants is to find ways now to begin to reduce the carbon dioxide emissions from the burning of fossil fuels that are the primary cause of human-induced climate change.” That is, in response to climate change, the ECI opted for mitigation. But at our debate Gushee acknowledged that this might not be so. He was right to do so, and it appears that he had simply not thought seriously about the other option—adaptation—before preparing for the debate.

Failure to think about optional responses and to assess them by comparative cost/benefit analysis is a serious mistake when confronting any problem. It is particularly serious when confronting a problem alleged to be global in scope and catastrophic in degree, for the magnitude of response must therefore be very large, and consequently the cost of error will also be very large. Let me specify a little bit.

The costs of significant reductions in CO₂ emissions will be enormous. With no emissions trading, the cost of compliance with just the first round of the Kyoto Protocol to reduce CO₂ emissions, to the United States, the European Union, Japan, Canada, Australia, and New Zealand (the so-called “Annex I” countries) alone, in the year 2010 alone, would be around \$350 billion; with emissions trading within two blocks of that group, it would be about \$240 billion; with unrestricted trading within all Annex I countries, slightly over \$150 billion; and with global trading, about \$75 billion. The worldwide cost would likely be from \$200 billion to \$1 trillion *every year* from 2001 through 2050.²⁰ For that period, that means combined costs of \$10 trillion to \$50 trillion.

The temperature reductions purchased by those costs would not prevent any catastrophe. According to climatologist, global warming alarmist, and Kyoto supporter T. M. L. Wigley, “Global mean reductions [in warming by 2100] for the three scenarios [considered by the IPCC] are small, 0.08-0.28°C” (i.e., 0.14-0.5° F).²¹ Others are not so optimistic. University of Virginia climatologist Patrick Michaels estimated that “the Kyoto Protocol . . . , if adhered to by every signatory (including

²⁰Bjørn Lomborg, “Should we implement the Kyoto Protocol? No—We risk burdening the global community with a cost much higher than that of global warming,” at www.spiked-online.com/articles/00000002D2C3.htm; Bjørn Lomborg, *Skeptical Environmentalist*, 303, Figure 158, citing John P. Weyant and Jennifer N. Hill, “Introduction and overview,” *The Energy Journal*, Kyoto Special Issue [1999], vii-xliv, at xxxiii-xxxiv, and Bureau of Economic Analysis, *Price Indexes for Gross Domestic Product and Gross Domestic Purchases* (www.bea.doc.gov/bea/dn/st3.csv) and *Selected NIPA Tables showing advance estimates for the fourth quarter of 2000* (www.bea.doc.gov/bea/dn/dpga.txt), both 2001.

²¹T. M. L. Wigley, “The Kyoto Protocol: CO₂, CH₄ and Climate Implications,” *Geophysical Research Letters*, vol. 25 (July 1998), 2285-88, at 2287

the United States)[,] would only reduce surface temperature by 0.07° C [0.13° F] in fifty years.”²² In either case, the temperature reduction is so tiny as to disappear in annual fluctuation and have no significant impact on consequences.

As a result, Kyoto’s supporters also say it is just a first step—that we shall need many more such treaties.²³ National Center for Atmospheric Research scientist Jerry Mahlman says elimination of human-induced warming would require “forty successful Kyotos.”²⁴ Others say thirty.²⁵ That forces us back to counting costs again. Even assuming (contrary to basic economic theory) that each new step was no more costly than the first, this would yield annual costs for twenty “Kyotos”—not the forty Mahlman suggested, or even the thirty others suggested—*annual* costs for twenty “Kyotos” of \$4 trillion to \$20 trillion, or about 9 percent to 45 percent of present annual gross world product, and costs for the full fifty years of \$200 trillion to \$1 quadrillion. But because the early steps will address the emission reductions most easily and least expensively achieved, each added step will be more costly than the last, so those figures are actually too low.²⁶

Other investments of the costs of mitigation would be of much greater benefit. It would cost a one-time investment of only about \$200 billion to provide clean drinking water and sanitation to everyone in the world who doesn’t already have them.²⁷ The economic principle of opportunity cost tells us that what we spend on one thing we can’t spend on another. If we spend \$200 billion to reduce carbon emissions, that money isn’t available to spend to provide drinking water and sanitation to the world’s poor. But providing those two simple services would prevent, according to the World Health Organization, two to three million premature deaths and about half a billion serious illnesses every year.

What the world’s poor most need is not the hypothetical and probably never-to-be-achieved reduction of future global warming by a tiny fraction of a degree but economic development to make

²²Patrick J. Michaels, *Meltdown: The Predictable Distortion of Global Warming by Scientists, Politicians, and the Media* (Washington: Cato Institute, 2004), 19.

²³Wigley writes: “For B=CONST, the expected global-mean warming to 2100 is reduced by [Kyoto compliance by] 0.10-0.21° C depending on the climate sensitivity (close to 7% in all cases). For NOMORE, the reduction in warming is 4%, while for the B= -1% case it is approximately 14%. The rate of slow-down in temperature rise is small, with no sign of any approach to climate stabilization. *The Protocol, therefore, . . . can be considered only as a first and relatively small step towards stabilizing the climate*” (Wigley, “The Kyoto Protocol,” 2287-88, emphasis added).

²⁴Tim Appenzeller and Dennis Dimick, “The Heat Is On,” *National Geographic*, September 2004, 11.

²⁵David Malakoff, “Thirty Kyotos Needed to Control Warming,” *Science*, December 19, 1997, 2048.

²⁶As MIT climatologist Richard Lindzen put it, “Should a catastrophic scenario prove correct, Kyoto will not prevent it. If we view Kyoto as an insurance policy, it is a policy where the premium appears to exceed the potential damages, and where the coverage extends to only a small fraction of the potential damages. Does anyone really want this? I suspect not.” “Testimony of Richard S. Lindzen before the Senate Environment and Public Works Committee on 2 May 2001,” online at http://epw.senate.gov/107th/lin_0502.htm.

²⁷Paul Driessen, “Global Warming and the Poor,” in *An Examination of the Scientific, Ethical, and Theological Implications of Climate Change Policy*, by Roy Spencer, Paul Driessen, and E. Calvin Beisner (Burke, VA: Interfaith Stewardship Alliance, 2005), 8; citing Lomborg, “Should we implement the Kyoto Protocol? No—We risk burdening the global community with a cost much higher than that of global warming,” at www.spiked-online.com/articles/00000002D2C3.htm.

affordable to them the amenities we take for granted. Affordable, plentiful energy is an indispensable condition of that economic development. But the forced carbon dioxide emission reductions promoted by the ECI would push energy prices upward, making everything produced and transported with energy—which is literally *everything* our economies produce—more expensive. Thus the policy would prolong the suffering of the world’s poor, who, for instance, are forced to use wood and dried dung as their principal fuels for cooking and heating—causing indoor air pollution that the World Health Organization estimates causes some 1.6 million premature deaths, mostly among women and children, every year.²⁸ Providing electricity to their homes instead would help not only them but also other species, for they would then no longer need to speed deforestation and habitat loss in their quest for firewood. Likewise, investing to improve their crop yields would not only reduce their suffering from hunger but also reduce the need for crop land, again reducing habitat destruction and thus pressure on species survival.

Perhaps the most ironic element of the ECI’s “Call to Action” appears in its statement that “as a society and as individuals we must also help the poor adapt to the significant harm that global warming will cause.” The cure it prescribes will rob the poor of the very thing they most need if they are to be able to adapt, not just to catastrophic global warming but to *any* future catastrophe: wealth.²⁹

Finally, the costs of adaptation to warming would be less than those of ineffective mitigation. As renowned environment and development economist Indur M. Goklany testified to the prestigious Stern Commission of the English Parliament, “the benefits associated with halting climate change—and more—can be obtained at an annual cost of \$10–\$20 billion through efforts taken now [instead] to enhance adaptive capacity through activities focused on reducing vulnerabilities to climate sensitive problems that are urgent today and would, moreover, be exacerbated by climate change.” Further, “Studies by the UN Millennium Project and the IPCC indicate that an additional \$150 billion per year could reduce global malaria by 75 percent; hunger, poverty, and lack of access to safe water and sanitation by 50 percent (each); [and] child and maternal mortality by at least 66 percent; [to] provide universal primary education; and [to] reverse growth in AIDS/HIV.” “For approximately the same cost as the Kyoto Protocol, which will at best have a marginal impact in terms of reducing risks from climate change, the overall reduction in risks from climate-sensitive hazards using such a ‘broad development’ approach will—through 2085 at least—substantially exceed what can be obtained through a complete halt in climate change.”³⁰

²⁸The Intermediate Technology Development Group, citing United Nations and International Energy Agency data. Smoke from wood and dung fires thus kills more people than malaria and almost as many as unsafe drinking water and lack of sanitation. Most of its victims are women and children. Alex Kirby, “Indoor smoke ‘kills millions,’” BBC News, November 28, 2003, online at <http://news.bbc.co.uk/go/pr/fr/-/2/hi/science/nature/3244214.stm>.

²⁹I. M. Goklany, “Integrated Strategies to Reduce Vulnerability and Advance Adaptation, Mitigation, and Sustainable Development,” forthcoming in *Mitigation and Adaptation Strategies for Global Change* (2006).

³⁰Indur M. Goklany: “Comments to the Stern Review on the Economics of Climate Change,” March 17, 2006, at <http://members.cox.net/goklany/Stern%202.pdf>. See also by Goklany: “Evidence for the Stern Review on the Economics of Climate Change,” December 9, 2005, <http://members.cox.net/goklany/Goklany-%20Evidence%20for%20Stern%20Review.pdf>; “Integrated Strategies to Reduce Vulnerability and Advance Adaptation, Mitigation, and Sustainable Development,”

The Unintended Consequences of Political Alliances

I conclude with a point at which I began: the unintended consequences of political alliances. Evangelicals who supported the Evangelical Climate Initiative mostly call themselves social, political, and economic conservatives (with some exceptions, like Jim Wallis and Tony Campolo). Most certainly did not anticipate that their pressure to raise environmentalism, and particularly global warming, to the top of the political agenda would contribute, whether heavily or slightly, to the turnover of control of Congress to the Democratic Party. But it seems to have done so, and now progress on issues about which, presumably, those very same evangelicals feel much more passion—abortion, infanticide, euthanasia, assisted suicide, marriage protection, human trafficking, pornography and other sexual exploitation, and so on—will be severely hampered for at least the next two years. Who can expect now, to mention just one consideration, that any pro-life judicial appointments, at *any* level but especially at the appeal and Supreme Court levels, will survive a Democratically controlled Senate Judiciary Committee? I am afraid that in their rush to elevate concerns about global warming, some evangelicals fell prey to a strategy to split their vote.

That strategy is not just imaginary. It was evident in these remarks by one prominent journalist to the Society of Environmental Journalists on October 1, 2005:

The President's contempt for science—for evidence that mounts every day—is mind boggling. Here is a man who was quick to launch a 'preventative war' against Iraq on faulty intelligence and premature judgment but who refuses to take preventive action against a truly global menace about which the scientific evidence is overwhelming.

Unfortunately, the people in his core constituency who could most effectively call on this President to lead are largely silent. I mean the Christian conservatives who gave President Bush 15 million votes in 2000 and maybe 20 million in 2004. Without their support, the transnational corporations who now control Washington would fail to have the votes needed to eviscerate our environmental protections.

Some of these Christian conservatives are implacable. They have given their proxies to the televangelists, pastors, and preachers who have signed on with the Republican Party to turn their faith into a political religion, a weapon of partisan conflict.

But millions of these people believe they are here on earth to serve a higher moral power, not a partisan agenda. They overwhelmingly respond to natural disasters like last year's tsunami or the AIDS crisis in Africa by opening their hearts and wallets wide. Alas, although many of them may believe Christians have a moral obligation to protect God's creation, most

http://members.cox.net/igoklany/Goklany-Integrating_A&M_preprint.pdf; "A Climate Policy for the Short and Medium Term: Stabilization or Adaptation?", *Energy & Environment* 16:3&4 (2005), http://members.cox.net/igoklany/EEv16_Stab_or_Adaptation.pdf; "Evidence to the House of Lords Select Committee on Economic Affairs on Aspects of the Economics of Climate Change," *Energy & Environment* 16:3&4 (2005), http://members.cox.net/igoklany/EEv16-3+4_GoklanyHoL_Evidence.pdf.

remain uninformed about the true scope of the environmental crisis and the role of the Republican Party in it. As a result, they typically vote their consciences on social issues rather than environmental ones.

Listen to this anguished moral missive from Joel Gillespie, a conservative Christian who recently wrote to *On Earth* magazine: “I’ll admit that when I pushed the button for President Bush, I did so with some sadness, given his dismal environmental record. But many of us who love the natural world . . . feel we face an almost impossible either-or-predicament. Voting for pro-environmental candidates usually means voting for a package of other policies that we will never swallow. We’re forced to choose unborn babies or endangered species, traditional marriage or habitat protection, cleaning up the smut that comes across the airwaves or the smut that fouls our air. And the fact that we are forced to make such choices has harmed the natural environment and the special places we love and cherish.”

Many evangelical Christians face Gillespie’s dilemma. They need to be challenged to look more closely at their moral choices—to consider whether it is possible to be pro-life while also being anti-earth. If you believe uncompromisingly in the right of every baby to be born safely into this world, can you at the same time abandon the future of that child, allowing its health and safety to be compromised by a President who gives big corporations license to poison our bodies and destroy our climate?³¹

But not only elective politics is in view here. Leaders of the Evangelical Climate Initiative ought to have thought long and hard about why the Hewlett Foundation, a major worldwide donor to family planning programs of which elective abortion is a centerpiece, would want to give them \$450,000 to promote their global warming message.³² The reason is that Hewlett sees population growth as the chief threat to the environment and the ultimate driver of global warming, and so it sees population control, including through abortion, as the ultimate preventative measure. Might this not have suggested to these evangelicals that they were unintentionally being used by others with a different agenda?

Scientific orthodoxies and politicized science, like those encountered in the global warming debate, make for dangerous waters, and evangelicals who want to swim in them should look carefully for rocks and riptides and be well prepared before they dive in.

³¹Bill Moyers, “A Question for Journalists: How Do We Cover Penguins and the Politics of Denial?”, keynote address to the annual convention of the Society of Environmental Journalists, Austin, Texas, October 1, 2005; at <http://www.sej.org/confer/austin/PenguinsandthePoliticsofDenial.pdf>.

³²See “From Climate Control to Population Control: Troubling Background on the ‘Evangelical Climate Initiative,’” a joint paper of the Institute on Religion and Democracy and the Acton Institute for the Study of Religion and Liberty, <http://www.ird-renew.org/atf/cf/{8548C466-7ECE-4AF1-B844-49C289CE5165}/FROM%20CLIMATE%20CONTROL%20TO%20POPULATION%20CONTROL%20UPDATE.PDF>.