

THINKPROGRESS

Stories tagged with “Geoengineering”

CLIMATE PROGRESS

Science Sunday: “The economics (or lack thereof) of aerosol geoengineering”

By **Steve Romm** on Apr 17, 2011 at 5:13 pm

Is the aerosol strategy intergenerationally unethical?



The **Gist**: **Putting reflective aerosols high into the atmosphere to slow climate change is too risky and not cost effective.**

That’s Climate Central [describing](#) the core conclusions of the *Climatic Change* [paper](#) “The economics (or lack thereof) of aerosol geoengineering,” (full paper [online here](#)).

This study would seem to support the view that if you don’t do aggressive greenhouse mitigation starting now, you pretty much take aerosol geo-engineering off the table as a very limited (but still dubious) add-on strategy “” as even geo-engineering experts like climatologist Ken Caldeira have [made clear](#).

What’s nice about this study is that it doesn’t just do an economic analysis, but also discusses intergenerational ethics. I’ll excerpt the study itself at length — after the full Climate Central summary:

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CLIMATE PROGRESS

April 9 Science News: Key 'geoengineering' strategy may yield warming, not cooling

By Joe Romm on Apr 10, 2011 at 1:25 pm

Whitening clouds by spraying them with seawater, proposed as a "technical fix" for climate change, could do more harm than good, according to research.

Whiter clouds reflect more solar energy back into space, cooling the Earth.

But a study presented at the European Geosciences Union meeting found that using water droplets of the wrong size would lead to warming, not cooling.

Doh!

As science advisor John Holdren resasserted in 2009 of strategies such as space mirrors or aerosol injection, **"The 'geo-engineering' approaches considered so far appear to be afflicted with some combination of high costs, low leverage, and a high likelihood of serious side effects."**

Two major problems for most of the 'hard' geoengineering strategies — aka solar radiation management aka smoke and mirrors — are that they still require aggressive mitigation, and they must meet a very strong test of science.

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GREEN

USA Today's Dan Vergano Depicts Geoengineering As 'One Of Many Options In Addressing Climate Change'

By Prad Johnson on Feb 25, 2011 at 1:00 pm

USA Today's excellent science reporter Dan Vergano wrote an extensive overview of geoengineering, but failed to clearly explain the risk of intentionally poisoning our atmosphere to mitigate the effects of global warming pollution. Geoengineering describes a wide array of concepts to alter how planetary systems deal with greenhouse gas pollution, but Vergano fails to clearly distinguish reasonable efforts to reduce greenhouse gas concentrations from radical experiments to transform the planet. He cites several interviewees who depict extreme geoengineering in colorless, amoral economic policy language:

"We're moving into a different kind of world," says environmental economist Scott Barrett of Columbia University. "Better we **turn to asking if 'geoengineering' could work**, than waiting until it becomes a necessity."

“That’s where geoengineering comes in,” says international relations expert David Victor of the University of California-San Diego. “Research into geoengineering creates **another option** for the public.”

“Geoengineering is no longer a taboo topic at scientific meetings. They are looking at it as **one more policy prescription**,” says Science magazine reporter Eli Kintisch, author of *Hack the Planet: Science’s Best Hope — Or Worst Nightmare — For Averting Climate Catastrophe*. “But it is yet to become a household word.”

Although Vergano attempts to describe the risks of, say, pumping millions of tons of sulfur dioxide into the stratosphere (“consigning hundreds of millions of the poorest people on the planet in Africa and Asia to recurring drought”), he has failed to accurately interpret the scientific literature. The only risks he has depicted — ones that involve the potential deaths of millions if not billions of people — are the “known” ones, the ones easily modeled by imperfect simulations of experiments never conducted before by humanity. The risks of geoengineering, particularly the ones that emulate the effects of a nuclear winter to dim the amount of sun reaching the earth, are practically unbounded. Depicting the known risks, as Vergano did, as the only risks of geoengineering, is astoundingly optimistic.

The only reason that serious climate scientists (other than [Dr. Strangelovian extremists](#)) are discussing geoengineering is that they fear the possibility of humanity’s extinction — or merely the utter collapse of human civilization — from unchecked fossil fuel pollution is significant enough to consider doomsday survival scenarios. “We should avoid geoengineering if possible,” Dr. Ken Caldeira, one of the climate scientists who has explored geoengineering scenarios, “but we need it in our toolbox [in case of catastrophe](#).”

UPDATE

At [Thoughts From Kansas](#), Josh Rosenau comments:

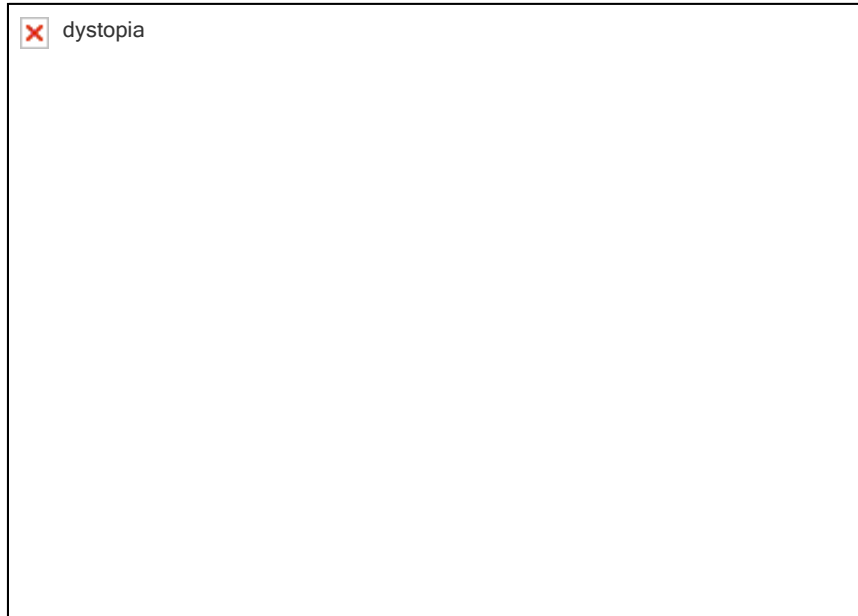
Simply put, there are plausible scenarios in which global temperatures could begin rising so fast that they could be impossible to stop. This could be because frozen methane begins leaking into the atmosphere, thus promoting more warming, or because ice melts and stops reflecting light back into space (allowing dark rocks to absorb more heat). Given how slowly society is moving towards carbon emission reductions, the only way to avert these catastrophic feedbacks might be a carefully planned and targeted phase of geoengineering, in concert with aggressive emissions reductions.

But by injecting geoengineering into the public discourse before we’ve set ourselves on that emissions-reducing course, journalists and scientists risk introducing confusion about what geoengineering can possibly do. At most, it’s a stopgap to cover the inevitable lags between emissions reductions and a decline in atmospheric carbon dioxide. On its own, it won’t stop global warming. Without emissions reductions, we’d be, as Vergano puts it elegantly “addicted to sky-borne sulfates to keep the cooling on track.” And that, too, would have harmful effects on the global climate and on life on earth, some predictable, and others that we can’t yet imagine.

CLIMATE PROGRESS

Caldeira calls Lomborgs vision a dystopic world out of a science fiction story

By **Joe Romm** on Nov 15, 2010 at 10:56 am



If you don't do aggressive greenhouse mitigation starting now, you pretty much take geo-engineering off the table as a very limited (but still dubious) add-on strategy.

Bjorn Lomborg has one thing right about messaging — if you just keep repeating your disinformation and long-debunked arguments over and over and over again, you can break through to the media and general public. This is doubly true because the debunkers usually get tired of repeating themselves first.

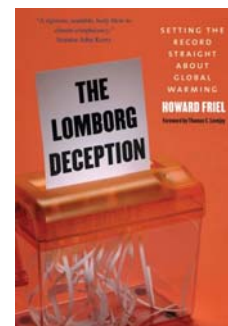
Now the discredited Dane has a documentary film out, “Cool It” pushing his favorite ‘solutions’ to global warming — R&D plus the (false) hope of geo-engineering — while repeating his fatally-wrong core message that under no circumstances should humanity start aggressive mitigation of carbon dioxide.

Few people have been as thoroughly debunked as Bjorn Lomborg (see [“The Bjorn Irrelevancy: Duke dean disses Danish delayer”](#) and [“Lomborg’s main argument has collapsed”](#)). Heck not only has the [trailer for his film](#) been debunked, there’s a whole book, [The Lomborg Deception](#), eviscerates his writing and even his [footnotes](#).

Lomborg’s view of geo-engineering in particular is almost completely backwards from what the science suggests.

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CLIMATE PROGRESS



Martin Bunzl on “the definitive killer objection to geoengineering as even a temporary fix”

By Joe Romm on Sep 27, 2010 at 4:20 pm



Solar radiation management (SRM) – aka ‘hard’ geo-engineering — is, literally, a smoke and mirrors solution to the dangers posed by unrestricted emissions of greenhouse gases,.

As science advisor John Holdren resasserted in 2009 of strategies such as space mirrors or aerosol injection, **“The ‘geo-engineering’ approaches considered so far appear to be afflicted with some combination of high costs, low leverage, and a high likelihood of serious side effects.”**

And, of course, those ‘solutions’ do nothing to stop the consequences of ocean acidification, which recent studies suggest will be devastating all by itself (see Geological Society: Acidifying oceans spell marine biological meltdown “by end of century”).

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CLIMATE PROGRESS

Lomborg flip-flop: “Climate change is undoubtedly one of the chief concerns facing the world today.”

By Joe Romm on Aug 31, 2010 at 1:43 pm

The one-time “Skeptical Environmentalist” now says, “man-made global warming exists” and “we have long moved on from any mainstream disagreements about the science of climate change.”

Climate ‘sceptic’ Bjørn Lomborg now believes global warming is one of world’s greatest threats

One of the world’s most prominent climate change sceptics has called for a \$100bn fund to fight the effects of global warming, after rethinking his views on the severity of the threat.

That’s the UK Telegraph’s [headline](#).

Bjørn Lomborg: the dissenting climate change voice who changed his tune

With his new book, Danish scientist Bjørn Lomborg has become an unlikely advocate for huge investment in fighting global warming....

That’s from the Guardian’s [headline](#).

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CLIMATE PROGRESS

Exclusive: Science reporter Eli Kintisch, excerpts his book, “Hack the Planet,” on carbon-eating cement

By Climate Guest Blogger on Mar 25, 2010 at 10:09 am

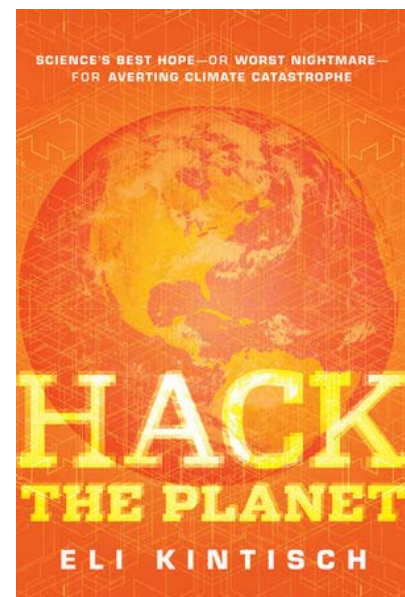
Science magazine reporter [Eli Kintisch](#), sent me a blog post based on the research he did on Calera company for his new book, “Hack the Planet.”

So startup Calera, who seeks to turn CO2 exhaust into limestone for “carbon negative” cement, has struck a \$15 million deal with coal giant Peabody. And Monday [you reported](#) on various issues facing the technology.

I thought I’d offer more: Harvard geochemist Dan Schrag says its CEO is “pulling numbers out of his a##.” And other independent experts have their doubts as to various aspects.

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CLIMATE PROGRESS



On the eve of landmark climate manipulation conference, chief sponsor moves to quell criticism

By Joe Romm on Mar 22, 2010 at 10:34 am

Sometimes blog posts have immediate impacts. On Thursday, March 18, I wrote a piece on the Climate Response Fund that reflected concerns raised to me by many leading climate experts: "[Exclusive: Chief sponsor of landmark climate manipulation conference maintains close financial ties to controversial geo-engineering company.](#)"

CRF's Board responded with a [statement](#) on Friday, specifically addressing these concerns:

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CLIMATE PROGRESS

Exclusive: Chief sponsor of landmark climate manipulation conference maintains close financial ties to controversial geo-engineering company

By Joe Romm on Mar 18, 2010 at 2:48 pm

Goodell: "Is this conference about advancing the science and governance of geoengineering or about advancing and raising the profile of the Climate Response Fund?"

[UPDATE: Sometimes blog posts have pretty immediate impacts -- see [here](#).]

I am not comfortable with the the idea that a meeting set up to create guidelines governing geoengineering field tests might be used to help raise funds for geoengineering field tests, without the informed consent of meeting participants. I am also concerned with possible conflicts of interest related to the profit motive.

That's from an e-mail that climatologist and geo-engineering expert Ken Caldeira sent me this week.

I had heard last week that Caldeira was not going to the star-studded "Asilomar International Conference on Climate Intervention Technologies" — the "Woodstock" of geo-engineering. I asked him why. I reprint his full email below, along with concerns raised to me by geo-engineering expert David Keith.

Frankly, **I think all of the conference attendees (and they include some of the biggest names in climate, [full list here](#)) need to ask themselves whether they are helping to legitimize — and thereby ultimately helping to raise funds for — a nonprofit that will not unequivocally forswear funding geo-engineering experiments, a nonprofit that is closely tied to the financing efforts of a for-profit company that has already started pursuing dubious geo-engineering schemes.**

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CLIMATE PROGRESS

Sole “Strategic Partner” of landmark geo-engineering conference is Australia’s “dirty coal” state of Victoria

By **Joe Romm** on Mar 15, 2010 at 7:27 pm

Sponsorship of “Asilomar International Conference on Climate Intervention Technologies” is as controversial as its subject matter

Climate Progress is beginning a multipart series on what has been called the “Woodstock” of geo-engineering. This historic but controversial event will take place March 22 – 26 in Asilomar, CA. Details can be found [here](#) on the website of the conference “developer,” Dr. Margaret Leinen of the Climate Response Fund.

I have been interviewing leading experts on geo-engineering about this conference, including journalist Jeff Goodell, author of the forthcoming book, *How to Cool the Planet*.

This conference proclaims its lofty goal “to develop norms and guidelines for controlled experimentation on climate engineering or intervention techniques.” That’s one reason why, as Goodell put it to me, it “needs to be purer than pure.” It appears to fail that test in a number of respects, as we will see.

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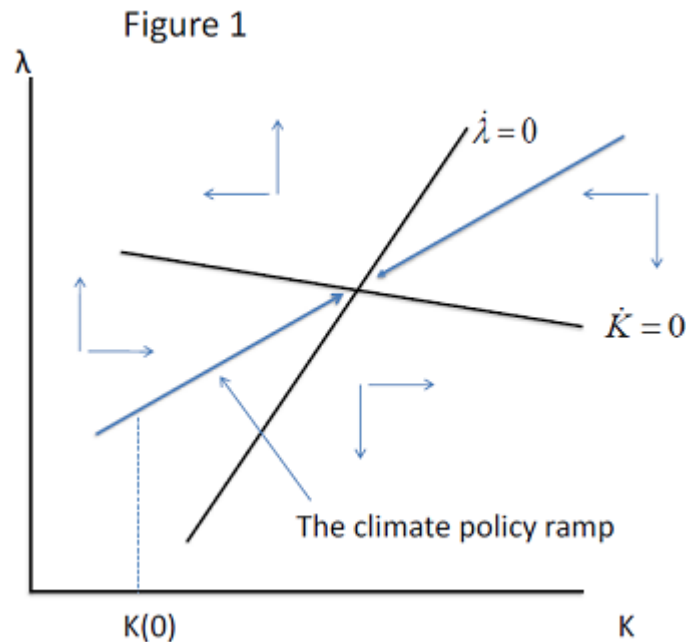
GREEN

The Gap Between Climate Science And Economics Is A Chasm

By **Prad Johnson** on Mar 11, 2010 at 4:25 pm

.../ does society seem incapable of grappling with the destructive threat of global warming? From the perspective of climate scientists, the question of whether fossil fuel pollution puts modern civilization in jeopardy is a solved problem. Now scientists are spending their efforts on observing the results of the global experiment, tracking just how the increase in climatic entropy disrupts the planet’s ecosystem, and arguing whether we’ve passed tipping points into runaway global warming (thus necessitating doomsday geo-engineering exercises) or whether there’s still time to limit the damage (to a few thousand species and a dozen low-GDP nations) by the complete elimination of fossil fuels within a few decades.

The consensus economic view, however, is profoundly different. Nobel Prize-winning economist Paul Krugman inadvertently shows the sorry state of the understanding by economists of global warming in a recent blog post, in which he writes down a “toy model that hopefully clarifies the issues” of climate policy:



See! The problem can be boiled down to three straight lines, intersecting at the optimal balance of economic and environmental impacts. This level of understanding is about as developed as recognizing that burning fossil fuels could heat up the atmosphere, which physicists realized in 1896, 114 years ago.

Unfortunately, Krugman’s toy is actually better than most economic thinking.

Business-as-usual projections used by the federal government, such as the Energy Information Administration, the Environmental Protection Agency, the Department of Labor, and the Congressional Budget Office, don’t take into account climate disruption, which comes in the form of temporary, regional catastrophes (a flood, storm, hurricane, heat wave, wildfire), widespread catastrophes (collapse of coral reefs and forests, decadal drought), and possibly global catastrophe (several feet of sea level rise, permanent El Nino, permafrost melt). The International Energy Agency has only begun to do so in its most recent world energy outlook.

Popular economic models for climate policy, such as Dr. William Nordhaus’s DICE model, use climate damage formulas that have no basis in reality, maxing out at 10% reductions in GDP under runaway global warming ten times what has already been experienced. Citing such models, Congressional Budget Office chief Doug Elmendorf testified that the U.S. economy would be “relatively insulated from climate effects” from 4-6°C warming — at least 500% more warming than present. His “pessimistic estimate” of the damages? Three percent of GDP.

Krugman also writes about the work of Harvard economist Martin Weitzman:

As for the welfare sensitivity: Marty Weitzman has managed to scare me, by pointing out that there’s a **pretty plausible case that a rise of 5 degrees C – which is no longer an**

outlandish prediction – would be utterly catastrophic. You don't have to be sure about this; just a significant probability is enough.

Climate scientists have come to the consensus that a rise of more than 2 degrees C — about three times present warming — would be utterly catastrophic, and repeatedly caution that even that threshold is not necessarily safe. It is frankly baffling that even the best economists studying climate policy have the fantasy that modern human civilization has a reasonable possibility of sustaining 5 degrees C of warming without suffering on an unprecedented scale.

There are beginning efforts by the federal government to at least include some assessment of the cost of carbon pollution in its analyses, using a “social cost of carbon” in new energy regulations. But even this crude mechanism isn't factored into policy where it's really needed, such as the Departments of Treasury and Defense.

That said, Paul Krugman is orders more brilliant than I can even fathom, and back-of-the-napkin calculations can be a powerful tool, if the scribbles are the result of a brilliant mind. For example, climate scientist Stephen Schneider praises the effectiveness of “simple simulations of complex models” in his excellent book “Science as a Contact Sport.” Schneider, by the way, has been considering the prospect of doomsday geoengineering since 1996.

UPDATE

In line with Krugman's thought experiment, The Economics for Equity and Environment Network describes how to reconfigure the DICE model assumptions to deliver results consistent with climate scientist recommendations:

The DICE default value for climate sensitivity is 3°C. The second parameter determines the effect of temperature increases on the economy. DICE assumes, on the basis of little or no evidence, that climate-related economic damages depend on the square of temperature increases. We explore the alternate assumptions of damages based on the cube, fourth, or fifth power of temperature increases. With the assumption of 6°C climate sensitivity and a damage exponent of 4 or 5, DICE recommends something close to the Hansen scenario: all carbon emissions are eliminated before the middle of this century; peak temperature increases are one degree or less; and atmospheric concentrations of CO2 are 360 ppm or less at the beginning of the next century.

UPDATE

,Economist James Barrett emails:

There are only really 2 lines in that graph. The third (the two sets of arrows pointing toward the intersection of the other two) is actually just an indicator of the dynamic path toward equilibrium.

Most of economics boils down to the weighing of costs and benefits in one way or another. It's the warp drive of economics. You can build as fancy a ship around it as you want, but buried in the middle is something doing this balancing. Krugman has stripped it down to it's barest elements and made it transparent, but it's the same basic reasoning that dates back to Adam Smith in 1776, or maybe Alfred Marshall in 1890.

All Krugman has done is to re-arrange the process of weighing costs and benefits in a way that makes more sense to him and is readily adaptable to two important variables, the passage of time and the difference between the stock of carbon in the atmosphere and the flow of carbon into the atmosphere. (I think inverting the capital accumulation decision is a pretty elegant way of doing this. Anyone who is facile with those models can use this easily. I wouldn't have done it this way, but I'm not a serious student of that field.)

I think Krugman's big mistake in all this is the statement that "there doesn't seem to be much disagreement about the economic costs of carbon abatement." The damage function is something of a red herring to me. The real problem I have with Nordhaus's model is not that it underestimates the damage that climate change will create, but rather that it presents a view of the economy as a very rigid beast. You have to bludgeon it with an extremely painful price signal to get it to change course, and carrots are very nearly useless. In that sense, it doesn't matter whether you have to change course a little to get to 550ppm or a lot to stay below 350, moving this thing off the path to 750 is just too damn hard. The conventional economic wisdom is that you need a really high carbon price to move the carbon needle and that high price will put the hurt on the economy. Part of the reason why the CW ends up here is that some very old and incorrect economic assumptions are buried deep, below the level that Krugman exposes in his toy model, so that even he ends up in the wrong place.

CLIMATE PROGRESS

Owning the Weather

By Climate Guest Blogger on Dec 12, 2009 at 6:00 am

A Film by Robert Greene (2009, 92 minutes)

The following is a guest post by Hillary Berkowitz of 4th Row Films about "Owning the Weather," which is being screened in Copenhagen, tomorrow, Sunday the 13th.

The desire to modify the weather has been around forever; but with the threat of catastrophic climate change, water wars, and intensifying hurricanes, a new breed of weather control has emerged.

[OWNING THE WEATHER](#) tells the story of weather modification in the United States, from Charles Hatfield's infamous rainmaking days to modern plans to engineer the climate.

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CLIMATE PROGRESS

SuperFreakonomics coauthor Dubner ratchets up the rhetoric, claiming his critics have issued a ~fatwa!

By Climate Guest Blogger on Nov 18, 2009 at 5:10 pm

Superfreaks come up with their biggest aerosol smoke screen yet to obscure their book's countless mistakes, as Brad Johnson reports in this Wonk Room [repost](#). Note also how Dubner, in playing the victim card, trivializes the very serious issue of religious persecution.

In the latest of many fawning interviews promoting *SuperFreakonomics*, author Stephen J. Dubner claimed the critics of his “[global cooling](#)” chapter have issued a “fatwa for entertaining alternate theories.” On Public Radio International’s morning program, “The Takeaway,” Dubner told hosts John Hockenberry and Celeste Headlee that he was right to call global warming a “religion.” In fact, he considers the criticism the book has received from economists, climate scientists, and energy experts to be “[essentially a fatwa](#)”:

In terms of the biggest result, I’d say is: We argued that the movement to stop global warming has the feel of a religion. I think if anything **we should strengthen that sentence, because what’s been issued here is essentially a fatwa** for entertaining alternate theories.

Listen here:

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GREEN

SuperFreak Dubner: Our Critics Have Issued A ‘Fatwa’

By **Brad Johnson** on Nov 18, 2009 at 11:40 am

... In the latest of many fawning interviews promoting *SuperFreakonomics*, author Stephen J. Dubner claimed the critics of his “[global cooling](#)” chapter have issued a “fatwa for entertaining alternate theories.” On Public Radio International’s morning program, “The Takeaway,” Dubner told hosts John Hockenberry and Celeste Headlee that he was right to call global warming a “religion.” In fact, he considers the criticism the book has received from economists, climate scientists, and energy experts to be “[essentially a fatwa](#)”:

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Listen here:



A fatwa is an Islamic clerical legal ruling. Dubner is evidently alluding to Ayatollah Ruhollah Khomeini’s twenty-year-old [fatwa calling for the death of author Salman Rushdie](#), whose novel *Satanic Verses* was considered blasphemous by hardline Muslims. Rushdie has suffered assassination attempts and decades in seclusion. Translators of the book were [stabbed](#), [shot](#), and [killed](#), and bookstores were firebombed.

Despite this supposed global warming “fatwa,” however, Dubner is heroically appearing all week on the Takeaway to flack his book, co-written with University of Chicago economist Steven Levitt. The *SuperFreakonomics* authors have now enjoyed softball interviews from [Charlie Rose](#), [Jon Stewart](#), [20/20](#), the

[Guardian](#), the [UK Telegraph](#), and others. The Diane Rehm Show did a much better job, bringing in IPCC lead author Peter Frumhoff to debunk their nonsense.

SuperFreakonomics has been edged out on the bestseller list by Sarah Palin's *Going Rogue*, and Glenn Beck's *Arguing with Idiots*.

UPDATE

Dubner actually trotted out the "fatwa" claim last month on a different WNYC program, saying on the [Leonard Lopate show](#) on [October 21st](#):

The movement to stop global warming has some of the components of a religion and I'll tell you we've certainly experienced that in the past few days. It feels very much like a fatwa has been levied. As with fatwas there's obviously a bizarre twisting and omission of facts.

UPDATE

,Aaron Huertas of the Union of Concerned Scientists responds:

Levitt and Dubner are unfairly equating reasoned critiques of their arguments from scientists with personal attacks. They need to respond to UCS, Gavin Schmidt, Jeffrey Severinghaus and other scientists who have pointed out how the book's chapter misrepresents climate science. Additionally, geoengineering is not an alternative to reducing emissions. Levitt seemed to acknowledge that during an interview with a UCS scientist, but in subsequent media interviews and in a USA Today op-ed, he and Dubner have continued to inaccurately present geoengineering as an alternative to reducing emissions.

The book has been out for a month. UCS issued its criticism five days before the book came out. Levitt and Dubner say they want to contribute to the debate about how we should respond to global warming. If that's true, they should respond to arguments from scientists and they should do so as soon as possible. The longer they wait to respond, the more credibility they will lose with scientists studying this issue. As a group, scientists are happy to rationally weigh the merits of an argument regardless of who is forwarding it.

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CLIMATE PROGRESS

Superfreakonomics authors abandon climate science

By Climate Guest Blogger on Nov 17, 2009 at 11:23 am



*The authors of SuperFreakonomics simultaneously insist they accept the science — “Like those who are criticizing us, we believe that rising global temperatures are a man-made phenomenon” — while at the same time labeling global warming a “religion” (see [here](#)). And we’ve seen one award-winning journalist explain “[Freakonomics Guys Flunk Science of Climate Change](#).” But now, as this stunning Charlie Rose video shows, we have the clearest demonstration that both Levitt and Dubner don’t accept **and** don’t understand the science. This is a [Wonk Room repost](#).*

Appearing on PBS’s influential [Charlie Rose Show](#) last week, *SuperFreakonomics* authors Steven Levitt and Stephen Dubner expanded upon their [destructively uninformed portrayal of climate science](#), even throwing into question man’s influence on global warming. When Rose asked him about the controversial “global cooling” chapter, Levitt fatuously claimed that “what we actually said is not even very controversial.” Levitt said that *SuperFreakonomics* is “not denying that the Earth has gotten warmer.” After Rose interjected, “And it’s man created,” Levitt said, “It’s harder to know whether it’s man created”:

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GREEN

SuperFreaks Retrench: ‘It’s Harder To Know’ Whether Global Warming Is ‘Man-Created’

By Prad Johnson on Nov 16, 2009 at 5:45 pm

Appearing on PBS's influential Charlie Rose Show last week, *SuperFreakonomics* authors Steven Levitt and Stephen Dubner expanded upon their destructively uninformed portrayal of climate science, even throwing into question man's influence on global warming. When Rose asked him about the controversial "global cooling" chapter, Levitt fatuously claimed that "what we actually said is not even very controversial." Levitt said that *SuperFreakonomics* is "not denying that the Earth has gotten warmer." After Rose interjected, "And it's man created," Levitt stammered, "It's harder to know whether it's man created":

I-i-i-it's harder to know whether it's man created. It's always harder to know whether it's some — you know, why something happened than whether it did. That's not even our question.

Watch it:



Later during the interview Dubner attempted to justify the book's claim that "carbon dioxide is not the right villain," arguing that it was the decrease in sulfur dioxide and other pollutants that has caused global warming, rather than the accumulation of carbon dioxide.

This is of course utter nonsense — aerosols like sulfur dioxide certainly masked the heat-trapping effects of greenhouse gases, but global warming is caused by the greenhouse gases. If a methamphetamine addict is using alcohol to blunt the side effects of his meth habit, his hyperactivity isn't due to a lack of binge drinking.

Dubner and Levitt's quest to deny the reality of climate change and promote radical geoengineering to block the sun as a "sensible" alternative to reducing greenhouse gases is, as the New Yorker's Elizabeth Kolbert writes, "horseshit." Their strategy is like counseling the meth addict to become a full-blown alcoholic instead of reducing his drug use.

Despite Levitt's argument that "it's harder to know" whether global warming is "man created," in reality the scientific evidence is clear and has been for years, according to the scientific organizations of the world:

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CLIMATE PROGRESS

Superfreakonomics coauthor replies to “scathing review” by Elizabeth Kolbert: “she somehow accomplished all this with a degree from Yale in literature.”

By [Steve Romm](#) on Nov 14, 2009 at 1:20 pm

... Monday, *The New Yorker* published Elizabeth Kolbert’s lengthy review of *SuperFreakonomics: Global Cooling, Patriotic Prostitutes, and Why Suicide Bombers Should Buy Life Insurance*. In her 2400-word review, titled “[Hosed: Is there a quick fix for the climate?](#)” she writes:

Given their emphasis on cold, hard numbers, it’s noteworthy that **Levitt and Dubner ignore what are, by now, whole libraries’ worth of data on global warming. Indeed, just about everything they have to say on the topic is, factually speaking, wrong. Among the many matters they misrepresent are: the significance of carbon emissions as a climate-forcing agent, the mechanics of climate modelling, the temperature record of the past decade, and the climate history of the past several hundred thousand years.** Raymond T. Pierrehumbert is a climatologist who, like Levitt, teaches at the University of Chicago. In a particularly scathing critique, he composed an open letter to Levitt, [which he posted on the blog RealClimate](#).

She then quoted from that open letter, which noted that their critique of solar cells was “complete and utter nonsense.”

On Friday, coauthor Stephen Dubner replied in a post titled, “[With Geoengineering Outlawed, Will Only Outlaws Have Geoengineering?](#)” Notwithstanding the title, the piece is clearly meant to be serious. Here is what they have to say about Kolbert’s review:

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CLIMATE PROGRESS

One error retracted, 99 to go. Superfreakonomics authors will, in future editions, correct their claim that Caldeira believes “carbon dioxide is not the right villain”

By [Steve Romm](#) on Nov 5, 2009 at 9:13 pm

... outrage over — and debunkings of — the [error-riddled book *Superfreakonomics*](#) continue, even as coauthors Levitt and Dubner slowly concede their mistakes.

Perhaps the most scathing takedown to date comes from [Raymond T. Pierrehumbert](#), the Louis Block Professor in the Geophysical Sciences at the University of Chicago, on RealClimate, in an “[An open letter to Steve Levitt](#).” Pierrehumbert accuses his U of C colleague of “**academic malpractice** in your book.”

So far, Dubner has apologized to me for one false accusation in his Sunday, October 18 post attacking my accurate debunking of his book (see [here](#)). Now he has finally conceded [on his blog](#) that one of the many key errors I pointed out in his book — that climatologist Ken Caldeira did not believe or ever say that “carbon

dioxide is not the right villain in this fight” (see [here](#)). He still has not retracted the countless other mistakes I and others have pointed out. Indeed, Berkeley economist [Brad DeLong](#) urged both authors to “[abjectly apologize](#)” for the whole chapter.

And Dubner has not retracted the claim that is still being parroted by the deniers and delayers around the web that I did a “smear” on the book. **It is clear for all to see now that there never was a smear. Everything I wrote in my original debunking was accurate** – see [Error-riddled ‘Superfreakonomics’: New book pushes global cooling myths, sheer illogic, and patent nonsense](#) and the primary climatologist it relies on, [Ken Caldeira](#), says “it is an inaccurate portrayal of me” and “misleading” in “many” places.

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GREEN

What Not To Name Your Geoengineering Project: Ice-Nine-One-One

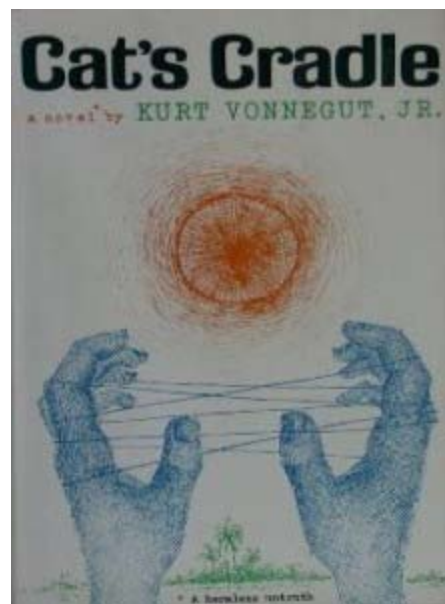
By [Brad Johnson](#) on Nov 1, 2009 at 9:46 am

Thanks to the “[academic malpractice](#)” of *SuperFreakonomics* on the one hand and rising scientific concern that radical measures will have to be taken within decades to preserve human civilization on the other, talk about geoengineering to combat global warming is on the rise. One such project is [Ice911](#), an unfortunately named scheme:

Ice911 is an engineering approach to reduce the melting of the ice. It is a solution that can be rapidly implemented. It has the potential to slow down the melt, provide interim mammal habitat, and perhaps even rebuild the ice.

The Ice911 is in fact a project to develop a low-tech method to increase the Arctic Ocean’s albedo in order to stop the feedback loop that is causing Arctic ice to melt at catastrophic rates, using [millions of small, white floats](#). Although filling the world’s oceans with [yet more plastic trash](#) isn’t the most desirable [rapid-cooling strategy](#), it sure beats options like those promoted in *SuperFreakonomics*, which have possible side effects like [destroying the ozone layer](#). Ice911 has an [impressive advisory board](#), and is led by Dr. [Leslie Field](#), a world-class technologist.

However, the name Ice911 recalls “ice-nine,” a substance from Kurt Vonnegut’s classic science-fiction novel, *Cat’s Cradle*, one of the great parables of the “unintended consequences” of finding the “[cheap and simple fix](#)” to complex, global problems. As summarized at [Technovelgy](#), “A general had a problem: mud. Marines have slogged their way through it for generations. Is it possible to get rid of mud? Without having to carry anything heavy? Marines already have enough to carry. Dr. Felix Hoenikker, an original thinker, found the ‘outside-the-box’ answer: a single crystal of Ice-Nine would crystallize every bit of water it touched”:



“...suppose, young man, that one Marine had with him a tiny capsule containing a seed of ice-nine, a new way for the atoms of water to stack and lock, to freeze. If that Marine threw that seed into the nearest puddle...?”

“The puddle would freeze?” I guessed.

“And all the muck around the puddle?”

“It would freeze?”

“And all the puddles in the frozen muck?”

“They would freeze?”

“And the pools and the streams in the frozen muck?”

“They would freeze?”

“You bet they would!” he cried. “And the United States Marines would rise from the swamp and march on!”

The book ends with the world’s water turned to ice-nine, the book’s fictional author one of the last remaining survivors of the human race, writing down his story as he prepares for his death. The fictional Felix Hoenikker, a “father of the Atomic Bomb,” recalls Dr. [Edward Teller](#), the Manhattan Project physicist who later championed the Star Wars satellite laser system and in 1998 promoted a “[Sunscreen for Planet Earth](#)” — “solving” global warming through the injection of particles into the stratosphere, reviving an idea first proposed in 1979 as a thought experiment by fellow nuclear physicist (and now aging climate skeptic) [Freeman Dyson](#). Teller’s protégé, Lowell Feld, has continued to champion Teller’s ideas and worldview at Nathan Myhrvold’s Intellectual Ventures, now promoted on bookshelves everywhere in *SuperFreakonomics*.

CLIMATE PROGRESS

Rep. Jay Inslee slams SuperFreakonomics: “People are still trying to write books to deceive the American public” on climate science.

By Climate Guest Blogger on Oct 30, 2009 at 11:01 am

This is a [repost](#) from *Wonk Room*.

Yesterday, Rep. Jay Inslee (D-WA) rebuked the authors of *SuperFreakonomics* for participating in a “continuing effort to deceive the American public” on the science of climate change. During an investigative hearing on [forged letters sent by the coal industry](#) to oppose climate action, Inslee condemned the industry’s effort to “hoodwink, defraud, and deceive the American public now to cover up the toxicity to the world environment” of global warming pollution. Inslee then turned to Steven Levitt and Stephen J. Dubner, criticizing them for “absolute deception” in their work on global warming:

The second thing I want to note is **this is not the only continuing effort to deceive the American public**. I want to note a book called *Freakonomics*, or *SuperFreakonomics*, that some authors wrote, that basically said or asserted we don’t have to control CO2, we’ll just pump sulfur dioxide up into the atmosphere and that will solve the problem. They purported to quote a scientist named Ken Caldeira from Stanford who’s one of the predominant researchers in ocean acidification to suggest that Dr. Caldeira didn’t think we should control CO2. **Which is an absolute deception**. Dr. Caldeira I’ve spoken to personally. He’s told me we have to solve ocean acidification. You can’t solve ocean acidification without controlling CO2 and yet **people are still trying to write books to deceive the American public**. And we ought to blow the whistle on them, we’re blowing the whistle on one today, we’ll continue to do it, because ultimately science is going to triumph in this discussion.

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