

Comment

A harsh climate

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I might as well come right out and say it: I don't care whether global warming is caused by manmade greenhouse gas emissions. And neither should you.

Before you start reaching for your laptops, iPhones, and BlackBerrys to fire off scathing emails, give me a moment to explain why I made this statement and what it really means. I bet that, when I'm through, you will agree with me.

This column is being written because of the confluence of two events. One is a meeting in Copenhagen of representatives of most of the world's nations, aimed at formulating a new global strategy for dealing with the climate crisis. The talks have ground to a halt as I write this because the group of developing countries, known as the G-77, has accused the United States and other industrialized states of forsaking the Kyoto Protocol, the current climate agreement that imposes greenhouse gas emissions on nearly every developed nation.

The second event is 'Climategate', the release of illegally hacked emails between climatologists. As an example of giving aid and comfort to the enemy, Climategate could hardly be improved on. In late November, a computer file including more than 1,000 emails either sent from or to members of the University of East Anglia's Climate Research Unit (CRU) was stolen and released on the Internet. The emails contain language that opponents of emission curbs have seized on as alleged examples of data manipulation and outright fraud on the part of climate researchers. For example, one email apparently sent by the head of the CRU, Professor Phil Jones, refers to using "Mike's *Nature* trick of adding in the real temps to each series for the last 20 years ... to hide the decline". The CRU is one of the leading research units on climate change, and their data had a major role in the Fourth Assessment Report of the Intergovernmental Panel on Climate Change (IPCC), released in 2007, that provided unequivocal evidence for global warming (see Figure 1).

Of course, scientists use the word 'trick' all the time as a shorthand term for a method or algorithm, but professional skeptics rarely bother themselves with the way scientists work. It seems likely that the files were stolen in an attempt to undermine the Copenhagen talks, but my assessment is

that there are so many other contentious issues in that meeting that this is a relatively minor matter for most of its participants. Nevertheless, Professor Jones has stepped down as head of the CRU pending an internal investigation. In my view, he should instead have been made to write on the blackboard 1,000 times: "I will never put anything into an email or text message that could be embarrassing to me or to my organization if it were read by someone else, and if I don't believe this I should ask Tiger Woods."

One of the most sensible things I have read about the climate debate is an opinion piece by Stewart Brand in the 15 December 2009 edition of *The New York Times*. He argues that the popular depiction of the combatants as belonging to two camps, the alarmists and the skeptics, is fallacious. There are actually four sides: *denialists*, a group consisting of people with a right-wing political agenda who assert that the claim that global warming is caused by manmade emissions is a lie and is not based on sound science; *skeptics*, a group largely comprising scientists who argue that climate science, particularly large-scale modeling, is far too imperfect to form the basis of a consensus; *warners*, another group of scientists who believe that the best climate models accurately predict a looming planetary disaster and that human production of greenhouse gases is the primary cause; and *calamatists*, a collection of environmental activists whose agenda, like that of the denialists, is ideologically driven, but in the opposite direction: they have a neo-luddite view of industrialization, and believe the denialists are evil. As Brand, a self-described warner, points out, understanding from which of these camps any given argument springs is useful in distinguishing propaganda from science, and appeals to emotion from evidence-based assertions.

Yet even Brand misses what I think is the crucial point, the point I want to make in this column, which is that you can't win a war if you are fighting in the wrong field. And in the war over climate change, which should be fought in the field of science, the denialists and the calamitists have dragged us into battle on their turf.

When you're in a fight with an opponent who is not above using invective and illogic, the worst mistake you can make is letting the other side define the terms of the debate.

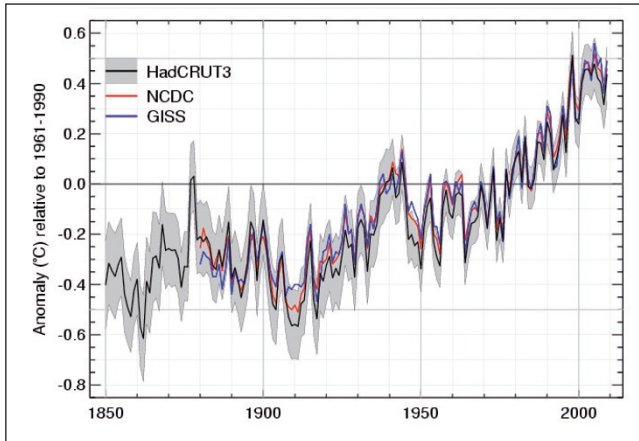


Figure 1

Unequivocal evidence for a warming planet. Global surface temperature trend from three global datasets: NOAA (NCDC Dataset), NASA (GISS dataset) and combined Hadley Center and Climate Research Unit of the University of East Anglia (UK) (HadCRUT3 dataset). The data clearly indicate a dramatic, and accelerating, warming trend over the past 150 years. Reproduced from the World Meteorological Organisation [http://www.wmo.int/pages/index_en.html].

That's exactly what has happened in the argument about climate change. For decades the denialists insisted that the earth was not getting warmer. Short-term fluctuations were meaningless, they asserted. Climate modeling was worse than useless. The doomsayers were just trying to push a liberal political agenda, and so on. But after massive amounts of data were collected and analyzed by the Intergovernmental Panel on Climate Change, it became clear, on the release of their report in 2007, that no sensible person could deny that a dramatic rise in the planet's average temperature had been occurring for at least a century (see Figure 1). Largely thanks to Al Gore, this information also reached the general public, whose reaction even the staunchest denialists could not ignore.

So they did what clever, unprincipled losers often do: they changed the issue. Of course the earth is getting warmer, they said (blithely ignoring the fact that they had said exactly the opposite the day before), but human activities have nothing to do with it. It's entirely due to natural causes, and people who assert that manmade greenhouse gases are causing the problem are employing flawed science, deliberately distorting the facts (Climategate), and are using fear to advance the same old, tired environmental activism. Because global warming is not a manmade phenomenon, there is no scientific or political reason to limit manmade greenhouse gas emissions. Sarah Palin (why am I not surprised?) is one of the leaders of this chorus, stating recently that climate change occurs naturally "like gravity", while warning that reducing greenhouse gas emissions will mean "job losses" and "economic costs".

(This is the same ex-Alaska governor Sarah Palin who, before becoming a national political figure, said in July of last year, "Alaska's climate is warming. While there have been warming and cooling trends before, climatologists tell us that the current rate of warming is unprecedented within the time of human civilization. Many experts predict that Alaska, along with our northern latitude neighbors, will warm at a faster pace than any other areas, and the warming will continue for decades." I don't know whether to laugh at that kind of soulless opportunism or just cry.)

This strategy is actually working, to some extent. It's much harder to establish the cause of something than it is to prove that something is happening, and the data supporting manmade emissions as the leading driver of climate change are not nearly as persuasive, or as immune to challenge, as the data demonstrating the fact of global warming. And scientists, foolishly, have allowed that to become the center of the climate crisis debate. I say foolishly because, in so doing, they have given up the victory that they already won.

The denialists have conceded the fact of climate change. And here is my central point: once you admit that the earth is warming rapidly, it does not matter in the least whether that trend is due to manmade causes or not.

Regardless of its origin, a rapidly changing climate is a very bad thing. We have built an entire civilization on the assumption of long-term climate stability. We grow wheat in Kansas rather than in the Yukon because Kansas has an ideal climate for growing wheat and the Yukon is too cold, and we assume that will still be the case 10 years from now. We build our cities on the coast because that is convenient for shipping goods, and we assume the coastline won't suddenly move 10 miles inland. We don't have air conditioning in many homes in northern California because we assume the average temperature won't suddenly rise by several degrees, making summer unbearably hot. We assume that England won't have a yearly climate like Lapland, even though its position on the globe might lead one to expect otherwise, because the Gulf Stream will always be there off the west coast, keeping things moderate. Every one of these assumptions fails in the event of significant global warming. One reason I prefer the term 'climate crisis' to 'climate change' or 'global warming' in discussing this problem is because our dependence on stable long-term climate patterns means that any change in those patterns represents a potential catastrophe on a planet-wide scale.

It doesn't matter what the cause of that crisis is; once you accept the fact that the crisis is coming, the only thing that matters is how to prevent it or slow it down. And the only way we have of doing that at the moment is to reduce our greenhouse gas emissions. Put another way, human

activity may not even be causing the earth's temperature to rise, but human activity is the only means we have of doing something about it.

A simple analogy may make this point clearer. Suppose we learned tomorrow that there was one chance in ten that a huge asteroid, recently discovered, was going to crash into the earth in 5 years, killing a billion people and raining debris in such amounts as to blot out sunlight significantly for a year. (A similar event is thought to have led to the extinction of the dinosaurs.) Would anyone in his or her right mind argue that, because we couldn't prove that human activity was responsible for the asteroid, there was no reason to hurt our economy by spending hundreds of billions of dollars firing nuclear-tipped rockets at it to destroy it or alter its course? Yet that's exactly what the denialists are trying to argue now, in the case of a climate crisis that has at least an equal probability of globally devastating consequences.

True, our climate models can't predict with certainty that the steps being considered in Copenhagen will retard, halt or reverse the current warming trend. But they represent all we can do at the moment. If global warming is being caused primarily by greenhouse gases, as many thoughtful scientists believe, then they will do a lot. If global warming is actually caused by, say, sunspots or something similar, reduction of emissions may not do so much. But everyone agrees that they will do something, and my point is that something simply has to be done.

I hope you see now why I started this essay as I did. We should not be debating whether human activity is responsible for global warming or not. Given that even the denialists and skeptics have conceded the fact of global warming, the debate should be over the most effective means of doing something about it. This means, I am afraid, not just limiting our discussion to controls on CO₂ emissions. We need to look seriously at developing technologies for carbon sequestration, alternative fuels,

and carbon-neutral technologies for transportation and energy production. Much of this will involve engineering microorganisms and plants, so genomics is going to be very important in enabling these technologies as we grapple with the crisis. I also see no escape from at least investigating ideas for geoengineering - solutions involving deliberate changing in sunlight absorption, carbon capture and temperature reduction on a continent- or planet-wide scale. My gut reaction to geoengineering is that it is a terrible idea, born as much of hubris as desperation, that should be shelved permanently because we will never have the kind of models that would guarantee beforehand that it could be done safely. But the fact is, we don't know what we don't know when it comes to such projects, and, given the severity of the climate crisis, if someone wants to propose that we should at least begin to study such solutions to determine the extent of our ignorance and the possibility that we might someday be able to employ them, I wouldn't say no.

So, the next time you find yourself in a debate with someone over the climate crisis, and they say that we shouldn't reduce CO₂ emissions because there is no definitive proof that manmade greenhouse gases are the cause of global warming, respond by saying, "Then if an alien race were threatening to exterminate mankind, you wouldn't do anything to try to stop them because human activities weren't the cause of the alien invasion, is that right?" And they'll reply, "Of course not! But this is completely different." And you'll say, "No, it's not. Let me explain why."

Given the harsh climate that has developed around the subject of global warming, you probably won't convince them that they're wrong. But at least you'll be having the right argument.

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