

I Was On the Global Warming Gravy Train

By David Evans, 5/28/2007

I devoted six years to carbon accounting, building models for the Australian government to estimate carbon emissions from land use change and forestry. When I started that job in 1999 the evidence that carbon emissions caused global warming seemed pretty conclusive, but since then new evidence has weakened that case. I am now skeptical.



In the late 1990s, this was the evidence suggesting that carbon emissions caused global warming:

1. Carbon dioxide is a greenhouse gas, proved in a laboratory a century ago.
2. Global warming has been occurring for a century and concentrations of atmospheric carbon have been rising for a century. Correlation is not causation, but in a rough sense it looked like a fit.
3. Ice core data, starting with the first cores from Vostok in 1985, allowed us to measure temperature and atmospheric carbon going back hundreds of thousands of years, through several dramatic global warming and cooling events. To the temporal resolution then available (data points more than a thousand years apart), atmospheric carbon and temperature moved in lockstep: they rose and fell together. Talk about a smoking gun!
4. There were no other credible causes of global warming.

This evidence was not conclusive, but why wait until we are absolutely certain when we apparently need to act now? So the idea that carbon emissions were causing global warming passed from the scientific community into the political realm. Research increased, bureaucracies were formed, international committees met, and eventually the Kyoto protocol was signed in 1997 to curb carbon emissions.

The political realm in turn fed money back into the scientific community. By the late 1990s, lots of jobs depended on the idea that carbon emissions caused global warming. Many of them were bureaucratic, but there were a lot of science jobs created too.

I was on that gravy train, making a high wage in a science job that would not have existed if we didn't believe carbon emissions caused global warming. And so were lots of people around me; there were international conferences full of such people. We had political support, the ear of government, big budgets. We felt fairly important and useful (I did anyway). It was great. We were working to save the planet!

But starting in about 2000, the last three of the four pieces of evidence above fell away. Using the same point numbers as above:

2. Better data shows that from 1940 to 1975 the earth cooled while atmospheric carbon increased. That 35-year non-correlation might eventually be explained by global dimming, only discovered in about 2003.
3. The temporal resolution of the ice core data improved. By 2004 we knew that in past warming events, the temperature increases generally started about 800 years before the rises in atmospheric carbon. Causality does not run in the direction I had assumed in 1999 – it runs the opposite way!

It took several hundred years of warming for the oceans to give off more of their carbon. This proves that there is a cause of global warming other than atmospheric carbon. And while it is possible that rising atmospheric carbon in these past warmings then went on to cause more warming ("amplification" of the initial warming), the ice core data neither proves nor disproves this hypothesis.

4. There is now a credible alternative suspect. In October 2006 Henrik Svensmark showed experimentally that cosmic rays cause cloud formation. Clouds have a net cooling effect, but for the last three decades there have been fewer clouds than normal because the sun's magnetic field, which shields us from cosmic rays, has been stronger than usual. So the earth heated up. It's too early to judge what fraction of global warming is caused by cosmic rays.

There is now no observational evidence that global warming is caused by carbon emissions. You would think that in over 20 years of intense investigation we would have found something. For example, greenhouse warming due to carbon emissions should warm the upper atmosphere faster than the lower atmosphere – but until 2006 the data showed the opposite, and thus that the greenhouse effect was not occurring! In 2006 better data allowed that the effect might be occurring, except in the tropics.

The only current "evidence" for blaming carbon emissions are scientific models (and the fact that there are few contradictory observations). Historically, science has not progressed by calculations and models, but by repeatable observations. Some theories held by science authorities have turned out to be spectacularly wrong: heavier-than-air flight is impossible; the sun orbits the earth; etc. For excellent reasons, we have much more confidence in observations by several independent parties than in models produced by a small set of related parties!

Let's return to the interaction between science and politics. By 2000 the political system had responded to the strong scientific case that carbon emissions caused global warming by creating thousands of bureaucratic and science jobs aimed at more research and at curbing carbon emissions.

But after 2000 the case against carbon emissions gradually got weaker. Future evidence might strengthen or further weaken it. At what stage of the weakening should the science community alert the political system that carbon emissions might not be the main cause of global warming?

None of the new evidence actually says that carbon emissions are definitely not the cause of global warming, there are lots of good science jobs potentially at stake, and if the scientific message wavers then it might be difficult to later recapture the attention of the political system. What has happened is that most research efforts since 1990 have assumed that carbon emissions were the cause, and the alternatives get much less research or political attention.

Unfortunately politics and science have become even more entangled. Climate change has become a partisan political issue, so positions become more entrenched. Politicians and the public prefer simple and less-nuanced messages. At the moment the political climate strongly blames carbon emissions, to the point of silencing critics.

The integrity of the scientific community will win out in the end, following the evidence wherever it leads. But in the meantime, the effect of the political climate is that most people are overestimating the evidence that carbon emissions are the main cause of global warming.

I recently bet \$6,000 that the rate of global warming would slow in the next two decades. Carbon emissions might be the dominant cause of global warming, but I reckon that probability to be 20% rather than the 90% the IPCC estimates.

I worry that politics could seriously distort the science. Suppose that carbon taxes are widely enacted, but that the rate of global warming increase starts to decline by 2015. The political system might pressure scientists to provide justifications for the taxes.

Imagine the following scenario. Carbon emissions cause some warming, maybe 0.05C/decade. But the current warming rate of 0.20C/decade is mainly due to some natural cause, which in 15 years has run its course and reverses. So by 2025 global temperatures start dropping. In the meantime, on the basis of models from a small group of climate scientists but with no observational evidence (because the small warming due to carbon emissions is masked by the larger natural warming), the world has dutifully paid an enormous cost to curb carbon emissions.

Politicians, expressing the anger and apparent futility of all the unnecessary poverty and effort, lead the lynching of the high priests with their opaque models. Ironically, because carbon emissions are raising the temperature baseline around which natural variability occurs, carbon emissions might need curbing after all. Maybe. The current situation is characterized by a lack of observational evidence, so no one knows yet.

Some people take strong rhetorical positions on global warming. But the cause of global warming is not just another political issue, subject to endless debate and distortions. The cause of global warming is an issue that falls into the realm of science, because it is falsifiable. No amount of human posturing will affect what the cause is. It just physically is there, and after sufficient research and time we will know what it is.

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