



Refuting Climate Change Deniers with Their Own Sources

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Early in their training, young lawyers learn that the most powerful weapon against a hostile witness can be the witness's own statements. "Admissions of a party opponent" is what we call it in legalese, and such admissions can turn cases on their head. As a trial attorney, I spent one Christmas vacation with two young children in tow and a three foot high stack of transcripts of prior testimony by my opponent's key expert witness. The labor was well worth the effort, as the expert withered on the witness stand when I drew out that in a similar case a few years earlier he had testified to just the opposite of the opinion he offered in our case.

Self-styled "experts" who deny the validity of human-induced climate change should be treated the same way. Listen very carefully to what they say and investigate any sources they cite. Recently, I used this approach to respond to a June 5, 2013 OpEd in the *Bangor Daily News* by one of Maine's most outspoken climate deniers, the retired physician Dr. Alan Boone, who proclaimed that the theory of man-made climate change is driven by politics and refuted by scientists. "Group-think boils over into mass hysteria, fed by those dependent on your tax dollars and by sensationalist media," Dr. Boone asserted. "Our schoolchildren are marinated in this new religion. The inquisitive and skeptical essence of science, shamefully, is not being demonstrated or taught." In response, I used Dr. Boone's call for scientific integrity to puncture his own claims.

What the Available Science Shows

Scientific integrity means relying on objectively analyzed data either from one's own research or from credible scientific studies that have been reviewed and found sound by other scientists in the relevant fields. Sources must be cited and accurately characterized or quoted. When available science is assessed in this way, there turns out to be an overwhelming consensus among scientists studying rising atmospheric and ocean temperatures, rising sea levels, shrinking glaciers, melting Arctic sea ice, and increasing humidity. Scientists investigating such phenomena have concluded that the world is warming dramatically, in large part because humans add more than 90 million tons of carbon pollution to earth's atmosphere every single day.

The evidence is ever mounting. In May, atmospheric carbon dioxide levels were measured at 400 parts per million for the first time in several million years. In April, the National Oceanic and Atmospheric Administration reported that the annual average sea temperature for the Northeast Shelf Ecosystem in 2012 was 57.2 degrees Fahrenheit, the highest average ever calculated since measurements were first collected in 1854. In March, researchers at Harvard University published a report in the journal *Science*, finding that temperature over the last 100 years has warmed 1.3 degrees, whereas during the previous 5,000 years the Earth had cooled about 1.3 degrees. Temperature on earth is, in effect, changing fifty times faster than it did during the eras when agriculture and modern civilization developed.

Letting a Denier Testify Against Himself

Now to the "admissions of a party opponent" in Dr. Boone's OpEd. In writing my response, I urged readers who may have been swayed by his rhetoric to assess his sources by following, as I did, the nine web links imbedded in the online version of the piece. The first eight of these sources directly *refuted* Boone's overall argument, one failed to support him, and one was outrageously misquoted. Here are a few of the worst manipulations and misrepresentations:

- Dr. Boone's opening salvo cited the British tabloid *The Daily Mail* as reporting that the British Meteorological Office had made a "confession" that the "world's temperature hasn't increased in 16 years." The imbedded cite, however, is to a story in *The Guardian* that provides a detailed refutation of the tabloid story and quotes the Meteorological Office as saying the *Daily Mail's* "claim that 'world stopped getting warmer almost 16 years ago' is simply wrong."

- Misquoting a statement by twenty retired astronauts and engineers from the National Aeronautical and Space Administration, Boone claimed that they said there is “no convincing physical evidence to support the man-made climate change hypothesis.” But that quote does not appear in the astronauts’ report, where in fact they caution that “climate science is not one of our technical specialties.” The astronauts and engineers acknowledge increases in atmospheric carbon dioxide and simply say that climate change is not yet clearly “catastrophic.” They do not challenge the hypothesis that climate change is man-made.
- Even more astonishing was Boone’s misleading claim that his views are supported by a 1998 article published by the Astronomical Society of the Pacific about the possibility of solar events contributing to global warming. When I looked at the actual article, I found that it calls on readers to “be aware of the political background to this delicate issue, and not fall into the trap of using possible solar warming as an excuse for delay in reducing man-made emissions of greenhouse gases. Whatever the magnitude of the effects of these in the long term, there is no doubt that their concentration has increased dramatically in the past 30 years...” In short, these scientists argued the opposite of Boone’s overall thesis.

In arguing that man-made global warming is a “myth,” Dr. Boone – a physician who should know better – has not done his research and does not accurately represent the findings of available peer-reviewed science. He does not even accurately present his own cited sources.

Time to Face Scientifically Established Reality

Along with Dr. Boone, we all wish that man-made climate change were not happening. But wishing isn’t science – and we cannot afford the risks of unfounded denial. More than four years ago a joint statement from the National Academies of Science of thirteen leading nations declared that “the need for urgent action to address climate change is now indisputable.” The U.S. Congress has unforgivably failed to respond to this urgent call for action from the world’s leading scientists. But there are signs of hope. As Bob Inglis, former Republican representative from South Carolina, told the Associated Press after Superstorm Sandy, “I think the impossible” – referring to a new tax on carbon emissions – “may be moving to the inevitable without ever passing through the probable.” Even as Congress delays in passing such a tax, President Obama announced on June 25, 2013 that he will use executive powers to reduce carbon emissions. This is a landmark step in the right direction. Each of us should respond to President Obama’s call to “push back on misinformation” and join him in acting to stave off the dire threat global warming poses to our planet.