

## A CONSILIENCE OF OBSERVATIONS

by DONALD PROTHERO, Jul 20 2011

I've just survived four days of The Amazing Meeting 9 in Las Vegas, and my head is buzzing with so many thoughts—so many great talks—so many friends I haven't seen since TAM8 last year, and new ones I met for the first time after months of email and Facebook exchanges. TAM never fails to exhilarate me—and exhaust me. My favorites: Bill Nye's brilliant pep talk for science and space exploration; Dawkins' wonderful preview of his new book and his speculations about extraterrestrial life; PZ Myers' very different take on the non-prevalence of humanoids on other planets; Elizabeth Loftus' succinct review of her lifetime of research showing the unreliability of human memory; and especially the message at the end of both Neil DeGrasse Tyson's and Sean Faircloth's presentations: we need to dial back all the petty sniping within our ranks and realize that we face a very serious enemy out there of religious and political zealots who do not value science, skepticism, critical thinking, or "reality-based" political views. They outnumber us; they are well funded by right-wing think tanks and evangelical churches; and they have elected plenty of people in power who are already pushing their agenda. I realize that getting skeptics and freethinkers to work together is like herding cats, but we have a powerful entrenched opposition that will require every resource at our disposal to hold them at bay, let alone push them back. They are already eroding science education and displacing good science with pseudoscience in public policies.



But my favorite talk was Eugenie Scott's presentation, "*Deja Vu* all over again: Denialism of Climate Change and Evolution." It gave me a sense of *deja vu*, because apparently without knowledge of each others' work, we have converged on a common topic. This is what philosopher William Whewell would call a "consilience" or common agreement of different lines of evidence or threads of argument. As I independently pointed out in my upcoming book written last summer about science denialism, entitled *Reality Check*, and in a paper I wrote which is now in press, there are tremendous parallels between the evolution-deniers (creationists), the climate change deniers, and many other types of science deniers. Even more striking, they borrow most of their tactics from the prototypical reality deniers, the Holocaust revisionists, along with the tactics of the tobacco companies in creating "doubt" through PR to obscure the real science.

Consider the following:

- *This scientific consensus about this idea is accepted by 95-99% of all the scientists who work in the relevant fields;*
- *This scientific topic threatens the viewpoints of certain groups in the U.S., so it is strongly opposed by them and people they influence;*
- *Their anti-scientific viewpoint is extensively promoted by websites and publications of right-wing fundamentalist institutes such as the Discovery Institute in Seattle, and often plugged by Fox News;*
- *The opponents of this consensus cannot find legitimate scientists with*

*expertise in the field who oppose the consensus of qualified scientists, so they beat the bushes for "scientists" (none of whom have relevant training or research credentials) to compose a phony "list of scientists who disagree with Topic X";*

- Deniers of the scientific consensus resort to taking quotes out of context to make legitimate scientists sound like they question the consensus;*
- Deniers of the scientific consensus often look for small disagreements among scholars within the field to argue that the entire field does not support their major conclusions;*
- Deniers often pick on small errors by individuals to argue that the entire field is false;*
- Deniers of the scientific consensus often take small examples or side issues that do not seem to support the consensus and use these to argue that the consensus is false;*
- Deniers of the scientific consensus spend most of their energies disputing the scientific evidence, rather than doing original research themselves;*
- By loudly proclaiming their "alternate theories" and getting their paid PR people to question the scientific consensus in the media, they manage to get the American public confused and doubtful, so less than half of US citizens accept what 99% of legitimate scientists in this field of research consider to be true;*
- By contrast, most modern industrialized nations (Canada, nearly all of Europe, China, Japan, Singapore, and many others) have no problems with the scientific consensus, and treat it as a matter of fact in both their education and in their economic and political decisions;*
- Powerful politicians have used the controversy over this issue to try to force changes in the teaching of this topic in schools;*

Reading through this list, most people would immediately assume that it only describes the creationists and their attempts to target the scientific consensus on evolution. Indeed, the list *does* describe creationists or "evolution denialists"—but it also describes the actions of the climate denialists (who deny global climate change is real and human caused) as well. In fact, the membership lists of creationists and climate-change deniers is highly overlapping, with both causes being promoted by right-wing political candidates, news media (especially Fox News), and religious/political organizations like the Discovery Institute and many others.

The one big difference between them is motivation. Creationists are motivated exclusively by strong fundamentalist literalist religious beliefs; most AGW (anthropogenic global warming) deniers are motivated by right-wing political and economic ideologies, which view environmentalism as a threat to unrestrained capitalism and freedom to do whatever we damn well please (including polluting and destroying our planet). As Oreskes and Conway (2010) brilliantly document, AGW denialism did not exist as a serious movement until about a decade ago, when various right-wing and libertarian think tanks (Marshall Institute, Heartland Institute, Cato Institute), heavily funded by energy companies with vested interests in denying AGW, began a concerted PR campaign to discredit the overwhelming evidence and the conclusions of 95% of the climate science community. Because there were almost no climate scientists who denied the evidence for AGW, the PR specialists recruited among scientists not trained in climate research, and compiled phony lists of "dissenting scientists" (most of whom have no advanced degree, or their degree is not in climate science). This is comparable to the way creationists compile phony lists of "scientists dissenting from evolution," which turns out to be mostly people with degrees completely irrelevant to evolution, like engineering and physics, rather than evolutionary biology or molecular genetics or geology. The NCSE

brilliantly satirized this ridiculous PR exercise by creating “Project Steve”, which showed that there are more scientists with the name “Steve” or “Stephen” or “Stephanie” (over 1100 so far, which is less than 1% of the total population of scientists) than the total number of “scientists disputing evolution.”

I could go on and on with documentation of the other similarities between evolution-deniers and AGW-deniers, but the space in this column is limited. Most of it is provided by Oreskes and Conway (2010), and spelled out in my two upcoming publications in even greater detail. The only good news I can see in this regard is that the U.S. is almost alone in its anti-scientific attitudes toward both evolution—and AGW. Almost all the other industrialized nations in western Europe and Asia have accepted it long ago, were enthusiastic signatories at the Copenhagen Conference, and are actively involved in working to reduce their carbon footprints. More revealing is the fact that numerous relatively conservative or non-ideological institutions also accept the reality of climate change. This includes the insurance companies and their re-insurers (like Swiss Re), many other major businesses, emergency management agencies at every level, and even the U.S. military (hardly a bastion of liberalism). These organizations don’t have the luxury of playing political games. They’ve read the scientific consensus and must plan for the future. If they can see the matter so clearly, why can’t we? Just like in our lack of an energy policy and dependence on foreign oil, it looks like the U.S. will be the last major country dragged into facing reality after the rest of the world has already jumped ahead of us and prepared for it—and invested heavily in clean energy development and preparation for climate change while we wasted time in an unnecessary battle between accepted science and ideological PR.

There is one other other ray of light: Eugenie Scott announced at TAM9 that the National Center for Science Education will now be fighting not only for good evolutionary science to be taught in schools, but also climate science as well. And her announcement got a huge round of applause from the TAM9 audience, which would not have happened a few years ago when there were still a lot of AGW deniers at TAM.

You are entitled to your own opinion, but you are not entitled to your own facts.

—Former Sen. Daniel Patrick Moynihan, 2003

Reality must take precedence over public relations, for Nature cannot be fooled.

—Richard Feynman

What’s real is what’s real, and, like it or not, no one can change the nature of reality. Except, of course, with mushrooms.

—Bill Maher

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## 2 RESPONSES TO "A CONSILIENCE OF OBSERVATIONS"

1. *James Randi* says:

July 20, 2011 at 5:42 am

I sincerely thank Donald Prothero for his flattering remarks about the just-concluded TAM9 experience which rather frustrated me due to my inability to meet with so many of the 1,652 attendees with whom I'd have liked to sit and talk. Even this magician couldn't manage to be in the sessions and expounding to interviewers at the same time. Bilocation is not among my talents...

Fortunately, we will have much of the talks available through the miracle of video, and some of my time in the next two weeks will be catching up on the Loftus, Faircloth, and Scott material that I missed. We're all fortunate to have this Shermer vehicle to cruise with when keeping up with events, folks.

Thank you all.

James Randi.

Reply

2. *Max* says:

July 20, 2011 at 5:43 am

The NCSE argued that teaching Creationism as a science in public schools is unconstitutional because it's a religious belief, but AGW denialism can only be attacked for being bad science.

Reply

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