

Climate Science Register Guard Op-Ed piece, 07/2009

By John Donovan

Director, MicroAnalytical Facility

University of Oregon

1348 words

According to a 2009 survey by Rasmussen Reports, public acceptance of climate change science is decreasing. According to the survey “forty percent of U.S. voters say global warming is a very serious problem, but voters are closely divided over whether it is caused by human activity or long-term planetary trends. In recent months, voters have been trending away from the idea that humans are to blame.”

But what do professional scientists have to say on these questions? According to Wikipedia (google “scientific opinion on climate change”), “with the release of the revised statement by the American Association of Petroleum Geologists in 2007, no remaining scientific body of national or international standing is known to reject the basic findings of human influence on recent climate change.”

Furthermore, according to a 2009 poll by Doran and Zimmerman at the University of Illinois, 96% of climatologists who are active in climate research agreed that, compared with pre-1800s levels, mean global temperatures have generally risen”, and 97% agreed that “human activity is a significant factor in changing mean global temperatures.” As a group, 90% of all earth scientists surveyed agreed that temperatures have risen..., and 80% agreed that humans significantly influence the global temperature. The lowest levels of agreement were from meteorologists (64%) and economic geologists (47%), the latter group’s statistic bringing to mind Upton Sinclair’s observation that “It is difficult to get a man to understand something when his job depends on not understanding it.”

But more importantly, why is there such a large discrepancy between public opinion and expert scientific consensus? For one thing most people simply do not understand how science works. They do not understand how the process of peer reviewed science produces results that are amazingly reliable. And they are confused by contrary opinions from a few scientists who disagree with the current robust consensus derived from a critical examination by the vast majority of expert scientists weighing the preponderance of data. In other words, not being experts themselves, the public somewhat naturally assumes that if there is a public controversy with two opposing positions, the truth probably lies somewhere roughly halfway in between. But this is not the case, if one side is just plain wrong.

Another disturbing factor appears to be contributing to this perceptual gap, and according to a Gallup poll earlier this year, it has a partisan political flavor. This poll showed that “although a majority of Americans believe the seriousness of global warming is either correctly portrayed in the news or underestimated, a record-high 41% now say it is exaggerated”. But even more disturbing is the finding that “since 1997, Republicans have grown increasingly likely to believe media coverage of global warming is exaggerated, and that trend continues in the 2009 survey... in just the past year, Republican doubters grew from 59% to 66%, and independents from 33% to 44%, while the rate among Democrats remained close to 20%.”

How can so many Americans, who in other surveys rate scientists among the most respected of professions (just under medical doctors and those in military service), refuse to accept the scientific consensus from the relevant experts in this one area?

Consider this analogy: do we challenge our dentist to produce the evidence for the efficacy of any dental procedure that he will perform on us? Would we refuse to accept his expertise on any issue related to dentistry? No, we simply accept the expert advice and we almost never even seek a second opinion! And yet our dentist’s decisions are of far more immediate consequence to us than anything that climate scientists decide. Of course we trust our dentist; he’s an expert. And after all, not being dentists ourselves, on what basis could we refuse to accept the expert consensus on dental care?

For this reason we tend to listen to scientific expertise, even when it’s inconvenient; even when it challenges our intuitions, because we all know that science is successful, fruitful, powerful and, most of all, reliable.

Reliable enough that we routinely stake our very lives on results from science, depending on the Theory of Germ Disease and the Theory of Aerodynamics- even though they are “just” theories!

So why, as seen in the above polling data, are some people so reluctant to accept expert scientific consensus from this one particular scientific area? I asked several conservative friends of mine, why they refuse to accept the expert consensus in climate science and got several variations on the following phrase: “Global warming from carbon emissions is not real, and if it is, doing anything about it will destroy our economy.”

Similar statements are commonly seen on-line and in the cable media and all seem to posit a linkage between a particular result from science (anthropogenic global warming) and possible economic/political implications of efforts to mitigate these environmental consequences. Specifically concerns are expressed with regard to greater energy costs, increased government regulation, and the need for international agreements that are perceived to affect US sovereignty.

But implications of environmental policy cannot have any bearing whatsoever on the truth of any scientific proposition, which can only be decided upon the available scientific evidence as evaluated by experts. In fact, even if it were demonstrated that our social/political policy in response to climate change had wonderful economic effects, those positive implications should likewise have absolutely no bearing on the scientific questions of whether climate change is occurring and what factors are contributing to this change.

Additionally we should note that these are only possible, not necessary policy implications, since obviously we could, as one extreme, simply decide to do nothing about greenhouse gas emissions and just adapt as best as we can to a warming planet. That decision is entirely separate from the determination of the scientific facts on climate change.

It is worth noting the Gallup survey data does not show that all conservatives do not accept climate science. For example, the generally conservative American Association of Evangelicals accepts the scientific consensus on climate change. However the reasons for their acceptance is not necessarily because of the science, it's at least partly because they believe they have been commanded by God to be "good stewards of the Earth", which though admirable, is still a non-scientific rationale.

So, why should we accept the scientific consensus on climate change? After all, individual scientists are people too and therefore not infallible. The reason is, although it is true that scientists often work individually, their findings are evaluated by thousands of expert peers. This is why a scientific consensus produced by many different scientists is so much more reliable than the opinion of any one scientist. Because, if an individual scientist fails to recognize the significance of a particular piece of data, another scientist will gladly point it out (that's how one gets famous in science- by proving other scientists wrong based on evidence). Thus the critical examination of the available evidence by both competing and collaborating scientists is exactly why the scientific consensus is so reliable, which includes those few who disagree but have been unable to make a strong enough case for their arguments in this scientific competition of ideas.

Like most of us, I am not a climate scientist. Although it's fun to follow the science, I would never presume that my laymen's understanding of these complex processes could ever trump the consensus of expert opinion. And after all, as a non-expert, on what basis could my opinion possibly trump the professional consensus of climate scientists with regard to such scientific questions?

As laymen we must accept the expert scientific consensus if we truly care about understanding our natural world. Of course, as a member of the general public, we do play a role in how these findings from science are utilized by society as a whole. We all recognize it is critically important to both minimize any negative economic, social and political impacts while maximizing economic benefits in the form of green jobs and renewable energy technologies. However none of these non-scientific impacts of public policy should ever be a consideration in the evaluation of the science itself.