Among other things the global warming crusaders got wrong -- skepticism is a virtue, not a vice.

Joseph Bottum and William Anderson, The Weekly Standard, 11-28-11

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In retrospect, we probably should have paid more attention when, around 2005, activists shifted their primary vocabulary from *global warming* to *climate change* to describe the impact of human beings on this biosphere we call the Earth. Both phrases had been around for a while, of course. *Global warming* got its modern start back in 1975, when the journal *Science* published a feature asking, "Are We on the Brink of a Pronounced Global Warming?" In one form or another, *climate change* has been in use since the physicist Joseph Fourier wrote of the greenhouse effect in the 1820s.

For that matter, both are unexceptionable meteorological terms with reasonably clear meanings: global warming a particular species or instantiation of general changes in the globe's climate. The public purpose of those words, however—the political intent: That was a different thing altogether. For decades, *global warming* seemed a powerful, dynamic term to use—an apocalyptic phrase that summoned a grim vision of the eschaton, our world reduced to a lifeless wasteland. The only trouble was that it required the world to be, you know, *warming*. Constantly. A cold winter, and people started to wonder. A chilly spring, and people started to doubt.

Recent news reports have been dominated by squabbles between Berkeley's Richard Muller and Georgia Tech's Judith Curry, both involved in research that led to the release of data in October from the Berkeley Earth Surface Temperatures study. Muller claims that the fact of global warming now leaves "little room for doubt," while Curry tells the *Daily Mail* that there exists "no scientific basis for saying that warming hasn't stopped." And yet, even in the midst of touting the study, Muller admits that the Berkeley data show that temperatures have not risen over the last decade.

Which confirms, more or less, what seems to be emerging as the feeling of the general public: These recent winters have been *cold*, and the summers themselves not so hot. That, in turn, creates a problem, for no sense of impending apocalypse survives widespread disbelief. And so—right around the point where it all started to seem a little hard to swallow—the phrase *climate change*, more generic if less picturesque, began to slip into public pronouncements, supplanting the old, falsifiable term *global warming*. A bitter January in the Midwest could well be a sign of climate change. Hurricanes in the Caribbean, mudslides in Latin America, floods in Australia. Earthquakes, even. Everything and anything, the whole wild uncertainty of the world, proved that we were right to feel under the gun—faced with an eschatological doom of our own creation.

The more the term embraced, however, the less it explained. That's not as contradictory as it may seem. There's a simple epistemological process by which, as we move up the genus-species tree, we arrive at ideas that cover more cases but convey less information: Lots more mammals exist in general than marmosets in particular, but *mammal* doesn't tell us as much about the beast in question as *marmoset* does. Move up high enough into the linguistic arbor, and you arrive at terms that refer to all but mean none: *thing*, for example, or *being*.

Or *climate change*, as far as that goes. The great emotional gain of the shift from *global warming* to *climate change* was that the name had become so generic that nothing imaginable could prove it wrong. Every shift in weather is a confirming instance. The only problem left was the pesky little scientific one that, well, *nothing imaginable could prove it wrong*. In its public use, in the mouths of activists and the titles of organizations such

as the United Nations Framework Convention on Climate Change, the phrase had come to describe something nonfalsifiable.

This is what was in the background when Ivar Giaever, a Nobel laureate in physics, resigned recently from the American Physical Society—in protest over the society's loudly declared position that evidence of human-caused climate change is "incontrovertible." Giaever is not some committed global warming skeptic, but he decided that he just couldn't stomach the claim that *anything* in science is incontrovertible. If you can't imagine conditions under which it might be controverted, then you're no longer doing science.

It was back in the 1930s that Karl Popper popularized the idea of falsifiability as a necessary property of a scientific proposition. Several of the intellectual currents of the era combined to make Popper's work seem a major breakthrough. The mechanisms of inductive logic had become a crisis point in philosophy, for example, and the commonly used "fact-value distinction" lacked clarity.

None of these philosophical problems seem particularly pressing these days, but the concept of falsifiability still grants some insight into the vagaries of modern environmentalism. In politics, the notion that climate change can't be falsified—everything only serves to confirm it, nothing imaginable can contradict it—has been a marvelous boon. In science, the fact that climate change can't be falsified seems to prove, mostly, that climate change isn't science: There's no way to test for it, no way to quantify it, and no way to demonstrate it.

If politics is the human activity by which collective decisions are made, then (whatever the structure of the regime, from the most coercive authoritarianism to the most radical democracy) all government depends on some kind of agreement. Our political instincts have developed over many millennia, but the essential commonality is that we are most comfortable when we shape our opinions to the consensus of our group. As a general matter, we'd rather be wrong in a group than right but alone.

Science, on the other hand, is a methodological tool by which we coordinate observation, logic, and experiment to attempt to discover facts. Science doesn't deal in either certainty or consensus. Every well-formed theory contains a set of testable hypotheses. When these hypotheses fail confirmation by repeated experiment, the theory has to change. Thus the progress of science is halting and erratic, ultimately convergent on, but never achieving, final explanations of our world.

Naturally, that means confusion reigns when scientists dabble in politics and politicians attempt to explain science—as when we are confronted by such oxymorons as "settled science." And, unfortunately, in the worlds of climate change, such confusions seem to be happening a lot—from the United Nations agency that got caught taking an environmental activist group's unsupported (and mistaken) word that Himalayan glaciers would all be melted away by 2035, to the *Times Atlas* that recently decided global warming would be more striking if 15 percent of the Greenland ice cap were arbitrarily erased from the map. To say nothing of the 2009 case in which bizarre emails between influential scientists and activists, hacked from a server at the University of East Anglia (which is climate-change central, keeper of international temperature records), were released to the public.

Professional scientists are people, of course, and thus participants in the rough and tumble of political debate. Professional politicians are also people, of a sort, and they're always eager to use the prestige of science to claim support for their political goals. Most of the time, these crossover category errors stay relatively minor. Occasionally, however, conflations of politics and science snowball into disasters for both politics and science—and the debate over climate change is as clear an example as we've had since stem cells rolled into public view.

An hour's poking around on the Internet reveals that no scientific consensus on massive human-caused climate change actually exists. Those afflicted with what economists call "perverse incentives," however, *want*

scientific consensus to exist, and they try, hard, to pull that consensus into being. Naturally, the debate is skewed toward the faction which controls the most political and economic resources—particularly the United Nations, on the commanding heights of resource allocation for activists through the mechanism of its various interlocking directorates of committees and NGOs.

The result is an astonishing tangle of mostly ad hominem arguments. Proponents of catastrophic global warming claim that their opponents are in denial and corrupted by corporate funding. Skeptics counter that these alarmists are corrupted by government funding and political pressure. The result has been good for neither politicians nor scientists, with every new poll betraying smaller numbers of those who trust either government or science to speak the truth—much less to fix our strange and broken world.

As far as the actual facts go, they go quickly, the first casualties in the battles at the crossroads of science and politics. We do know that there have been periodic ice ages for the past million or so years, and that the period of those ice ages is on the order of 100,000 years. About 10 percent of discernible history is made up of warm periods (such as our current climate), and the rest much colder, with large portions of the earth covered with thick ice.

The cause of this periodicity is not well understood. Human activity may have contributed to some of it recently, but clearly not to changes occurring over millions of years. Variations in solar irradiance, changes in atmospheric gases, variable ocean currents, and cosmic rays have been hypothesized, each the bearer of a much greater burden than human activity could be. We now appear, on the basis of prior history, to be in the last stages of a warm period which has existed, with some variations, for about 10,000 years.

Within each era, variances of climate occur, as warmer and colder periods of several hundred years come and go. The causes of these changes are similarly uncertain. Is there an ideal global average temperature? If so, what is it? And how do we measure it? Can our species influence these changes? If so, should we? In which direction? What are the costs, risks, and benefits? These questions are not, to say the least, in any realm of settled science.

Enter the climate scientists. The research enterprise in the modern world is a large-scale activity. Difficult questions are raised, and hypotheses are generated to move toward an answer. This requires hiring staff, recruiting experts and consultants, purchasing equipment, and putting all of it in a building, preferably on a university campus. Most of all, what's needed for this kind of research is oceans of money. And where money is the driver, politics is the unavoidable road down which the scientist has to race. Grant-making authorities, whether in government, industries, or foundations, tend to have a preferred perspective on the process and outcome of research. These preferences are not lost on the applicant researchers.

A few research centers have dominated the study of climate change, and these are typically funded by national governments, with the approval of U.N. agencies and the transnational perspective that U.N. agencies represent. What has emerged, in other words, is a *political* consensus that emphasizes the claim of ongoing climate change which (1) tends toward warming, (2) is caused by human activity, and (3) threatens to be apocalyptic. Groupthink then emerges as the dominant social response, with ostracism of skeptics and excommunication of apostates.

As the grant-achieving scientists congealed their opinions around the hypothesis (and now doctrine) of catastrophic anthropogenic global warming—warmed, themselves, by their presumptive guardianship of truth and virtue—some have succumbed to the temptation to cut corners. Dissenting investigators have been marginalized, their research papers viewed with prejudice by academic journals. The principle of free availability of raw data has been ignored. Peer review has degenerated into pal review. Cases of data destruction and tampering have been documented.

Through all this, public opinion has remained bemused, and only mildly interested, with polls suggesting a small decrease in concern over catastrophic manmade climate change and a gradual increase in disbelief about the whole thing. Which has to concern the people whose livelihood depends on predicting catastrophe. Prophecy demands belief.

Perhaps the greatest reason for any of us to feel skepticism about climate change, however, is the unchanging politics of those who employed it to advance their agendas. Are we wrong to suspect that most global warming activists are merely using global warming as the latest in a long series of tools with which to demand fundamental changes in Western civilization?

Think of it this way: The premise of catastrophe produces the conclusion that the political and economic underpinnings of Western civilization must be discarded. Governments must take control of economies. Capitalism must give way. All decisions must be made by our scientific and political elite, for only they can save us from doom.

Now, in a purely logical world, the rejection of the premise would mean that we don't have to accept the conclusion. *If A, then B* and *not A* together produce nothing. But the people who've been lecturing us for more than a decade now about global warming and climate change didn't start by holding *A*. They began by holding *B*—the conclusion, the proposition that Western civilization must change. And it is, literally, a nonfalsifiable proposition: If global warming and climate change help lead to it, then hurray for global warming and climate change. If not, well, then, they'll find something else.

Yet facts remain stubborn things, and the thesis of climate change, at least, is clearly in decline. The once-proud carbon-trading market in Chicago is now defunct. Similar European schemes have collapsed in confusion and fraud. Alternative scientific theory is beginning to find its footing. Flawed methods have been exposed. Leaked emails indicate a corrupted scientific process. Most of all, public opinion has not been stampeded, in spite of intense climate-change advocacy in the media.

Skepticism, the prime scientific virtue, still lives, in other words. If nothing else, Ivar Giaever may yet be able to rejoin the American Physical Society.