

# When politicians distort science

By Robert Socolow and Roger A. Pielke, Jr. | 20 October 2011

Republican presidential candidate and Texas Gov. Rick Perry recently questioned the science of climate change in ways so unsupported by evidence that Glenn Kessler, the "Fact Checker" columnist at *The Washington Post*, gave him a rating of "four Pinocchios." Perry's is but one scientific misstatement among many that regularly roil the US political scene. What is the proper scientific response to the political distortion -- or even outright rejection -- of science? In coming weeks, three *Bulletin* experts will offer authoritative and at times provocative analysis.

Enter with caution Roger A. Pielke, Jr. | 27 October 2011

Here we go again. The US presidential campaigns of 2004 and 2008 saw some in the scientific community seek to exert influence on the elections. In 2004, scientists mounted an aggressive effort to unseat George W. Bush, and four years later sought to raise the profile of science in the election by calling for a presidential debate on science. Neither effort bore much fruit.

But hope springs eternal. As the 2012 campaign gets under way with a focus on the Republican nominees vying for the ticket, the scientific community is once again trying to figure out how it can impact the process. A seemingly obvious way is for scientists to do what any citizen can: evaluate the claims made by candidates, factor those into their judgment as to whom to support, and, if desired, actively work to help get those candidates elected.

The situation is, of course, more complex. Scientists are not just ordinary citizens; they have specialized expertise. So what should scientists do when a political candidate expresses a perspective that they -- as individuals or within groups -- hold a different view on? In our system of democracy scientists can speak out, and because scientists are held in high regard within our society, they are more likely than the average citizen to have their voices amplified (if not treated with deference) by the media. I've been known, on occasion, to use my own blog to call out politicians for misrepresenting the state of science related to my own work.

Of course, there are several pitfalls that scientists should be aware of when making a decision to

speak out and express a view differing from a politician's.

First, although scientists are not like every citizen, all citizens have the right to speak out. So if a scientist says that life on Earth evolved over billions of years, anyone else has the right to counter that view by expressing his or her belief in creationism. Depending on one's view of the merits of democracy and expertise, this feature of American political life may be viewed as a positive or a negative. Experts should never forget that in democracies, citizens have every right to make bad decisions or hold the wrong views -- if we define "bad" decisions and "wrong" views as those which are counter to the perspectives held by experts.

Second, when scientists speak out publicly, they will quickly learn that it is not just candidates for office who have their views scrutinized. For instance, this roundtable was apparently motivated by Texas Gov. Rick Perry taking issue with aspects of climate science that many in the research community have long viewed to be settled science, with only a few outliers taking issue. Perry's views prompted rebukes from scientists and fueled reverberations through the blogosphere's echo-chambers for weeks.

Yet in sharp contrast, when President Barack Obama sought to explain the recent Texas drought as a consequence of human-caused climate change, few (if any) of those same scientists found fault with his views, despite the overwhelming consensus (also disputed by a few outlier voices) that individual events cannot be attributed to the human influence on climate because such changes are observed as statistics that play out over several decades and longer.

The selective behavior goes to process as well. When NASA scientist James Hansen was told by the Bush administration that he could speak with the press only when accompanied by agency "minders," the scientific community loudly and quite rightly expressed outrage. Yet, when the Department of Health and Human Services under President Obama recently announced a similar policy, virtually all of those once-outraged voices were mute.

An observer of this selectivity might note that significant parts of the scientific community have a political preference for Democrats over Republicans. For instance, a survey of the membership of the American Association for the Advancement of Science found only 6 percent registered as Republicans, and almost 10 times more registered as Democrats. Scientists who take on politicians in the name of science risk being perceived as simply using science as a fig leaf of expertise to advance what ultimately are political preferences.

That politicians express misleading or incorrect views (on scientific issues or anything else) will not come as a surprise to most any member of the general public, whether that person has specialized expertise or not. In our recent book on presidential science advisers, Roberta Klein, managing director of the Center for Science and Technology Policy Research at the University of Colorado, and I documented controversial claims made by each president going back to Eisenhower, including both Democrats and Republicans. For instance, Jimmy Carter set a goal of achieving 20 percent of the US energy supply from renewable sources by 2000, even though he was told it would be infeasible. Ronald Reagan wanted creationism taught in schools. The area of

national security seems particularly perilous. Bill Clinton bombed a Middle East chemical factory based on supposed scientific proof that ultimately did not exist. George W. Bush justified claims that Iraq had WMDs, also on supposedly scientific evidence. And the list goes on.

Of course, for those wrapped up in partisan debates, a favorite pastime involves argument about which political party is worse in its deviation from facts accepted by the scientific community. Such debates are certainly fun -- especially on blogs and during cocktail hour -- but they have little connection to real-world issues that most people care about. (In case you are curious, most Republicans think Democrats are worse, and vice versa.)

When scientists go into political battles armed with their expertise and invoking science as the basis for their claims, they may think that they are working to improve the factual basis underlying political debates. This of course is a worthwhile ambition, and to the extent such efforts are successful, they will help to improve the quality of policy discussion.

But if scientists are not mindful of the pitfalls that accompany their efforts to insert themselves into the bright glare of political campaigns, they may find that rather than making politics more scientific, they have instead made science more political. Prominent scientists and leading scientific organizations face much greater risks in this regard than do rank and file scientists. No matter how well intentioned, actions that exacerbate the politicization of science diminish both our science and our politics.

Yes, science is being distorted. But, much more dangerous, it is being rejected.  
Robert Socolow | 20 October 2011

This roundtable explores "the proper scientific response to the political distortions of science." Indeed, distortions abound regarding both what science understands and how science is conducted. Of even greater concern, however, is the rejection of the scientific way of knowing -- or rather its relegation to the status of just one of many equally valid ways of knowing. If the scientific method loses its place as a privileged way of knowing, the consequences will be devastating. Developing effective responses to the rejection of science, however, will take scientists into unfamiliar territory.

**Distortion.** The scientific enterprise encompasses both what is understood about the natural world and a set of professional norms. Both can be distorted, out of ignorance and deliberately.

In America's litigious society, the scientific enterprise is enmeshed in conflict. Science is used selectively by those seeking to influence legislation. The scientist-as-expert-witness is hired to persuade juries. Sometimes the conflict centers on whether a glass is half full or half empty: The same fact is looked at two different ways. Sometimes how well something is known is debated. It is hardly surprising that there is so much misunderstanding about both what science has learned and how science is conducted.

With a free press and unrestricted access to decision-makers, the open society is supposed to

limit the adverse consequences of such legitimated distortions of science. To provide those checks and balances, the open society must be protected. The best way forward is to shore up our democracy -- no small task when the funding of politics is skewed by corporate personhood and the cogency of the media is undermined by the leveling effects of the internet.

**Rejection.** More threatening than the distortion of science, however, is its rejection. At issue is whether the scientific way of knowing is privileged relative to other ways of knowing that are rooted in myth. As scientists, we are poorly prepared to respond when science is called "just a theory," on a par with other theories. We are distressed when intelligent design and evolution are placed on the same footing. We consider it self-evident that better climate science will help in sorting out threats to human well-being from climate change. Then we learn that the answer is already known: Our vulnerability is minimal because God wouldn't let climate change injure us.

Think hard about Republican presidential candidate and Texas Gov. Rick Perry's mental model, which leads him to reject climate science and cast himself as Galileo and the current science establishment as the 17th century Catholic Church. Rather than writing him off, perhaps scientists should consider this stagecraft to be a warning. Perhaps an experienced politician knows something about the state of the electorate that scientists should not dismiss. What *are* the similarities between the current scientific enterprise and the 17th century papacy? We scientists are remote, we believe we deserve deference, and we extract considerable financial resources from the general population to run our affairs. Such parallels make us vulnerable.

We must not underestimate the threat now looming. Another age of darkness could lie ahead. In what may someday be called the Science Wars, our opponents present science as dogma and construct a symmetric conflict: their dogma vs. our dogma. We are carried back to the contest set up by Elijah to determine the stronger god, described in the Book of Kings. Firewood is piled on two altars on the peak of Mount Carmel, and each group pleads with its god to create a fire. "Baal, we cry to thee" is a poignant moment in Mendelssohn's rendition.

There is no such symmetry. Science is not just another point of view. Science is a process of searching, always incomplete. Its norms include strict evidentiary standards and transparency. Anyone working anywhere can overturn a prior consensus. Safeguards against human frailty take the form of countless processes that protect decision-making from being compromised by friendship, rivalry, and financial interest.

To counter the rejection of science, perhaps it will be productive for scientists to assure that these long-tested and distinctive norms are widely appreciated. Science is usually defended differently. One strategy is to justify science through its utility -- its role in bringing about the healthier and fuller lives that nearly all of us live. A second is to appeal to the elegance of the edifice of science and its capacity to make sense of both our past and our place in the universe. Arguing for science by explaining its governing rules is, in effect, opening a third front.

In summary, to refute distortion we must first understand that distortion is often animated by rejection. And to counter rejection, we must retain -- or perhaps regain -- the public's trust. We

must earn the moral high ground: No longer can we assume that others will place us there.

The time on the *Bulletin's* Doomsday Clock would need to be advanced at least two minutes toward midnight if the scientific method were to lose its primacy, even if, in the short run, nothing else changed.

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