

Winning and Losing the Global Warming Debate

Roger A. Pielke, Jr.
Environmental and Societal Impacts Group
National Center for Atmospheric Research

Daniel Sarewitz
Center for Science, Policy, and Outcomes
Columbia University

It is time to declare winners and losers in the global warming debate. The results might surprise you.

For more than a decade, scientists and policy makers have engaged in a sometimes vitriolic debate about the Earth's climate. The debate concerns potential changes associated with increasing atmospheric greenhouse gases, popularly known as global warming. The debate can be summarized as *Global Warming: YES or NO?* It is rooted in science, including frequent references to computer models and scientific expertise. Yet the debate only thinly masks the associated policy prescriptions: *Global Warming: YES* = global emissions reductions, while *Global Warming: NO* = business as usual.

On the *Global Warming: YES* side of the debate are those who think of themselves as *Cassandras*, warning of impending environmental doom caused by profligate lifestyles and a lack of concern for human impact on the environment. Some *Cassandras* have hitched their existing social and environmental concerns to global warming. They see the issue as a way to mobilize public support. Still, the majority of *Cassandras* have taken the moral high ground. If humans are acting in ways that could compromise our collective future, they point out, it is our responsibility to take precautions.

The champions of the *Global Warming: NO* side of the debate see themselves in the role of *Dorothy*, pulling back the curtain to reveal the frail wizards who manipulate scientific models for political motives. The *Dorothies* seek to expose the great uncertainty involved in the models, even while at times presenting a "don't worry, be happy" philosophy. This side of the debate has gained stature from the excesses of the *Cassandras* who make claims at the fringes of scientific credibility—like the well-worn but incorrect claim that extreme hurricanes occur more frequently now than in earlier decades this century.

But the *Dorothies* are guilty of many excesses themselves. Some have even promised that rising greenhouse-gas levels will benefit society. As with the *Cassandras*, some also use the debate to exploit their political interests, all but inviting *ad hominum* attacks on their motives, rather than on the merits of their positions. But, like the *Cassandras*, many *Dorothies* have taken the moral high

ground, pointing out that it would be foolish to act as if we know the future with certainty, when most evidence suggests that we don't — and can't.

So who has won the debate? The answer depends on how one judges victory.

From the standpoint of *policy action*, the Cassandras have won the debate going away. The 1997 Kyoto Conference of Parties to the U.N. Framework Convention on Climate Change, proposed strong reductions in emissions growth. Many nations of the world have all but accepted that something of the sort will become reality. Many companies as well, including Ford and British Petroleum, have begun to acknowledge the need for emissions policies in response to climate change.

Some Cassandras will decry the pace of the action. But it cannot be denied that the *Global Warming: YES or NO?* debate is no longer about whether to act. Even in the United States, where the Senate has refused to ratify the Kyoto Protocol, the question now is how to act.

From the standpoint of science, however, the debate is a draw. We have learned much more about climate over the past decade, but arguably we are no closer to gleaning the future state of the climate. The relationship between human activities, the atmosphere, and indeed the global environment is much more complicated than scientists had thought. Modeling historical climate has proven hard enough, but accurate predictions of future climate — decades or more hence — remain out of reach. An oil crisis, a volcano, or a breakthrough in energy technology would render irrelevant the predictions of even the most sophisticated computer model.

In any case, the real-world evaluation of the accuracy of climate forecasts must await the unfolding of a distant future. Thus, there is one prediction of which we can be confident: ten years from now, debate over scientific uncertainties about global warming will rage on. Still, the public is on the side of the Cassandras. As many studies have shown, the public readily believes that human activities can significantly alter the Earth's climate. The conclusions of prestigious science reports can seem rather tame by comparison.

From the standpoint of the *impacts* of climate on humans and the environment, we are all losers. The global-warming debate has missed one of the most important aspects of the problem: Climate changes. In fact, the phrase "climate change" is redundant. A changing climate is an unchanging attribute of a dynamic Earth. Human-caused or not, these changes are likely to have impacts on society and the environment. Natural disasters, human health, biodiversity, endangered species, water resources, international trade, financial services, transportation networks, agriculture — virtually any area of human experience is in some way affected by climate. These impacts are occurring today, and they hold the prospect of increasing in the future. And for the most part, we are doing too little in response.

We are all losers because the global warming debate has focused almost exclusively on preventing climate change. And it has addressed greenhouse-gas emissions as the sole cause. But climate is only part of the cause of impacts, and greenhouse gases are only one potential cause of changes in climate.

Climate impacts occur because society and environment are vulnerable. This vulnerability might take the form of urban development on a flood plain or on an unstable mountainside, or it might mean a species stressed through loss of its habitat. Because society and environment are already vulnerable to their present climate, stabilizing climate would not prevent impacts. Nor would reducing greenhouse-gas emissions necessarily stabilize climate, which historically has shown great variability.

Furthermore, even if emissions reductions could in principle stabilize climate, it is very unlikely that the world will see emissions reductions that Cassandras deem necessary to avoid dangerous human interference with the atmosphere. Therefore, if the Intergovernmental Panel on Climate Change (IPCC) is correct, humans will contribute to climate change in the future. And even if the IPCC happens to be wrong, we can still be confident that the climate will continue to change. It always has.

In short, we are all losers, because the debate has ignored the need for society to *adapt* to climate. Ian Burton, the natural-hazards scholar, has pointed out a few reasons for this neglect:

- First, many Cassandras oppose adaptation. They see it as undermining the argument for stabilizing climate and as an obstacle to sustainable energy policies.
- Second, the political process has framed the issues too narrowly. It keeps emissions goals separate from other sensitive issues, such as economic development and international assistance. Adaptation comes awfully close to these issues.
- Third, adapting to climate means accepting that we cannot control it. But many disagree and assume that humans can in fact control future climate impacts via energy policies. In his book *Earth in the Balance*, Al Gore wrote that adaptation represents "laziness." Presumably, he believed that through mechanisms like the Kyoto Protocol, humans can control the climate in desired ways.

If we are to reduce our world's vulnerability to climate, it could very well be that our worst enemy is the *Global Warming: Yes or No?* debate itself. Climate impacts cause human suffering, economic loss, and ecosystem destruction. Meanwhile, diplomats, politicians, and scientists pursue a debate that has become too narrow, at times too personal, and increasingly irrelevant to the real impacts. As a striking example of this folly, last fall thousands of diplomats, advisers, and advocacy groups gathered in Buenos Aires to address the climate problem shortly after Hurricane Mitch killed more than 10,000 people in Central America. Some in Buenos Aires even pointed to Hurricane Mitch as a harbinger of *future* disasters

brought on by climate change. We point to Hurricane Mitch as a failure to prepare for climate impacts *today*.

What is to be done? Two steps can be taken right away:

- First, the scientific and policy communities must exercise leadership. Whether Cassandras or Dorothies, leaders from the scientific community must look beyond past commitments and personal stakes. They must recognize publicly that the *Global Warming: YES or NO?* debate has lost much of its usefulness. It is now distracting us from what needs to be done.
- Second, politicians and diplomats, too, should turn to adaptation as a needed response to climate. Under the mantle of climate, they must tackle such thorny issues as preparation for natural disasters, habitat preservation, and land-use policies.

In short, let both sides declare victory. They can then ask instead how to make society and the environment less vulnerable to climate. The IPCC has already started to focus its attention on vulnerability and adaptation to climate, but its steps in this direction must be bolder.

Some say that a focus on adaptation might result in "every country for itself." It need not. The U.N. Framework Convention provides a mechanism through which the world's climate "winners" can help boost the resilience of the climate "losers." When climate does change, the distribution of winners and losers might also change, but shared assistance would persist.

These steps defy conventional wisdom. They are unlikely to be popular, given that the status quo sustains Cassandras and Dorothies alike. Unfortunately, in spite of the high moral rhetoric from both sides, the debate itself stands in the way of further progress. We need a third way to confront climate change, even if it means moving beyond now-comfortable positions held fast for many years.

Climate changes. Let's deal with it.

Roger A. Pielke, Jr., and Daniel Sarewitz have most recently completed ***Prediction: Decision Making and the Future of Nature***, along with R. Byerly, to be published in 2000 by Island Press. Both have long had an interest in the interrelation of science and policy. Pielke, also the author with his father of *Hurricanes: Their Nature and Impact on Society* (Wiley, 1997), is currently a scientist with the National Center for Atmospheric Research and also teaches at the University of Colorado. Sarewitz, best known for *Frontiers of Illusion: Science, Technology, and the Politics of Progress* (Temple, 1996), is currently a Senior Research Scholar with Columbia University's Center for Science Policy and Outcomes, and has also served as director of the Geological Society of America's Institute for Environmental Education as well as a congressional science advisor.