

Climate Experts Tussle Over Details. Public Gets Whiplash.

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News Analysis By ANDREW C. REVKIN



Michael Kappeler/Agence France-Presse — Getty Images; Erik S. Lesser for NYT; NOAA; NASA

DATA DELUGE From left, Greenland ice, lemur leaf frog, hurricanes tracks and a plot of buoys used in sea temperature studies. Discordant findings aside, the theory of rising human influence on climate endures.

When science is testing new ideas, the result is often a two-papers-forward-one-paper-back intellectual tussle among competing research teams.

When the work touches on issues that worry the public, affect the economy or polarize politics, the news media and advocates of all stripes dive in. Under nonstop scrutiny, conflicting findings can make news coverage veer from one extreme to another, resulting in a kind of journalistic whiplash for the public.

This has been true for decades in health coverage. But lately the phenomenon has been glaringly apparent on the global warming beat.

Discordant findings have come in quick succession. How fast is Greenland shedding ice? Did human-caused warming wipe out frogs in the American tropics? Has warming strengthened hurricanes? Have the oceans stopped warming? These questions endure even as the basic theory of a rising human influence on climate has steadily solidified: accumulating greenhouse gases will warm the world, erode ice sheets, raise seas and have big impacts on biology and human affairs.

Scientists see persistent disputes as the normal stuttering journey toward improved understanding of how the world works. But many fear that the herky-jerky trajectory is distracting the public from the undisputed basics and blocking change. "One of the things that troubles me most is that the rapid-fire publication of unsettled results in highly visible venues creates the impression that the scientific community has no idea what's going on," said W. Tad Pfeffer, an expert on Greenland's ice sheets at the University of Colorado.

"Each new paper negates or repudiates something emphatically asserted in a previous paper," Dr. Pfeffer said. "The public is obviously picking up on this not as an evolution of objective scientific understanding but as a proliferation of contradictory opinions."

Several experts on the media and risk said that one result could be public disengagement with the climate issue just as experts are saying ever more forcefully that sustained attention and action are needed to limit the worst risks. Recent polls in the United States and Britain show that the public remains substantially divided and confused over what is happening and what to do. Some environmentalists have blamed energy-dependent industries and the news media for stalemates on climate policy, arguing that they perpetuate a false sense of uncertainty about the basic problem.

But scientists themselves sometimes fail to carefully discriminate between what is well understood and what remains uncertain, said Kimberly Thompson, an associate professor of risk analysis and decision science at Harvard.

And, Dr. Thompson said, the flow of scientific findings from laboratory (or glacier) to journal to news report is fraught with "reinforcing loops" that can amplify small distortions.

For example, she said, after scientists learn that accurate, but nuanced, statements are often left out of news accounts, they may pre-emptively oversimplify their description of some complex finding. Better, but more difficult, Dr. Thompson said, would be to work with the reporter to characterize the weight of evidence behind the new advance and seek to place it in context.

To support clarity, Stephen H. Schneider, a climatologist at Stanford, helped create a glossary defining what is meant by phrases like "very likely" (greater than 90 percent confidence) in the reports from the Intergovernmental Panel on Climate Change. In a news media universe where specialized reporting is declining and a Web mash-up of instant opinion and information is emerging, Dr. Schneider said, it is ever more important for scientists to take responsibility for communicating in ways that stick, while sticking with the facts.

Dr. Thompson said climate science presented particularly tough challenges, given the long time lag before the worst effects kick in and the persistent uncertainty about the likelihood of worst-case outcomes. She said the news media sometimes overplayed the uncertainty by balancing opposing views in a story without characterizing the overall level of confidence in either side. And sometimes they do the opposite, sacrificing accuracy for impact, she said.

"Words that we as scientists use to express uncertainty routinely get dropped out to make stories have more punch and be stronger," she said, adding that those words are important to include because "they convey meaning to readers not only in the story at hand, but more generally about science being less precise than is typically conveyed."

Public-relations offices at leading scientific journals and hubs for research also could do more to avoid overplaying incremental research results, she and several other experts said.

Donald Kennedy, a Stanford professor emeritus who was the editor in chief of the journal *Science* from 2000 until earlier this year, said the flow of papers on climate, glaciology and relevant ocean sciences greatly increased in his tenure. "I do think we grew more sensitive to the need for critical review of papers likely to initiate or continue the kind of controversy that results in a whiplash effect," Dr. Kennedy said.

Roger A. Pielke Jr., a political scientist at the University of Colorado, warned that the focus by the public and media on the stream of evolving climate science could distract from the need for policies now that made sense regardless of uncertainties. "The example of reducing losses to hurricanes is a good one," Dr. Pielke said, "where the actions that make the most sense are really independent of the debate over greenhouse gases and hurricane behavior."

"The same might be said for many health studies on fat, coffee, carbs," he added. "The lesson from experts is to eat a balanced diet and get plenty of exercise," which stays the same despite the various disputes.

He said his advice for scientists who wanted to "dampen the whiplash effect" was to "discuss the 'So what?' implications of the work explicitly, rather than leaving that step to advocates or politicians, or reporters."

Increasingly, scientists are taking their message straight to the public. Realclimate.org, Climatepolicy.org and Climateethics.org are among Web sites where issues are explored in an ongoing way, rather than in response to news releases and scientific papers. Other new Web ventures, like ClimateCentral.org at Princeton and the Yale Forum on Climate Change and the Media, focus on improving media coverage.

Robert J. Brulle, a sociologist at Drexel University, said it was hard to be optimistic about such efforts. "In this public sphere," he said, "it is assumed that the better argument, backed up with solid scientific evidence, will prevail." He said many studies had shown that people tended to sift sources of information to reinforce existing views.

Morris Ward, the editor of the Yale effort (yaleclimatemediainforum.org), says that it will be up to the public to choose to be better informed on momentous issues that do not fit the normal template for news or clash with their ingrained worldviews. "At some point," he said, "the public at large has to step up to the plate in terms of scientific and policy literacy, in terms of commitment to education and strong and effective political leadership, and in terms of their own general self-improvement."