

Improving media coverage of climate science

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Thwaites Glacier, a melting section of the West Antarctic Ice Sheet, is predicted to contribute to significant worldwide sea-level rise. Credit: NASA

Climate science makes headlines every day: "Shrinking Sea Ice Could Put Polar Bears In Grave Peril by 2100." "Climate Change May Spark More Lightning Strikes, Igniting Wildfires." "U.S., British Data Show 2014 Could Be Hottest Year on Record." "Volcanoes May be Slowing Down Climate Change." "Polar Ice Sheets Melting Faster, Raising Sea Levels."

Unfortunately, media coverage of [climate](#) science is often inaccurate. Stories may either under- or over-emphasize the risks of anthropogenic

global warming. It's easy to find reporting that cherry-picks data or represents widely discredited scientific concepts. Non-expert readers might not recognize skewed scientific information. Scientists, for their part, are often unsure of whether or how to speak out about public misrepresentation of science.

"The availability of accurate information is a necessity if we are to make good decisions about [climate change](#) as a society," says Emmanuel Vincent, a postdoctoral associate at Yale University who recently completed a fellowship in MIT's Department of Earth, Atmospheric, and Planetary Sciences (EAPS). "When I read something I know is incorrect, I can blog about it, but only a few people will read the post. Moreover, the comments below blog posts tend to get acrimonious. It depresses me."

To improve the situation, Vincent channeled his frustration into launching [Climate Feedback](#), a method that aims to help journalists, science writers, and scientists who write for the public, to assess the quality of their reporting on climate science and find better sources of information. It also allows the general public to investigate the accuracy of climate stories.

Vincent partnered with the founders of the non-profit Hypothes.is, who created a free Internet browser plug-in that allows users to make sentence-level critiques on web pages in an effort to foster a collaborative evaluation of online content. Climate Feedback, an application of the Hypothes.is platform to climate science communication, will allow active climate scientists to evaluate the scientific accuracy of an article by adding comments on the right-hand side of the screen. Everyone—especially journalists, writers, and other scientists—can learn from this pool of knowledge to improve their reporting or find resources on a topic.

"Our project will ultimately promote scientific reasoning and make scientific resources more accessible to citizens," says Vincent. "The idea is, instead of starting fights, to make a quality contribution—informative rather than ideological."

In a first experiment with Climate Feedback, a group of post-doc researchers in the climate sciences from MIT, Woods Hole Oceanographic Institution (WHOI), and Columbia University used Hypothes.is to evaluate the recent Wall Street Journal article "Climate Science Is Not Settled" by physicist Steven E. Koonin, director of the Center for Urban Science and Progress at New York University. The six researchers highlighted inaccurate statements about [sea level rise rate](#), the [ocean's role in climate](#), and the [timescale of CO2 influence on climate](#), as well as multiple instances of confusion about climate science.

The following is an example of annotations on two particular statements. (To see the fully annotated version, install the [Hypothes.is](#) plug-in in your web-browser, then visit the [WSJ article](#) and activate the plug-in from the upper-right corner.)

Koonin writes: "The climate has always changed and always will."

Alexis Berg, a postdoc at Columbia University's International Research Institute for Climate and Society (IRI), comments: Misleading. Climate change in the past was, by definition, not man-made. Current climate change is. In addition, modern human civilization developed during the stable climate of the Holocene (~10000 years). It has thus never witnessed a change in global climate anything like what can be expected from current and projected greenhouse gases emissions.

Koonin writes: "The models roughly describe the shrinking extent of Arctic sea ice observed over the past two decades, but they fail to describe the comparable growth of Antarctic sea ice, which is now at a record high."

Kyle Armour, postdoc in MIT's EAPS, comments: Antarctic sea ice extent is indeed at its highest point since continuous records began in 1979, and the mechanisms driving this are not yet understood. However, satellite observations from the 1960s show that it [used to be higher](#) than it is today. Moreover, the growth of Antarctic sea ice [has not kept pace](#) with the loss of Arctic sea ice.

Vincent performed this first experiment to identify the success and problems of his proposed workflow, and he shared the results with journalists and non-experts in climate science. "I got very positive feedback," he says. "They found the annotations very helpful and more convenient than a 'reply' published on a blog. Having the comments in context apparently helps a lot because people usually don't remember the details of one article before reading its refutation elsewhere on the web."

Climate Feedback is an easy way for interested researchers to apply their expertise to improve the public's understanding of climate science, but the question remains whether enough people will participate to make the project into a dependable resource. "I think the key is widespread adoption," says Britta Voss PhD '14, a postdoc at the U.S. Geological Survey who participated in the first experiment. "This will only work if serious scientific criticism is something people come to expect and depend on when reading and hearing about science in the news. Maybe in time, the consequence of poor Climate Feedback reviews would compel journalists to be more rigorous and factual in their analysis of scientific information. Personally, I hope that by engaging more scientists in communication, more of us will see the need for our voices among the chatter of politicians, pundits, and lobbyists, and seek out more ways to communicate [climate science](#) to the public."

Currently, Vincent is working to engage more scientists and software developers with the project. He is also looking for sources of funding to

support the initiative. To spread the word, he will host a workshop at the American Geophysical Union conference in San Francisco on Dec. 18 to present the project to climate scientists and perform a hands-on practice. He also submitted Climate Feedback to the MIT Climate Conversation's Idea Bank, where the project has garnered a high level of approving votes.

Interested in taking part? The time is now. Vincent says that anyone can use the Hypothes.is plug-in to annotate web pages or view annotations. Official article evaluations will begin in the spring of 2015. To publish in the Climate Feedback channel, scientists will have to apply and provide credentials showing they are actively engaged in climate research (official email address and public research profile with a list of publications). Scientists interested in joining for upcoming experiments can send an email to join@climatefeedback.org.

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