

Online science news needs careful study, researchers say

January 3 2013, by Chris Barncard

A science-inclined audience and wide array of communications tools make the Internet an excellent opportunity for scientists hoping to share their research with the world. But that opportunity is fraught with unintended consequences, according to a pair of University of Wisconsin–Madison life sciences communication professors.

Dominique Brossard and Dietram Scheufele, writing in a Perspectives piece for the journal *Science*, encourage scientists to join an effort to make sure the public receives full, accurate and unbiased information on [science and technology](#).

"This is an opportunity to promote interest in science—especially basic research, [fundamental science](#)—but, on the other hand, we could be missing the boat," Brossard says. "Even our most well-intended effort could backfire, because we don't understand the ways these same tools can work against us."

Recent research by Brossard and Scheufele has described the way the Internet may be narrowing [public discourse](#), and new work shows that a staple of online news presentation—the comments section—and other ubiquitous means to provide endorsement or feedback can color the opinions of readers of even the most neutral science stories.

"Today, I can use my mobile phone, tablet, or laptop to almost instantly look up more information than ever before," Scheufele says. "But the way most people look up information in online settings may significantly

restrict what types of information they encounter." Online news sources pare down discussion or limit visibility of some information in several ways, according to Brossard and Scheufele.

Many [news sites](#) use the popularity of stories or subjects (measured by the numbers of clicks they receive or the rate at which users share that content with others or other metrics) to guide the presentation of material.

The search engine [Google](#) offers users suggested search terms as they make requests (offering up "[nanotechnology](#) in medicine," for example, to those who begin typing "nanotechnology" in a search box). Users often avail themselves of the list of suggestions, making certain searches more popular, which in turn makes those search terms even more likely to appear as suggestions.

"Our analyses showed a self-reinforcing spiral, which means more people see a shrinking, more similar set of news and opinions on science and technology subjects when they do online searches," Brossard says.

The consequences become more daunting for the researchers as Brossard and Scheufele uncover more surprising effects of Web 2.0.

In their newest study, they show that independent of the content of an article about a new technological development, the tone of comments posted by other readers can make a significant difference in the way new readers feel about the article's subject. The less civil the accompanying comments, the more risk readers attributed to the research described in the news story.

"The day of reading a story and then turning the page to read another is over," Scheufele says. "Now each story is surrounded by numbers of Facebook likes and tweets and comments that color the way readers

interpret even truly unbiased information. This will produce more and more unintended effects on readers, and unless we understand what those are and even capitalize on them, they will just cause more and more problems."

If even some the for-profit media world and advocacy organizations are approaching the digital landscape from a marketing perspective, Brossard and Scheufele argue, scientists need to turn to more empirical communications research and engage in active discussions across disciplines of how to most effectively reach large audiences.

"It's not because there is not decent science writing out there. We know all kinds of excellent writers and sources," Brossard says. "But can people be certain that those are the sites they will find when they search for information? That is not clear."

It's not about preparing for the future. It's about catching up to the present. And the present, Scheufele says, includes scientific subjects—think fracking, or synthetic biology—that need debate and input from the public.

"A lot of people are saying we're in an intense period of change, let's see where the dust settles. But we're in a world where the dust is not going to settle for a long time," he says. "What we really do need is a systematic effort between sciences and social sciences to use this new environment to get the science across and public reactions across without biases that the process itself may incorporate."

Provided by University of Wisconsin-Madison

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