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Scientific Organizations Reflect on Building “Trust in Science” | June 15, 2015

By Julia Milton

The scientific community has been grappling with topics related to science communication and public trust in science lately. This spring, several major scientific organizations met to focus on these issues. To name a few, the National Academy of Science’s 2015 Henry and Bryna David Lecture¹ was held on “Communicating the Value and Values of Science;” the AAAS’ annual Forum on Science and Technology Policy² held not one, but two break-out sessions on “Public Opinion and Policy Making,” as well as an evening plenary lecture entitled “Science to Action: Thoughts on Convincing a Skeptical Public;” and the Academies’ Roundtable on Public Interfaces of the Life Sciences held a workshop, “Does the Public Trust Science? Trust and Confidence at the Intersections of the Life Sciences and Society.”³

According to Pew Research Associate Director Cary Funk, the public generally has confidence in both the institution of science and scientists as a profession. However, when it comes to specific science-related issues like evolution, attitudes become more varied and may be correlated with factors like political ideology, education, and religiosity, depending on the topic. There is certainly a sense that “science” has been on the defensive lately as public policy debates on climate change, childhood vaccinations, and genetically modified foods generate controversy and incidents like the high-profile retraction of a study on attitudes toward same-sex marriage grab headlines.⁴

Factors Influencing Public Trust

A number of explanations for why science seems to be losing ground have been proposed. William H. Press of the University of Texas, Austin, suggested that increased suspicion and skepticism toward science may be the result of the use (and misuse) of “science” by corporations to advance their commercial interests, a trend that began with cigarette companies (as chronicled in *The Merchants of Doubt*).⁵ Part of the problem, according to Kathleen Hall Jamieson, a professor of communication at the University of Pennsylvania’s Annenberg School for Communication, could be that researchers, science writers, university public relations departments, and others, are simply doing a poor job of communicating scientific concepts and findings, leading to confusion and misinformation. Misaligned incentives for university researchers (“publish or perish”) and communications staffs, scientific journals, and the media (the rise of “clickbait” headlines) may be a contributing factor, as well as the public’s poor scientific literacy.

¹ http://sites.nationalacademies.org/dbasse/Henry_and_Bryna_David_Lecture/index.htm

² <http://www.aaas.org/event/2015-forum-science-and-technology-policy>

³ <http://nas-sites.org/publicinterfaces/roundtable/events/trust/>

⁴ <http://www.nytimes.com/2015/05/29/science/journal-science-retracts-study-on-gay-canvassers-and-same-sex-marriage.html>

⁵ <http://www.merchantsofdoubt.org/>

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It is also worth remembering that our institutions, including science and medicine, have not always been deserving of the public's trust. Phyllis Pettit Nassi of the Huntsman Cancer Institute at the University of Utah discussed these issues from a Native American perspective, but it is true for other marginalized cultures as well. The history of exploitation of minority racial and ethnic groups for "scientific" purposes (such as the Tuskegee syphilis experiment or harvesting Henrietta Lacks' cell line without consent) can make individuals from these cultures understandably wary of the intentions of scientists. Extra effort must be made to understand their perspectives and rebuild trust.

The confluence of these and other factors that impact how people feel about science make it an especially complicated problem to address. Maintaining the public's trust is essential for a vibrant scientific enterprise. However, there is also the pragmatic consideration that losing it can have a direct impact on our ability to conduct research. In today's budget-conscious environment, if scientists are perceived as poor stewards of the resources they are given, particularly (though not exclusively) federal funding, those resources will be cut off. The House Science Committee's investigations into National Science Foundation (NSF) social science grants with "silly" titles, which became a proposed gutting of NSF's social science directorate in the House's reauthorization bill, illustrates this point.⁶

Strategies for Improving Communication and Maintaining Trust

Because trust is a multi-dimensional concept, efforts to improve it will have to take many forms and come from a variety of sources in the science community, including researchers, communications professionals, science reporters, academic journals, associations, and university administrations. Jamieson recommended that intermediaries between the raw research and the public, who translate scientific findings into information that can be used by the media and a lay audience, focus on explaining the uncertainty and limitations of new findings. She also emphasized the importance of finding analogies that help illuminate scientific concepts and being careful to define scientific terms clearly and accurately.

Press differentiated "science" as a methodology for discovery versus as a value system that privileges rational thinking. He argued that it is the second incarnation—when science answers questions of what should be done—that can create tension with the public. Examples of that second territory include the discovery of the harmful effects of smoking and the human impact on climate change. Scientists should not shy away from weighing in on issues that involve values, but must take extra care to communicate how they arrive at their positions. Further, in order to maintain its integrity, the scientific community needs to be better at policing itself, including calling out poor quality research and rigorously disclosing funding sources.

When there is public disagreement with the scientific consensus, it can be valuable to remember that the opposing position likely represents a continuum of opinions on the issue. Glenn Nowak, of the University of Georgia and former Communications Director for the Centers for Disease Control and Prevention's National Immunization Program, spoke about this in the context of suspicion towards childhood vaccinations. Directing messaging to those occupying the intermediary points on the spectrum is likely to be more effective than trying to convert staunch opponents. Chad English, formerly of the science-communication firm COMPASS, pointed out that people interpret scientific information through the lens of their own culture. Scientists and science communicators need to be mindful that people are unlikely to be receptive to information that places them at odds with their identities.

⁶ <http://www.cossa.org/tag/competes/>