

Framing Science: Meeting the Needs of Diverse Audiences

Moderator:

Jonathan Lifland

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Speakers:

Matthew C Nisbet

American University

Washington, DC

Ginger Pinholster

American Association for the

Advancement of Science

Washington, DC

Reporter:

MIAO Jingang

Texas A&M University

College Station, Texas

How do we frame science so that our messages to various audiences are accurate and compelling? Two speakers shared their thoughts—one emphasizing theory and the other emphasizing practice.

Matthew C Nisbet, assistant professor at the American University School of Communication, introduced the predominant paradigm of science communication—the deficit model. He first examined the assumptions of this model, which attribute public skepticism toward science primarily to a lack of knowledge about science and cite providing enough information as the solution. He then pointed out where the model falls short: the public makes decisions in the absence of knowledge; the availability of science information does not mean that the public will use it; in the 1950s and 1960s, contrary to what the deficit model claims, people's science knowledge was low, but they were supportive of science; and science education is growing rapidly, but science literacy is not. Science

literacy has little to do with public perceptions, Nisbet noted.

Nisbet then emphasized that perception depends on the frame of reference. For example, different framings have greatly influenced how much people have supported funding for stem-cell research.

Nisbet gave four directives for framing science ethically: “emphasize dialogue, two-way interaction, and participation; emphasize values that guide and relate to policy decisions; emphasize accuracy, and avoid either distortion or hype; and avoid using framing to denigrate, stereotype, or attack a particular social group or for partisan and electoral gains”. He demonstrated his points by using the case of evolution.

Ginger Pinholster, director of the American Association for the Advancement of Science (AAAS) Office of Public Programs, talked about how science is framed in her organization, which publishes *Science*. The *Science* press-package team provides journalists with a “mental stair step” to understand complex science. The team members do minimal framing because they try to prepare accurate and faithful translations of research findings, and further interpretation is left to science journalists. The science journalists who use *Science* press packages are highly specialized, and half of them work outside the United States.

Pinholster said the approach differs when AAAS carries out strategic science communication on evolution, climate change, and other controversial topics. In such cases, it tends to do more framing because its goal is to influence public attitudes.

Pinholster pointed out that everybody has a frame of reference, so we have to contextualize; otherwise, people will not care. She warned that contextualizing doesn't mean spinning conclusions. People in her office try to avoid “hying” and overstating scientific information, especially when

the information is related to public health. They try to make their audiences excited about what they are communicating without exaggerating the information.

Newspapers in the United States are shrinking, Pinholster said, and people are moving to online sources for science information. That trend provides opportunities. AAAS now offers services to support “an increasingly diverse community of reporters” by using multiple media and training researchers to speak in a language journalists can understand. She also mentioned EurekaTube! and EurekaAlert!, two resources of AAAS. At the time of the meeting, EurekaTube! had 11,718 photographic, audio, and video files. EurekaAlert! carries news in English and other languages, including Chinese, French, German, Japanese, and Spanish.

AAAS has launched a program to give scientists and engineers tools for communicating science, Pinholster said. The program includes workshops and a Web site (www.aaas.org/communicatingscience). In six workshops, 350 researchers have been trained to distill messages into three key points, to present their messages, participate in question-and-answer sessions, and be interviewed on camera.

Finally, Pinholster briefed the audience on the AAAS position on the teaching of evolution, global climate change, and human embryonic stem-cell research. She summarized what AAAS holds to be proven facts and what AAAS holds to be uncertain about those topics. 