ET CETERA

Plain Language in Science: Signs of Intelligible Life in the Scientific Community?

Presenters:
Joanne N Locke
US Food and Drug Administration
Rockville, Maryland

Lily Whiteman
US Mint, Department of the Treasury
Washington, DC

Reporter:
Devora Mitrany
IMR—an AdvancePCS Company
Scottsdale, Arizona

"The importance of the work is inversely proportional to the number of people who can understand it" is an outdated attitude in today's scientific arena. The trend toward plain language is gathering force in government, academe, and scientific journals.

Don't think plain language is dumbing down; it's reaching out to an expanded audience—an urgent need in our scientifically bereft society. Fewer than 50% of surveyed adults understand that the earth orbits the sun yearly, only 21% can define DNA, and a mere 9% know what a molecule is. The effects of the choices we make now about global warming and other vital issues will reach far into the future, so it is vital that the public, our lawmakers, and those who fund research understand the science behind the choices. As Isaac Asimov said, "The whole premise of democracy is that it is safe to leave important questions to the court of public opinion—but is it safe to leave them to the court of public ignorance?"

The benefits of plain language to science are many: winning grant money, encouraging multidisciplinary breakthroughs, being read and covered by the press, and inspiring the public.

Plain Language Programs

The Smithsonian Institution encourages the use of plain language by requiring its postdoctoral fellows, students, and research assistants to spend 20% of their time in public outreach. At the National Zoo's Science Gallery, for example, visitors are encouraged to walk through and interact with the scientists—and the exhibit is packed.

The Aldo Leopold Leadership Program (*www.leopold.orst.edu*) offers environmental scientists an intensive course in communicating their work to a broader audience, including the media, policymakers, business, and the general public. As David Brower of the Sierra Club stated, "Communicate, and we'll win in the end."

Although plain language is a culture change for many, attitudes are changing. In fact, over 80% of surveyed scientists said they were willing to devote more time to learn how to communicate better. To that end, the presenters offered 10 tips for writing a page-turner:

1. Trumpet conclusions in the Abstract.
2. Use structured abstracts.
3. Include a "What this study adds" box.
4. Use summary boxes as needed.
5. Use human interest boxes.
6. Use a clear, specific opener that gives context.
7. Eliminate unnecessary jargon.
8. Use short sentences.
9. Include a summary of the article in plain language.
10. Use the active voice.

Our Role in Clear Writing

The real challenge for us, as editors, is to get scientists to move from "What I want to say" to being reader-focused and asking, "What will my primary and secondary audiences understand?" Editors can show researchers that it is in their best interest to write plainly, and science writers can serve as role models. At a minimum, scientists in other disciplines should be able to understand the text.

Information overload is a compelling reason to make scientific articles easier to understand. Floyd Bloom, former editor of *Science* magazine, said that trying to absorb the onslaught of new scientific data is "like trying to drink from a fire hose" and that "finding the highlights" is close to "an absolute requirement".

Another reason to write clearly is that your work may be misunderstood if you don't. One chilling example is an article published in the journal *Stroke* in 1984 that questioned the use of carotid endarterectomy. The television show "20/20" picked up the story but misinterpreted the findings, focusing on an unsubstantiated conclusion about the risks of unnecessary surgery. As a result, from 1985 to 1991 the number of endarterectomies dropped by one third because many people who could have benefited were unwilling to undergo the surgery. In 1991 the published results of a large-scale trial clearly showed the benefits of the procedure, and only then did the number of endarterectomies begin to increase again.

With their deft presentation, humorous asides, and hands-on exercises, Joanne N Locke and Lily Whiteman inspired each of us to further the cause of plain language in our daily work. Their parting shot, from the venerable Quintilian: "One should aim not at being possible to understand, but at being impossible to misunderstand."