

Current Comments®

Science Communication and the Continuing Mission of ISI Press

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In previous reports on ISI Press®, we have stressed its goal of improving scientific communication.¹ Under the leadership of Robert A. Day, ISI Press has made considerable progress in fulfilling that mission. In 1983, we released four books that touch on different aspects of this commitment. Two new books join the growing list of titles in our Professional Writing Series. These works meet a high standard of scholarship. They are designed to help professionals and scholars in all disciplines communicate more effectively.

Presenting Science to the Public,² by Barbara Gastel, is intended to help scientists communicate effectively with the general public. Whether we realize it or not, the public is enormously interested in our work as scientists. It's no wonder: many social, political, and economic issues revolve around scientific questions. A few years ago, science received scant attention in the mass media.³ Today, however, science stories on television news programs, as well as shows featuring science exclusively, capture large audiences. Newspapers devote increasing space to science topics. News-magazines frequently publish cover stories on science. And a number of recently established science magazines enjoy wide circulation, while their older counterparts thrive as well. I've discussed a number of these in detail in recent years.^{4,5}

The *ISI® Press Digest* in *Current Contents® (CC®)* each week is one way we

help you keep informed on science and public policy issues. Most scholars would be hard-pressed to sift through the amount of material that appears in the lay press. In addition, ISI has collaborated with the Scientists' Institute for Public Information (SIPI), New York, in publishing *Current Controversy*, a monthly newsletter. Since 1981, *Current Controversy* has reported on a number of important science and public policy questions. Direct quotes, presenting all sides of current issues, are extracted from current popular and scientific sources. Recent topics have included genetic engineering, the space shuttle, and the breeder reactor. SIPI distributes the publication to newspaper, television, and other journalists to help insure that coverage of science is balanced and accurate.⁵

With scientific information in such demand, scientists can expect at some point in their careers that journalists will ask them to comment on their work. Whether the result evokes pride or embarrassment depends in part on the scientist's understanding of the popular media. *Presenting Science to the Public* takes up many of the complex issues surrounding science and the media. Gastel's assertion is reasonable: the more scientists know about the media, the more they can make sure their results reach the public in an accurate, timely, and lively manner.

Gastel teaches science journalism and technical writing at Massachusetts In-

stitute of Technology, Cambridge. She has held positions with the US Department of Health and Human Services and the National Institutes of Health. During the 1983-1984 academic year, she is teaching at the Beijing Medical College, People's Republic of China.

Table 1 shows the table of contents of *Presenting Science to the Public*. The first segment of the book discusses the basics of communication in the mass media. Drawing examples from popular works by highly acclaimed scientists and science journalists, Gastel analyzes the techniques used in popular communication.

In the second section, Gastel describes the diversity of individuals who call themselves "science journalists." Some hold doctorates in science, while others possess no special training at all. Gastel explains how the media work, including the steps an article goes through on its way to print or broadcast. She also discusses the various media—newspapers, magazines, television, and radio—and shows how each places different demands on the journalist and scientist.

Throughout the second section, she contrasts the scientist's point of view with the journalist's. While the journalist aims to gather and present *news*—that which is pertinent, and sometimes entertaining—to many people, the scientist wants to build upon the world's store of knowledge by the painstaking collection and interpretation of scientific data.

Given such a split, scientists and journalists often misunderstand one another. For instance, scientists often complain that popular coverage of their work is inaccurate. While errors of fact do occur, most errors are actually omissions. The journalist may have left out the methods of study, names of other researchers, or exceptions to the conclusion. To the journalist, these facts are not news. While journalists strive for accuracy, Gastel writes, "the journalist may consider accurate a story that cap-

tures the gist of a scientist's message and conveys it in a way that a general reader can grasp. The scientist, however, may call for precision and completeness instead."² (p. 41)

The second section also offers advice on how scientists can work out conflicts with journalists. For example, scientists can anticipate a journalist's need to clarify an abstract statement by offering an example that concretely but accurately illustrates it. They also can be sure to point out the qualifiers to their conclusions. And scientists would do well to discuss the implications of their findings with journalists. If they don't, very often the journalist, or his or her editor, will speculate about them.

The concluding section of the book addresses those scientists who would like to publish popular material. After all, as the group best acquainted with science and its intricacies, scientists have the most authority to speak out.

It is not enough, however, for the scientist or journalist to know how and where to present information to the public. He or she must also know how to use language correctly. Many communicators simply do not bother to make sure their words are concise and convey exactly the meanings intended. As the author of two best-sellers on grammar and usage,^{6,7} television journalist Edwin Newman was in a special position to appreciate another new book by ISI Press, *A Treasury for Word Lovers*,⁸ by Philadelphia lawyer Morton S. Freeman. He was so impressed by the book that he wrote a foreword that exemplifies the art of brevity. "The English language is not being well served by many of those who use it," he says. "They, as the saying goes, need help.... Mr. Freeman's book supplies that help, directly, practically, and entertainingly."⁹

Freeman's book is a collection of brief essays arranged alphabetically by key word. Each one clarifies a problem in correct grammar and word usage. Many of the entries discuss words that are

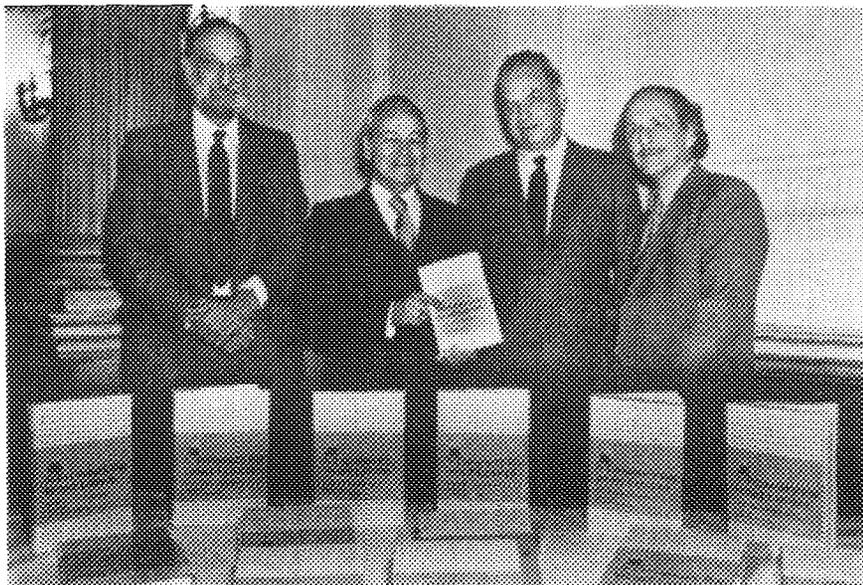
Table 1: Table of contents of *Presenting Science to the Public*, by Barbara Gastel.

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often confused with one another. For example: "To tell the truth, a *liar*, strictly speaking, is neither an *equivocator* nor a *prevaricator*. A *liar* tells lies. An *equivocator* speaks in ambiguities, refusing to commit himself to what he says.... One who prevaricates, [however,] straddles the truth; he quibbles. It is said that Pliny used prevaricate in reference to one who ploughed in crooked lines and that later the term came to refer to anyone who gave crooked answers."⁸ (p. 107) Freeman also gives in-

struction on grammar, the proper use of foreign phrases, and the avoidance of clichés. But *A Treasury for Word Lovers* is by no means a grammar book. The author's sophisticated wit and clever use of word play make it entertaining to browse.

The book has already received a share of attention in the media and in publishing circles. The *Philadelphia Inquirer's* Howard Shapiro described the book in an October review as "good enough for pleasure reading rather than simply for



Photograph by Neil Benson

Left to right: Bob Day, director, ISI Press®; Morton S. Freeman, author of *A Treasury for Word Lovers*; Edwin Newman, NBC television journalist and author of two best-sellers on word usage; and Eugene Garfield, president, ISI®.

reference."¹⁰ The Book-of-the-Month Club and its subsidiary, the Quality Paperback Book Club, chose the book as an alternate selection for December. As such, it will be reviewed and illustrated in each club's monthly catalog. The catalogs reach more than a million club members.

Freeman's intimacy with the English language derives from his experience as director of publications for the American Law Institute of the American Bar Association. In 1979, he wrote *The Grammatical Lawyer*, a book on grammar and usage for attorneys. The book was given the American Society of Legal Writers Book of the Year Award. He also has written, since 1976, a column on English usage for a national magazine, *The Practical Lawyer*, published eight times a year.

It was a special pleasure to meet both Freeman and Newman at a dinner held in Philadelphia. Freeman is a tiny man

with a wonderful wit. By contrast, Newman is a giant. Indeed, like most TV news commentators, he is almost always seen seated. You would never guess he is so tall. But as the photograph shows, he is not quite as tall as Bob Day.

In a recent essay on another aspect of science communication, I discussed the work of the International Federation of Scientific Editors' Associations (IFSEA).¹¹ The founder and president of that organization, Miriam Balaban, is also an editor and publisher in her own right. For many years she has been a colleague of a well-known British scientist also named Miriam. The latter is Lady Miriam Rothschild, the author of a work that is unusual in many respects. Rothschild asked Balaban to coordinate the worldwide distribution and production of a book that required literally a lifetime to create.

The result of all this—a collaborative publishing venture involving ISI Press,

Hutchinson Publishing Group, and Balaban International Science Service—is a biography of the famous zoologist and turn-of-the-century English scholar, Walter Rothschild, called *Dear Lord Rothschild: Birds, Butterflies and History*.¹² Rothschild, the author, holds a doctor of science degree from Oxford University and has published about 250 scientific papers on fleas, butterflies, birds, snails, intestinal worms, and wildflowers. Indeed, her entomological career has been so interesting and distinguished it merits more detailed discussion in a separate essay. Much of the book is based on personal recollection, because for 27 years the author lived at the family mansion, Tring Park, with her uncle and his parents. The book is the only biography of Rothschild, and the only book about any Rothschild written by a family member.¹² (p. xvi) The table of contents is shown in Table 2.

The biography serves as a reminder that scientific contributions occur within the context of an individual's life and culture. Rothschild was born into what was then the most influential banking family in England. He was expected to be a statesman and a banker, like his father. He served in the family bank for 18 years. Even so, not a single record exists as proof of his time there. Afflicted with a speech disorder and with a shyness that cast his glance continually downward, he did not possess the temperament for business success. When he was seven, he had announced to his parents what his occupation would be: he would "make a museum," and his friend, Alfred Minall, a worker on the estate, would help him look after it. Both prophecies materialized: in 1880, when Rothschild was 12, Minall became curator of the boy's first collection.

It was in his museum that Rothschild's genius found outlet. He amassed, in a span of 50 years, the largest collection of animal specimens assembled by one man: the Tring Museum. It contained more than two million butterflies and

moths, 300,000 bird skins, 144 giant tortoises, and 200,000 birds' eggs. Although the museum had no catalog, Rothschild knew the location of every one of the moths and butterflies, and would go directly to the correct drawer if someone asked for a particular species. For the library, Rothschild collected 30,000 relevant scientific books. The Tring Museum has since become part of the British Museum of Natural History, South Kensington, England.

Together with two of the best zoologists of the time, Ernst Haeckel, an ornithologist, and Karl Jordan, an entomologist, Rothschild formed at Tring a research team whose work contributed greatly to systematics and to the Darwinian theory of evolution. The three described 5,000 new species and published more than 1,300 books and papers. It was at Tring that the concept of subspecies was shaped into its present definition. It was also at Tring that the trinomial system of classification was given a firm footing. In the trinomial system, a third name is added to the genus and species names to indicate an organism's subspecies. Although the group at Tring, because its ideas challenged established views, received only the slightest acknowledgment from zoologists of the day, the concepts pioneered there have since become firmly implanted zoological principles.

To record the museum's work and to provide a forum for the trinomial system, the three men published *Novitates Zoologicae*, a zoological journal, from 1894 until 1939. Rothschild was editor from the age of 26 until his death. Many distinguished zoologists of the time published their work in this journal. The 42 volumes amounted to approximately 23,000 pages and 600 plates.

But to view Rothschild only as a scientist would be to miss much of the richness of his life. Despite his shyness, he served four terms in the British House of Commons. And the Balfour Declaration, the document outlining the British

Table 2: Table of contents of *Dear Lord Rothschild: Birds, Butterflies and History*, by Miriam Rothschild.

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plan for a Jewish state in Palestine, was addressed to him. Hence the "Dear Lord Rothschild" in the title of the book.

The book follows the life of a man who made enormous contributions to the scientific and political world of his day. As such, it offers something to a variety of readers. For the student of history, the book provides excellent insight into English life during the Victorian and Edwardian periods. For those with a political bent, it provides background on the controversial issues surrounding the establishment of the state of Israel. And for those whose interest is natural science, the book documents the development of the theory of evolution and of one of the most valuable natural history collections in existence: the Tring Museum.

Dear Lord Rothschild: Birds, Butterflies and History is available in the Western Hemisphere from ISI Press. In the UK, Australia, and South Africa, the book is available through Hutchinson Publishing Group. Balaban International Science Service provides the book in other countries.

Since 1962, I have ventured into my own form of science journalism with my

CC essays. ISI Press recently collected the essays from 1981 to 1982 into *Essays of an Information Scientist, Volume 5*.⁵ Topics covered in this volume include art, autism, risk analysis, ethics in scientific publication, women in science, depression, and more. Many of the essays honor distinguished scientists and scholars, such as Sir Hans Krebs, R. Buckminster Fuller, and V.V. Nalimov. With *Volume 5*, my essays are available in book form from 1962 to 1982.

ISI Press will continue, as before, to publish works of scholarly distinction and demonstrable value. In this way, it is thought, ISI Press will retain the attention of authors of the highest quality. CC readers are invited to submit their proposals and manuscripts. They also are encouraged to share their thoughts concerning the kinds of publications they feel are needed. All inquiries should be addressed to Robert A. Day, director, ISI Press, 3501 Market Street, Philadelphia, PA 19104, USA.

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