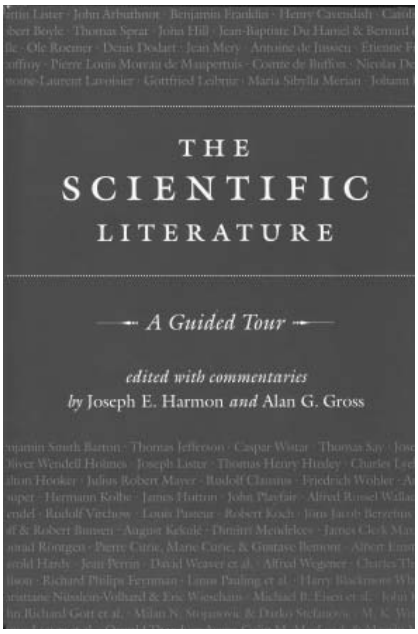

THE SCIENTIFIC LITERATURE: A GUIDED TOUR. EDITED WITH COMMENTARIES BY JOSEPH E HARMON AND ALAN G GROSS. CHICAGO: UNIVERSITY OF CHICAGO PRESS; 2007. 327 PAGES. HARDCOVER $72.50, SOFTCOVER $29.00. ISBN: 978-0-31655-0 (HARDCOVER), 978-0-226-31656-7 (SOFTCOVER).

Have you ever wondered how science writing evolved to its current form or how and why it differs from the early scientific literature? The editors of *The Scientific Literature: A Guided Tour*, Joseph E Harmon and Alan G Gross, answer those questions and more by presenting over 100 excerpts from scientific publications, with commentary, to illustrate trends and styles over time. No strangers to science literature, Harmon is a senior writer and editor at the Argonne National Laboratory and Gross, a professor of rhetoric at the University of Minnesota. Both were coauthors, with Michael Reidy, of an earlier book about scientific literature, *Communicating Science: The Scientific Article from the 17th Century*.

As tour guides, the editors introduce each chapter and present a series of excerpts from scientific writings to illustrate the topic of discussion. Their commentaries and explanatory notes simplify the technical content of the excerpts for the general reader, provide historical and scientific context, and identify rhetorical strategies used in presenting scientific arguments. The chosen examples are "classics" of the western world written by eminent scientists and some lesser-knowns in many scientific disciplines. They are not necessarily the most important works or the best examples of scientific communication, but many of the greatest scientific discoveries are represented in this anthology of the science literature.

The tour begins in 17th-century England when the first English scientific periodical, *Philosophical Transactions*, was published by the Royal Society of London. Contributors were generalists and shared an interest in the natural world; they were called philosophers in a time before the word *scientist* had been coined. Their mainly descriptive and subjective writings took the form of letters or entire books. Those "learned letters" were passed along to other philosophers, who might have read them at philosophical society meetings or copied and distributed them to their colleagues (much as e-mail communications are distributed today). The French also published early scientific journals, such as *Journal des Sçavans*, which differed from the English journal in that its contributors were professional scientists instead of gentlemen philosophers. Excerpts from those early journals include works by Boyle, Hooke, van Leeuwenhoek, Lister, Isaac Newton, Benjamin Franklin, and Lavoisier.

As scientific knowledge expanded, scientific publication became more international and more specialized. The intended audience narrowed as professional scientists wrote more and more for other scientists in their own disciplines. Visual enhancements appeared more often in publications and progressed from realistic drawings of natural phenomena and experimental equipment to the use of tables, Cartesian graphs, and equations for depicting theories and data trends. Science became more quantitative and more precise, and the scientific literature followed suit. Discussion of the theoretical basis of scientific findings became more prevalent. Examples of those changes are evident in the selection of writings by such scientists as Hutton, Mendel, Virchow, Pasteur, Curie, Einstein, and Pauling.

By the early 20th century, the prevailing organization of scientific arguments in print was the abstract, introduction, methods, results, conclusions, and references that typify today's science literature. Scientific English with its specific vocabulary and stylistic features became widely used, although it was sometimes dryly descriptive, sober, and impersonal. The passive voice, noun strings, technical abbreviations, and understatement made communication in science more efficient but also made the prose dense and sometimes bland. Just in time to relieve the unpleasant thought of reading such prose, the authors lead a romp through a selection of modern literature that exhibits playfulness, science in verse, hidden images in figures, musical renditions of scientific information, and downright belligerence. Don't try this at home. Such unorthodox diversions, although amusing, are rare in scientific journals today. Interspersed among the oddities are elegant examples of writing with true style.

Harmon and Gross also explore the realm of controversy in science literature by presenting a collection of opposing views on the disagreements between Sewall Wright and R A Fisher about natural selection and the dissenting opinions of Hobson, McCarly, and others on Freud's dream theory. The commentary elaborates on how scientists present their arguments in the literature and the value of controversy in stimulating research and discovery.

The final chapter of excerpts from modern classics is a collage of truly groundbreaking science by great scientists. Their discoveries often were made by using theory as a guide to research and by conducting thought experiments in fields of study in which it can be impossible to collect empirical data.

A list of references to secondary literature sources for each chapter, recommendations for additional reading, and an index complete the book. This is an educational and entertaining read for scientists, teachers and students of scientific writing, and anyone interested in scientific history and rhetoric. The authors do a good job, for the most part, of distilling the essence of the scientific discussion for general readers. The book also benefits from the writings of a stellar cast of great scientists whose original words, despite their often humble and understated conclusions, continue to awe and inspire.

Susan M Shirley

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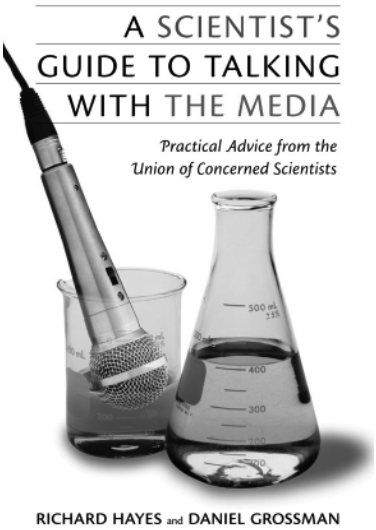

A SCIENTIST'S GUIDE TO TALKING WITH THE MEDIA: PRACTICAL ADVICE FROM THE UNION OF CONCERNED SCIENTISTS. RICHARD HAYES AND DANIEL GROSSMAN. NEW BRUNSWICK, NJ: RUTGERS UNIVERSITY PRESS; 2006. XV + 200 PAGES. SOFTCOVER $18.95. ISBN: 978-0-8135-3858-7.

At the height of a renewed debate over stem-cell research, as President Bush was preparing to veto a measure expanding federal funding for embryonic–stem-cell research in summer 2006, Presidential Aide Karl Rove asserted that adult–stem-cell research was more promising than research using embryonic stem cells.

Rove's claim that researchers had found "far more promise from adult stem cells than from embryonic stem cells" was made in a discussion with the *Denver Post* editorial board. But it got wide airing only after *Chicago Tribune* reporters Jeremy Manier and Judith Graham wrote that "Rove's negative appraisal of embryonic stem cell research—echoed by many opponents of funding for such research—is inaccurate, according to most stem cell research scientists, including a dozen contacted for this story."

The reporters went on to quote several experts. "'[Rove's] statement is just not true,' said Dr. Michael Clarke, associate director of the stem cell institute at Stanford University, who in 2003 published the first study showing how adult stem cells replenish themselves.

> "Dr. Markus Grompe, director of the stem cell center at the Oregon Health and Science University, is a Catholic who objects to research involving the destruction of embryos and is seeking alternative ways of making stem cells. But Grompe said there is 'no factual basis to compare the promise' of adult stem cells and cells taken from embryos."

In telling the story that way, the reporters implicitly rejected their profession's conventional "balancing act". Instead of quoting experts on both sides of controversial scientific issues and giving them equal weight, the *Tribune* reporters substituted context, perspective, and judgment to repudiate Rove's scientifically indefensible statement. In *A Scientist's Guide to Talking with the Media: Practical Advice from the Union of Concerned Scientists*, authors Richard Hayes and Daniel Grossman painstakingly explain this newer approach to science journalism as part of a broader description of how reporters practice their craft. The book urges scientists to be active in promoting scientific literacy and offers them a detailed step-by-step manual for working with the news media.

Grossman, a science writer, and Hayes, a science media-relations expert, are at their best when parsing examples to make their case that scientists naïve about the media pay for their ignorance.

The *Daily Telegraph*, a British newspa-

per, once ran a headline that read "Put down that rolling pin darling, it's bad for your heart" over a story on research that showed that "submissive" (the researchers' word) women were 31% less likely to have heart attacks than people who were more assertive in interpersonal decisions. Although the Scottish researchers interviewed 1600 men and women in their 5-year study and used the word "meek" for "submissive" in a press release about the research, the headline writer obviously equated "submissive" with female stereotypes and had fun with the story at science's expense. The authors comment that the researchers should have worked harder to find a "more suitable alternative to submissive", suggesting that the result would have been more accurate stories. Although at times their advice is almost painfully obvious ("scientists should test their language on non-scientist friends at a party"), evidently there is a need for such advice. The authors cite several instances of predictable media-scientist miscommunication and show how they could have been avoided.

Despite the pitfalls, Hayes and Grossman urge scientists to take risks. They find communicating science to nonscientists a "civic duty" of their profession, and they offer many strategies for getting media attention. The *Guide* includes tips on being interviewed; becoming a valued source for reporters; meeting with editorial boards; writing letters to the editor, op-ed commentaries, and press releases; and appearing on television. They explain the differences among the various forms of journalism and suggest relevant approaches for the various media, including local and national newspaper, television, and radio and the Internet. This is absolutely a "how-to" book, down to recommendations for what to wear when appearing on television ("women, business suit, dress, or pantsuit, fabrics with texture, rich colors: turquoise, royal purple, red; men, gray or navy blue business suit or blazer"—you get the idea).

Readers might find more useful the annotated examples of successful and failed op-ed pieces. Citing the work of a biologist at Ithaca College who uses a narrative style to write about pollution from an Illinois plastics plant, the authors note, "Ultimately, the op-ed succeeds because it is well written, easy to understand, and interesting, and communicates a strong position along with a call for action." And on why op-eds fail, the authors note that scientists often labor over tediously long pieces only to have them rejected. They offer as explanations, among other observations, "the recurring problem of inaccessible language", poor writing, excessive length, and ignorance about readers.

Scientists, especially those unfamiliar with the news media, will find that the *Guide* offers useful advice for trying to make themselves heard—and understood; but in at least one respect, the authors fall seriously short. In a section titled "Video News Releases", they explain that VNRs are "like a press release except the information is presented in video form". They present straightforward tips for making a VNR, even offering cost estimates and ways to save money. Here the "how-to" approach is inadequate. Journalism professionals often refer to VNRs as "fake news"—and that's when they're being kind. They have been widely exposed in the political arena, where fake reporters with a political point of view send out slick packages ready for airing by unsuspecting smaller-market television stations.

But VNRs also have been a problem for science and health journalism. For example, PRWatch.org, a Web site of the Madison, Wisconsin-based Center for Media and Democracy, cites a campaign by Health Care America, funded by pharmaceutical and hospital companies, to respond to Michael Moore's film *Sicko*. Among the output: sound bites and video "B-roll" (essentially an unassembled VNR that television stations can edit for length), including an interview of a Canadian cancer patient lamenting her care and saying that she wished she'd gone to Buffalo so that she could benefit from private health-care providers there. Another VNR promotes a public-private health-care system and slams Moore's single-payer approach as "an unpopular, 'simplistic' and unrealistic 'public takeover of the healthcare system'".

Ouch.

Donna Rosene Leff

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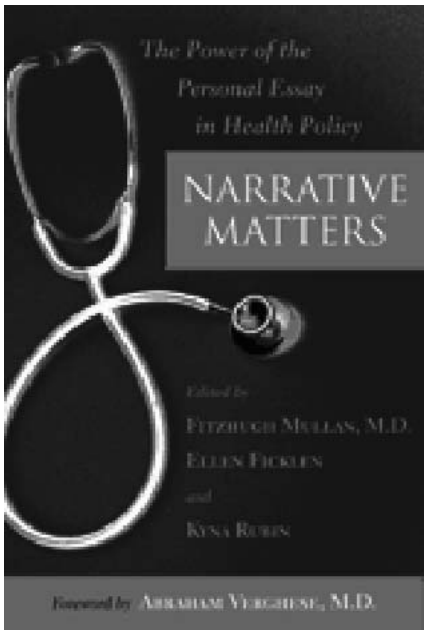

Narrative Matters: The Power of the Personal Essay in Health Policy. Edited by Fitzhugh Mullan, Ellen Ficklen, and Kyna Rubin. Baltimore: The Johns Hopkins University Press; 2006. xxi + 293 pages. Hardcover $40.00, softcover $20.00. ISBN 0-8018-8478-0 (hardcover), 0-8018-8479-9 (softcover).

Clinical medicine is clearly the stuff of stories, but health policy may seem less so. Yet policies related to people's health emerge from people's tales and can greatly affect them. Hence the collection *Narrative Matters: The Power of the Personal Essay in Health Policy*.

The collection consists of 46 pieces, almost all nonfiction, from the deftly titled Narrative Matters section of the journal *Health Affairs*. Like the journal, which has published the section since 1999, the collection focuses largely on health policy, broadly defined, in the United States. The pieces are grouped in eight chapters, the first of which discusses the policy narrative as a genre and as a device and the last of which focuses on ethical issues. Among themes of the intervening chapters are financial challenges, frustrations posed by the health-care system, problems in the health-care professions, the influence of pharmaceutical companies, and disparities associated with race and ethnicity.

The book ranges widely, providing tales and associated reflections from health-care providers, administrators, academicians, journalists, and others. Some of the authors have long known the health-care system in their professional capacities but have gained new perspectives on confronting it as family members. Among the many realms dealt with in one or more essays are health-insurance coverage; the care of infants and children, the elderly, immigrants, and people with mental illness; the departure of nurses from the profession; the application of medical genetics; and the use of anecdote in policy-making. The volume is attractively and readably designed. Conveniently, it includes an index—not always a feature of such collections.

Especially strong pieces include the three by W Richard Boyte, a pediatric critical-care specialist and clinical ethicist at the University of Mississippi Medical Center. One, an essay titled "Casey's Legacy", tells of honesty in the face of medical error. Another, the essay "The Curtain", revolves around attending the funeral of a patient. The third, a short story titled "Pizza Ship", chillingly depicts poor clinical communication. The fine crafting and communication themes of these pieces may especially attract science editors.

Another particularly well done piece is "Shopping for Long-Term Care", in which health-policy scholar Deborah Stone depicts her family's experience in this realm and considers why market approaches therein fail. Other essays that stand out include "Voices from the Clinic: AIDS Then and Now", in which infectious-disease specialist Abigail Zuger illustrates and reflects on the increased longevity of people with AIDS, and "Learning Genetics", in which Sharon F Terry, whose children have a rare genetic condition, traces how she came to lead advocacy organizations related to such disorders.

Although every piece in the collection provides something of value, not all are as effectively written as those. In particular, expositions related to policy sometimes seem awkwardly integrated into the narratives. Also, a tiny and tangential cavil: Given the demographics and values of the health-policy field, it seems odd that all six endorsements on the back cover are by men.

"If a picture is worth a thousand words, a good story is worth many columns of statistics," the preface to this book begins. *Narrative Matters* can help to humanize the statistics for students and practitioners of public policy. It can serve as a resource in the medical humanities. And it offers fine reading to others who care about the stories that are the beginning and end of policies related to health.

Barbara Gastel

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