

Current Comments

The Sciences: Science Journalism Written by Scientists

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Over the past few years, a number of new science magazines have come into existence. Many of them appeared after I wrote an essay complaining about the paucity of science journalism.¹ I like to think that my essay was related to the surge of scientific information in both the print and electronic media,² but this would be difficult to prove. I've commented on some of the new science magazines, such as *Omni*³ and *Science 80*,⁴ as well as an older one, *Science News*.⁵ In the future, I'll be commenting on the newest popular science publication—*Discover*, published by Time, Inc. But now I would like to focus on another science magazine that has been around for some years, *The Sciences*.

Published ten times a year by the New York Academy of Sciences, *The Sciences* provides a forum for scientists to discuss current issues and research developments in a non-technical format. The magazine first appeared in 1961 as a 16-page, pocket-sized pamphlet, roughly the same size as *Current Contents*⁶. Its main purpose was to list the Academy's monthly program of activities. It has since grown to an 8½-by-11 inch format, with 32 or more pages per issue.

With a circulation of over 45,000, *The Sciences* cannot properly be called a mass audience magazine. Academy members still comprise the bulk of the readership and subscriber surveys indicate that about 84% of *The Sciences'* readers hold an MD or a PhD. An even higher percentage have authored papers in primary journals. *The Sciences*, then, is aimed at the working scientist who is

interested in developments in other fields.

Despite the educational level of its audience and its authors, articles appearing in *The Sciences* are written in lay terminology, free of jargon. When a social psychologist writes an article about the social impact of allowing parents to select the sex of their offspring,⁶ he or she will be addressing specialists in many fields. As Richard D. Smith, *The Sciences'* editor since January 1979, says, "There's no reason to assume that someone in one field of science will necessarily be more familiar with another field of science than someone who is not a scientist at all."⁷ Thus, the articles published in *The Sciences* are written in language that is readily understandable to the educated layperson.

By presenting its information without jargon, *The Sciences* straddles the continuum between a mass audience magazine like *Omni* and a publication such as the prestigious but somewhat technical *Scientific American*. "Our readers understand that they can get technical information if they want it," says Smith, "but I don't want to burden our articles, in terms of readability, with the kind of information a journal article would deal with. We could never take the place of a primary journal, and we shouldn't try."⁷

In marked contrast to some mass audience publications, the goal of *The Sciences* is to inform, rather than speculate. *Omni*, for instance, according to its publisher, Robert Guccione, is "a mixture of science fact, fiction,

fantasy and the paranormal."⁸ *The Sciences*, on the other hand, carries only non-fiction. While *Omni* is lavishly illustrated with color photographs, popular art, and tinted pages, the philosophy at *The Sciences* is that such graphics tend to distract the reader from the article.⁷ *The Sciences* uses only black-and-white reproductions to illustrate its features, and avoids popular art and the use of color, graphs, and charts. The selection of the illustrations is handled by *The Sciences*' art director, Amy Tetenbaum; picture editor, Hitty Gowans; and fine art consultant, Paul Libassi.

The Sciences is sold at newsstands for \$1.50 per issue. A subscription costs \$12.50 per year and may be ordered by writing to *The Sciences*, Subscription Department, 2 East 63rd Street, New York, New York 10021. A full-color, full-page ad costs \$1,600 and a full-page black-and-white ad costs \$1,100. The bulk of the advertising in *The Sciences* promotes other science-oriented publications and academic books. Paid advertising amounts to an average of two pages per issue, though sometimes it can be as little as a single page or as many as four. Although some revenue is generated by advertisements and subscription payments, most of the cost of producing *The Sciences* is picked up by the Academy itself.

Each issue of *The Sciences* contains at least four major articles on current research, science policy, and cultural affairs, as well as several departments. Most of the main articles are authored by scientists, engineers, and physicians who summarize and comment on the latest research in their own fields. In September 1979, for instance, *The Sciences* carried Francis Crick's article, "How to Live with a Golden Helix."⁹ The October 1980 issue of the magazine was dedicated to Andrei Sakharov. Portions were written by Hans Bethe,¹⁰ 1967 Nobel prize winner in physics, and by Alexander Rich,¹¹ the biologist who discovered left-handed DNA.

Occasionally, *The Sciences* will deal with broad topics, such as the quality of science programming on television,¹² or

the rapidly-expanding market for science-oriented, popular publications.¹³ These types of articles are often written by members of *The Sciences*' staff or free-lance writers.

There was a time when the free-lance or staff-written article was the rule, rather than the exception. The new policy of scientist-authored articles began when Robert Ubell, now American publisher of *Nature* magazine, took over the editorial reins of *The Sciences* in mid-1976. At that time the layout of *The Sciences* was re-designed by Rudi Wolff. His graphics, with minor alterations, are still in use.

Among the articles recently appearing in *The Sciences* was an examination of controlled nuclear fusion, written by Francis Chen, professor of electrical sciences, University of California at Los Angeles. Noting the public's current distrust of electrical power derived from conventional fission reactors, as well as the constantly increasing demand for more power, Chen discusses both the problems of fusion and the advantages fusion reactors will have over their fission counterparts.¹⁴

The nature of time was discussed with authority and humor by Paul Charles William Davies, a frequent contributor to *The Sciences* and a lecturer in applied mathematics, Kings College, London. Most people, Davies comments, are like Saint Augustine, who said that "he knew what time was, so long as nobody asked him to explain it." Davies' article covers Einstein's special theory of relativity, the beginning and the end of time, black holes, and time reversal.¹⁵

Kenneth Boulding, president of the American Association for the Advancement of Science, recently discussed the psychological implications of adopting the metric system in the US. Boulding notes that the English system now in use in the US is based on human anatomy and perceptions. He then argues that in a measuring system, it is not so important for the units of progression to be in logical exponential powers of one another, as they are in the metric sys-

tem. Rather, the size of the units and their multiples should be convenient and, as in the English system, easy to visualize.¹⁶

In his article, "A Time to Die,"¹⁷ Nobel laureate Macfarlane Burnet notes, "At the present time, the predominant attitude is that every individual is entitled to go on living as long as is possible at whatever cost to the community or to the patient or to the family." Burnet calls for "a more rational attitude," one which recognizes "the inevitability of our own eventual death," and with full regard for humanitarian principles, will not call for the heroics of modern medical technology to postpone the moment of death. Consider that Burnet is now 81 years old.

Stevan Harnad, a cognitive psychologist and editor of *The Behavioral and Brain Sciences*, authored an article examining the process of peer review of journal articles among scientists.¹⁸ Harnad asserts, "The very fact that the conduct of peer review is anonymous and closed. . . [means that] many of the aspects of the 'creative disagreement' process are lost." He advocates the system of open peer commentary which he employs in his own journal and which I have discussed in a previous essay.¹⁹

Other articles in *The Sciences* explore the wisdom and the folly of awarding prizes for scientific endeavor,²⁰ discuss the latest developments in the field of contraception,²¹ and dispute the long-accepted idea that humans have achieved evolutionary success because of innate "killer instincts."²² Still other articles discuss the possible link between interferon and the regulation of the body's immune system,²³ the discovery of a new heavenly body between the orbits of Uranus and Saturn,²⁴ and the relationships between diet and the functioning of the brain.²⁵

In addition to the main articles, each issue of *The Sciences* features commentary from Europe ("Small World"), a monthly calendar of Academy events ("Monthly Program"), and a department devoted to short, new items of in-

terest ("Quanta"). A selection of book reviews and a quiz also appear regularly, as well as letters to the editor, which often become lively dialogues between *The Sciences'* readers and its writers. Appearing irregularly are editorials and features such as "Spectrum," which is devoted to presenting controversial opinions in the world of science.

One regular feature is Louis Lasagna's "Reader's Guide," which discusses topics suggested by items appearing in the news media and other publications. Lasagna is professor of pharmacology and toxicology, University of Rochester School of Medicine and Dentistry. He has dealt with such topics as the decreasing amounts of government aid to medical schools and medical students,²⁶ the problems involved in national health insurance,²⁷ and the ethical dilemma posed when scientists help an attorney select a jury,²⁸ in which he makes extensive reference to my essay on the same subject.²⁹

The "Spectrum" department has examined such issues as the possibility that our technology is out of control,³⁰ and the controversy surrounding the banning of foods containing weak carcinogens while proven carcinogens like tobacco continue to be marketed virtually unmolested.³¹

The December 1980 issue of *The Sciences* promises to be especially interesting, with more editorial content than usual. Its theme is "Scientific New York," and it will deal with New York City's scientific establishment—"the city as a laboratory," according to Editor Smith. Joshua Lederberg, president of Rockefeller University and Nobel laureate, has prepared the keynote article, "Network New York." The article examines the communications network among scientists working in New York in a most extraordinary fashion. Lederberg told me recently that part of this article was inspired by material in our *Current Bibliographic Directory of the Arts and Sciences*TM, which annually provides a geographic breakdown by cities of publishing scientists and scholars.³²

The December issue will also feature a full-color, fold-out map of many of the points of scientific interest in the city—something that, apparently, has never been done before. "At least, we were unable to find a precedent for it," confided Smith. "It should prove an interesting, useful piece of information."⁷

That's what we've come to expect in recent years from *The Sciences*.

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