

Current Comments®

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The Scientist: How It All Began

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Recently I was proud to announce *The Scientist*™, ISI®'s newspaper for the science professional.¹ I gave a brief overview of what the paper will be like and expressed my hope that it will become an important forum for the scientific community. I did not, however, explain the whole story of the paper's evolution. The purpose of this essay is to provide a historical background to the project so that you can better understand my enthusiasm for it.

As I pointed out, the launching of *The Scientist* realizes an ambition of mine that goes back more than 20 years.^{1,2} In the course of those years my aims for a newspaper of science varied somewhat. One goal was to solve the problem of primary publication in science. Another objective involved "popularizing" science for lay readers as well as for scientists. It is no coincidence that over the past several years I have been commenting systematically upon the various media that have been developed to satisfy the public need for scientific information.^{3,4} Magazines like *OMNI*,⁵ *Discover*,⁶ *Science News*,⁷ and so on, primarily report the substance of science in a form comprehensible to the average reader. Science magazines do not usually contain original reports of scientific research; highly cited articles appearing in journals like *Scientific American*⁸ are review articles written for the educated layperson. Popular science magazines are not the vehicle for primary scientific publication. And, despite a surge in popularity during the early 1980s, some of

these publications are experiencing financial and other difficulties in obtaining an appropriate market identification for advertisers.⁹ As a result, *Scientific American* has recently been acquired by a German publisher and *Science 86* has been merged with *Discover*.

But back in the 1950s and 1960s, the timeliness of *primary* scientific journals was a key issue. The ever-increasing support for scientific research put tremendous pressure on the traditional journals. Scientists everywhere were complaining, quite justifiably, that journals had excessive publication delays. Furthermore, the conventional abstracting services were even more hopelessly late in digesting what did get published. It was no accident that *Current Contents*® (*CC*®) was born in the late 1950s.¹⁰

During this period there also emerged countless "letters" journals. Their main purpose was to solve the problem of prompt publication. These letters journals have served their purpose rather effectively, although one does hear complaints from time to time. What the future holds remains to be seen, now that electronic publishing is on the horizon. Joshua Lederberg's most recent proposed solution to the inherent problems created by conventionally printed journals suggests instant publication of scientific results via the electronic form of communication that he called the "EUGRAM,"¹¹ a word combining "eu," meaning "good," and "gram," for "writing." However, there seems to be very little movement in that direction, in spite

of the fact that many primary journals are now available in electronic form.

Of course, a generation ago such solutions were not feasible. At that time Lederberg and others, including me, thought that another solution would be to use the production efficiency of newspapers to resolve the problem. Indeed, in one proposal to the National Science Foundation, I calculated that about 25,000 original full-length articles per year could be published in a newspaper the size of the *New York Times*. For example, if each article occupied 1 full page, an issue of 120 pages could contain about 100 articles plus indexes. This daily newspaper of science would be published five times per week.

I hasten to point out that this greatly exceeds the entire output of *significant* articles published in all the world's scientific journals combined. Although we index well over 500,000 articles per year in the *Science Citation Index*[®] (*SCI*[®]), only 1 or 2 percent are reports that approach breakthrough proportions. Viewed from another angle, that same "*Daily Scientist*," as I called it, could have included a half million 200-word abstracts per year.

Apart from covering such a voluminous amount of material, the use of newsprint instead of more expensive paper would have had a significant impact on costs. In the US at least, the postal cost for distributing newspapers was and still is *relatively* low. How long this will last remains to be seen. While second-class mailing rates are important to a publisher in holding down expenses, they are increasing rapidly. Alternative means for delivering daily newspapers locally have already been worked out. Large circulation newspapers like the *Wall Street Journal* can be transmitted electronically and printed in several local plants for regional distribution. In the UK, this is revolutionizing national newspaper production, with two new titles being launched this year.

One can imagine various permutations of this basic idea for a newspaper of science. For example, in one proposal I suggested that the *Daily Scientist* would contain the "stock" listings of science—that is, the *daily* output for the *SCI*. Since we process over 9,000,000 citations per year at ISI, the daily version could cover about 30,000 citations per day. Thus, it would be possible to check for citations to your work on a daily basis. For this reason we often talked about the project as a "*Wall Street Journal* of science." More recently I seriously contemplated naming the ISI newspaper the "*Market Street Journal of Science*," after our address here in Philadelphia.

So far, I have described three different ideas for a newspaper of science. One was an extension of the science magazine that reports the substance of science in language comprehensible to an educated nonspecialist audience. The second was a substitute journal of original research, produced in newspaper form to improve the timeliness of publication. The third was a major abstracting or indexing journal. As it happened, none of these proposals materialized, although some came very close to fruition.

But there is a fourth aspect of science communication. So far I've said nothing here about the "news" of the science establishment itself. When you think of a publication such as the *Financial Times* or the *Wall Street Journal*, you recall its editorial content and its daily reporting of a few major stories. But these newspapers, like the *Journal of Commerce* (New York), primarily report on numerous details that are of interest to the business community. They present not only coverage of stock market activities, but news about other aspects of business as well.

At this time there exists no single publication that systematically reports the "news" of interest to the scientific

community. As I see it, there is a need for a publication that supplies news about the economics and financing of science, as well as science policy, regulatory issues, and the ethical debates of science. Also needed is more coverage of personalities, as well as news about research grants, forthcoming meetings, awards, and all the other minutiae that make up the lives of working scientists, including laboratory management, applications of computers, and information resources. At present, such news is dispersed among many specialized publications, including *Chemical & Engineering News*, *Physics Today*, *BioScience*, and many others. There are also numerous newsletters such as *Science & Government Report*, the *Blue Sheet*, and so on. I believe that because of this scattering of news and opinion sources, there is no single publication that serves as the town crier for the scientific community.

Long after I had given up the idea of producing one huge daily journal of original research or a daily abstract service, I continued to perceive a need for a comprehensive newspaper of science. I knew, however, that I would have to bide my time. No matter what formula was adopted, the project would undoubtedly require many resources and considerable capital. Several years ago we came quite close to a partnership with the *Chronicle of Higher Education*. Later the *Economist* became interested in launching a science newspaper with ISI. In each case, however, a final agreement was not reached.

In the meantime, we made certain compromises. I considered the possibility that *CC* itself could one day evolve into a twice weekly, and later a daily, publication of science. We added a new dimension to *CC*, the *ISI Press Digest*, which provides excerpted coverage of issues pertinent to the scientific and scholarly community. Another idea, often suggested by *CC* readers, was that we in-

stitute a "letters" feature in *CC* to which readers could contribute opinions on various topics.

Considering that a newspaper of science would have to obtain financial support through advertising, we thought about *CC* readers as the starting point for launching a newspaper. We also thought about expanding *Press Digest* as a significant feature of the newspaper, which in fact we intend to do.

As you can see, many ideas and many years have gone into the planning of *The Scientist*. This is a vastly simplified and abbreviated account. But its final culmination makes the actual launching of the paper all the more gratifying and exciting.

The Scientist will have an experienced staff of reporters and editors. The paper's editorial policies will be established by an advisory board consisting of Joshua Lederberg, me, and other distinguished scientists. *The Scientist's* general manager, Roland Holub, was previously at McGraw-Hill, where he served as publisher and advertising sales manager on several trade journals. Day-to-day decisions and activities as well as editorial direction will be the responsibility of editor Tabitha Powledge, who has had wide experience writing and editing articles and books on science, especially science policy. In addition to extensive freelance work as a writer and consultant, Powledge has edited trade newspapers and was senior editor at *Bio/Technology*. She was also director of the Genetics Research Group at the Hastings Center, Hastings-on-Hudson, New York, a research organization that studies social and ethical problems in science and medicine. Associate editor Jeffrey Mervis was previously editor of *Monitor*, the monthly newspaper of the American Psychological Association. *The Scientist's* other associate editor, Linda Heiserman, was an assistant and later associate editor at *Science*. Production manager Jean Gwaltney was

production manager for *Engineering Education*, the magazine of the American Society for Engineering Education.

Contrary to what you might have expected, *The Scientist* will not have a particular viewpoint. I expect the newspaper to become widely recognized as a factual and balanced medium for reporting the news and views of science. Controversial issues will be dealt with in a balanced manner and in eminently readable style. As I mentioned in my recent essay announcing *The Scientist*,¹ a key feature of the paper will be its Opinion section. Science professionals will have a forum in which to express their views in an interesting and, indeed, provocative fashion. Let me emphasize also that *The Scientist* will be international in its coverage of the scientific world. Sub-

scriptions outside the US will be delivered by air cargo, as is now the case with *CC*.

I believe the advent of *The Scientist* is symbolic of the definitive role that science and technology now play in our society. An irrevocable commitment to science is evident in the developed world. This commitment is increasingly evident in the developing world as well. Budgets may rise and fall temporarily, but research as a way of life will be more and more visible in a world in which scholarship and knowledge have become the international currency. This commitment to science and information takes place, not coincidentally, as we also witness the growth and impact of the information revolution.

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