Editorial & Letters

EDITORIAL

On the Future of Scholarly Journals

Like global tectonic plates moving on a collision course, the world of scholarly journals—made up of authors, readers, librarians, and publishers—is headed for seismic upheavals that must result in major alterations in the landscape. Librarians, hit with declining budgets and escalating journal prices, are canceling subscriptions. Publishers, facing declining subscription levels, raise rates to compensate, and then some. The increase in the output of research papers balloons the size and cost of journals. The vision of meaningful access to current information by scientists in developing countries is further off than ever.

Fortunately, some solutions—in the form of digital publishing—are at hand. We already know the elements of digitally based systems that are essential to handling research reports. But we must still solve their many economic and technical problems. The devil is in the details.

Digital publishing has much to recommend it over print publishing for practical if not for esthetic reasons. Uncomfortable tradeoffs are involved, to be sure, but the gains include ease of access, rapid delivery over great distances, and hypertext links from indexing services and bibliographic citations to the full texts of cited documents. And how better to manage the expanding body of research? This is not to say that electronic publishing will suddenly make journals inexpensive or make printed journals disappear overnight. Journals that switch completely from print to electronic format will save the heavy costs of paper, printing, binding, and shipping worldwide, but they will incur the costs of setting up and maintaining digital archives. Certain other fixed costs such as those associated with peer review will remain. Still, the net effect should be cost savings and far greater accessibility of material.

Who will design, build, and operate these new systems? Inevitably, that will be decided by journal owners. Societies own many journals, but the majority are the property of commercial publishers. Proposals have been floated under which all journal publishers would provide editorial content prepared in a standard digital format to a government agency, or to a new "nonprofit foundation," commissioned to digitally archive journals. But in the U.S. political climate today, funding of the former plan by "big government" appears unrealistic, and the latter raises issues of control and division of revenues.

Sensing opportunity, document delivery companies, or "consolidators," have sprung up seeking to persuade publishers to license them to take on this responsibility, and to offer pay-per-view services. But why pay someone else for what you can do yourself? In the long run, all except small publishers will likely decide to handle the job themselves, alone or via consortia. Indeed, publishers would be foolish not to maintain such archives anyway, if only for security reasons. In any event, libraries would serve as an interface with the journal archives and as service providers. The need for interlibrary loans should fade.

To realize the fullest benefits of electronic publishing for the user, publishers must be willing to open their archives to pay-per-view via the Internet, whether or not the printed versions of the journal continue to exist. Many journals (for example, *Science*) now allow Internet access at nominal cost, but only to those who maintain subscriptions to the printed journal. Fortunately, the price of journals like *Science* is low, thanks to high circulations and advertising revenues. But most scholarly journals have paid circulations of less than 2000 and little advertising and thus rely heavily on library subscriptions. Faced with shrinking library subscriptions, publishers of such journals may gradually abandon print formats altogether and go electronic, developing realistic fee schedules for pay-per-view use. Publishers will insist upon reliable systems that track usage, charge the users, and block access to those not licensed to tap into the archive network. These requirements necessitate the use of new types of archival systems still under development (see www.arl.org/newsltr/194/identifier.html).

A standing committee of publishers, librarians, and information technologists should be formed to decide how a network of multiple archival sites can best be configured. Compatibility is obviously essential. Preservation of the world's scientific heritage in digital form over decades of changing software and hardware is imperative. Such an archive must not be vulnerable to market forces or to shortsighted business decisions. This argues for at least a "repository of last resort," perhaps best kept by the Library of Congress, consisting of off-line storage of abandoned materials.

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LETTERS

Looking ahead

Two research teams find evidence that the virus that causes Kaposi's sarcoma "can protect [AIDS patients] from ... HIV dementia." The identity of a chimp whose "bipedal locomotion is peculiar" is nailed down. And readers discuss a study on learning in young owls. (Below, juvenile owl in prisms.)

ANNE KNUDEN

Great Expectations in China

In her article "Chemist to lead new science ministry" (News & Comment, 27 Mar., p. 2034), Xiong Lei notes that Chinese Premier Zhu Rongji has promoted Zhu Lilan, a polymer chemist, to head the new Ministry of Science and Technology. Much is expected of the new Cabinet and of Premier Zhu Rongji, especially with respect to strengthening the economy.

Although science and technology are essential for China's success, democracy is another player to whom Zhu Rongji might give an important role. Many Western-educated Chinese have long believed that science and democracy are key characters in China's future.

The mentor of Minister Zhu Lilan is Qian Renyuan (not Wenyuan, as his name was spelled in the article). Having graduated from Zhejiang University, "an oriental Cambridge," Qian Renyuan may be the best-known living polymer scientist in China.

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Owls and Early Learning

In her News & Comment article "Owl study sheds light on how young brains learn" (6 Mar., p. 1451), Marcia Barinaga extrapolates from the results of an animal study to human de-