

ELIMINATING THE SCHOLARLY COMMUNICATION CRISIS:

FROM HERE TO *NEAR*

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The U.S. research university has led the world in both basic and applied research. Our continued leadership is critically dependent upon researchers being able to share their findings widely. Much of this sharing has been institutionalized through a system of scholarly journals, but ten years of annual compounded increases in excess of 10% in the prices of many scholarly journals, especially in science, technology and medicine, have reduced the availability of information to scholars and threaten to reduce the universities' contribution to both basic and applied research.

As provost of a research institution, I have to stretch our budget to address many needs. The library has not fared well over the last decade, even though it has maintained its share of the university budget. That constant share has permitted the library to purchase a declining proportion of the scholarship that has been produced. In fact, in order to purchase the same proportion of published serials and monographs as a decade ago, our acquisitions budget would have had to increase by 250%. Instead, our budget has increased only about 50%. I do not know of any university with sufficient resources over the past decade to hold constant the proportion of journal scholarship purchased by its libraries. More narrowly, I do not know of any university that in the past decade had increases in its acquisitions budget sufficient to buy even the same number of serials and monographs it bought a decade ago, much less keep up with the tide of new scholarship.

At the University of Kansas we have responded with some increased funding, increased interlibrary loan activity, cooperative buying ventures, use of electronic document delivery, etc., but these responses are palliatives, not solutions. It is time for solutions, for this crisis is growing to the point that scholarship and education will be damaged significantly if we do nothing. Although scholarly journals are not the entire problem, they are the most acute part of it, and my remarks focus on them. The Association of Research Libraries' statistics show their unit costs have climbed 169% from 1986 to 1997 while monographs went up 62% and the consumer price index went up 46%. Surely a cost increase nearly quadruple that of the general level of prices warrants our attention.

If we are to keep scholarship available in our libraries we must assert that, at some point, all of it must become part of the public domain. We must then find a way to make that information permanently accessible to scholars and the public in a useful fashion. I no longer believe that solutions that fail to deal with ultimate ownership of scholarly communication, i.e., copyright, are viable. I have reached this conclusion because I believe in the market. What the market reveals is that scholarship published in many academic journals has real economic value. While it is fashionable to characterize all scholarly journal articles as "seldom read" and "of primary value only in negotiating the academic credentialing game," the truth is far different.

Some commercial publishers of academic journals in science, technology, medicine, and lately the social sciences, have demonstrated the economic value of scholarly journals by raising their prices far in excess of production costs. The effort by libraries to combat these cost increases by canceling journals that were inordinately expensive on a per use basis has not affected the profitability of these journals. Even if the rates of increase in prices do finally decline, such decline does not demonstrate that publishers have ceased to exploit the value of journal contents. Even monopolists do not forever raise prices at a higher rate than do competitive producers. The difference between competitively organized markets and those that tend toward monopoly is the level of prices and volume of product produced, not the continuing rate of increase in prices. What we need to make scholarly communication affordable is a reduction in price back to competitive levels, not a reduction in the rate of price increase.

I would be more sanguine about solutions other than those that deal with copyright ownership if I believed that many non-profit scholarly associations would continue to ignore the market worth of the material contained in their journals. Recent evidence is that they are beginning to exploit it. I take little comfort in the fact that they have not yet gone so far as their profit-making brethren, for I fear that if society members were now faced with the choice of raising dues or paring back their organization's human and physical infrastructure in order to make scholarly work more accessible to libraries, they would choose to leave journal prices high.

Indeed, it is because of the demonstrated economic worth of information contained in many scholarly journals that I do not subscribe to the popular notion that a cure for the scholarly communication problem is for universities to cease evaluating scholarship by counting a faculty member's publications. In addition to overlooking the reality that quality universities do not evaluate quality "by the pound," such a notion ignores the fact that universities are not the only entities who profit from the research results contained in scholarly journals. Great universities must encourage the

generation of knowledge through research and the spread of that knowledge through publication. Any institution that evaluates a faculty member on volume of publication without considering the quality is not a place of higher learning. Thus I vigorously reject the notion that in an expanding age of knowledge, reduction of the quantity of scholarship published is a viable solution.

Even if we were to somehow reduce the rate of increase in prices of existing journals, the birth rate of new journals is so high that we still could not afford to buy even a large number of them. While many new journals do not merit acquisition, others are of high quality and constitute the sole access to scholarship in some very narrowly defined academic fields. Failure to add the latter journals to the collection will cause specialized scholars and their students to lose timely contact with their most important scholarship. A viable solution must deal with both the problem of price increases for existing journals and the rapidly expanding number of new journals.

My proposal is simple: when a manuscript by a U.S. faculty member is accepted for publication by a scholarly journal, a portion of the copyright of that manuscript will be retained for inclusion in a single, publicly accessible repository, after a lag following publication in the journal. We know that "the devil is in the details," but in fact, the details are not important to the principle of my proposal. Moderate alteration of the details would still leave my proposal a viable solution to the problem we face.

At present, essentially all scholarly journals require that all copyrights pass from the author to the journal when a manuscript is accepted for publication. In this proposal, only the exclusive right to journal publication of the manuscript would pass to the journal. The author would retain the right to have the manuscript included in the National Electronic Article Repository (NEAR) ninety days after it appears in the journal. The faculty's published article would be transmitted to NEAR upon its publication, by federal law as part of a funding agency stipulation or by contractual agreement with the University employer. NEAR would index manuscripts by author, title, subject and the name of the journal in which they appeared. (The electronic form would be searchable on many more dimensions.) NEAR would see to it that articles are permanently archived, thereby assigning responsibility for the solution to another problem brought to us by the electronic age. NEAR could be funded by universities through "page charges" per article included, by federal appropriation, by a small charge levied on each user upon accessing articles or by a combination of these methods.

I do not expect that this plan will generate substantial opposition from faculty members since it guarantees them access to all scholarship published

by U.S. faculty members wherever they happen to be located or employed. The proposal, by its universality, addresses the fear that any attempt by faculty to withhold any part of the copyright will lead journals to reject manuscripts. If the requirement were ubiquitous in U.S. universities, no journal, domestic or foreign in origin, would relinquish the possibility of publishing all work arising from U.S. faculty. Thus no U.S. faculty members would need fear that their manuscripts would be rejected because of partial copyright retention.

Of course much scholarship is generated outside of the academy and by scholars abroad. If journal publishers find that the work of U.S. university authors must appear in NEAR, surely they would find little reason to oppose inclusion of all their articles in NEAR. The current U.S. Government requirement that only a portion of copyright of articles authored by its employees be surrendered could quickly be modified to require inclusion of such articles in NEAR. Employees of private firms commonly must receive clearance from their employer before they publish an article based on their work. It would seem reasonable that once one decides that something a firm paid to produce can be published, granting wider exposure by including the article in NEAR would be acceptable. Thus, it is reasonable to expect that work published in U.S. journals by international scholars or by government or private scientists would be included in NEAR.

Journals now generally have exclusive ownership of the copyright to manuscripts nearly into infinity. Under my proposal, this exclusive ownership right would be truncated to a period of 90 days. While 90 days is arbitrary, in my view, it is enough time to leave sufficient value with the journals. Journal subscribers will continue to pay for more timely access to information. But free or low cost access after 90 days would surely depress the extraordinarily high prices now charged by some journals and curb the publishers' ability to increase those prices seemingly without limits. Since all scholarly journal articles would pass into the public domain in 90 days, individuals, libraries, agencies and businesses would choose to subscribe only to those journals where timely access justified the cost. The amount by which prices would fall will vary inversely with the rate at which the value of the information contained in the journal deteriorates over time. I would assume that a journal of portfolio analysis would drop little in price, while a journal of cosmology would drop substantially. Similarly, new journals would be free to spring up, but their impact on library costs would be tempered by the reality that the material they contain would be in NEAR 90 days after publication.

In response to proposals that bear some of the elements of this one (for example see Bachrach et al. in *Science*, Sept. 4, 1998, p. 1458), scholarly journals often proclaim that they add value through their refereeing,

editing, printing, etc., and therefore deserve to reap the fruits of their efforts by retaining exclusive rights to articles. I do not deny that journals add value. Furthermore, I believe that any solution that attempts to eliminate journals would do scholarly communication a great disservice. In my field, the title *American Economic Review* tells the reader a great deal about the quality of the articles within. In an age with more information available than time to read it, every screening aid of this nature is valuable. What I do deny is that journals are entitled to all the value of an article. What they are entitled to is the value that their refereeing, editorial and publishing processes add.

I intend for this proposal to apply only to "scholarly" journals. Articles such as "Who Will Own Your Next Good Idea?" in the September 1998 issue of *Atlantic Monthly* address the concerns of professional journalists that erosion of copyright protection threatens their livelihood. A proper definition of the term "scholarly journal," while not a trivial task, ought to allay such fears. A critical characteristic of scholarly journals is peer-refereed materials, something not found in the popular press, where those who are paid by the piece for their work make a living. Universities have a claim only to the journal-disseminated scholarship produced by their faculty, not the work of journeymen authors.

How do we get from here to NEAR? An easy solution would be the passage of a federal law requiring that the work published in scholarly journals by U.S. university faculty members be deposited in NEAR within 90 days of the date of its publication. A variant would be to require that all work arising out of federally funded research subsequently published in a scholarly journal be deposited in NEAR. I would welcome the former and cannot envision any serious political opposition to the latter. NEAR, of course, would have to be created by the same legislation. Federal agencies as a condition of research grants and contracts also could require deposit of resulting articles in NEAR.

Alternatively, an organization like the Association of Research Libraries, the American Association of Universities, the National Association of State Universities and Land Grant Colleges, the Library of Congress, OCLC (Online Computer Library Center, Inc.), or a private foundation might establish NEAR. Then, university by university, we would have to pass copyright ownership policies that require deposit of journal articles in NEAR. We in Kansas have moved in this direction in the hopes that such a vehicle will soon be created. The intellectual property policy that was adopted by the Kansas Board of Regents in November 1998, includes the following:

Upon the establishment of national governmental or nonprofit entities whose purpose is to maintain in an electronically accessible manner a

publicly available copy of academic manuscripts, the Kansas Board of Regents will review each entity and upon determination that providing the manuscripts will not jeopardize the publication of articles or infringe on academic freedom, require the creator(s) to provide the appropriate entity a limited license for the use of each manuscript.

I add this proposal to those already on the table. There is room for multiple approaches, and certainly there are alternatives to NEAR.

- ARL has spawned SPARC to create innovative approaches to reduce journal costs. To date, it has joined with professional societies to create three new scholarly journals with prices substantially lower than those of existing journals in the same field. While I support SPARC, I note that three is a tiny portion of the tens of thousands of journals extant. In addition, it is possible that SPARC will lead to a proliferation of journals that will require increased library budgets rather than the hoped for reduction.
- AAU continues to work on the decoupling project. This project is designed to form refereeing panels to review manuscripts that subsequently will be available electronically to all and for journals to consider for publication. To date, professional societies have been unwilling to work with the AAU in forming the refereeing panels.
- Some universities are considering changes in intellectual property policies such that the university retains part ownership of manuscript copyrights. This approach has two problems. First, journals may refuse to publish articles unless they have exclusive copyright ownership. I hope journals would not take this stance, but I have little confidence they will not unless a great many universities simultaneously adopt this approach. Second is the problem of cataloging. How does a researcher find a manuscript if it is on the web site of any one of 300 universities? Clearly, simply retaining faculty-produced manuscripts on the university web site is of limited utility to researchers elsewhere.
- University groups including the Big Ten universities' Committee on Institutional Cooperation, the Big Twelve, plus groups of universities within states (such as Ohio) have formed buying cooperatives. These arrangements permit members to pit their collective purchasing power against the market power of very large journal publishers. Unless such cooperatives can make good on threats not to buy journals from a publisher, I am not sanguine about the ability of such groups to do more than slightly mitigate price increases.

- Finally, individual faculty who are members of scholarly associations can insist that their associations remain true to their founding purpose to referee and disseminate disciplinary research at reasonable cost to the academy. To do so they must insure that no more scholarly journals are sold to commercial publishers and that their own societies charge no more for their journals than warranted by the production costs. This approach will have no impact on the cost of journals remaining in the commercial sector.

For the reasons cited above, I do not believe any of these actions will provide substantial help in the foreseeable future.

Any proposal that does not guarantee the ultimate right of the academy to inexpensive and open access to the scholarly communication it generates will not solve our problem. We must deal with the thorny issue of copyright ownership. Probably, we will have to obtain protection from anti-trust action if we choose to act in concert to make NEAR a reality. I believe I have outlined a proposal that will resolve the scholarly communications crisis while protecting the legitimate rights of all who make scholarship possible.

I welcome your evaluation of this proposal and your assistance.

I wish to acknowledge the great influence William J. Crowe, Dean of Libraries and Vice Chancellor for Information Services at the University of Kansas, has had on my thinking in the area of scholarly communication. Bill and I work closely together in strategizing and philosophizing about how best to deal with the immense problems facing university libraries today. His knowledge and vision are important assets for our university, and the academy.