

Copyrights and the Paradox of Scholarly Publishing

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Abstract: While the information revolution has made dissemination of documents faster, easier, and less expensive, scholarly publication has not evidenced the expected benefits. Journal prices have been rising much faster than inflation due to dysfunctions in the market for critical materials. Copyright ownership and control is at the fulcrum in finding a new balance between access and the financial success of publishers. To assure long-term access, authors should consider alternatives, such as including copyright addenda, before transferring copyrights to publishers.

Background: Information revolution and price of dissemination

Over the last several decades we have experienced amazing advances in the technologies of computation and communication and their applications. This “information revolution” has been so sustained and pervasive that the ongoing revolution itself has almost become a commonplace fact of life. Revisiting a few milestones from a quarter of a century ago can underline the magnitude of the changes in our ability to disseminate information and set the stage for consideration of their effects on scholarly communication in particular. One has to pause to remember that in 1980: only a tiny fraction of the U.S. population had access to a personal computer; only specialists from science, engineering, and business regularly could take advantage of a mainframe computer; and only the technologically adept could connect to a remote computer using telephone circuits and 300 baud modems. Since then we have seen the arrival of personal laptop computers with the power of a supercomputer of 1980 vintage, the switch from analog telephony to digital transmission, the replacement of the modems of old with widespread broadband access at 1.5 megabits per second and beyond, and the advent of the Internet and the Worldwide Web. The Web and tools such as search engines now give the Internet-literate layperson the ability to access and retrieve information from data sources that surpass the Library of Congress of 1980 in sheer volume.

The massive societal investment in the infrastructure of communication and computation has changed stunningly the economics of the dissemination of a text. Sending a single letter to a friend in 1980 entailed the costs of some paper and ink and a first-class postage stamp, not to mention the time spent in cursive writing or typing the letter. Now emailing a letter to a thousand friends over the Internet costs close to nothing. Today the big investment for the user is the price of entry into “cyberspace” – the purchase and maintenance of a computer and display and software, and the monthly connection and Internet service provider fees. The marginal cost of sending even a file with, say, the text of the U.S. Constitution is effectively zero, no matter where on the Internet it is going.

Music industry threatened

This dramatic change in the economics of information transmission has disrupted long-standing business models and practices in many industries and placed a new emphasis on the role and importance of intellectual property rights. An example that has been a focus of concern for academic communities is the recorded music industry. For decades the investment in cultivating new artists, recording their creations, promoting them with a large audience, mass-reproducing the recordings, and distributing the records or compact discs to retail outlets has been repaid quite handsomely by the profits made on sales to young consumers. In popular music, comparatively few CDs achieve sales volumes that recapture the initial investment, but the profits from big hits have amply covered the gambles on artists and records that attracted only small paying audiences.

Initially the introduction of the CD, with its exceedingly high fidelity that does not degrade with time, caused only minor adjustments to the music business enterprise. As CD reproduction became commonplace, the industry had to fight against the emergence of a pirated-disc industry. The recording industry's model came under serious threat when the power of the Internet blossomed, MP3 file compression reduced the size of music files to more manageable proportions, and peer-to-peer file software became widespread. This was a fundamental and momentous shift in the propagation of music. In response, the Recording Industry Association of America has engaged in a vigorous campaign to educate potential consumers, many of them college students, to the importance of respecting copyright laws, while it simultaneously pursues criminal and civil penalties against visible large-scale abusers. As the next stage of this adaptive evolution, new business models have been developed to make the speed and convenience of on-line downloading from home into a business asset. Apple's iTunes store has pioneered on-line sales of copyrighted works with remarkable success. Measured in constant dollars, the average cost to legitimate consumers has actually dropped in the iTunes model from what it had been 15 years ago. A new balance has been struck between the need for a viable recording industry and the desire of consumers to benefit from the cost-savings and convenience of new technologies.

Market dysfunction and rapid growth of cost of scholarly publications

Although the scholarly publication industry has also experienced significant changes due to the information revolution, the dynamics have been very different. In an article in *Change* magazine, Edwards and Shulenburg¹ cite a number of statistics on the rising costs of scholarly publications, especially scientific journals. Paradoxically, as the cost of almost every step in the organization and dissemination of scholarly works has been reduced by information technologies, the price of journals has been increasing at rates far above general inflation. For a brief summary statistic, Edwards and Shulenburg cite data collected by the Association of Research Libraries for the period from 1986 to 2001: for a portfolio of journals the prices rose by 215 percent over the 15 year period, whereas the Consumer Price Index rose by only 64 percent. They argue in the language of economics that this has been a manifestation of a dysfunctional market, in which market

power has been quietly concentrated in the hands a limited number of commercial publishers. The undeniable value of the contents of a high-quality journal to university scholars pressures university libraries to pay whatever price the controlling publisher demands.

The market dysfunction threatens to limit the access to scholarly work unless action is taken by authors to protect their own rights as authors. To strike a new sustainable balance between the need for a healthy publication process and the need for access to scholarship, the authors of valuable scholarly works must themselves protect access. The authors must retain rights to use their own works and to allow others access to their works at a reasonable price.

The paradox: the elements of the publication cycle

The rapidly rising price of scholarly publications during this period of sharply falling costs of information dissemination is a striking paradox. How can it be that the music industry has been forced to lower prices in constant dollars while scholarly publishers claim that they must raise them? To examine the shifts that have taken place in scholarly publishing, it is useful to think through the various steps and actions associated with the process of scholarly publication. We present them here in broad terms as a list. While the creative processes are very different, writing, recording, and selling new music involves analogous steps.

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| A. Research | G. Journal composition and indexing |
| B. Writing the article | H. Printing and Binding |
| C. Submission to journal | I. Marketing and Sales |
| D. Peer review and revision | J. Distribution |
| E. Copy editing | K. Access |
| F. Phototypesetting | L. Archiving |

University faculty and staff, as well as industrial laboratory researchers and staff, are the main contributors to steps A through D: conducting research, writing articles and submitting, reviewing, and revising them. University libraries have historically made the major investment to provide access and to archive the record of scholarship, step K and L. Publishers have carried the costs of steps E through J, from copy editing to distribution. Each of the steps is important and has contributed to the remarkable success of the scholarly communication enterprise.

How has the information revolution affected the costs associated with these steps? While rapid electronic access to sources has changed the nature of research in many fields, it would be hard to argue that it has lowered the costs associated with high-quality research. Scientific laboratories are better organized and more automated, but information technology has often raised expectations for research and not lowered costs. Imaginative thinking and good writing still take time and intellectual effort. The processes of submission, review, and revision have been aided and accelerated by rapid

communication. Editing, journal composition, and indexing are easier with information tools. Phototypesetting is much easier. Indeed, many journals now demand that completed manuscripts be submitted in formalized languages that allow almost automated phototypesetting, shifting much of the remaining burden of typesetting from the publisher to the author.

Printing, binding, and distribution of hard copy journals have benefited very little from information technology *per se*, and these steps do account for a sizable fraction of the cost of disseminating a print publication. If these were the cost-drivers for publishers, one might expect to see the price of journals rising at approximately the rate of inflation.

Even for conventional printed materials, there is really nothing in the costs associated with each step that accounts for the rapidly escalating prices documented by Edwards and Shulenberg. Market control and the necessity for research libraries to provide scholars access to critical materials have allowed the prices to be set at very profitable levels. When the publisher owns the copyrights to valuable works (generally transferred by authors in the typical publication agreement), university libraries have little choice but to pay the publisher's price, whether fair or exaggerated.

Licensing access to publishers' on-line journals

In many fields, the convenience of electronic access is rendering hard copy obsolete. Researchers are satisfied with the quality of presentation available on high-resolution screens, and libraries now concentrate far more on making electronic collections available.

A number of major publishers have now moved to adapt to this shift in emphasis by offering on-line access licensing agreements for subscribers in lieu of transferring an electronic copy with rights to distribution. In this new model, a license for access to a set of journals by a designated pool of users is granted for an annual fee usually at a lower price than standard hard copy subscriptions for the same journals. This fully electronic model reduces costs greatly, since there is no longer the need to print, bind, and distribute heavy physical materials. There is greater investment in servers and Internet infrastructure, but for large audience journals these are modest by comparison with the cost savings. The fully electronic model captures all the benefits of the information revolution – but for whom?

There are two places where this model must be scrutinized. First, unless there is a big reduction in the price, the publisher is capturing the financial benefit, since the expensive steps of printing, binding, and distributing the hard copy have been eliminated. Second, access may be entirely dependent on the payment of the annual licensing fee. If the fee is not paid, there may be no residual access to existing materials. In the hard copy world, a university library purchased a physical copy of a journal, and access to that physical copy could always be assured, even if the journal subscription was later canceled. There is no automatic assurance of analogous access in the electronic model. If the annual fee is not

paid, previously published materials may no longer be available. This loss of guaranteed access to the historical record potentially poses a significant threat to scholarly work.

In the music industry, millions of potential customers have abused copyrights by illegally downloading songs over the Internet, and that widespread abuse has threatened the profitability of the music industry. In scholarly publishing, university libraries do not violate copyright laws, and this has allowed publishers to raise the price of scholarly journals at a rate faster than inflation, despite the introduction of information technologies.

Retaining author's rights – access and self-plagiarism

This is not to say that violations of copyright laws do not occur in the realm of scholarly publishing. In fact, many faculty members unwittingly engage in practices that do violate copyright laws.

When an author transfers ownership of the copyright to a work to a publisher, the legal agreement may preclude uses of the material that the author usually takes for granted. Is the author permitted to post a pre-print version on his or her Website, for example? Not necessarily – not unless the transfer agreement explicitly provides for the author's retention of that right. Depending on the language of the legal agreement, such a posting may be a straightforward violation of the copyright, subject to prosecution at the publisher's discretion. Can the author re-use excerpts in another context? Usually not. Unless permission to republish excerpts has been obtained from the copyright owner or can be defended as fair use, it is a violation of copyright law. Moreover if the excerpts are not properly identified, re-use constitutes self-plagiarism. Although legal action for self-plagiarism is very rare in the academic world, self-plagiarism suits have been pursued against recording artists whose subsequent works resembled too closely their own previous copyrighted works.

NIH model

The National Institutes of Health (NIH) has recognized that public access to the fruits of research funded by federal grants has been compromised by the high cost of scientific journals. To counterbalance the growth of prices and to ensure that research results will not be locked away, the NIH adopted a policy advocating the public posting of materials produced with support from the NIH. Specifically, the NIH requests the author to post his or her scholarly publication in its entirety on a publicly available repository such as PubMed Central twelve months after its initial publication.ⁱⁱ The twelve-month embargo on public release maintains the value of the currency of a journal and motivates libraries and individuals to maintain their subscriptions. Concomitantly a year-delayed release ensures that everyone will eventually have full access for free. If a journal is exorbitantly priced, the readership has the option of waiting for free access. There are efforts in progress to change NIH policy further, making the posting requirement mandatory and the embargo period six months instead of twelve.

Options: Copyright addenda, Alternative modes of publication

Everyone recognizes that publication is at the heart of scholarly communication, and there must be a sustainable publication process and a healthy publishing industry. The information revolution has made publication easier and faster, but the dynamics of the publication industry and control of copyrights have compromised access to scholarly work. Without some important changes in practices, rising costs will lead to the disappearance of valuable journals from library shelves, and authors could find access to their own works unduly restricted.

The provosts of the CICⁱⁱⁱ suggest that authors consider a number of options in choosing and interacting with the publishers of their articles. The best option will depend on the author's circumstances, the available suitable journals, and expectations in the author's field of inquiry.

1. Affordable journals – Consider journals whose prices have remained affordable. Often the journals sponsored by scholarly societies have kept prices reasonable.
2. Electronic journals – New online lower-cost or open access journals have been inaugurated, and many are gaining good audiences and high stature their fields.
3. Copyright addenda – In signing the copyright agreement furnished by a publisher, return it with a signed addendum that retains certain of your rights as the author by overriding contradictory conditions present in the publisher's proposed agreement. A companion document to this article is an Author's Addendum prepared by the CIC. It is similar to author's addenda prepared by national organizations including Science Commons and SPARC.

A good number of professional journals are now accepting copyright transfer agreements with similar addenda. The CIC provosts recognize, however, that some journals may insist on a copyright transfer with their specified terms and reject the provisions of these addenda. If you encounter this resistance, discuss options with your department head or chair, your dean, and your university librarian. There may be a good alternative, or it may be in your own best interest to accept the publisher's terms.

Whatever option you exercise, be aware and informed of the consequences of copyright ownership and transfer. In the electronic world where copying is easy and distribution is effectively free, copyrights deserve close attention. University scholarship should become more readily and widely available, but it may not be unless you preserve important rights and select publishers committed to access at a reasonable price.

Endnotes

ⁱ Richard Edwards and David Shulenberger, “The High Cost of Scholarly Journals (And What to Do About It),” *Change*, Nov/Dec. 2003, pp. 11-19, 2003, Heldref, Washington, D.C.

ⁱⁱ “Beginning May 2, 2005, the policy requests that NIH-funded scientists submit an electronic version of the author's final manuscript, upon acceptance for publication, resulting from research supported in whole or in part by NIH. The author's final manuscript is defined as the final version accepted for journal publication, and includes all modifications from the publishing peer review process.

The policy gives authors the flexibility to designate a specific time frame for public release — ranging from immediate public access after final publication to a 12 month delay — when they submit their manuscripts to NIH. Authors are strongly encouraged to exercise their right to specify that their articles will be publicly available through PubMed Central (PMC) as soon as possible.” *NIH News*, February 5, 2005.

ⁱⁱⁱ The CIC [<http://www.cic.uiuc.edu>] is consortium of mid-western universities involving those in the Big Ten athletic conference, both the Chicago and Urbana-Champaign campuses of the University of Illinois, and the University of Chicago.