June 2004

Reshaping Scholarly Communication

John Ober

California Digital Library, john.ober@ucop.edu

Catherine Candee

California Digital Library, catherine.candee@ucop.edu

Beverlee French

California Digital Library, beverlee.french@ucop.edu

Follow this and additional works at: <https://docs.lib.purdue.edu/atg>

Part of the [Library and Information Science Commons](#)

Recommended Citation

Ober, John; Candee, Catherine; and French, Beverlee (2004) "Reshaping Scholarly Communication," *Against the Grain*: Vol. 16: Iss. 3, Article 13.

DOI: <https://doi.org/10.7771/2380-176X.4343>

This document has been made available through Purdue e-Pubs, a service of the Purdue University Libraries. Please contact epubs@purdue.edu for additional information.

ATG Special Report — Peer, Review: Past Present and Future

by **Steve McKinzie** (Social Science Librarian, Dickinson College, Carlisle, PA 17013; Phone: 717-245-1601)
<mckinzie@dickinson.edu>

This issue of *Against the Grain* tackles the troubling and sometimes vexing question of peer review. We subtitled it: "Peer, Review: Past Present and Future, in the hope that an expanded scope would grant contributors sufficient latitude for cogent and diverse analysis. They didn't disappoint us, as you'll see shortly.

Peer review itself has enormous relevance for scholars and publishers, but it is especially important for librarians saddled with the task of building collections.

What could be more valuable in the collection development process than having a tool that helps you buy the best of what the scholarly world has to offer? Peer review, the handy utensil of collection management, attempts to guarantee quality — to separate the wheat from the chaff, the professional from the amateur, and the experienced researcher from the would-be popularizer. It is the *modus operandi*, of scholarly credibility. Built on the insistence that only the experts in a given field have the ability, training, and understanding to judge the quality of a scholar's work, peer review allows disciplines to police themselves, and it enables scholars to keep their scholarly professional literature unbiased and accurate.

Such, at least, is how the theory goes, but even in the best of worlds, peer review is an all too human process. **Mark Herring** argues in his regular Red Herring column that accompanies this issue that peer review doesn't necessarily ensure quality and that it doesn't always work as it should. Fabrication and absurdity can still pass for scholarship — and peer-reviewed scholarship at that. As usual, **Dean Herring's** sobering and sometimes irreverent analysis is well worth reading.

Gerry McKiernan takes up peer review from a different angle altogether in his article, "Peer Review in the Internet Age: Five (5) Easy Pieces." He agrees that peer review is a form of quality control, but he insists that it isn't the only one on the block. There are others — additional means of keeping the standards of scholarship high. He explains several, pointing out the strengths and advantages of some of the models, live options that the scholarly community would do well to consider closely.

Barbara Fister has a fascinating piece entitled "Academic Authors and the Crisis in Publishing. She asks us to consider why scholars publish and whether or not the entire academic reward system itself may be to blame for creating a publishing system that seems more interested in quantity than quality, more concerned about bestowing author credibility than gaining true understanding.

Of course, no one can take up any of these questions about peer review — the issues addressed by **Fister**, **Herring**, and **McKiernan** without encountering what some have called "the scholarly communication crisis." With the cost of journals going up substantially, particularly commercially-owned journals, some universities, scholars and even governments are calling on publishers to lower their prices or face a bevy of unsavory consequences. The extended hullabaloo over scholarly journal prices coincides with the online explosion, a development that has also given us the intriguing new publishing paradigm, **Open Access**. **Peter Suber**, a scholar who has emerged as one of the international champions of the new approach, argues in his article "A primer for **Open Access** to Science and Scholarship" that the movement holds enormous promise, especially for academic institutions caught in the grip of escalating serial expenditures. By transferring costs away from the consumer — be it the library or a personal subscriber, and to the author, **Open Access** can encourage the sharing of scholarly information, foster the free exchange of ideas, and solve the bedeviling problem of copyright, all at a modest cost.

In tandem with **Suber**, an additional article offers a variation on the theme of **Open Access**. **Beverlee French**, **Catherine Candee**, and **John Ober** discuss their involvement with the **California Digital Library (CDL)**. By sponsoring their own online repository, the **University of California** has created in **CDL** a scholarly commons, a place where scholars can publish freely, without the reliance on commercial publishing but with the safeguards of traditional peer review.

For some, these arguments in favor of peer-reviewed **Open Access** may appear to be too good to be true. **Michael Mabe**, Director of Academic Relations with **Elsevier** Publishing suggests that such is precisely the case. He suggests that the advocates of **OA** have overstated their case. In his article, "Peer Review and Pay-to-Publish: The World Turned Upside Down?" he contends that to date a plethora of objections about **Open Access** remain largely unanswered. He mentions a few. Is it really economically feasible? Will the practice of having authors pay for publication corrupt the reviewing process? Can publishers themselves, desperately in need of funds, resist the tendency to publish more than they should, given the fact that the actual quantity of their publishing (the sheer number of articles themselves) is directly proportional to their profits? In short, **Open Access** for **Mabe** doesn't have the answers. It is in the end more a symptom of the scholarly communication crisis than it is any kind of solution.

Finally, my own opinion piece, "Open Access: Two Caveats," offers a personal take on the traditional publishing and **Open Access** controversy. Like most librarians, I find **OA** enormously attractive, and I fancy that the new approach to journal publishing is destined to become part of the publishing landscape. Even so, I recommend caution. **Open Access** has disturbing dimensions that none of us can dismiss too quickly. At the very least, we ought to give traditional publishers a fair and impartial hearing — something that some librarians and some parts of the scholarly community seem reluctant or unable to grant. My sense is that at this point in the debate, we all (publishers, scholars and librarians alike) need to answer a good many more questions about **Open Access** before we can give it unqualified support. 🐼

Reshaping Scholarly Communication

by **John Ober** (Director of Policy, Planning and Outreach, Office of Scholarly Communication, California Digital Library) <John.Ober@ucop.edu>

and **Catherine Candee** (Director, Publishing and Strategic Initiatives, Office of Scholarly Communication, California Digital Library) <Catherine.Candee@ucop.edu>

and **Beverlee French** (Director of Shared Content, California Digital Library) <Beverlee.French@ucop.edu>

For academic libraries and librarians it is impossible to know the future landscape of scholarly communication. But it is necessary to wonder about it, and imperative to act. By now many of the facts are known. There is mounting evidence of the economic unsustainability of current scholarly communication systems.¹ Unhappiness about the trends and a desire by all parties to have a healthy system for disseminating and managing the results of scholarship are leading to an amazing variety of actions. Witness the parliamentary investigations, the flood of speculation and pontificating, reports in the

continued on page 44

Reshaping Scholarly... from page 42

popular press, the deployment of actual new business models for publishing, and, most telling, faculty resolutions and editorial revolts.²

Principled, Thoughtful Action

It is by now clear that significant pieces of the landscape are crumbling and that change is needed. What is more difficult is to focus the energy of speculation and the imperative to contribute in a way that leads to principled, thoughtful action.

Like many of you and your institutions, for years the **University of California** libraries have been engaged in these issues and working for change. However, recent events, unprecedented faculty support, and clear successes for our **eScholarship** publishing infrastructure have led us to consider an even more explicit and collective scholarly communication program.

UC recently received attention for the unprecedented result of its negotiation with **Reed-Elsevier** at the end of 2003. That outcome — including more favorable terms on base costs, annual price increases, and preservation copies of journals — gave UC continuing access to materials we otherwise would have been forced to cut. It provides necessary budgetary flexibility for journals from other publishers that represent a closer alignment between price and value. And, if nothing else, it bought time to more deeply consider a situation that had led, prior to the negotiation, to spending 50% of the UC's online materials budget for journals that received only 25% of the use.

But beyond providing a small economic breather, the negotiation and surrounding context revealed profound passions of librarians, faculty, administrators, and other partners. Tapping that passion clearly yielded support for the tactics of that one negotiation. ("Passion" can be used in this context in both its common sense of "strong emotion" and the recently revived one based upon the Christian etymology, i.e., of "suffering.")

More than that, it reaffirmed that the libraries must take a key programmatic role in the university's response to the need for structural change in scholarly communication systems. At UC the cumulative effect requires us to move from one-time battles and tentative publishing innovations to programmatic efforts based on evidence, guiding principles, and action priorities.

The result is the articulation of a UC libraries' scholarly communication program guided by principles and focused by a set of related priority actions.³ Those principles and priority actions currently include:

Principle: Action must be based upon deep understanding of the factors, dynamics, economics, and the needs of stakeholders in scholarly communication systems.

Action: Extend and deepen understanding through applied research and thoughtful outreach efforts. Share this understanding with faculty and use it in library decision processes.

Principle: Seek economies of effort; leverage individual and collective effort.

Action: Create a network of highly engaged and informed library staff to shape and support systemwide as well as campus-based efforts. Pursue inter-institutional service developments, including partnerships with peer institutions beyond UC.

Principle: Use the libraries' market position to influence the economics of scholarly publishing toward sustainability.

Action: Establish and operate according to selection principles that account for scholarly value and economic sustainability.

Principle: Authors of scholarly work should carefully manage the copyrights inherent in products of their scholarship. Only through retention of some rights, and care in the assignment or exchange of others, can the author influence or control the associated economic advantages or future uses inherent in possession of the rights in their work.

Action: Provide the knowledge and tools for faculty to retain and use copyrights. Create a robust publishing infrastructure that encourages innovative dissemination of their scholarly output, including but not limited to that in which they have retained copyright.

Extend Understanding

There are at least two faces to the principle that action must be supported by deep knowledge. The first is to admit that there are a great many issues about which we need to know more. These range from fine-grained information about the economics of publishing practices within disciplines and sub-disciplines or between commercial and non-profit publishers, to the priority needs of scholars under their different roles as authors, editors, society members, reviewers of peers, and library users. UC has a five-year history of focus groups with faculty on these topics and is mounting an applied research program to increase both quantitative and qualitative information.

As the recent **Reed-Elsevier** negotiations demonstrated, our faculty have a hunger for information that can guide their individual and collective action. The second face, then, of deepening knowledge is to share it. The UC libraries are extending a communications campaign that fosters understanding among the stakeholders in library decision processes and that will engage their support in those processes (e.g., journal cancellations). We plan to provide that information consistently — perhaps by integrating it with end-user services such that users can see it at point of resource discovery and use. We believe sharing such data, along with the challenges of key negotiations, will deepen awareness to the point of inciting action.

Work Collaboratively

We need to turn our attention to both internal and external partnerships. There is significant expertise and deep awareness of scholarly communication issues available at UC, as there is also across the U.S. and beyond. Among the obvious benefits of identifying and coordinating UC expertise will be the lowered costs of distributed rather than redundant effort, and the ability to adapt centrally-managed knowledge, created through actions related to the first principle, for greatest local effect.

Similarly, while efforts within UC will be important in a limited context, real impact will require a critical mass of leading universities to make institutional commitments to changing the economics of scholarly publications and to collaborating on supporting infrastructure and services. We have recently begun discussing with colleagues around the world, for example, about the possibilities of creating federated search services of post-print repositories. Such a service will be necessary to ease discovery and use of institutionally housed, **Open-Access** versions of articles that also appear in commercial publications.

Use Library Buying Power

An important complement to deepening our understanding, sharing that understanding, and collaborating for action, is for libraries to direct some of their scarce dollars away from overpriced journals and towards innovation. This speaks to the effective use of buying power as a guiding principle to effect change. We support ventures sponsored by **SPARC**, university presses, societies, and experimental business models like **BioMed Central** and **Public Library of Science**, even without complete confidence, but certainly with hope, that they themselves will be sustainable or will catalyze the needed change. We do not shy away from rigorous negotiations and deselection because we have seen them feed librarians' dialog with faculty about the continuing crisis in scholarly communication. Further, our faculty economists advise that we must discriminate between the good and the bad to affect prices, that we must reduce the inelasticity of the marketplace.

Because sustainability is a key value and an operational necessity, the UC libraries increasingly preference materials and publishers/vendors that provide the greatest value. At this point "value" is an imprecise metric. We believe, however, that it must be based on relevance and high quality at reasonable (sustainable) costs. And it must include elements of service such as measures and mechanisms for persistent access and for integrating access into the rich mix of our collections and services (e.g., through robust linking and adaptable user interfaces).

Refining our understanding of value and translating the principle of economic sustainability into guidelines will not be easy.

continued on page 46

Reshaping Scholarly... from page 44

We will have to consider, for example, that UC faculty editorial participation, even in major roles, will not necessarily be a factor in favor of addition or retention of a title. We will need to propose that UC will actively cancel titles whose editorial boards announce that they have quit expensive commercial publications and launched an equivalent journal under a different title with a new, lower cost publisher.⁴ These refined selection guidelines could be reinforced by more sophisticated measures of value. So, we are exploring the possibility of constructing new multi-variant value metrics — incorporating impact factor, use, price-per-page/citation, and the like — that quantify value and can be used, in addition to traditional subjective judgment, to inform selection decisions.

Support Authors' Management of Copyright

In discussions with faculty we have been asked time again for clear, practical, easy-to-use information about the reasons for retaining rights and the methods to do so. This is leading us, not uniquely by any means, to include such information on our Websites and to watch and support efforts carefully like the **RoMEO/SHERPA** database on publisher copyright policies, or the **Create Change** and **Creative Commons** templates for modifying publishing agreements.

But we are also actively extending an already successful infrastructure that gives many options to scholars who want to disseminate

their work in novel and non-commercial ways.

eScholarship, the UC libraries' programmatic vehicle for experimentation in scholarly publishing, is hosted by the **CDL** and was launched in response to faculty need for dissemination and publishing tools and services. It was prompted by declarations within the library community of the need to influence scholarly communication even before the dysfunctions were felt as acutely or as broadly across the academy as they are now. The **eScholarship Repository** is an **Open Access** system at the heart of the initiative that offers UC faculty a central, online location for everything from technical reports to peer-reviewed journals and edited volumes. In slightly less than two years, the repository has seen almost 500,000 full-text downloads, i.e., downloads of entire papers or articles.

The program seeks to demonstrate a reliable and sustainable model as part of the effort to improve all areas of scholarly communication — creation, peer review, management, dissemination, and preservation. It includes the following publishing services and venues.

Working Papers and Research Reports

The **eScholarship Repository** <http://repositories.cdlib.org/escholarship/> provides UC departments, centers, and research units direct control over creation and dissemination of the full range of scholarly output, from pre-publication materials through journals and peer-reviewed series, and — beginning in May 2004 — legal posting of any UC author's digital copy of commercially published articles.

The repository, which debuted in April 2002, enables easy upload of papers into a centralized, managed location that makes the content freely available. UC faculty units are responsible for the review, selection, and deposit of the content, including editorial support for journals and peer-reviewed series; the **CDL** is responsible for maintenance of the digital record. The technical expertise required to upload and publish papers is minimal. Documents can be provided in a variety of formats (**Word**, **RTF** or **PDF**) and associated materials such as pictures, data sets, and **PowerPoint** presentations can be posted with the article.

Each program or department has its own uniquely branded site complete with logo and links. Web search engines such as **Google** can easily crawl and index information about the papers, since each paper is represented by a static Web page with the relevant descriptive information. This information is also available for harvesting through the **Open Archives Initiative Protocol for Metadata Harvesting (OAI-PMH)**, to enable discovery services which we hope will be built to provide one-stop searching of hundreds of similar repositories.

Journals and Peer-Reviewed Series

The **eScholarship Repository** includes peer-review capability allowing UC faculty another alternative to publishing their research in for-profit journals. The **CDL** expects the number of peer-reviewed papers and journals to grow substantially in coming months, with the addition of scientific monographs and other con-

tent from the **University of California Press**. A number of journals sponsored by departments at several UC campuses are in the pipeline, including the new *InterActions: UCLA Journal of Education and Information Studies* and *Comitatus*, a 34-year-old journal sponsored by the **UCLA Center for Medieval and Renaissance Studies**.

Compared to the sum of published scholarship the **eScholarship Repository** is an admittedly modest effort. Yet its growth in all dimensions has been exponential over the course of its first few months, and now includes 2,800 papers in the categories mentioned above, and over 10,000 paper downloads per week. Although a few papers tend to be quite popular, usage is spread fairly evenly across the repository, with about 75% seeing at least one download in any given week. A UC research institute director has noted that "many papers are getting more readers from this source than we would expect them to get in the best professional journals."

Post-Prints

A new service is being launched in response to the recent liberalization of publisher policies regarding the posting of electronic reprints, aka "post-prints." A section of the **eScholarship Repository** has been designated specifically for deposit of previously published articles. These articles will be searchable and browseable alone or in association with other **eScholarship Repository** papers, and they will be fully discoverable alongside their commercially published twins.

Books

Books are central to the scholarly enterprise and form the core of UC library collections. In keeping with our mission to support the research and instructional activities of the university, **eScholarship** is also engaged in a suite of digital book projects that build on the enormously productive collaboration between **CDL's eScholarship** program and the **University of California Press**. The partnership was forged with the launch of **eScholarship Editions**, an **XML**-based service for publishing books that currently includes 1500 **University of California Press** monographs and 500 additional books in process.

The **UC Press eScholarship Editions** have been greeted enthusiastically by faculty, librarians, and the public, and **CDL** now has an opportunity to leverage the investment made in developing a robust infrastructure by acquiring other digital book collections and extending our technical and service capabilities. We are exploring e-commerce models and the idea of licensed access to an expanded package of offerings. Such a package might include monographs from other university presses and groups within the university who currently publish their own monographs but could gain both prestige and efficiency by joining our efforts.

Scholarly Communication Landscape Architecture

The **University of California Libraries** are committed to joining others as assistant architects of the scholarly communication landscape.

continued on page 48

Endnotes

1. The extreme disjunction caused by the triple whammy of escalating prices, expanding volume, and limited library buying power for published scholarship are perhaps best represented by the **ARL Creating Change** graphic at <http://www.createchange.org/librarians/issues/silent.html>.
2. Expressions of the certain need for healthy systems that support the production and spread of knowledge and of starting points to maintain that health are found in a growing number of faculty resolutions calling for attention, if not always action. Peter Suber maintains a list of such resolutions at <http://www.earlham.edu/~peters/fos/newsletter/04-02-04.htm#actions>.
3. The UC libraries' scholarly communication activities are represented at <http://libraries.universityofcalifornia.edu/scholarly/>.
4. There are, of course, numerous examples, including Elsevier's *European Economic Review* (now *J. of the European Economic Association*—**JEAA**—from MIT Press) and *Journal of Algorithms* (now *Transactions on Algorithms* from the ACM).
5. *Systemwide Strategic Directions for Libraries and Scholarly Information*. University of California, Systemwide Library and Scholarly Information Advisory Committee. Prepared for SLASAC by the UC University Librarians through the Office of Systemwide Library Planning, UC Office of the President, 2004.

Academic Authors and the Crisis in Publishing

by **Barbara Fister** (Folke Bernadotte Memorial Library, Gustavus Adolphus College, St. Peter, MN 56082; Phone: 507-933-7553) <fister@gac.edu> <http://homepages.gac.edu/~fister/vita.html>

A few years ago, our biology department hired a neuroscientist. As soon as he arrived, he stopped by the library to see what we had in the way of journals in his field. Unfortunately, we had none since he was the first neuroscientist on campus and nobody thought to mention it to the librarians. (We have a seat on the curriculum committee, but this new curricular development hadn't shown up in the paperwork of course proposals or program changes. Nor, unsurprisingly, had it revealed itself in a mysteriously increased library budget.) Apart from expecting the library to support undergraduate research and study in his area, he quite reasonably planned to keep up his own research — something not only needed for his own growth as a scholar, but required for tenure and promotion at our liberal arts college. He had been assured that interlibrary loan would supply materials we didn't own locally. When I explained the "5/5" rule, he was appalled. Five? While the rule might not daunt a humanities scholar, used to quarterly journals that publish perhaps twenty articles a year, many science journals publish well over a thousand articles annually. It didn't make sense to him. What's the point of publishing results if they can't be shared?

Herein is the conundrum of scholarly communication. The Constitution gives Congress the power "to promote the progress of science and useful arts, by securing for limited times to authors and inventors the exclusive right to their respective writings and discoveries" — a fairly straightforward balance between social and individual interests to be orchestrated by Adam Smith's "invisible hand." We can quibble over what is meant by "a limited time," and we do, but the concept rests on the uncomplicated no-

tion that tipping the balance too far in either direction would be bad both for individual authors and for society at large.

In the case of the academic author, however, things get complicated. Certainly, giving scholars the exclusive right to have their name associated with research findings is a powerful incentive that drives the production of new knowledge. Setting aside the abstract quest for truth, authorship of publications — particularly those appearing in well-respected scholarly journals — is essential for personal advancement. The self-interested scholar publishes in order to get tenure and promotion, win grants, and develop a bankable name in the marketplace of ideas. Yet it is the use of those publications, not their sale, that is the primary currency of exchange. Scholars aren't rewarded through the sale of their texts, but rather through their being read and cited. They give away their legal ownership of those texts to publishers assuming that gift will make their ideas available for circulation. Once published, after all, their work will become a part of the record, a contribution to the common knowledge base on which other scholars can build.

The flaw in the argument, of course, is the assumption that those texts will be readily available. It's an understandable mistake. For several decades after the birth of "big science," and the mass infusion into academia of public funds for basic research, they almost always were. Academics produced knowledge, publishers published it, and libraries ransomed it back. Simple — until the ransom demands grew too high. It wasn't until scholars began to have trouble getting their hands on the literature they and their colleagues produce that their faulty assumption became clear. It had been obscured by the fact that the reward systems for publishers and for academic authors are significantly at odds. And, while it's tempting to simply fault publishers, the academic reward system itself is a significant part of the problem.

The Republic of Science Faces a Deficit

Michael Polanyi described science as a republic in which everyone plays a part in making and remaking knowledge. Though he was speaking of science in particular, it's an apt description of making knowledge in any academic field. Authority is built on a network of trust and tradition, in that no one person or body decides what is true; it is decided by those who know enough to make those judgments. Yet flouting tradition has its place, too. "While the whole machinery of science is engaged in suppressing apparent evidence as unsound, on the ground that it contradicts the currently accepted view about the nature of things, the same scientific authorities pay their highest homage to discoveries which deeply modify the accepted

view about the nature of things" (66). **Thomas Kuhn** offered a somewhat more ram-bunctious picture of how this works in *The Structure of Scientific Revolutions*: the normal course of affairs is overturned when significant anomalies are uncovered that call into question the regulations used by science to assess truth — a crisis that is "tradition-shattering."

In either case, these models view the production of knowledge not as a process of piling up bits of truth incrementally through ongoing discovery, but of a social activity that depends upon a self-governing process of negotiation — a process in which (like the balance described in the Constitution) the self-interest of the scientist is largely consistent with society's need for good science, assuming that the goal is knowledge and that the value accruing to scholars is their name attached to ideas that others can build on.

However, self-interest can influence the ways research is shared, often to the detriment of the public's interest. Some scholars have their name attached to research to which they made little contribution. Others may rush into print with a discovery that needs more testing merely to stake their claim since, if a competitor beats them to it, it is instantly devalued. Authors may finely slice a piece of research into what **Whitney Owen** has called the "Least Publishable Unit" to seem more productive than they really are. Review committees too often ask "how much have you published?" rather than the harder question, "what difference does it make?" Across the disciplines, the marketplace of ideas is beset by inflation. It seems to take a wheelbarrow of publications to buy a loaf of credibility.

Peter Lawrence attributes these shenanigans to an obsession with mindless accountability, lamenting the fact that "rather than assessing the research itself, those who distribute the money and positions now evaluate scientists by performance indicators." Scholars are judged on how much they publish and where — and quickly realize that "building capital in the hard currency of the audit society can be safer and easier than founding a reputation on discoveries" (259). This inflation makes it harder for scholars to keep up. Though the number of publications has grown, the time for any one scholar to scan the literature has not, forcing an inevitable narrowing of focus. The reward system has skewed the way scholars communicate, and that has altered how we create new knowledge.

Beyond the academy, the public has grown less trusting of scholarly expertise. Suspicion of conflicts of interest and a drive for accountability has led the federal government — which invests some \$45 billion annually on basic research — to propose new rules requiring highly regulated peer review practices that some scientists fear run the risk of excluding all quali-

continued on page 49

Reshaping Scholarly... from page 46

In their 2004 strategic plan they declare that *influencing the development of new forms of scholarly communication* is one of five key strategic directions that must be pursued collectively.⁵

Increasingly, we understand that this form of architecture requires its own principles, tools, and action plans. And, increasingly, we glimpse the possibilities of a world in which scholars and institutions of higher learning regain control of the landscape itself.

Ultimately, we hope the landscape is well-matched and flexibly evolves to meet the needs of scholars, their societies, libraries, university presses and other publishers — the creators and keepers of the scholarly record within the academy. For now, we are excited and committed to contributing to that evolution.