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October 2001

A MONTHLY REPORT ON RESEARCH LIBRARY ISSUES AND ACTIONS FROM ARL, CNI, AND SPARC

BEYOND CORE JOURNALS AND LICENSES: THE PATHS TO REFORM SCIENTIFIC PUBLISHING

How and Why More Scientific Journals Created

A Social Science of Publishing and Innovations

Henry Oldham described the intellectual system of science as a "deep transformation in the communication system of science, and not simply as a regimented side comment on the publishing landscape." International publishers, with various disciplines, have been transformed twice to the side comment of major international publishers. With the growth of online journals, has brought about so many changes that the title "Beyond core journals and licenses" can be seen in the industry. In order to achieve authority, the publishers have to give away natural licenses and permission that their journals are required to give. However, the growth of online journals, has brought about so many changes that the title "Beyond core journals and licenses" can be seen in the industry. In order to achieve authority, the publishers have to give away natural licenses and permission that their journals are required to give.
Certainly did not bolster the cause of dignity, solutions were sought that might help remove the scientific tribes' inner disputes from the public eye.

- Then, the question of intellectual property stood front and center as printers kept trying to ascertain their grip on a trade that, from their perspective, appeared poorly regulated. In short, printers wanted to transform the category of writers into that of owners (of a text), thanks to the work involved in the writing. A writer who is the legal owner of a text becomes an author and, as such, he/she can then sell his/her property just as he/she could sell a piece of land: exclusively and in perpetuity. Early on, however, copyright law added a time limit on the ownership of intellectual property, not so much to support the Public Good as to assert the principle of Royal Prerogative. Remember, this was a time in British history dominated by a tug of war between absolute and constitutional monarchy.¹

The lack of a public registry of discoveries, inventions, and innovations had often forced natural philosophers to resort to strange tactics to ensure their paternity claims, as when coded messages were broadcast to various colleagues so that they would know that some, yet undisclosed, discovery claim was being made. Natural philosophers were also limited to finding patrons so long as the lack of an efficient registration system prevented them from acting as full-fledged authors/owners who could submit their work to the verdict of an intellectual market.

With Phil Trans, all this began to change. A kind of co-optations system based on peer review began to emerge, which bestowed honor and visibility to those whose works were deemed of sufficient value to be duly registered in the printed registry. The multiplication of printed copies and their dissemination throughout Europe ensured the validity of the claim. In short, Oldenburg had invented the record of a kind of parliament of science. Through peer review, it could confer a form of intellectual nobility upon individuals. Thus was established the game of science, whereby giving away what one had discovered was paradoxically the best way to ensure one's intellectual ownership of it. Also, the incentive of giving away results, although they had been acquired after much expense in time, money, and effort, made sense because the "symbolic capital"—an expression originally coined by the sociologist Pierre Bourdieu—thus accumulated could then be translated into employment and other various, tangible rewards, including the earlier form of patronage.

The result of this operation was not an egalitarian republic of natural philosophy; various speculations on the best way to establish such a republic—e.g., the New Atlantis by Francis Bacon—also included a hierarchical vision of science. However, in the latter case, the hierarchy was based on an epistemological hypothesis that translated into a graduated division of labor. In Oldenburg's scheme, on the other hand, the hierarchy was based on one's ability to lay claim to intellectual ownership—a clear consequence of one's personal abilities as well as the material conditions in which the work is done. A complex mix of excellence and elitism ensued that has accompanied science ever since.

**In the Gutenberg Era: The Functions of Scientific Journals**

**The Perspective of Scientists**

Librarians have long noted that scientists often appear in two guises: authors and readers. The latter want all the documentation they need; the former publish where they can reap the maximum amount of visibility, authority, and prestige. The scientist as reader meets the problem of the cost of journals in the guise of missing titles: the library simply does not have enough money to fill everybody's complete needs; the scientist as author does not think about prices when he/she seeks the best possible evaluation through publication.

It must also be noted that scientists do not always read in the same manner. When they look for information in the course of pushing an investigation, they use investigative methods that are both pragmatic and varied. At that stage, they appear like detectives and will find the needed information through a wide variety of means: articles, of course, but preprints, e-mails, phone calls, etc. are probably used more often. On the other hand, when they write articles, scientists carefully check the boundaries between what they own and what others own. Oldenburg's registry acts fully as intended at that stage of the scientific enterprise.

Scientists want to be published in the "best" journals because they want to benefit from the "best" evaluation. This process is patently a social construct; although it tries to present itself as an objective procedure that weeds the wheat from the chaff, and while it succeeds to some extent, it cannot claim to do so perfectly or to avoid errors. It acts at best like an imperfect and somewhat unreliable filter. No amount of professional or ethical rigor can change this regrettable but, alas, unavoidable situation. If the scientific enterprise manages to achieve reliable results, it is over the medium and long range, after many, many eyeballs have scrutinized particularly strategic pieces of knowledge. However, scientists work on the short range; they get rewarded almost as quickly as they
manage to get published in the right journal. For this reason, journals really act as “quick-branding” devices, with all the ambiguities that can be attached to this expression.

Those who play a role in this quick-branding procedure are generally the editors and those who assist them, such as reviewers. Together, these scientists act as gatekeepers of the scientific enterprise and, quite obviously, they play a powerful role in the scientific publishing system. Together, they form a kind of oligarchy that runs the collective registry of branded new knowledge that is published in scientific journals. However, this oligarchy is also hierarchical, for the gatekeeper of a journal like Nature certainly carries a lot more clout than his/her colleague involved in some local or even national journal, or, given the role of English nowadays, some journal written in another language.

Building the Branding Hierarchy of Journals: Some Unexpected Consequences of the Science Citation Index

How did the branding hierarchy of journals emerge? A quick answer would say that the good select the good and this is enough to understand how science got its stratified structure. However, a closer look shows that some tools were quite useful in this regard. It also shows that this stratification appears to obey some very definite agendas.

Using once more an historical approach, it is easy to remember that Bradford’s Law was first designed to help librarians decide how to spend limited resources to be most useful to their particular constituencies. At first, it amounted to little more than a somewhat formalized observation of scientific customs: experience dictated that to follow a specialty most efficiently, a few “core” journals—5 to 10 in general—were enough. The same experience showed that collecting information more completely required much more work: an exponential growth in the number of titles surveyed only yielded an arithmetic increase in the number of useful articles.

Although a little discouraging for anyone inhabited with the passion for exhaustivity, Bradford’s observation looked innocuous enough. For a given librarian, it meant that the needs of his/her local scientists could be well satisfied by looking at these individual title core lists and ensuring their presence in the local library. It was pragmatically common-sensical and did not appear threatening in the least.

The Second World War came and went. It brought about a few momentous consequences and many minor ones. Among the latter, the musings of Vannevar Bush and his hypertext prototype named “Memex” are among the best known, particularly in the world of libraries and the Internet. It also inspired Eugene Garfield’s work that culminated in the establishment of the Institute of Scientific Information (ISI) and the development of the Science Citation Index (SCI).

It is not particularly important to recount to this audience what the SCI is about: most readers will be intensely familiar with this extraordinary bibliographic tool; many readers will also be aware of the scientometric possibilities opened by SCI. What is not so well known, however, is that the SCI could not have been elaborated without finding a credible, yet pragmatic, way to truncate all of science publishing down to a suitable subset that would be small enough to permit the systematic tracing of citations while being extended enough to appear as the credible quintessence of science. In effect, Garfield collapsed all the little “cores” detected through the Bradford law; he then proceeded to do a series of independent checks by referring to the coverage of major disciplinary bibliographies and by doing direct interviews of well-known scientists. The result was the building of a list of “core” scientific journals that suddenly took on a life of its own.

Originally, these core journals were mainly in the hands of learned societies and scientific associations. Commercial publishers, in the late ’60s, still played a relatively minor, fragmented, and ultimately secondary role in the publishing of science journals, as they had essentially done since the middle of the 19th century. The motives of commercial publishers to sustain even this minor role in scientific publishing were limited to prestige reasons and to keep an eye on potentially interesting authors that might want to write a commercially lucrative textbook or an equally profitable treatise. Periodicals rarely brought in profits. However, with the sudden emergence of a core set of journals, publishers became aware of the fact that these journals would have to be bought by every library worth its salt. In other words, the previously vaguely prestigious, financially uninteresting field of scientific periodicals had become an inelastic market that could be milked for all it was worth. Periodical prices then began to climb precipitously.

The grip of commercial publishers over science periodicals led to two independent developments: while prices were climbing, a series of mergers rapidly concentrated the industry into very few hands. Now, a big player such as Reed Elsevier controls over 1,500 titles (since acquiring Academic Press via the purchase of Harcourt Brace); Taylor & Francis controls over 800 titles since its acquisition of Gordon and Breach. At the same time, publishers began making very important connections with scientists by helping create new journals, and thus opening the door to new nominations into the hallowed circle of gatekeepers. For the
publishers, such a tactic had two advantages: while it allowed for tighter relationships with elite scientists, it also allowed for competition with similar journals available from other publishers that appeared to be vulnerable.

The Libraries’ Response
Libraries quickly felt the newly induced pain, but they found it more difficult to convey a forceful and coherent message to the research circles or even the research administrators. It must be said that publishers did all they could to keep librarians atomized and to prevent them from publishing useful, shared comparisons. The endless legal actions undertaken by Gordon and Breach against University of Wisconsin physicist Henry Barschall in four countries are extreme, yet symptomatic, forms of what all publishers were trying to do: cajoling, obfuscating, and, if needed, threatening. Commercial publishers managed to create a very wealthy industry out of what had been a gentlemen’s publishing club a few years before.

In the end, frustration and anger did rise. Various counteractions were contemplated and some later implemented. Capping a decade of research, analysis, and discussion, in 1998 ARL established the Scholarly Publishing and Academic Resources Coalition (SPARC). SPARC’s mission is to pursue various ways to reintroduce competition in this “market” that had been unwittingly transformed into a playground for particularly greedy commercial publishers by the advent of the notion of “core journals.” SPARC’s actions touch only a limited number of titles, but the concept of competition has been demonstrated to work and the hope is to see the demonstration catalyze an expanding movement in this direction. The success of SPARC’s first publishing partnership with the American Chemical Society, Organic Letters, pitted as it is against Elsevier’s Tetrahedron Letters, is indeed inspiring, as is the resignation of a whole editorial board from another Elsevier journal and its successful recreation within the auspices of Cambridge University Press. Elsevier, for its part, has been trying to assemble a new team of scientists to compete against the former editorial board—for Elsevier knows competition well—but the publisher is discovering that a scientific community may not remain so passive and pliant when it discovers some of the publishing world’s harsh realities. All the financial inducements that a very rich company can command may increasingly appear hollow in this regard.

SPARC has repeatedly demonstrated that the big guys are not invulnerable, that counterattacks are possible, and that when librarians and scientists work hand in hand, the process of scientific communication (and all that it means for the evaluation of careers) can fall back into academic hands—where it belongs anyway. SPARC has also brought to light the fact that the relationship between librarians and some publishers is better characterized by the sound and fury of vicious battles, rather than the quiet and elegant atmosphere of an exclusive business club. That in itself is positive, as these publishers have no interest in showing that they are locked into struggles where they obviously do not play very palatable parts. In short, SPARC is doing much to remind all partners in research activities that the present situation of scientific publishing is anything but normal.

THE ADVENT OF DIGITIZATION AND THE INTERNET AND THE SECOND COUNTERREVOLUTION IN SCIENTIFIC PUBLISHING
The advent of digitization, coupled with the worldwide deployment of the Internet, has brought about a new communication and publication environment that is displacing print from many of its traditional functions. The process is already quite visible, as are some of its consequences. The arena of scientific publishing actually offers one of the most advanced examples of what to expect when digitization cum networks occurs: not only are the technical conditions of publishing deeply transformed, but also their legal, economic, and ultimately social dimensions. In short, a deeply transformative transition—a revolution in fact—is taking place: moving away from selling journal volumes through subscriptions and within the constraints of copyright law, commercial publishers, inspired by the software industry, have introduced licensing contracts. Libraries, as is now well understood, no longer own anything; they become mere “knowledge pumps” and instead of opening up a free, public space for readers, they find themselves saddled with the unlikely task of policing access to “legitimate users.” The fact that publishers do not yet expect a close monitoring of who can or cannot use the local knowledge pump changes the situation very little. Having effectively managed to transform libraries into surrogate cops shows the extent of the publishers’ advance; it also demonstrates that the digital revolution really amounts to a counterrevolution.

Hit by this unexpected development, libraries found
themselves rather poorly equipped to respond effectively. The new contractual context required a level of legal talents that was rarely present among librarians, and the highest managerial echelons of large research libraries found themselves devoting an inordinate amount of time mastering and (hopefully) solving contractual matters that they had never encountered before. In the process, they discovered that they had to negotiate from scratch most of what copyright law for years had provided as a matter of course, such as fair use. Not surprisingly, the need to share experiences quickly became obvious and the realization that the large commercial publishers played on a scale that was inaccessible to most if not all libraries led to new and expanded roles for consortia. By pooling the resources of dozens of libraries—so went the thinking—some financial and therefore negotiating clout could be regained. However, the specificity of scientific publishing protects publishers: if you want to access journal X, journal Y simply will not do and X's publisher knows this well. As a result, the libraries' elbowroom is very limited and, correspondingly, the financial savings obtained through consortia seem to have been limited on the whole.

One of the more recent and most efficient consortia has been the Canadian project generally known in English as CNSLP (Canadian National Site Licensing Project). It has managed to inject an exceptionally high level of competition among publishers by sticking to an "all or nothing" strategy, by putting publishers on notice that the amount of money is limited, and by warning them that they have been ranked according to some internal formula such that, if they are high enough on the list, they may get one chance, but one chance only, at closing a deal. This strategy has led to some significant reductions in costs, but this success did come at a price:

- It was partially based on surprise, but that surprise will not occur twice. Next time, publishers will be ready.
- Deals closed cannot be stopped easily when renewal comes. Publishers know that, and will try to take advantage of this favorable context even though some price-capping agreements have been struck up front to soften the blow of renewal price increases.
- New deals can occur only if CNSLP sees its budget vastly expanded so as to move beyond the renewal of existing deals. Presently, this is only an optimistic hypothesis.
- It is a strategy based on the "big deal" approach. As Ken Frazier has pointed out, the privilege of selection by librarians is being forfeited by big deals.3

Of course, a consortium does not necessarily have to envision itself as the cure-all of all the needs of participating libraries; rather, it may see itself as the provider of an interesting subset of titles that are obtained for all participating institutions at a rather good price. Libraries can then complete their local collection needs according to the particular needs of the constituencies they serve. But this division of labor does not resolve the serial pricing crisis and it may even weaken consortia by putting a certain amount of emphasis on the fragmented nature of the demand emanating from a wide variety of institutions in a 64-library organization that is national in scope.

The experience acquired by CNSLP ultimately shows both the possibilities and the limitations of consortia. It also points to the need for consortia to keep closely informed of each other's results and strategies—a situation that publishers, once again, try to discourage by requesting a certain degree of discretion over the terms of signed deals. The main benefits of consortia, in fact, may lie more with the transformation of libraries from isolated collection fortresses into more and more networked (and hopefully collaborative) attitudes, than in any financial advantage. It may be that, through the experience of consortia, libraries are learning some of the tricks of distributed intelligence and this development may turn out to be more fundamental and important than the limited financial results obtained.

Consortia also raise troubling questions, of which two are particularly important:

- Consortia that accept big deals from very large publishers (such as Elsevier in particular) may end up offering their users a completely distorted vision of what science is doing. The case of OhioLink is patent in this regard. Thanks to a big deal with Elsevier, more than half of the articles they offer to their users come from Elsevier journals, even though Elsevier does not control more than 20-25% of the core scientific journals. One may assume that Elsevier articles, because over-represented in the available collection of articles, will be used more frequently than they would be if they constituted only 25% of the available corpus. One may further assume that if they are used beyond what would be normally expected, they will also tend to be cited more than would be normally expected. In other words, by offering big deals, big publishers can manipulate usage and even citation rates, and this translates into improved impact factors. In other words, consortia, through big deals, can help big publishers to promote their journals at the expense of other, smaller, publishers, while putting the consortia into the position of offering a distorted lens on
Current Issues

continued

science. Consortia, in effect, may unwittingly help create bad cases of cognitive astigmatism...

- Big publishers dealing with big consortia occupy an extraordinarily interesting observation post. Since Jeremy Bentham, these posts are often called "panoptic." At any moment, anyone located at the panoptic center can monitor the usage of articles through enough institutions to be able to draw interesting statistical inferences. Analyzing these results can probably be translated into an understanding of where interesting science is happening, where breakthroughs are likely to occur, etc. All this, of course, translates into knowledge that can help policy making, industrial intelligence, or investment strategies. Governments would die to lay their hands on such data; governments should also beware of the fact that the usage statistics of the best labs and research institutions in their country are being closely monitored by private companies, many of them foreign.

Open Archives and Other Subversive Initiatives

Scientists also took note of the digital transformations. While most quickly grasped the added ease to access and retrieve digitized articles, a few also started to experiment with new tools. This has led to a series of interesting projects, the most significant of which has been the Open Archives Initiative (OAI). OAI finds its roots in a physics preprint server launched in 1991 by Paul Ginsparg at the Los Alamos National Laboratory. Designed to create a faster, more efficient exchange of preprints—a working custom that is particularly among physicists (but not exclusively)—the Los Alamos server rapidly demonstrated that the communication phase of science was quite separate from the evaluative phase of science. That these two functions had remained confused together so long was largely because print demanded it. This decoupling between communication and evaluation also helped the community to realize that behind hundreds of core journal titles, big publishers actually deal with articles. As a result, journal titles appear tied to the branding process all the more exclusively.

The advent of Ginsparg's open archive led to a flurry of experiments corresponding to an astounding range of diverse and even contradictory (not to say conflicting) agendas. These experiments can be summarized as follows:

- Other equally open archives, e.g., in computer science and in economics, were established and work began on a protocol to suggest the interoperability of archives and on easily implemented metadata. This, in effect, summarizes the Open Archives Initiative (OAI) when it is seen as an attempt to generalize Ginsparg's project to all disciplines. Complementing the OAI is the self-archiving movement, interoperable with OAI, that is enriched by an "open citation" project (led by Stevan Harnad and others).

- There have been various attempts to convince journal editors to free their content after a certain period of time, such as the 90 days in University of Kansas Provost Shulenberger's NEAR proposal or the six months proposed by the Public Library of Science movement with its worldwide petition that garnered about 27,000 signatures until last September 1st. PubMed Central, launched at NIH by Nobel Prize winner Harold Varmus before he left for Sloan Kettering, also favored the creation of free content, but proceeded in a somewhat idealistic manner: it essentially tried to convince existing journals to give the store away. Not surprisingly, most refused and a few even protested loudly.

- New enterprises have been established to help learned societies and scientific associations gracefully manage their transition to digital publishing. They often propose a bundled basket of titles that really amounts to collections of articles: HighWire Press, Bepress, BioOne, MUSE, ICAAP, etc., are good examples of this trend. Each case is a bit different, the accent on scientific publishing varying from project to project, but they all share a certain respect for reasonable prices on journals, and they generally emphasize financial viability and sustainability over profitability. Some—for example, Bepress—even leave copyright in authors' hands. Others, like HighWire Press, try to free as much content as is possible after a certain period of time. Results vary from title to title.
• BioMed Central is yet another kind of animal: while it leaves copyright in the hands of the authors, and although it supports free access to an archive of refereed papers, it is actually a commercial outfit. BioMed Central was developed as a consequence of PubMed Central’s lack of visible success, and in some ways it completes it. For example, most of the titles available within PubMed Central come from BioMed Central. BioMed Central’s business plan, however, remains somewhat unclear beyond the usual references to publicity and the possibility of page charges for authors. Further services enriching the archive, such as cross-linkage, etc., are also promised for the future, and they will have to do it if they want to compete successfully against the parallel efforts extended by the commercial publishers across their individual offerings. BioMed Central’s recent offer to provide refereeing services to authors who have signed the Public Library of Science—and who might find themselves in an uncomfortable position because only a dozen journals (more or less) have agreed to free their content within the (more or less) six months—is an interesting proposal in that it actually provides a clear alternative to journal branding (even though it largely retains this appearance).

• The most surprising experiment of all, ChemWeb, is an open archive of chemical preprints launched by none other than Reed Elsevier. Obviously, it is a device to keep Elsevier in touch with the open archives movement, and perhaps will be a potential tool to compete with the American Chemical Society. As noted above, Organic Letters, a SPARC-endorsed ACS journal, appears to be winning its competition against Elsevier’s Tetrahedron Letters, and Elsevier is likely to be studying ways of challenging ACS. ChemWeb also seems to test various new ways of evaluating scientists’ publications while offering them a greater visibility. As such, it is an experiment that must be followed closely, if only to follow commercial publishers’ thinking on ways to counter the OAI and to develop their empire in an archive-based mode rather than a journal-title mode.

ChemWeb, although modest in its present scope (fewer than 300 articles are on its site as of this writing), is also symptomatic of a very important trend: publishers now realize that future competition in scholarly publishing will actually take place on the evaluation front. With the branding of quality now firmly linked to traditional, core journals, the big publishers have held a firm and majority grip on evaluation of researchers and their performance. This has translated into an almost unlimited capacity to boost journal prices to incredible levels. With digitization, they are already thinking beyond the licensing business—after all, that will last only so long—to plan new modes of market control. My hypothesis is that maintaining a dominant voice in the evaluation process will remain the publishers’ trump card, however the process will be transposed, translated, or adapted. This strategy necessarily rests on maintaining a strong alliance with a significant set of elite scientists. Conversely, weakening the grip of commercial publishers over the evaluation process will take the form of diluting the power of journal titles as branding devices either by adapting the process to new forms of publishing and/or by revising the evaluation processes themselves, for example, by demonstrating that better evaluation processes exist and can be implemented.

TO CONCLUDE, SOME PROPOSALS THAT, ALTHOUGH MODEST, ARE ANYTHING BUT SWIFTIAN IN SPIRIT

We still stand in Oldenburg’s shadow. Designed to register claims to originality, inventiveness, and creativity, the scientific journal has turned into a complex system totally enmeshed with commercial interests which have partially distorted its original functions. In particular, it has become ever more difficult to separate scientific excellence from financial elitism—a situation that has been particularly hurtful to third-world countries, but also to many institutions within richer countries. In particular, it has probably contributed to creating a “research divide” that ought to be closely investigated.

Librarians find themselves occupying a particularly strategic role in this context, and not only because they have suffered most from the state of affairs imposed by large commercial publishers through the two revolutions (or counterrevolutions) sketched out above. SPARC, of course, demonstrates a will to do more than adapt to a situation that, otherwise, would appear to be unavoidable, almost fateful in nature. However, SPARC is still young and it covers only some dimensions of scientific publishing. As a result, it ought to extend its tactics and several new objectives ought to be studied and, if suitable, pursued:

1. Librarians should stand squarely and strongly behind the OAI. In that spirit, they should support all initiatives that tend to liberate content either immediately or after a while. They should also negotiate long-term archiving of private, commercial digital journals with this objective in mind.
2. Open archives allow greater monitoring of the kind of articles being used and, as a result, the observation post that big publishers have been creating for themselves could no longer be monopolized by them. On the contrary, the usage statistics and their interpretation could become associated activities led by scientists, librarians, and specialists of scientometrics for the common good.

3. Open archives can also help develop new and better evaluation tools of researchers and their performance. Scientists should retain a leading voice in evolving these evaluation tools, in conjunction with administrators and with the support of research libraries. The point here is to ensure the development of better branding devices than the mechanical use of impact factors transposed from journal titles to scientific authors, and to dilute or weaken (not to be confused with destroying) the power of journal titles as branding devices.

4. Creating new gatekeeping devices and evaluation tools and organizing, as a distributed network of libraries, very wide forms of cross-linking are nothing but ways to reopen the traditional tasks of librarians in a new mode: they are ways to reassert the “epistemological engineering” function of librarianship in the context of cyberspace.

In the last 30 years, scientific publishing has witnessed a very dynamic situation characterized by a high degree of tactical and strategic initiatives, particularly on the part of commercial publishers who have shown themselves very creative in this regard. Simply reacting and adapting as best as one can to these new situations and contexts cannot lead to durable or even satisfactory solutions. More proactive attitudes must be developed that will bring researchers, librarians, and administrators into a new alliance where common strategies can be devised. These will not only counter commercial publishers’ plans, but will even precede them as the balance of initiatives starts shifting back in favor of the academic and public research institutions. Librarians are uniquely poised to bring this new coalition into being.

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**ABOUT THE AUTHOR**

Jean-Claude Guédon holds his doctorate in the History of Science from the University of Wisconsin, Madison, and is currently Professor of Comparative Literature at the University of Montreal. Professor Guédon is the founder of *Surfaces*, the first Canadian electronic scholarly journal still in existence, begun in 1991. His interest in both theoretical and practical issues regarding electronic publishing has led him to produce numerous papers on the subject as well as to present at conferences worldwide. Professor Guédon is not new to the research library community. In 1994, he presented a paper at ARL’s Fourth Symposium on Scholarly Publishing on the Electronic Networks and he has been actively engaged in projects pushing the boundaries of scholarly communication, including serving on the steering committees of the Canadian National Site Licensing Project and the Digital Library of Electronic Theses and Dissertations.

**ABOUT THE PAPER**

Professor Guédon made a presentation on his ideas in May 2001 at the 138th Membership Meeting of ARL, a meeting held in conjunction with the Canadian Association of Research Libraries in Toronto. The presentation was received very positively and, as a result, Professor Guédon agreed to write a paper to encourage further discussion. His article in the October 2001 issue of *ARL: A Bimonthly Report* introduces the reader to his main arguments, but by no means takes the place of reading the full paper, *In Oldenburg’s Long Shadow: Librarians, Research Scientists, Publishers, and the Control of Scientific Publishing*. The full paper is available on the ARL website <http://www.arl.org/arl/proceedings/138/guegon.html> and in print from ARL Publications <pubs@arl.org>. Both the article and the paper are published by ARL with permission of the author in order to stimulate further discussion and new thinking on the important issues that he raises.

THE IMPACT OF SERIAL COSTS ON LIBRARY COLLECTIONS

As Jean-Claude Guédon points out in his article, libraries were among the first to feel the pain of escalating prices that came as a result of the commercialization of scholarly journal publishing. For the last 14 years, ARL has collected data from member libraries to track the costs of serials and monographs and their impact on library collections. Since 1986, the average annual increase in the serial unit cost for an ARL library was 8.8%—amounting to a total serial unit cost increase of 226%. The result is that in 1999–2000, ARL libraries spent almost three times as much on serials as they did in 1986 and yet the number of titles acquired was 7% fewer. This seemingly moderate reduction in serial holdings reflects a certain amount of damage control; that is, many libraries have shifted funding from other parts of their budget to lessen the impact on serials. Monograph acquisitions, for example, have fallen from a median of 32,697 titles purchased in 1986 to 27,089 titles in 2000—a 17% decrease overall. On average and based on 1986 purchasing levels, this adds up to over 90,000 monographs forgone in each research library. (See accompanying graph, Monograph and Serial Costs in ARL Libraries, 1986-2000.)

Not all journal titles are equally expensive. Studies have shown that there is a “profile” of expensive journals that routinely post extraordinarily high rates of price increase. For example, the title is typically in the science-technical-medical (STM) area, where journals are the primary vehicle for the communication of scholarly information. Its publisher is likely to be a for-profit company as opposed to a not-for-profit society or association. More commercial publishers are finding how profitable journals can be: some social science journals are posting annual increases even greater than those in STM areas (see table, Average 2001 Prices for Journals in Selected Disciplines).

Every year, journals eat up more and more of the libraries’ acquisitions budgets. A straight-line projection suggests that the average journal title, which cost $125 in 1986, will cost $1,158 in 2012. Simply to maintain serials collections at present levels, the average journals budget, currently $4 million, would have to increase to $14.28 million by 2012—over $3 million more than what the budget would be if it continued at its current rate of increase. Clearly, this price tag is not sustainable by the library market.

—Mary M. Case

### Average 2001 Prices for Journals in Selected Disciplines

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desired outcomes for a diverse society and explore institutional goals that prepare students for a diverse democracy. Among the findings of issues that affect student success on campus was the importance of critical thinking skills on learning and social interactions. Information about the Diverse Democracy Project is available at <http://www.umich.edu/~divdemo/>.

The Library, Information Literacy, and Partnering with Faculty
The academic library community presented four sessions. They all focused on library initiatives and activities that are designed to achieve student learning outcomes by focusing on integrating information literacy into the curriculum, developing ways to measure information literacy outcomes, developing partnerships with faculty, and creating a culture of assessment in libraries and across campus.

The ACRL Information Literacy Competency Standards for Higher Education were highlighted and examples of partnerships with faculty were presented. Library programs that integrate the ACRL Standards into the curriculum in partnership with faculty were presented by Debra Gilchrist (Pierce College), Janet DuMont (King’s College), Anne Fiegen (California State University-San Marcos), Hannelore Rader (University of Louisville), Lyn Cameron (James Madison University), and Gregory Heald (University of Northern Colorado).

Carla Stoffle from the University of Arizona presented ARL’s New Measures Initiative with emphasis on the Higher Education Outcomes Research Review, which is designed to develop new roles and responsibilities for university libraries in advancing student learning through outcome assessment. Efforts to make this all happen by developing a “culture of assessment” in libraries was presented by Amos Lakos from the University of Waterloo.

Conclusion
Although assessment in institutions of higher education is becoming a necessity, it is not yet well integrated into the organizational culture. External accreditation bodies still drive institutional assessment.

For academic libraries, this conference is of special value. It affords an opportunity to showcase libraries’ commitment to learning outcomes and our considerable contributions to the educational endeavor to learning outcomes assessment. It is important to increase awareness about the work done on many campuses by librarians to integrate the competencies into the general curriculum as well as the efforts librarians make to assess student-learning outcomes. The 2002 Assessment Conference will be held in Boston June 20–23, 2002. For information, see the AAHE website at <http://www.aahe.org/assessment/2002/>.

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Building a Culture of Assessment
by Holly Grossetta Nardini, Service Quality Support Director, Yale University Library

Assessment is a critical tool for understanding library customers and offering services, spaces, collections, and tools that best meet their needs. Without good assessment, libraries could lose touch with users’ desires and needs and even become irrelevant. This message is the core of the ARL workshop “Building a Culture of Assessment in Libraries: The New Imperative,” which was offered at the Association of College and Research Libraries annual conference in Denver this past March. Shelley Phipps from the University of Arizona and Amos Lakos from the University of Waterloo made a convincing case for assessment and offered a mix of theory, practical discussion, and useful techniques and tools.

Some libraries assess their services because of external pressures like accreditation or institutional requirements. At Yale, we are moving to user-centered assessment to bolster traditional decision making. In the past, we have not depended heavily on assessment, although, like all libraries, we have toed up the standard measures of volumes, circulation, and questions answered. Like many of my fellow workshop attendees, I want assessment to routinely improve our services. Phipps and Lakos offered excellent tips for beginning to make those changes—tips drawn from management literature and theory, and also from practical experience in assessment-intensive institutions.

One barrier to developing a culture of assessment is that culture, by its very nature, is stable and resistant to change. Phipps and Lakos led a provocative discussion about organizational culture and presented the work of Edgar Schein, asking, “Do libraries put in place the processes and structures that support our values?” The group agreed that librarians are often attracted to the profession to “do good” and are accustomed to thinking that we know what that “good” is. Going beyond this aspect of our culture, and hearing the voices of our customers, is part of cultural change.

The workshop culminated in a discussion of a systems model for organization design. A 180-degree shift from traditional library organization charts, this model acknowledges the contributions of the environment, suppliers, and customers. A systems model considers all aspects of an organization and shows movement towards the institutional mission and values. The workshop highlighted the importance of administrative support for assessment, proper infrastructure, a rewards program, comprehensive training, and support for the risk-taking necessary to achieve success.

From covering the basics of why libraries should be involved in assessment to explaining how our organizations could be better designed to focus on our users and environment, Lakos and Phipps packed the workshop with information and techniques to lead similar discussions at our own institutions. Perhaps most useful to me was observing how Phipps and Lakos used their delivery, questions, and tools to energize an (obviously self-selected) group of librarians about how to begin to tackle this daunting topic. Their emphasis on innovation and removing barriers to change struck a chord in most attendees.

Workshops like this one give us opportunities to reflect on new ways to work and can push us toward the future—one where effective assessment can help us stay relevant in a time of great change. Meeting many other librarian colleagues who will be working on similar plans was an added bonus of the day. Good assessment requires different types of data and a full picture of the institution and the marketplace. By cooperating, benchmarking, and learning from each other, we will begin to build a culture of assessment within the library community.

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ARL Learning Outcomes Project Launched

The goal of the Learning Outcomes Project within the ARL New Measures Initiative is to help identify measures that libraries can use to demonstrate their contribution to campus learning outcomes. At a meeting in October 2001, the Learning Outcomes Working Group reported on their data-gathering efforts for institutions, accrediting agencies, and other organizations engaged in outcomes assessment and discussed learning outcomes assessment activities conducted on research library campuses.

The group decided to focus on the following activities:

- Identify commonly used learning outcomes from working group campuses, particularly those used for general education requirements, and determine if an instrument could be developed to be used across libraries to assess those outcomes.
- Identify potential national student surveys to which specific library questions could be added and construct those questions for testing at the next survey cycle.
- Develop plans for offering workshops that address both the process for becoming engaged in campus learning outcomes assessment activities as well as the specific skills needed to work with faculty on developing learning outcomes for research universities.

Contact Julia Blixrud <jblx@arl.org> for more information about the project.
ARL Calendar 2002

January 7–11  Web Development with XML  Charlottesville, VA
January 20   Using LibQUAL+ Results  New Orleans, LA
January 21–22  LibQUAL+: A Total-Market Survey  New Orleans, LA
February 7–8  ARL Board Meeting  Washington, DC
February 15–17  ARL/OCLC Strategic Issues Forum  Las Vegas, NV
March 7–8  Our Collections: How to Preserve Them in Times of Rapid Change  University of Michigan/ARL  Ann Arbor, MI
April 15–16  CNI Spring Task Force Meeting  Washington, DC
May 22–24  ARL Board and Membership Meeting  Los Angeles, CA
July 22–23  ARL Board Meeting  Washington, DC
October 15–18  ARL Board and Membership Meeting  Washington, DC

ARL & SPARC at ALA
ARL and SPARC events and exhibit information for ALA’s 2002 Midwinter Meeting (held in New Orleans January 18–23) are now available! Visit <http://www.arl.org/arli/ala02m.html> for more information.