*Scholarly Publishing: Books, Journals, Publishers, and Libraries in the Twentieth Century.* Edited by Richard E. Abel and Lyman W. Newlin. Indianapolis, IN: Wiley, 2002. Pp. 336. ISBN: 0-471-21929-0.

### Review by Charles H. E. Ault

The great Golden Age of scholarly publishing in the United States, bookended by the 1957 launch of Sputnik and the 1969 landing of Apollo 11, was largely the result of serendipity – the trickle-down effect of funding larger, ostensibly more pressing national priorities. Indifference and neglect marked the periods before and after, giving rise in the last quarter of the twentieth century to what many have called the crisis in scholarly communication. If you want to know how we got here, you could hardly find a more cogent collection of perspectives on the topic than those collected in *Scholarly Publishing: Books, Journals, Publishers, and Libraries in the Twentieth Century.*

These fifteen essays, commissioned by editors Richard Abel and Lyman Newlin and first published under editors-in-chief Katina and Bruce Strauch as the Special Millennial Issue of *Against the Grain,* are republished in this hardcover volume put out in 2002 by John Wiley & Sons. The contributors include what the editors call some of the best-known 'old hands' in scholarly publishing – John Francis Dill, Hendrick Edelman, Robert J. R. Follett, Jack G. Goellner, Ralph M. Shoffner, Sam Vaughn, Alan B. Veaner, and Richard Zeldin – as well as some newer hands still working full time in the profession – Peter Adams, Barbara Carol Dean, Peter Givler, Michael Gorman, Chuck Hamaker, Albert Henderson, and Stephanie Oda.

Despite the editors' lengthy and explicit guidelines for contributors, they wound up with a smorgasbord of essays in terms of quality, length, style, methodology, and approach to the subject matter. Some are hardly more than appetizers – brief overviews of industry segments, apparently meant for consumption by novices. Others offer a diet of raw facts and statistics with little or no attempt to prepare them for digestion. Most, however, offer real food for thought. Sam Vaughn's engaging memoir of his days mid-century at Knopf, Morrow, and Doubleday is a joy to read, as is Michael Gorman's sharply etched genealogy of the economic crisis facing libraries. Stephanie Oda has contributed the best brief introduction I have seen to the glut of consolidation in the publishing industry at the turn of the millennium. Robert Follett's informative primer on El-Hi and college publishing might well be taken as a eulogy, given his gloomy view of the future. The role of the university press is aptly given its due by Jack Goellner and Peter Givler, whose erudite history reaches back to the fifteenth century. Albert Henderson offers a staunch free-market defence of the commercial STM publishing community, while John Dill imagines a future when surgeons practice organ transplant surgery using a virtual reality simulator developed by an STM publisher. And along with his exhaustive survey of the growth of technology in the library, Ralph Shoffner offers an excellent summary of the birth of the Internet.

The assiduous reader will glean a wealth of information tidbits:

- In 1933 a contributor to *Library Quarterly* reported that the American Library Association credits women's clubs for establishing seventy-five per cent of all public libraries in the United States.
- During the Great Depression, in an effort to compete for shelf space in bookstores, publishers introduced the practice of allowing returns, a practice that in hindsight probably needed a little more theory behind it. (At a February 2003 gathering of the

Association of American Publishers, Borders CEO Greg Josefowicz announced to everyone's surprise that the industry as a whole would be better off without returns.)

- Before the practice of adopting a single textbook for an entire state school system came to an end, political kickbacks and jail terms for well-placed bureaucrats featured prominently in the text selection process – which is not to say that educationally relevant criteria subsequently played a deciding role.
- Efforts to encourage the widespread use of acid-free paper began in the 1960s and 1970s, when surveys revealed an alarming deterioration of library holdings due to disintegrating paper – correcting a problem introduced by 'improvements' in paper making at the turn of the century.
- With initial print runs averaging from 1500 to over 3000 copies for hardcover monographs in the 1960s, by the early 1970s university presses accounted for one in ten new books published in the United States. By the end of the century, however, initial print runs were heading seriously south of 750 copies.
- In college courses, on average in recent years, fewer than half the students buy a new textbook, and that percentage has been declining for years.
- An American Booksellers Association commentator notes that the 'natural' growth of independent bookstores crowding out mall stores in the 1970s and 1980s did not result in supply outpacing demand, but the sudden rise of superstores in the early 1990s led to a surge of returns in 1996.
- A footnote reminds us that publishers are not professionals, in the classical sense. There are a few master's programs around, yet there is no board of standards, no licensing body, no code of ethics governing the conduct of publishers. Teachers and librarians, however, are professionals, classically defined.

But the real value of this volume lies in what we can learn about the broader forces shaping the scholarly publishing enterprise throughout the twentieth century, a body of collected wisdom that might profitably be brought to bear on the corrosive issues facing us at the start of the new millennium. Three broad themes can be teased from the historical record compiled here: the apparently ever-accelerating rate of production of scholarly communications, the rapid proliferation and mutation of information technologies, and the collapse of these two trends under their own weight variously alluded to as 'the serials crisis' or, more broadly, 'the crisis in scholarly communication.' In the following pages I will try to summarize these three themes as they are elaborated by the contributors.

## The Information Explosion

At the beginning of the twentieth century most publishers in the United States offered a broad, general list.[1] New title output in the first decade of the century totalled just over 83,500. Although output was up and down over the next few decades, by the 1940s publishers still only managed to bring out just over 91,500 titles.[2] In 1944 the US Congress passed the Serviceman's Readjustment Act, better known as the GI Bill, which inaugurated a new era. Some two million ex-soldiers flooded into colleges and universities, doubling undergraduate enrollment.[3] Rushing swiftly into the wake of this tidal wave came the Baby Boomers, expanding the market of college-educated consumers even further. By the decade of the 1970s, publishers happily supplied the newfound demand with more than 400,000 new titles. Growth peaked, however, in the decade of the 1980s at just over 510,000 and slipped to 450,000 in the century's last decade.[4]

**For most of the century, the scholarly publishing sector tracked a similar growth curve. German publishers were dominant during the early period, when scholarly publishing remained largely the province of scholarly and scientific societies. That quickly changed, and in a direction that has stirred controversy to the present day. 'In the aftermath of World War I,' Hendrick Edelman points out, 'major consolidations had taken place in German publishing, and with the erosion of the traditional publishing by not-for-profit academies and societies, a model of private-sector scientific publishing emerged.'[5] The Germans held sway until World War II and the Cold War shifted the balance of scientific publishing to the United States, Britain, and the Netherlands. But the for-profit model remained. German publishers for the most part were allowed to resume publishing without restrictions after 1949, but by then English was the new *lingua franca.* The Dutch publisher Elsevier was already publishing in English. Springer-Verlag's *Pfluger's Archiv – European Journal of Psychology* began publishing in English in 1968 after issuing more than 300 volumes in German. And many who had fled Germany before the war had come to the US and set up English-language publishing houses, Academic Press and Marcel Dekker, for example.[6]**

Then in 1957 the Soviet Union launched Sputnik, jolting the Americans from a drowsy complacency. The resulting round of investigations concluded the Soviets had a better system of science information and education than the United States, and the link between the availability of information and the productivity of research became clear. The director of one US research centre used to like to tell the story that 'if a research job in the USA costs less than $100,000, it is cheaper to do it than to find out if it has been done before and is reported in the literature.'[7] After 1957, a flurry of Congressional legislation benefited education and libraries, notably the National Defense Education Act of 1958, the Library Services and Construction Act (1964), and the Higher Education Act of 1965. And in 1960, for the first time in history, the Democratic and Republican platform statements expressed support for libraries.[8] All this new funding stimulated expansion of the nation's system of higher education and along with it, the production of scholarly books and articles.

The rapid growth of scholarly production in the form of publications had attracted the attention in 1944 of Fremont Rider, a Wesleyan University librarian. Rider claimed that 'major academic library collections had increased exponentially for hundreds of years, doubling in size at sixteen-year intervals.'[9] First in 1975 and then with revised calculations in 1986, Yale University historian Derek de Solla Price seemed to buttress Rider's argument, ultimately concluding that the growth of published science research doubled every fifteen years.[10] Rider's and de Solla Price's calculations have been continually debated, with the optimal growth rate of library funding hanging in the balance.

In *Scholarly Publishing,* Albert Henderson writes that 'Libraries kept pace with research and development for one decade, until an American set foot on the moon.'[11] After the 1969 lunar landing of Apollo 11, spending on libraries and information dissemination promptly declined, the Vietnam war and 1973 oil crisis having diverted funds and attention from issues that no longer loomed as large on the national horizon. Spending on research and development dipped, too, but the end of the war in 1975 and continuing Cold War concerns allowed R&D funding to recover. In fact, between 1980 and 1995, inflation-adjusted US research and development spending doubled.[12] And since 1970, according to Henderson, the world output of research articles has tripled.[13]

What we might call an 'information gap' emerged. Scholars and researchers were producing more publications than publishers and libraries could assimilate, process, and disseminate. Stress fractures began to appear. Most academic libraries now had to curtail their acquisitions activity; only the 'biggest and richest' could afford to support a 'comprehensive collection development profile.'[14]

Already in 1963 the President's Science Advisory Committee had seen the crunch coming and warned that '[to] cope with the information explosion … scientists must create new science … their activities of reviewing, writing books, criticizing, and synthesizing are as much a part of science as is traditional research.' Observers early on recognized the need to keep access to new information on par with its

production if the full benefits of the growth of knowledge were to be realized. Henderson writes with eloquence that 'the gap between output and the human capacity to understand it … is the real disease of science, diagnosed often, prescribed for with care, yet not addressed by any policy.'[15]

## The Technoquandary

Technology offered one answer to the growing problem. As early as the 1930s, when microforms – microfilm, microfiche, reels, cartridges – were introduced, the technology was hailed as a 'breakthrough on all fronts.'[16] The euphoria subsided by 1955, however, when a Library of Congress study revealed that 'a significant number' of microfilms had deteriorated and many others were hardly in better shape. It wasn't until the 1980s that the Association for Information and Image Management published new, higher quality standards for films and processes.[17]

Computers, initially mainframes, came into general use in larger libraries in the 1960s, primarily to automate processes that were previously done by hand. One of the earliest and most important breakthroughs came with the development of machine-readable cataloguing and the MARC-II record format, which for the first time created an international standard of cataloguing. Computers quickly impacted acquisitions and circulation functions as well. Coincident with the great expansion of colleges and universities in the 1960s and 1970s, libraries began to outsource many of these technology-intensive 'back-office' services to vendors like Richard Abel & Co., Baker & Taylor, Blackwell North America, and others. Soon, companies were offering 'opening-day collections' and fully integrated library systems.[19]

It's probably superfluous to point out that the same geopolitical concerns that resulted in the expansion of libraries and information resources in the US were also behind the push to develop the computer. The needs of the intelligence community spurred the development of optical character recognition, machine translation of languages, and automated sorting and dissemination of information – technologies readily adaptable to the needs of scholarly communication.[19] The Internet came later.

Publishers, of course, also benefited from technology improvements. Manual typewriters were the primary copy input devices well into the 1960s. Hot metal gave way to photomechanical typesetting in the 1970s, which yielded to desktop digital composition in the 1980s. The last decade of the millennium saw the integration of all-digital workflows from author's raw disk to digital printing.[20] Production schedules were slashed. Digital presses made ultra-short runs of twenty-five to 300 copies economically feasible, keeping more titles in print and adding incremental revenue to publishers' bottom lines. Print-on-demand introduced a revolutionary new publishing model, flipping the formula from 'print and distribute' to 'distribute and print.'

But what really raised eyebrows in the scholarly publishing community was the promise of electronic publishing. Development of electronic data services began in the flush years of the 1960s, when the National Library of Medicine initiated efforts that ultimately led to MEDLINE, a searchable database of eleven million references and abstracts available for free on the Internet. Other indexing and abstract services like Dialog and LexisNexis also got their starts in the 1960s, but it wasn't until the National Science Foundation removed the restrictions on commercial use of the Internet in 1991 that non-STM uses began to proliferate online. Introduction of graphical user interfaces such as Mosaic, and later Netscape Navigator and Microsoft Internet Explorer, opened up the World Wide Web on the Internet, adding sound and pictures to what had been a text-only medium.[21] At the end of the decade the logical next step seemed to be online access to full-text journals and books.

Like microforms before them, the new digital technologies were not without problems. Questions of copyright and compensation for authors and publishers came quickly to the fore. Worries about 'Napsterization' and the security and protection of data and intellectual property are still with us. Archivists allude to the 'fallacy of displacement,' the mistaken belief that new media completely replace the old, and the difficulty of 'authenticating' electronic texts, not to mention the inevitability of hardware and software obsolescence. Then there's the price tag. In the space of only ten years, 'the percentage of funds allocated

to electronic resources rose in many libraries from zero to more than 20 percent.'[22] From about the mid-1980s on, Michael Gorman reports, 'libraries of all kinds were simultaneously trying to deal with cuts in their budgets (particularly materials budgets) and with paying for the hardware, software, and access to electronic resources' demanded by their constituencies.[23]

Certainly the Internet has made available to scholars and researchers more books and periodicals than ever before, and the supply of online publications continues to explode. Ralph Shoffner makes a telling observation: 'since the reader has about the same amount of time available each year to obtain the correct books from the ever-larger collection, the system for retrieval must become more efficient.'[24] More resources need to be found for the development of methods to 'catalogue' the Internet, for better search engines, automatic language translation, and voice-recognition systems. Although intended to comment on the potential usefulness of digitizing hard-to-use microform collections, Paul Conway's observation seems to apply equally well to any digitized collections: without 'improvements in intellectual access … digital conversion of these collections may prove to be quite feasible technically and quite untenable intellectually. The consequence of failure to build a truly useful and useable digital collection is irrelevance.'[25] Gorman, in a 1994 *Library Journal* article, offered a bleak vision of that failure, rendering the Internet 'a howling wilderness of unstructured, unrelated gobbets of "information" and random images in which the hapless individual wanders without direction or sense of value.'[26]

## The 'Crisis'

Whether the current drama vexing scholarly communication is best termed a 'serials crisis' or something broader, it seems the price of STM serials has long played a leading role. As early as 1927 an American Library Association study found many science librarians complaining that most of their budgets went into serials. This was a time when demand for scholarly and scientific publications was expanding and German for-profit publishing emerged as the new model. The following year the 'unbridled increase in production and the subsequent higher price tag became an international library controversy.'[27] In 1933, Charles Harvey Brown was perhaps the first, though certainly not the last, to charge American libraries with complicity: 'American libraries, by their ability and willingness to pay have enabled the publishers to persist in charging exorbitant rates.'[28] The rumpus settled down only after the Nazi regime agreed to throttle back production and allot 'a considerable state subsidy for export.'[29]

After the Golden Age of the 1960s, universities in the US increasingly found themselves in dire financial straits. Administrators attempted to navigate shallow funding streams by off-loading cargo: 'Funding for libraries was curtailed, book-buying budgets were cut back, and the trickle-down to university presses … pretty well dried up.' Fingers again started pointing at the STM publishers. While library budgets were declining, subscription prices were climbing, and in the opinion of some, climbing 'unconscionably.'[30]

How did libraries respond? Largely by cancelling serials subscriptions and increasing interlibrary loans (requests for interlibrary loans quintupled in the decade of the 1980s). According to Albert Henderson, this reaction only made matters worse. 'Circulation and price are inextricably linked. As cancellations rolled in, prices shot upward.'[31] Henderson blames the 'enemies of the library' for much of the mess. The 'enemies' are 'the university and science bureaucracies,' and even some librarians, who have not supported what Henderson believes would be adequate growth in library funding. He especially targets those relying on 'the fantasy of the Internet' to replace libraries and librarians and those who want to reduce costs by weakening or eliminating the costly and time-consuming peer review process. The 'enemies,' says Henderson, argue 'that the gate-keeping function of journal editors is an anachronism that unnecessarily slows down dissemination. The counterargument says, in effect, that we are already drowning in information; now you want to spice the flood with raw sewage to hasten our demise.'[32]

Not everyone is quite as ready as Henderson to let the STM publishers off the hook. Charles Hamaker cites several studies that conclude STM journals are, in fact, overpriced and have been since the 1930s. A 1947 article by Robert B. Downs, Hamaker says, 'should be taken as the base point … that the problems of

the last fifty years dealing with commercial STM titles are inherent in the systems used for creating, publishing, and selling such titles.' Downs charged that these publishers 'finagled prices' to keep them artificially high during the Depression and that they 'invented twigging,' the creation of ever more new journals to service ever smaller, more specialized fields of research. (Henderson argues that the phenomenon of twigging is actually a natural response to the growth of knowledge.) They became adept as well at the practice of bundling 'a few good articles in a journal that could be used to sell a lot of less important, even bad articles at the same high prices that the good articles commanded.'[33] A similar practice has crept into the electronic journals market, whereby a publisher offers a subscription 'package' to include all of a publisher's journals, leaving libraries little opportunity to cull those not in demand. This is an adroit rejoinder to the 80/20 rule, formulated in response to citation research identifying the journal titles that provide eighty per cent of use. Hamaker, however, faults librarians for not standing up to the forces perpetuating these distortions, primarily the publishers themselves and, interestingly, faculty. One research report advocating a firmer hand in eliminating subscriptions to underused periodicals quotes a professor defending his journal of choice with the assertion: 'When it comes to my journal, your damn statistics mean nothing.'[34] Libraries cannibalized their book budgets instead, a practice Michael Gorman likens to ingesting 'financial poison.'[35]

In the late 1990s, libraries and publishers looked for answers by expanding collaborative efforts, especially in the electronic arena. Ralph Shoffner traces the development of early electronic publishing efforts such as Project Gutenberg, the first major effort to provide free online access to public-domain texts; JSTOR, a not-for-profit organization that provides online full-text journal access on a sliding fee scale; and Project MUSE, a low-cost electronic archive of the journals of a consortium of university presses.[36] And Charles Hamaker reports on other not-for-profit ventures. 'The ARL [Association of Research Libraries] has become an activist organization on behalf of research libraries, and its SPARC project is at least an effort to affect the current publishing system,' he notes. 'Stanford University Libraries' Highwire Press is another experiment, and there are others.'[37]

**In the two or so years since these essays were written, the crisis has not diminished. In fact, things have only gotten worse. News reports of layoffs at university presses, although not routine, have exhibited an unprecedented frequency. Academic libraries continue to experiment with new models of scholarly communication. (One recent venture, collectively termed 'institutional repositories,' seeks to collect all publications of a single institution's faculty in an online archive.) The January 2003 issue of *The Journal of Scholarly Publishing* kicked off with a report ominously entitled 'The Future of Scholarly Publishing,' issued by an ad hoc committee of the Modern Language Association. And page twenty-five of the 3 March 2003, issue of *Publishers Weekly* featured two items of note: the firing of the director of Columbia University Press due to 'difficult economic conditions and reported conflicts with the Columbia University board of trustees,' and the cutting of nine staff positions at MIT Press that the director related to 'the poor economy.' On page twenty-eight of the same issue we learn that 'total revenue at Reed Elsevier rose 11% in 2002 ... and pre-tax profit increased 9%.' Elsevier's science and medical unit saw revenues rise twenty-six per cent and profit twenty-five per cent.**

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1 Abel, 25. All references are to the reviewed title, and article author.
2 Oda, Table 1, 65

3 Hamaker, 278
4 Oda, Ibid.
5 Edelman, 195
6 Henderson, Chapter 8, 148–51
7 Ibid., 151
8 Ibid.
9 Henderson, Chap. 1, 2
10 Ibid., 6
11 Ibid., 3
12 Henderson, Chap. 8, 155
13 Henderson, Chap. 1, 4
14 Edelman, 207
15 Henderson, Chap. 1, 9
16 Edelman, 197
17 Veaner, 170–74
18 Shoffner, 212–25
19 Ibid., 210–11
20 Adams. 29–37
21 Shoffner, 235–42
22 Edelman, 207
23 Gorman, 259–60
24 Shoffner, 250
25 Veaner, 175
26 Qtd. by Henderson, Chap. 1, 19
27 Edelman, 196
28 Hamaker, 277
29 Edelman, 196
30 Goellner, 274
31 Henderson, Chap. 8, 155
32 Ibid., 154–57
33 Hamaker, 282
34 Ibid., 283–84
35 Gorman, 267
36 Shoffner, 247–49
37 Hamaker, 286