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Scholarly Publishing's Market Failure

The introduction of *statutory* licensing into scholarly publishing is as unlikely to be anyone's initial preference for open access as statutory (or *compulsory*) schooling is a child's first choice for learning about the world. One reason that people turn to statutory licensing as a legal remedy is because the market is failing to deliver the desired goods at a fair price.[1] This is "the failure of the Invisible Hand that Adam Smith hoped could reconcile private motives and public goals," in the words of Wendy J. Gordon, a legal scholar at Boston College.[2] In the case of scholarly publishing, market failure is marked by the slow, unsteady, and expensive progress that is being made toward the agreed-upon goal of open access. A clear economic path forward to open access has yet to appear, while subscription prices continue to increase ahead of inflation. The academic

1. In the legal literature, compulsory licensing is justified when the market is not working in "the most efficient way to meet consumer demand for goods and services" and is thus not fostering levels of competition that "achieve socially optimal pricing," which is, after all, the great virtue of a free market; Daryl Lim, "Copyright under Siege: An Economic Analysis of the Essential Facilities Doctrine and the Compulsory Licensing of Copyrighted Works," *Albany Law Journal of Science & Technology* 17 (2007): 481. Compulsory licensing "also is used," legal scholar Robert Stephen Lee points out, "when technology has made old licensing methods for established rights ponderous or inefficient"; Lee, "Economic Analysis," 209. If the market is functioning well, then Stan J. Liebowitz's point is worth considering before recommending compulsory licensing: "Markets provide information that is virtually impossible to determine in any other way. The difficulty of emulating markets has historically been grossly underestimated"; Stan J. Liebowitz, "Alternative Copyright Systems: The Problems with a Compulsory License" (unpublished paper, University of Texas at Dallas, 2003), 12, OA.

2. Wendy J. Gordon, "Excuse and Justification in the Law of Fair Use: Transaction Costs Have Always Been Part of the Story," *Journal of Copyright Society of the U.S.A.* 150 (2002–2003): 151, OA.

community is struggling to turn the current consensus into universal open access. What further complicates this market failure is copyright's contribution to the lack of success.

Consider what happened in 2019, when it appeared that President Trump was about to sign an executive order ending publishers' ability to impose a twelve-month embargo on federally funded research publications. More than 120 scholarly publishers, most of them representing scholarly societies, signed an open protest letter to the president. "Publishers both support and enable 'open access' business models," the publishers' letter insisted, and yet to forbid one-year embargos "would jeopardize the intellectual property of" these American publishers.[3] "Undermining the marketplace," it went on, "is unnecessary, counterproductive, and would significantly harm the system of peer-reviewed scholarly communication" and "could also result in some scientific societies being forced to close their doors." This statement could hardly make clearer the extent to which copyright props up a "marketplace" that is, in turn, hobbling the pursuit of an open access that publishers "both support and enable."[4]

Yet can one claim that the scholarly publishing market is stalled when publisher profits top those of other industries, scholarly society journals dominate their fields, and research publications grow? The answer is yes on two points: both the profitability of industry and society publishers and the proliferation of publications are creating an unsustainable path for research libraries with too little progress toward open access for too much money. The role of copyright in this failure can be traced back to the age of photocopying, which offered the first clear and sweeping demonstration of researchers' appetite for what open access offers them.

3. Bruce Sterling, "Scientific Media: Set IP Phasers on Stun," *Wired*, December 18, 2019, OA.

4. At least two of the societies that signed the letter, the Association for Psychological Science (APS) and the Association for Computing Machinery, later apologized and wrote to President Trump withdrawing their support, given, in the case of APS, the "suggestion that our members' scientific work is the intellectual property of commercial publishers, a commodity to be sold throughout the world to benefit American industry"; "To APS Members from the Board of Directors," Association for Psychological Science, Washington, DC, January 24, 2020, OA.

Science's Copyright Problems

In 1962, the Copyright Society of America identified what it termed science's "copyright problems."[5] These problems date back to the 1930s, when Chester Carlson was working in the New York Public Library on what he would later develop into Xerox's reprography revolution, as discussed in chapter 1. Carlson had been inspired by how the new field of microphotography was being used in libraries and archives to support scholarly engagement with texts and artifacts leading to fresh thinking in fields such as classics.[6] In 1931, for example, Solon J. Buck, second archivist of the United States, and historian Robert C. Binkley at Smith College, on noting the "disharmonies . . . in the divergence between scholarly value and commercial value in the publishing trade," dared to imagine that such technologies might "liberate scholarship, future as well as present, from material limitations."[7] Although microphotography was still a belabored process, scholars' growing use of it for copying archival materials and publications did not take long to provoke questions of copyright infringement within the publishing community.

In 1935, publishers and researchers issued a joint statement, which became famously known as the "gentlemen's agreement," on the handling of such copying.[8] The National Association of Book Publishers

5. Copyright Society of the USA, *First Annual Report of the Committee to Investigate Copyright Problems Affecting Communication in Science and Education*, October 1962, 4.

6. Edith Hartwell, "Microphotography in the Library," *Library Chronicle* 9, no. 3 (1941), OA; Rozelle Parker Johnson, "Microphotography and Its Application to Classical Scholarship," *Classical Weekly* 31, no. 10 (1938): 95–99. John McPhee has described how, as a teenager in the 1940s, he assisted in this process for professors at Princeton: "The papers were copied by a photostat machine, which took pictures of them on photographic paper, which, in a photographic darkroom, was immersed, one page at a time, in a fluid called developer. . . . Even to copy a relatively short paper . . . could take the better part of an hour"; John McPhee, "Tabula Rasa: Volume One," *New Yorker*, January 13, 2020.

7. Solon J. Buck and Robert C. Binkley, "Report of the Joint Committee of the SSRC and the ACLS on the Materials for Research," *American Council of Learned Societies Bulletin* 15 (1931): 365, 369.

8. The parties to the agreement were the Joint Committee on Materials for Research of the American Council of Learned Societies, the Social Science Research Council, and the National Association of Book Publishers; "The Gentleman's Agreement and the Problem of Copyright," *Journal of Documentary Reproduction* 2 (1939): 31.

declared that it was prepared to permit libraries to make a single copy for "a scholar representing in writing that he desires such reproduction in lieu of loan of such publication or in place of manual transcription and solely for the purposes of research."[9] The scholar's copy, in all of the period's gentility and gendered proclivities, was regarded as an honorable exception to the publisher's copyright monopoly, but one that needed to be carefully contained. The agreement, long regarded as a landmark in fair use, established an early extralegal work-around in recognition of scholarship's distinct knowledge economy.[10]

The gentlemen's agreement was disrupted by the Soviet launch of Sputnik in 1957, which brought a new Cold War urgency to America's scientific efforts. The following year, the president's Science Advisory Committee issued a report on improving American access to research: "*Our very progress in science is dependent upon the free flow of scientific information* for the rate of scientific advance is determined in large measure by the speed with which research findings are disseminated among scientists who can use them in further research."[11] The committee recommended that the National Science Foundation establish a science information service that "through the application of machine techniques and through yet-undiscovered methods" could provide a clearinghouse for research to "encourage publishers and scientific societies to experiment with new

9. "The Gentleman's Agreement and the Problem of Copyright," 31.

10. Peter B. Hirtle, "Research, Libraries, and Fair Use: The Gentlemen's Agreement of 1935," *Journal of the Copyright Society of the U.S.A.* 53, nos. 3–4 (2006): 546.

11. W. O. Baker et al., *Improving the Availability of Scientific and Technical Information in the United States* (Washington, DC: President's Science Advisory Committee, 1958), 6, OA (emphasis in the original). Other expressions of this concern include the Report by the Subcommittee on Patents, Trademarks, and Copyrights of the Senate Judiciary Committee, S. Rep. 97, 86th Cong., 1st Sess. 12 (1959), OA: "Most scientists feel that their work is not published to gain any financial reward for the authors but should provide scientific data which other scientists may freely use and build upon to advance the cause of science" (63). In Study No. 15, May 1959, the Senate Subcommittee on Patents, Trademarks, and Copyrights, OA, heard that "the need of researchers for ready access to a mass of materials is present in every field of scholarly investigation. . . . The body of scientific and technical literature has grown so rapidly during the last few decades that it would be extremely difficult for the individual scholar or researcher to gain access to the works he may need to consult unless he can obtain copies from a library" (48). Then there was the Committee to Investigate Copyright Problems Affecting Communication in Science and Education, with its first report published in *Bulletin of the Copyright Society of the U.S.A.*, October 1962, 4.

and streamlined methods of publication designed to increase efficiency, improve services, and decrease costs."[12]

Enter the Xerox 914 in 1959. Xerox's first commercially available photocopier was given a splashy launch in a New York hotel, made all the more sensational by the machine catching fire during its debut.[13] The 914, initially sporting a fire extinguisher, went on to earn the title "the most successful single product of all time."[14] The ability to speedily produce inexpensive reproductions of any text on plain paper led to profligate copying. At the outset of the 1960s, the Committee to Investigate Copyright Problems Affecting Communication in Science and Education, made up of publishers and librarians, sought to address the dilemma.[15] In 1966, it was estimated that the US photocopied fourteen billion pages, much of it in research and university libraries.[16] The publishers' "copyright problems" were nothing if not a great boon to the work of scientists and educators. Here was a ready means for researchers to pack up a mass of studies, read them anywhere, mark them up, and make more of them to share.[17] As the Xerox machines whirred away in libraries and offices, the research world got an early taste of the difference that open access would make not that many decades later.

In 1970, Stephen Breyer, then a Harvard law professor before going on to be a Supreme Court justice, argued that all of this photocopying was unsettling the underlying assumptions of copyright. It led him to consider "the uneasy case for copyright" amid the reform efforts underway leading up to the Copyright Act of 1976. The relevant aspect of that general uneasiness for my work is around copyright falling short for academics,

12. Baker et al., *Improving the Availability*, 12.

13. Eva Hemmungs Wirtén, *No Trespassing: Authorship, Intellectual Property Rights, and the Boundaries of Globalization* (Toronto: University of Toronto Press, 2004), 64, OA.

14. While this claim is cited 356 times according to Google, its source remains a mystery to me.

15. Copyright Society of the USA, *First Annual Report*, 4.

16. Wirtén, *No Trespassing*, 64.

17. Consider Henry Armstrong in his 1894 presidential address to the Chemical Society: "We must have the papers at our individual disposal, and in a far more handy and less expensive form than that of the *Phil. Trans.*; such ponderous times cannot be carried about, and an ordinary brief abstract of such a paper . . . is of little use"; Csiszar, *Scientific Journal*, 269. In the 1980s, the Hungarian Soros Foundation pursued its goal of an open society by distributing photocopiers to universities and libraries for civil society groups to copy leaflets and pamphlets; Nicholas Kulish, "George Soros Is Making Changes at His Foundation While He Still Can," *New York Times*, September 12, 2021.

who do not need copyright to make a living, he noted, any more than medieval monks, nuns, and scholars did.[18] As for the photocopying of academic works, "the widespread dissemination of these kinds of works has various spillover benefits," Breyer wrote, "similar to those provided by the original distribution of the works copied; to discourage them from being copied is therefore particularly undesirable."[19] He saw universities willing to underwrite publications because they "may believe it unethical to become freeloaders."[20] And yet "we should hesitate to abolish copyright protection," he advises, just as "we should equally hesitate to extend or strengthen it."[21] While the statutory licensing of research publications might be thought to extend copyright, I still take comfort from how Breyer combined a reluctance to suspend copyright—given the "uncertainty as to what would happen if protection were removed"—with his sense of the "spillover benefits" of widespread dissemination.[22]

The scholarly publishers, on the other hand, were soon asking the courts to defend their property rights. In the late 1960s, the medical publisher Williams & Wilkins sued the US government for copyright infringement involving four of its journals. The case concerned a tiny tip of a 930,000-page iceberg that represents how much copying the National Institutes of Health, through the National Library of Medicine, did in 1970 at the request of business firms, scientists, and libraries. The government librarians based their defense on the long-standing "court-created doctrine of 'fair use'" by holding that they only made a single copy for each request.[23] In 1972, the trial judge in *Williams & Wilkins Company v. the United States* (1975) ruled in the publisher's favor, while the Court of Claims, on appeal, voted 4–3 in favor of the government, which was upheld by a split Supreme Court decision. In the Court of Claims decision, Judge Davis

18. Stephen Breyer, "The Uneasy Case for Copyright: A Study of Copyright in Books, Photocopies, and Computer Programs," *Harvard Law Review* 84, no. 2 (December 1970): 309, 282.

19. Breyer, "Uneasy Case," 318. By the same token, "the government may pay for a work containing a scientific theory, for example, that radiates benefits far beyond the circle of its readers" (307). In yet another academic example, Breyer points to "a professional association of physicists using dues to support a physics journal" (303).

20. Breyer, "Uneasy Case," 304.

21. Breyer, "Uneasy Case," 284.

22. Breyer, "Uneasy Case," 322.

23. The Williams & Wilkins Company v. the United States, 487 F.2d 1345, No. 73-68 (1973), OA.

notes the need for copyright change in support of science: "We are convinced that medicine and medical research will be injured by holding these particular practices to be an infringement; and . . . since the problem of accommodating the interests of science with those of the publishers (and authors) calls fundamentally for legislative solution or guidance, which has not yet been given, we should not, during the period before congressional action is forthcoming, place such a risk of harm upon science and medicine."[24]

To forbid such copying would mean, Judge Davis observes, that "medical and scientific personnel would simply do without, and have to do without, many of the articles they now desire, need, and use in their work." He considers that the "alternative of compulsory [or statutory] licensing" might have been a reasonable option in this case except that "the *1909 Act* does not provide for compulsory licensing in this field."[25] The field for which the 1909 act does provide statutory licensing is music. What I am asking is that research works be added to the fields to which statutory licensing applies, following Davis's interest in a legislative solution to science's "copyright problems." Davis concludes by emphasizing that "this is now preeminently a problem for Congress: to decide the extent photocopying should be allowed, the questions of a compulsory license and the payments (if any) to the copyright owners, the system for collecting those payments (lump-sum, clearinghouse, etc.), the special status (if any) of scientific and educational needs."[26]

In passing the Copyright Act of 1976, Congress sought to address science's copyright problems by introducing the common law notion of "fair use" into statutory law. The act recognizes that "for purposes such as . . . scholarship or research," copying "is not an infringement of copyright."[27] Still, the fairness of any particular instance of copying is subject to four considerations, to which the courts had been turning since *Folsom v. Marsh* (1841): (1) the purpose to which the work was put, whether commercial or not; (2) the nature of the work; (3) the amount copied;

24. *Williams & Wilkins Company v. the United States*.

25. *Williams & Wilkins Company v. the United States*.

26. *Williams & Wilkins Company v. the United States*. Davis's sly reference to "payments (if any)" follows his repeated reference to "the absence of proof that plaintiff has yet been hurt." He's not the least convinced that this photocopying has cost the publisher any journal subscriptions. It is rather that the publisher sensed a missed opportunity with this increased duplication and distribution; it was benefiting science and Xerox but not publishers.

27. Copyright Act of 1976, 17 U.S.C. § 107.

and (4) its impact "upon the potential market for or value of the copyrighted work." For scholars, citing another's work is *fair use* by all four factors. Scholarship is rarely commercial in purpose, the cited work is intended to be quoted, the excerpt is typically short, and the citing often adds rather than detracts from the value of the cited work.

The copying of another's article is a different story. The Copyright Act of 1976 addressed this question in an extensively qualified and parsimonious section (§ 108) on photocopying in libraries and archives. Such organizations are to limit themselves to making "a single copy" of an item after ensuring recipients were "researchers affiliated with the library or archives" or "other persons doing research in a specialized field."[28] The law was making a measured concession for scholarship, much as a parent might for a precocious child, while instructing librarians to keep a lid on any signs of the child's capricious indulgence of the privilege.

In 1976, Congress also took a further step in advising the publishing industry to establish an organization that would diminish fair use by extending "the potential market for or value of the copyrighted work." In 1978, the publishers set up the Copyright Clearance Center (CCC). "By reducing transaction costs associated with enforcing, on the one hand, and licensing on the other," Glynn S. Lunney Jr., Texas A&M law professor, pointed out, the CCC could "convert widespread infringement into markets."[29] But that means that the CCC was serving, in effect, as a sales agent for publishers, and it lost its tax-exempt status in 1982.

Still, the CCC played a part in the successful 1993 suit of the Geophysical Union and eighty-two other scholarly publishers against Texaco, which was actively copying journal articles for distribution among its R&D employees. Prior to the creation of the CCC, the courts had favored the NIH's claim of fair use for journal-article copying in *Williams & Wilkins Company v. the United States*, which they then denied to Texaco because

28. Copyright Act of 1976, 17 U.S.C. § 108. If a purchased copy has been damaged and "an unused replacement cannot be obtained at a fair price," then three copies of it can be made. Michael Carroll points to copyright's research allowance as a tailoring for "privileged users . . . who enjoy certain additional limits on liability or available remedies"; Michael W. Carroll, "One Size Does Not Fit All: A Framework for Tailoring Intellectual Property Rights," *Ohio State Law Journal* 70, no. 6 (2009): 1402, OA.

29. Glynn S. Lunney Jr., "Copyright Collectives and Collecting: The United States Experience," in *Collective Management of Copyright and Related Rights*, 3rd ed., ed. Daniel Gervais (Netherlands: Wolters Kluwer, 2015), 319.

the CCC offered the company a path to copyright compliance.[30] In *American Geophysical Union v. Texaco Inc.*, Judge Newman writes that "it is sensible that a particular unauthorized use should be considered 'more fair' when there is no ready market or means to pay for the use, while such an unauthorized use should be considered 'less fair' when there is a ready market or means to pay for the use."[31] In this and other cases, the CCC created a "ready market" by providing a "means to pay for the use."

Three additional aspects of the Copyright Clearance Center are worth noting given my case for copyright reform. As a collective rights-management organization, which by 2018 was representing some twelve thousand publishers, the CCC demonstrates that publishing is not so far removed from the statutory licensing structures of the music industry in which such organizations play a key role.[32] Second, where the CCC relies on the voluntary participation of both publishers and copiers, open access statutory licensing, should it come to pass, would make participation by and payment to publishers the law. And third, while this licensing will only apply to research publications, such works have played an outsize role in copyright infringement cases, including not only *Williams & Wilkins* and the *Geophysical Union* suits but also *Basic Books v. Kinko's Graphics* (1991), *Authors Guild v. HathiTrust* (2014), *Authors Guild v. Google* (2015), and *Cambridge University Press v. Patton* (2020).[33]

30. American Geophysical Union v. Texaco Inc., 60 F.3d 913 (2d Cir. 1995), OA.

31. *American Geophysical Union v. Texaco Inc.*, at 931. Jane C. Ginsburg interprets the court's ruling as a prescription for "license or lose it," which she further interprets as the courts imposing "a solution akin to compulsory [statutory] licensing," as "the court in effect compelled the copyright owners to license, lest the use be allowed for free, but left the rate-setting to the parties"; Jane C. Ginsburg, "Fair Use for Free, or Permitted-but-Paid?," *Berkeley Technology Law Journal* 29, no. 3 (2014): 1398. I discuss Ginsburg's work in chapter 5 on the connections between fair use and statutory licensing (which I am proposing for open access), in light of Ginsburg's own proposal for making fair use more fair for copyright holders with a proposed permitted-but-paid use model.

32. Corilee Christou, "Copyright Clearance Center at 40," *Information Today* 35, no. 1 (2018): 1–3. The CCC distributed $200 million in payments to the publishers for 2015.

33. In the most recent ruling on Cambridge University. Press v. Patton, 769 F.3d 1232 (11th Cir. 2014), in which the Georgia district court found in favor of the Georgia State University librarian's claim of fair use in thirty-seven of forty-eight items posted for courses, the Authors Alliance, in an amicus brief, asserted that it "agrees with the district court's assessment that academic authors' primary motivation to write scholarly works is grounded in their desire to share and advance knowledge," basing their argument on this being a different class of authors and

These cases reflect Jessica Litman's point that the language surrounding fair use in the Copyright Act of 1976 "was ambiguous, and intentionally so, because copyright owners and educational organizations never fully resolved their disputes" before the passing of the bill.[34] In 1984, the scholar and publisher Irving Louis Horowitz summed up the resulting "new information environment" this way: "Librarians and publishers, two groups that desperately require one another's cooperation and assistance, have been placed at loggerheads."[35] Science's copyright problems of the 1960s had grown into something far more antagonistic by the 1980s, reflecting increases in the stakes and size of the players.

The Commercialization of Scholarly Publishing

In the years following the Second World War, what might be portrayed as a gentle mix of commercial and learned society publishers was engaged in publishing a wide range of journals across the disciplines. While Springer and Elsevier, both founded in the nineteenth century, were certainly a presence, particularly in Europe, the societies dominated journal publishing at the time. The societies' low subscription prices, accompanied by the free exchange of copies among societies, reflected a singular interest in having researchers' works widely distributed. It did lead some societies to the brink of insolvency.[36] A number of them in the UK started to

works, which, while it has no direct bearing on fair use (concerned as it is with the use of the work), is very much aligned with the case I make for applying a different legal structure to motivating this work; Brief of Amicus Curiae Authors Alliance, Cambridge University Press, et al. v. J. L. Albert, et al. (February 13, 2017), 10–11, OA. The courts ruled in this case that "for loss of potential license revenue to cut against fair use, the evidence must show that licenses for excerpts of the works at issue are easily accessible, reasonably priced, and that they offered excerpts in a format which is reasonably convenient for users."

34. Jessica Litman's analysis makes it clear that the statutory codification of "fair use" in the Copyright Act of 1976 arose out of negotiations between publishers and educators; Litman, "Copyright Compromise," 887–888.

35. Irving Louis Horowitz, "Librarians, Publishers and the New Information Environment," in *The Right to Information*, ed. Jana Varlejs (Jefferson, NC: McFarland, 1984), 21. Horowitz founded Transaction Publishers, a scholar-led press, at Rutgers University in 1962, which was sold after his death to Taylor & Francis in 2017.

36. Aileen Fyfe, "Self-Help for Learned Journals: Scientific Societies and the Commerce of Publishing in the 1950s," *History of Science*, March 18, 2021, OA. Aileen Fyfe writes, "The history of learned society publishing reveals that the philanthropic desire to make scholarship widely available, and free to read

rely on research foundations to survive, while in the US, societies in the sciences increasingly levied page charges on authors (which later evolved into APCs for open access) to subsidize their low subscription rates.[37] All of this could be said to have taken a dramatic turn when the maverick media baron Robert Maxwell stepped onto the scholarly publishing stage.

After some earlier work with Springer and other presses, Maxwell launched Pergamon Press in London with five journals in 1951. He was soon acquiring publishers and starting new journals to build Pergamon's holdings at a great pace. He took advantage of journal monopolies—which, as a journal is not easily substituted by another, it is difficult for libraries to drop—to increase prices, and he opened new markets in the Soviet Union and elsewhere. He may well have believed, as he reflected later in life, that science is an antidote to history's more destructive forces, yet his recent biographer, John Preston, notes that "the whiff of chicanery was never far away" from his publishing deals.[38] By 1991, Pergamon had managed to create a series of million-dollar journals, at least judging by the $570 million that Elsevier paid that year to acquire Pergamon and its 418 journals.[39] By that point, societies had begun to see the light (or rather the cash) of commerce, and at the time of the Elsevier deal, a hundred of them had contracted with Pergamon to publish their journals. Although Maxwell's media empire turned out to be an overextended, debt-ridden house of cards—which was exposed following his mysterious drowning off the Canary Islands seven months after the Pergamon sale—the publisher's title-creation-and-acquisition model, combined with constant price increases, had already become a

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and reuse, is a scholarly tradition far older than the current Open Access Movement"; Aileen Fyfe, "The Royal Society and the Noncommercial Circulation of Knowledge," in *Reassembling Scholarly Communications: Histories, Infrastructures, and Global Politics of Open Access*, ed. Martin Eve and Jonathan Gray (Cambridge, MA: MIT Press, 2021), 147.

37. Tom Scheiding, "Paying for Knowledge One Page at a Time: The Author Fee in Physics in Twentieth-Century America," *Historical Studies in the Natural Sciences* 39, no. 2 (2009): 219–247.

38. John Preston, *Fall: The Mysterious Life and Death of Robert Maxwell, Britain's Most Notorious Media Baron* (New York: Harper, 2021), 31; Stephen Buranyi, "Is the Staggeringly Profitable Business of Scientific Publishing Bad for Science?," *Guardian*, June 27, 2017, OA.

39. Robert N. Miranda, "Robert Maxwell: 44 Years as Publisher," in *A Century of Science Publishing: A Collection of Essays*, ed. E. H. Fredriksson (Amsterdam: IOS, 2001), 78.

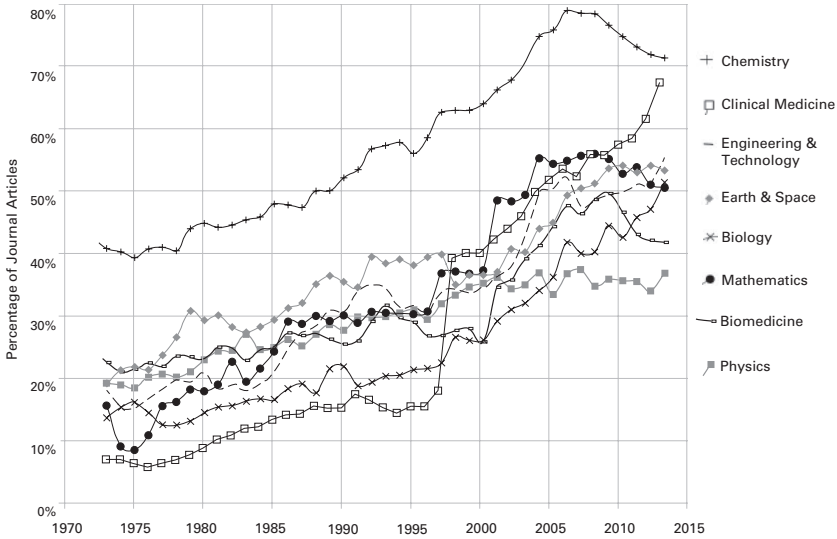

Figure 4.1
In the natural and medical sciences, the percentage of papers published by the top five publishers (Reed Elsevier, Wiley-Blackwell, Springer, Taylor & Francis, and American Chemical Society), 1973–2013.
Source: Vincent Larivière, Stefanie Haustein, and Philippe Mongeon, "The Oligopoly of Academic Publishers in the Digital Era," *PLOS One* 10, no. 6 (2015): e0127502 (CC BY), OA.

standard business practice (minus the chicanery) for commercial scholarly publishers on both sides of the Atlantic.

As a result, some two decades later, the five leading scholarly publishers had managed to accumulate a combined market share of more than 40 percent of the published papers in a significant number of fields and disciplines.[40] In chemistry, for example, the top five publishers held 40 percent of the journal market in the early 1970s, while by midway into the first decade of the century, they were approaching 80 percent; in that same period, these publishers' hold on psychology went from 10 percent to 70 percent (figures 4.1 and 4.2).

It is not to be denied that these publishers' many new titles increased opportunities for researchers to publish, just as they allowed new fields

40. Vincent Larivière, Stefanie Haustein, and Philippe Mongeon, "The Oligopoly of Academic Publishers in the Digital Era," *PLOS One* 10, no. 6 (2015): e0127502, OA.

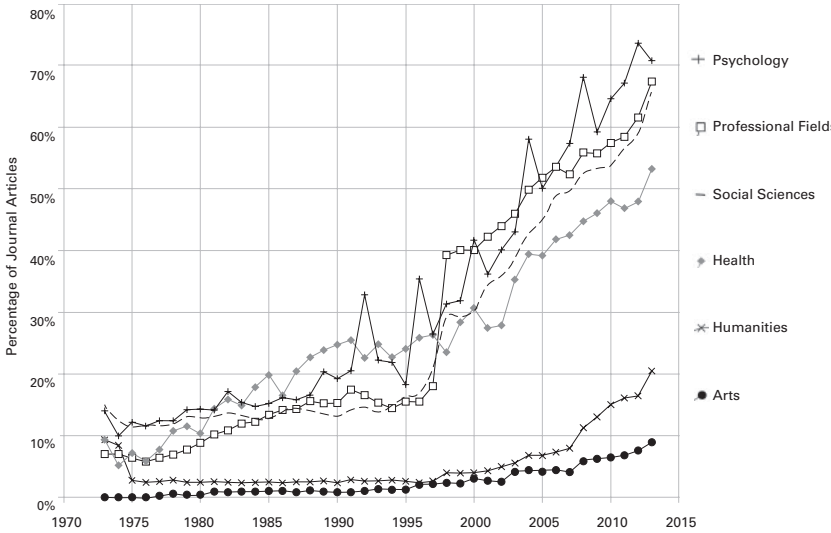

Figure 4.2
In the social sciences and humanities, the percentage of papers published by the five major publishers (Reed Elsevier, Wiley-Blackwell, Springer, Taylor & Francis, and SAGE), 1973–2013.
Source: Vincent Larivière, Stefanie Haustein, and Philippe Mongeon, "The Oligopoly of Academic Publishers in the Digital Era," *PLOS One* 10, no. 6 (2015): e0127502 (CC BY), OA.

to flourish and afforded societies an expanded range of activities. On the other hand, the Maxwellian run of hyperinflated price increases left research libraries reeling during the 1990s (figure 4.3). Hundreds of librarians have decried this "serials crisis" in one article after another.[41] Libraries were forced to cancel titles and reduce book orders. The journal pricing structure bore little to no relation to the journal's scholarly value.[42] The crisis reduced the number of titles in the very best research libraries,

41. To take one example, Susan Davis, "Surviving the Serials Crisis: Are E-journals an Answer?," *Serials Review* 21, no. 4 (1995): 95–96. And for an overview, "The Serials Crisis History and Data," Association of College and Research Libraries, Chicago, 2016 (subsequently updated), OA.

42. A classic study of journal pricing's independence from its impact factor, as one measure of value, is Theodore C. Bergstrom's "Free Labor for Costly Journals?," *Journal of Economic Perspectives* 15, no. 4 (2001): 183–198, OA, which has been recently confirmed and updated in Stephen Bosch, Barbara Albee, and Sion Romaine, "Costs Outstrip Library Budgets: Periodicals Price Survey 2020,"

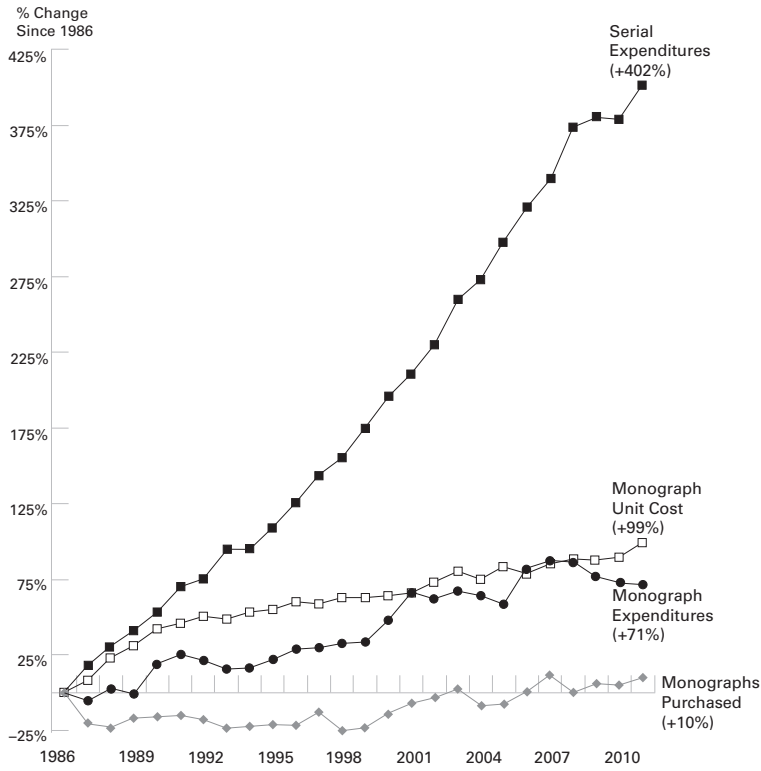

Figure 4.3
Monograph and serial costs in ARL, 1986–2011.
Source: Martha Kyrillidou, "Research Library Trends: A Historical Picture of Services, Resources, and Spending," *Research Library Issues: A Quarterly Report from ARL, CNI, and SPARC* 280 (September 2012): 22 (CC BY-NC-SA 3.0).

if far less than it did everyone else.[43] What added to the sense that something was terribly wrong with this picture was that it was taking place in the 1990s amid the promise of the information highway. Shouldn't access to research be expanding rather than shrinking, more than a few researchers and many librarians wondered?

Library Journal, April 14, 2020, OA. See also "Ted Bergstrom's Journal Pricing Page," University of California, Santa Barbara, OA.

43. Ian Sample, "Harvard University Says It Can't Afford Journal Publishers' Prices," *Guardian*, April 24, 2012, OA.

In this context, librarians' twenty-first-century embrace of open access was undoubtedly inspired, in part, by a hope for some relief from the serials crisis. Yet there was little letup in price increases, which also followed from the big publishers' acquisitions of other publishers in the transition from print to digital publication.[44] Web-based delivery also facilitated price increases, as the Boston University economist Michael McCabe noted in 2010: "Ironically, the same technologies that enable immediate access for readers also facilitate bundling and pricing policies by the major commercial publishers that exacerbate rather than alleviate the inflationary pricing trends of the pre-internet era."[45] In addition, these pricing patterns are proving readily transferable to open access APCs, which run close to $10,000 for an article in *Cell Genomics* at the high end. A 2019 study demonstrates the point by calculating that APCs increased by three times the rate of inflation from 2005 to 2018 among a group of four relatively new open access publishers.[46] A second study from that year concludes that the "converging evidence all points towards both APC-OA and subscriptions suffer[ing] from analogous flaws which lead to hyperinflation and market-failure in both cases."[47]

"Is there anything wrong with making money?" Matteo Carandini, vice dean of research at University College London's Faculty of Brain Sciences, tweeted before adding, "Yes, if it takes away from education and scientific research. For example, Elsevier's [$1.2 billion] profit could cover the research funded by Howard Hughes Medical Institute or by Wellcome Trust."[48] Elsevier's profit margins (37 percent in 2019) continue

44. Stephen Bosch, Barbara Albee, and Sion Romaine, "The New Abnormal: Periodicals Price Survey 2021," *Library Journal*, April 27, 2021, OA. Elsevier acquired bepress in 2017, and Wiley purchased Hindawi in 2021, both representing gains of hundreds of journals.

45. Mark J. McCabe, "Online Access and the Scientific Journal Market: An Economist's Perspective: Draft Report for the National Academy of Sciences," March 2013.

46. The publishers were BMC, Frontiers, MDPI, and Hindawi; Shaun Yon-Seng Khoo, "Article Processing Charge Hyperinflation and Price Insensitivity: An Open Access Sequel to the Serials Crisis," *Liber Quarterly* 29, no. 1 (2019): 1–18, OA.

47. Alexander Grossmann and Björn Brembs, "Assessing the Size of the Affordability Problem in Scholarly Publishing," *PeerJ Preprints*, preprint, submitted June 18, 2019, 26, OA.

48. Matteo Carandini (@MatteoCarandini), "Is there anything wrong with making money?," Twitter, June 14, 2020, OA. Carandini also points out in this thread on publisher profit that "Elsevier's is . . . 37% [2019]. Twice

to increase with their shift into electronic publishing, with some uptake of open access publishing after 2010.[49]

Such profits provoked a harsh critique of my copyright reform advocacy from an early reviewer of this book's manuscript. I was clearly overlooking the real impediment, the reviewer held; the true culprit of this market failure, in the move to open access, is the large corporate publisher. These publishers need to be unseated, I was advised, in favor of new paradigms and platforms capable of bringing about open access. With the greediest publishers gone, open access would follow without a need for legislative change. I can appreciate the exasperation but struggle to imagine the act of eminent domain it would take to dissolve these companies' property rights over the research literature. In comparison, I would think that legislating copyright reform seems all the more reasonable and a far less legally fraught course of action.

Yet I also think this expel-the-corporations strategy raises three additional points in favor of my proposal worth considering: (1) The publishers' financial excess affirms the current market failure (as healthy markets result in fair prices and reasonable profits). (2) The unjustifiable pricing and profits are directly addressed by a statutory licensing strategy, which involves both librarians and publishers presenting what might stand as "fair compensation" for research publications before a panel of copyright royalty judges. (3) And in light of my reviewer's call for new paradigms and platforms, it is no coincidence that I have turned to copyright reform after working with the Public Knowledge Project on developing an open-source publishing platform that currently enables over thirty thousand journals, largely from the Global South, to offer open access on a "diamond open access" basis (which charge neither readers nor authors).[50] As important as it is to develop systems that support global participation in the greater knowledge exchange of scientific inquiry, this open infrastructure / open access publishing model has neither altered corporate market domination nor expedited open access, thus the need to rethink copyright while continuing the work on platform development.

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as profitable as Google! No industry is so profitable. The top is banking at 31%. Pharma is at 18%. Tobacco: 17%. Oil 9%. Alcohol 8%," Twitter, June 14, 2020, OA.

49. Larivière, Haustein, and Mongeon, "Oligopoly of Academic Publishers," 1–15.

50. Jeroen Bosman, Jan Erik Frantsvåg, Bianca Kramer, Pierre-Carl Langlais, and Vanessa Proudman, "The OA Diamond Journals Study," ScienceEurope, 2021, OA.

My critic and I are equally troubled, to be sure, by Elsevier's intent "to implement open access policies in a sustainable way for both [*sic*] the academic community, our journals, and the wider public."[51] Yet business as usual in pursuit of open access, amid corporate concentration and monopoly pricing, is still a cause for concern: "While copyright confers a limited legal monopoly over expression in creative works," writes legal scholar Daryl Lim at the University of Illinois Chicago, "it is rarely coextensive with economic dominance, much less monopoly. It follows that copyright may create a legal monopoly, but the existence of a monopoly does not necessarily imply a dominant position or abuse of that dominance."[52] In this case, Elsevier, Springer Nature, Wiley, Taylor & Francis, and SAGE do appear to exercise "the power to behave independently of market forces," which Lim identifies as a matter of a few players exercising economic dominance over a market.[53] Yet Lim also points to how this market dominance leads "to inefficient distribution and use of available resources."[54] The inefficiency at issue, in the case of scholarly publishing,

51. Christopher Tancock, "Everything You Ever Wanted to Know about Open Access (but Were Afraid to Ask!)," *Elsevier Connect*, Amsterdam, October 25, 2018, OA.

52. Lim, "Copyright under Siege," 485. Lim discusses this tendency in the context of the Essential Facilities Doctrine (EFD), in which "the copyright owner controls a 'facility' that is indispensable to its competitors and refuses to grant access to that facility" while noting that "the more [a copyrighted work] is unique, valuable, and difficult to duplicate, the greater is the obligation to share it"; Abbott B. Lipsky Jr. and J. Gregory Sidak, "Essential Facilities," *Stanford Law Review* 51, no. 5 (1999): 1219, quoted in Lim, "Copyright under Siege," 489.

53. Lim, "Copyright under Siege," 535. In discussing the EFD, Lim holds that "once dominance is established, the copyright owner has a duty to grant access" (535), in the sense of being covered by compulsory licensing. This is warranted "if intervention produces lower prices, larger outputs, or improved product quality" (557). I see the EFD not applying literally in this case of open access but as a further legal consideration in favor of compulsory licensing for the reasons Lim gives. Society publisher Keith L. Seitter writes, for example, "The symbiotic relationship between scholarly institutions and publishers has not really changed . . . even in the face of clear-cut pricing *abuse* by some publishers" (emphasis added); Keith L. Seitter, "A Publisher's View of the Public Good: Aspects of Scholarly Publishing," *Serials Librarian* 44, no. 1/2 (2008): 70.

54. Lim, "Copyright under Siege," 490. On the detriment of dominant market monopolies for the quality of scholarly publishing, Kenneth J. Arrow builds the case for how "the incentive to invent is less under monopolistic than under competitive conditions but even in the latter cases it will be less than is socially desirable"; Kenneth J. Arrow, "Economic Welfare," 619, OA. On the other hand,

is the extent to which researchers are not able to access *all* of the studies relevant to their work as we slowly progress toward open access.[55]

The big publishers' "monopoly maintenance" strategies struck a reviewer of this project as offering another alternative to copyright reform—namely, pursuing the publishers' potential violations of antitrust laws for what the Federal Trade Commission (FTC) considers "unreasonable" market dominance.[56] Assuming the FTC could divert its attention away from Facebook and Google to investigate the top scholarly publishing corporations, I'm not sure the FTC can address the issue at hand. That is, would the FTC's various antitrust strategies, such as breaking up the publishers into smaller units, imposing price controls, or limiting their acquisitions, necessarily promote the scientific progress offered by open access?[57] Now, the FTC has, on occasion, imposed measures that resemble statutory licensing. In the 1941 antitrust case against the performance rights music organizations American Society of Composers, Authors, and Publishers (ASCAP) and Broadcast Music Inc. (BMI), consent decrees were issued that included a judicial review of pricing, which did place a check on their monopolistic practices.[58] But the scholarly publishing community is pursuing a larger scientific goal—open access to research and scholarship—which goes beyond monopoly busting. What introducing statutory licensing into the Copyright Act for research publications will do is ensure fair compensation to publishers for open access research publications. While this approach will not break up the large scholarly publishers (just as the FTC consent decrees did not break up ASCAP and BMI), it will reduce these corporations' monopolistic powers by ending their exclusive ownership of research and introducing judicious pricing while bringing about open access to research and scholarship.

Lim cites *Verizon Communications v. Trinko* (2004), in which the court ruled that monopolies are "an important element of the free-market system" and the magnet for "risk taking that produces innovation and economic growth" (531).

55. "Where science is concerned, information and data function as inputs to the process of discovery and thereby constitute an essential ingredient of future scientific progress"; Reichman and Okediji, "When Copyright Law and Science Collide," 1479.

56. "The Antitrust Laws," Federal Trade Commission, Washington, DC, OA.

57. In 2021, for example, John Wiley & Sons acquired Hindawi Limited with over two hundred journals, following its recent acquisitions of zyBooks, Knewton Alta, and Atypon; Michael, "Wiley Acquires Hindawi."

58. Michael A. Einhorn, "The ASCAP and BMI Consent Decrees: Is Partial Withdrawal Wise?" *Journal Copyright Society USA* 62 (2014): 199–209.

The Open Access Growth Rate

Another of the "surprising facts" that Elsevier presents concerning open access, to return to the publisher's campaign cited above, is that it published 25,000 open access articles in 2016. This made Elsevier, by its records, the second-largest open access publisher in the world. These 25,000 articles, however, amount to only 6 percent of the 420,000 articles it published in total (which is, in turn, a fifth of what it estimates to be the 2.1 million articles published in 2016). The company, both to its credit and as a further demonstration of the irregularity of the current open access rollout, also made the back issues of 130 titles from among its 2,500 journals open access, at least for articles six to forty-eight months old, depending on the journal (with issues dating as far back as 1923, in the case of the *British Journal of Anaesthesia*).[59]

To date, the mix of open access strategies—which include publishers' APCs and self-archiving allowances, open access legal work-arounds (such as the NIH policy), and independent scholar-publisher journals—is providing a slow and unsteady path to open access. The Periodical Price Survey for 2020 concluded, after noting once again overall subscription price increases in the 5–6 percent range, that "there are multiple OA paths but there is still no consensus which, if any, OA models will be sustainable and decrease the overall costs."[60] One study of open access growth since 2000, cited in the first chapter, suggests that it may take until well into the latter half of the twenty-first century before the whole of the literature is open access, barring a radical intervention such as legal reform to speed the plow (figure 4.4).[61]

The pace is being determined, in large part, by the major corporate publishers that are seeking to understandably preserve their revenue growth and profit margins in moving to open access, which is leading

59. "Open Archive," Elsevier, Amsterdam, December 5, 2019, OA.

60. Bosch, Albee, and Romaine, "Costs Outstrip."

61. Piwowar, Priem, and Orr, "Future of OA." As a further indicator of the patchwork quality of open access, here are the types, as defined by Heather Piwowar, Jason Priem, and Richard Orr (compared to the "dosed" articles, which were found in the study to not be open access): "Gold: published in a fully-OA journal; Hybrid: published in a toll-access journal, available on the publisher site, with an OA license; Bronze: published in a toll-access journal, available on the publisher site, without an OA license (Immediate Bronze: available as Bronze OA immediately upon publication; Delayed Bronze: available as Bronze OA after an embargo period); Green: published in a toll-access journal and the only full-text copy available is in an OA repository, Gray closed: everything else"; Piwowar, Priem, and Orr, "Future of OA."

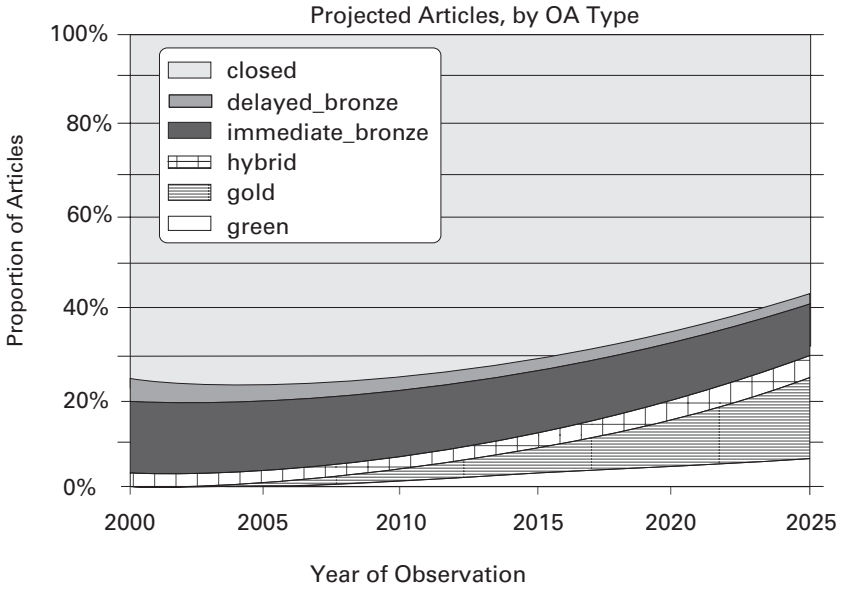

Figure 4.4
A projection of the proportion of open access research articles by type available from the year of observation, 2000–2025.
Source: Heather Piwowar, Jason Priem, and Richard Orr, "The Future of OA: A Large-Scale Analysis Projecting Open Access Publication and Readership," *bioRxiv* 795310 (2019), OA (CC BY).

to the complex, protracted negotiations with university library systems over the "transformational agreements," which I introduced in chapter 2. These involve complex combinations of traditional subscription costs and open access APCs, so that libraries pay for access rights to the publisher's content, with some portion of that payment enabling their faculty members to publish open access articles in the publisher's journals. In 2019, Wiley was able to strike such a "read-and-publish" agreement after three years of negotiations with Germany, representing seven hundred libraries, with similar deals following with Hungary and Norway; Springer Nature has similar agreements with Sweden, Norway, and Germany.[62] One can expect these agreements to lead to an increase in open

62. Diana Kwon, "As Elsevier Falters, Wiley Succeeds in Open-Access Deal," *Scientist*, March 26, 2019, OA. Lisa Olsson et al. report that a faculty survey (N = 4,221) on the Elsevier cancellation in Sweden revealed that 54 percent felt the loss of access had harmed their work; Lisa Olsson, Camilla Hertil Lindelöw, Lovisa Österlund, and Frida Jakobsson, "Cancelling with the World's Largest

access articles by German, Hungarian, Norwegian, and Swedish authors in these publishers' journals.

While the big five publishers, as well several smaller ones, including university presses and scholarly societies, now have close to a hundred such transformative agreements in place, it adds to the patchwork implementation of open access. Such agreements have yet to demonstrate a clear, manageable path to the agreed-upon goal of universal open access.[63] On top of that, "nearly all the deals involve wealthy northern European countries," notes Jefferson Pooley, professor of media and communication at Muhlenberg College, and "the practical effect is to grant selective OA authorship rights—with all their citation and visibility benefits—to scholars from the affluent West."[64] There's a market savvy to the model, as it enables publishers to capture a portion of the client institution's open access publishing activity in anticipation of an open access future. Yet its treatment of subscription payments as a step toward open access demonstrates, once again, the gravitational pull of a subscription-friendly copyright on publishers.

Among the rockier turns with this read-and-publish model was the breakdown in 2019 of Elsevier's transformative agreement negotiations in Germany, Sweden, Norway, and the University of California system, leading to a suspension of access to its journals.[65] In the case of the University of California (UC), law professor Dennis J. Ventry at UC Davis found that Elsevier's position amounted to a "refusal to address in any

Scholarly Publisher: Lessons from the Swedish Experience of Having No Access to Elsevier," *UKSG Insights* 33, no. 1 (2020): 1–13, OA.

63. See "Transformative Agreements Registry," Efficiency and Standards for Article Charges, Max Planck Digital Library, Munich, April 22, 2020, OA.

64. Jefferson Pooley, "Read-and-Publish Open Access Deals Are Heightening Global Inequalities in Access to Publication," *LSE Impact Blog*, February 21, 2020, OA. Pooley points to Roger Schonfeld's observation that the signing of these publish-and-read agreements is "effectively offering to crown the existing major publishers as the OA Royalty, rather than putting in place the competitive marketplace for OA"; Roger G. Schonfeld, "Will Europe Lead a Global Flip to Open Access?," *Scholarly Kitchen* (blog), June 26, 2018, OA. Further concerns have been expressed that such agreements "crowd-out pure OA [open access] publishers from institutional or national agreement negotiations"; Copernicus et al., *Current Transformative Agreements Are Not Transformative Position Paper—For Full, Immediate and Transparent Open Access*, March 2020, OA.

65. Fatima Qureshi, "Norway Joins the Ranks of Germany and Sweden, Cancels Subscription with Elsevier," *Editage Insights*, March 19, 2019, OA. Olsson et al., "Cancelling with the World's Largest."

meaningful way our dual goals of cost neutrality and open access."[66] Elaine Westbrooks, vice provost for University Libraries and university librarian at the University of North Carolina at Chapel Hill, said on their troubled negotiations with Elsevier, "I would love to be able to purchase all the scholarly journals that our faculty and students need, [but] renewing these packages is unaffordable and unsustainable. Rather than curbing runaway costs, renewing will increase them."[67]

No less disturbing is the lack of clarity around how publishers imagine the actual "transformation" to universal open access will take place. What is the tipping point when read-and-publish agreements lead to enough open access articles that it no longer makes sense for libraries to pay for the "read" aspect? The question has been addressed by John-Arne Røttingen and David Sweeney on behalf of the international research-funder consortium cOAlition S: "After 2024, we will be encouraging institutional libraries and large consortia to switch from 'read and publish' agreements with publishers to 'pure publish' deals for portfolios of subscription journals that have become open-access journals."[68] More than that, Røttingen and Sweeney go on to say, "cOAlition S funders will contribute to financing such deals, which will be more cost-effective and have fewer transaction costs than a single-paper charging system." Having funders step up to pay publishing costs, along with libraries, is also key to statutory licensing of open access for research publications.

Among alternatives to the read-and-publish agreements, I have had the chance to work with publishers on a "subscribe-to-open" model, which attempts a simpler move for journals to become open access, as it is based on the publishers' current set of subscriptions. Under this model, publishers ask their subscribing libraries to continue to renew their journals, much as they have in the past, with one major difference: the journal will now be open access, with the libraries' support. The subscribe-to-open model enables publishers to continue their operations, pricing, and use of

66. Michael Hiltzik, "In Act of Brinkmanship, a Big Publisher Cuts off UC's Access to Its Academic Journals," *Los Angeles Times*, July 11, 2019, OA. See also Quirin Schiermeier and Emiliano Rodríguez Mega, "Scientists in Germany, Peru and Taiwan to Lose Access to Elsevier Journals," *Nature* 541, no. 7635 (2017): 13, OA; Susan Mayor, "US Universities Review Subscriptions to Journal 'Package Deals' as Costs Rise," *BMJ* 328, no. 7431 (2004): 68, OA.

67. Laura Toler, "Scholarly Publishing at the Tipping Point," *Windows Magazine*, February 7, 2020, OA.

68. John-Arne Røttingen and David Sweeney, "Financing Open-Access Publication after 2024," *Nature* 572, no. 7771 (2019): 586, OA.

subscription agents much as they have in the past, while the libraries are, in effect, shifting their subscription support to open access. It also offers the further advantage, over the read-and-publish models, of enabling researchers anywhere to submit their work to these open access journals at no cost, just as everyone can read the entire subscribe-to-open journal. Still, you may wonder about libraries agreeing to "subscribe" to an open access journal. What Berghahn Books and Annual Reviews, two publishers who piloted this model for 2020 with a total of eighteen journals, discovered is that their subscribing libraries, as well as additional libraries drawn to the model, were happy to support this approach to open access: "Hands down, subscribe-to-open is our best option as an alternative to APCs," Curtis Brundy, a librarian at Iowa State University, stated, adding that "it's simpler to implement, and we don't have a lot of other models."[69] I recognize that the model makes a big ask of publishers, as they leave behind the legally binding arrangements of the traditional subscription (which the read-and-publish model retains) and enter into a "mutual assurance" agreement with the libraries to continue supporting the open access edition of the journal. But then the same results can be achieved, with legally binding assurances for publisher compensation, through the legislative reform that I describe in this book.

Market Failure Responses

Scholarly publishers and libraries have both taken additional steps to move beyond this market failure, three of which I would highlight here. The first arises out of the publishers' early recognition of the moral obligation associated with the open access that the digital era might afford. It is wrong, they recognized, to deprive so much of the world access to research when it costs so little to provide it to places that could not otherwise afford access. The publishers were thus quick to respond in 2001 to the World Health Organization's appeal to them to enable the poorest countries to freely access health research. This form of charitable access evolved into the Research4Life (R4L) program that now organizes open

69. Jeffrey Brainard, "Publishers Roll Out Alternative Routes to Open Access," *Science* 367, no. 6483 (2020): 1179, OA; John Willinsky, "The Simplest of Models for Open Access to Research Proves Itself: Welcome to Subscribe-to-Open," *SLAW*, March 5, 2020, OA; Lisa Janicke Hinchliffe, "Subscribe to Open: A Mutual Assurance Approach to Open Access," *Scholarly Kitchen* (blog), March 9, 2020, OA; Crow, Gallagher, and Naim, "Subscribe to Open," 181–185.

access for these countries to an expanding range of journals encompassing research in areas of health, agriculture, environmental science, intellectual property, and global justice.

Yet the rollout of this charitable open access initiative bears a similar unevenness to the spread of open access more generally. It has been beset by restrictive country qualifications (India is excluded), limited password distribution within qualifying countries, and publisher pullout (from Bangladesh in 2011).[70] The policy and technical issues speak to the value of establishing universal open access as the norm for circulating research. The uneven outcomes that can result from this admirable effort are neatly demonstrated by a small-scale study in ophthalmology. Researchers in this field were asked worldwide what proportion of 200 randomly selected papers on eye diseases in the field's subscription journals were they able to access and consult.[71] While 85 were open access, of the remaining 115 papers, fewer than half were available to researchers through their institution's subscriptions or through R4L's open access provisions (figure 4.5). The point is that the market is not doing all that much better with the charitable side of open access, adding weight to the value of a common legal structure that possesses the potential to grow into a global standard through current copyright harmonization organizations such as WIPO (which will be considered in chapter 6).

In a second, more recent move in response to this troubled market, the major corporate players have been expanding their operations outside of the traditional bounds of scholarly publishing.[72] Elsevier, for example, no longer refers to itself as a *publisher*. Its press releases identify it as "a global information analytics business" that "provides digital solutions and tools in the areas of strategic research management, R&D performance, clinical decision support, and professional education."[73] Elsevier

70. Tracey Pérez Koehlmoos and Richard Smith, "Big Publishers Cut Access to Journals in Poor Countries," *Lancet* 377, no. 9762 (2011): 273–276.

71. Christophe Boudry et al., "Worldwide Inequality in Access to Full Text Scientific Articles: The Example of Ophthalmology," *PeerJ* 7 (2019): e7850, OA.

72. There are other changes afoot, as Justin Fox notes: "Three of the four biggest academic publishers—Elsevier, Wiley's research-publishing arm and No. 4 Taylor & Francis, a division of Informa Plc—are now run by women with no background in academic publishing. A new era seems to be dawning for the industry, and it has been reshuffling its leadership to meet it"; Fox, "Scholarly Publishers."

73. Jonathan Davis, "Elsevier Launches Current Research Journals," press release, Elsevier, Amsterdam, June 18, 2019, OA.

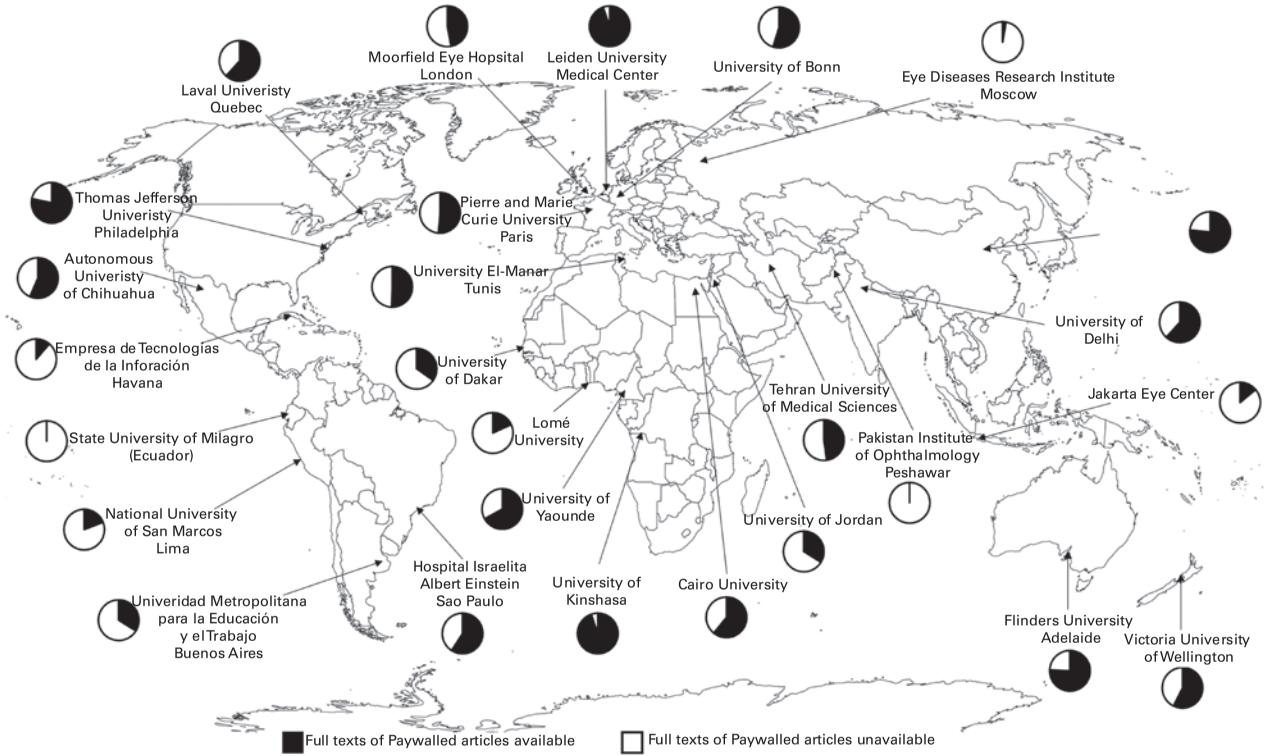

Figure 4.5
Availability of 115 "paywalled articles" in ophthalmology using institutional and R4L access, with an average of 53.8 (46.8 percent; SD = 31.5) articles available to study participants.
Source: Christophe Boudry et al., "Worldwide Inequality in Access to Full Text Scientific Articles: The Example of Ophthalmology," *PeerJ*, October 30, 2019 (CC BY), OA.

is now as likely to acquire data infrastructure companies, such as Plum Analytics, as it is to pick up a bepress for its digital repositories as well as its journal software.[74] It is negotiating open access deals with Dutch universities that combine subscriptions, APCs, and data services that have led to some worrying over the intellectual autonomy and mission of universities.[75] With the other big publishers similarly engaged, Wiley acquiring AnalystSuccess.com (financial services training), and SAGE picking up the Talis Group (learning platforms), it appears that publishers are seeking market diversification that may protect them against the need for change if universal open access is going to succeed.

A third response to the current state of the market has been for university librarians to take scholarly publishing into their own hands. Many research libraries now have scholarly communication divisions that host open access journals for their faculty and students. The Library Publishing Coalition, which formed in 2013, is now made up of over four hundred libraries.[76] The open-source publishing software developed by the Public Knowledge Project has played a part in these programs, as has bepress, which was also started by faculty members. The communal

74. Davis, "Elsevier Launches"; Benedicte Page, "Elsevier Buys EBSCO's Plum Analytics," *Bookseller*, February 6, 2017, OA; Lindsay MacKenzie, "Elsevier Expands Footprint in Scholarly Workflow," *Inside Higher Ed*, August 3, 2017, OA. Jefferson Pooley identifies Elsevier and other publishers' new direction as "surveillance publishing" with the intent "to streamline the top-down assessment and evaluation practices that have taken hold in recent decades . . . borrowed from the business sector"; Jefferson Pooley, "Surveillance Publishing," *Elephant in the Lab*, March 25, 2022, OA.

75. Sicco de Knecht, "Elsevier Biedt 100% Open Access. In Ruil Voor (Meta)data" [Elsevier offers 100% open access in exchange for (meta)data], *ScienceGuide*, November 1, 2019, OA. Among the concerns that have been raised about this move is that these companies will be able to "invisibly and strategically influence, and perhaps exert control, over key university decisions" in what "represents a potential multi-billion-dollar market (perhaps multi-trillion, when the value of intellectual property is factored in)" that "could significantly reduce institutions' and scholars' rights to their data and related intellectual property"; Claudio Aspesi, *The Changing Academic Publishing Industry—Implications for Academic Institutions* (Washington, DC: SPARC, 2019), OA. An updated copy of this report identified "the aggressive expansion of scholarly publishers into research assessment"; Claudio Aspesi, *2020 Update: SPARC Landscape Analysis & Roadmap for Action* (Washington, DC: SPARC, 2020), OA.

76. See *2022 Library Publishing Directory* (Atlanta, GA: Library Publishing Coalition, 2022), OA.

ethos behind this coalition of research librarians and journal editors demonstrates an interest in alternatives to the monopoly capitalism that has served commercial publishers well. Though communal and capitalist forces have a long history of coexistence, they are often at odds with each other, with the current tension between them playing its part in the misbegotten shape of the open access rollout.

The Predatory Publishers and the Shadow Library

I conclude this chapter with the illicit side of the market failure that besets the spread of open access. I first focus on the "predatory" journal phenomenon. Some upstart journal publishers are judged to be collecting publishing fees from authors, under the guise of the APC open access, without bothering to conduct scholarly reviews of the work they publish. I then turn to the database known as Sci-Hub, which serves as a deep-web shadow library offering free access to a massive amount of illegally obtained research literature.

Journals are said to be "predatory" because they are preying on seemingly innocent researchers, spamming them with solicitous, gaudy invitations to publish in low-APC open access journals.[77] Journals that offer remarkable turnaround periods of days and extremely high acceptance rates present clear signs that something is amiss. This is even more obvious with a small number of hijacked journals that are identical to legitimate open access titles right down to the editors' names, with the hijacked edition handily outpublishing the original given their turnaround and acceptance rates. As for legal action against such fraud, the US Federal Trade Commission obtained a $50 million summary judgment (with "no material facts in dispute") in 2019 against Omics International for deceptive business practices associated with their hundreds of journals and thousands of conferences.[78] After considerable educational efforts

77. Agnes Grudniewicz, David Moher, and Kelly D. Cobey, along with two dozen others, offer this definition: "Predatory journals and publishers are entities that prioritize self-interest at the expense of scholarship and are characterized by false or misleading information, deviation from best editorial and publication practices, a lack of transparency, and/or the use of aggressive and indiscriminate solicitation practices"; Agnes Grudniewicz, David Moher, and Kelly D. Cobey, "Predatory Journals: No Definition, No Defence," *Nature* 576, no. 7786 (2019): 210–212, OA.

78. The amount of the judgment represents an estimate of OMICS revenue from 2011 to 2017; Gina Kolata, "The Price for 'Predatory' Publishing? $50 Million," *New York Times*, April 3, 2019, OA.

to alert authors about the dangers of fake journals—such as the "Think. Check. Submit." Campaign from a collection of publishers—as well as the increasingly rigorous screening that goes into the Directory of Open Access Journals and the Open Access Scholarly Publishers Association, predatory journals continue to muddy the open access waters.[79]

This is, in part, because of how many thousands of journals have been listed as "predatory" based on the flimsiest of evidence. The process began by Jeffrey Beall, a librarian at the University of Colorado, Denver, who coined the term in 2008 and is on record as opposing open access.[80] After Beall stepped away in the face of much controversy in 2017, Cabells Predatory Reports created its own record based on such proxies of criminal intent as homepage grammatical errors and failures to post content-preservation policies.[81] One study I was part of discovered titles on Beall's list that do not charge APCs for publication, while listed publishers permitted us to verify the peer reviews their journals conducted.[82] Another study has revealed that hundreds of researchers are on record in Publons ("the home of expert peer review") as reviewing Cabells-listed

79. Marydee Ojala, Regina Reynolds, and K. G. Johnson, "Predatory Journal Challenges and Responses," *Serials Librarian* 78, nos. 1–4 (2020): 1–6. On faculty researcher use of them, see Derek Pyne, "The Rewards of Predatory Publications at a Small Business School," *Journal of Scholarly Publishing* 48, no. 3 (2017): 137–160.

80. Jeffrey Beall, "Beall's List of Predatory Publishers 2013," *Scholarly Open Access* (blog), December 4, 2012. On the distaste for open access among a leading identifier of predatory journals, see Jeffrey Beall, "What the Open-Access Movement Doesn't Want You to Know," *Academe*, American Association of University Professors, Washington, DC, May/June 2015, OA.

81. The information-aggregation company Cabells International sells subscriptions to its "predatory report," with more than fifteen thousand deprecated titles based on "60 behavior indicators," such as the same article appearing in multiple journals and dead OAs on the journal website; "Cabells Predatory Reports Criteria v 1.1," Cabells, Beaumont, TX, August 21, 2021, OA.

82. Saurabh Khanna and John Willinsky, "What Those Responsible for Open Infrastructure in Scholarly Communication Can Do about Possibly Predatory Practices," in *Predatory Practices in Scholarly Communication and Publishing: Causes, Forms, Implications, and Solutions*, ed. Ismaeil Fazel and Pejman Habibie (London: Routledge, in press), OA. We approach this research with an awareness of the conflict of interest we have as developers of an open-source (free) publishing platform through the Public Knowledge Project, and as a result of this work, we are taking steps to build verification systems into the software for peer review as well as for accessing editor and editorial board profiles.

journals.[83] With it difficult to ascertain legitimacy, amid this moral panic over predatory publishers, scientific contributions published by new journals may be undermined, pointing to how publishing platform developers (among whom I count myself) need to build into their systems publicly verifiable peer review records.[84] The need for trusted sources also figures in my copyright reform through a process of publisher registration overseen by librarians that will reintroduce to open access journal publishing the curatorial role that research librarians play in building their institution's journals collections.

Turning now to Sci-Hub, this shadow library got its start in 2011, when Alexandra Elbakyan, a graduate student in Kazakhstan, reached out to researchers for papers she could not obtain for graduate work in cryptography. One thing led to another much bigger thing, as legend has it, and Elbakyan appears to have directed her studies toward creating Sci-Hub. This involved illegally harvesting what is now estimated to be 85 percent of the online research in the world by using donated or hacked library credentials.[85] Over the six-month period for which Elbakyan released data in 2016, it appears that fifty million papers were downloaded twenty-eight million times by researchers in Istanbul; New Delhi; the Bay Area, where I live; and most everywhere else.[86] Sci-Hub stands as an earnest if illegal global expression of just how important access to research is to the world outside of reasonably well-endowed universities.[87]

Although Elbakyan said she was inspired by my and Timothy Gowers's work on open access in her letter of defense to the New York court that awarded Elsevier a $15 million infringement judgment against her, I

83. Anna Severin, Michaela Strinzel, Matthias Egger, Marc Domingo, and Tiago Barros, "Who Reviews for Predatory Journals? A Study on Reviewer Characteristics," bioRxiv, preprint, submitted March 9, 2020, OA.

84. See *PeerJ* journals for an example of transparent but still optional peer review; "Optional Open Peer Review," *PeerJ Computer Science*, March 17, 2020, OA. See also note 90.

85. Daniel S Himmelstein et al., "Research: Sci-Hub Provides Access to Nearly All Scholarly Literature," *eLife*, February 8, 2018, OA.

86. John Bohannon, "Who's Downloading Pirated Papers? Everyone," *Science* 352, no. 6285 (2016): 508–512, OA.

87. Shane Harris and Devlin Barrett, "Justice Department Investigates Sci-Hub Founder on Suspicion of Working for Russian Intelligence," *Washington Post*, December 19, 2019.

do not regard Sci-Hub as an open access model.[88] Rather, it is a symptom of what is wrong with this market, even as it refutes publishers' assurances that researchers have all the access they need.[89] It highlights how its users, many of whom have legal access at their home institution, prefer the simplicity of Sci-Hub's direct access compared to the extensive two-step security systems protecting subscriptions that are contributing to overhead costs for libraries.[90] And it questions the current hosting economy for the research literature (but not the management cost of peer review and editorial services), given Elbakyan's ability to serve up close to eighty million papers based on donations.[91] Where the statutory licensing of open access comes in on the SciHub question is by offering (1) a legal and economically sustainable means of realizing Elbakyan's mission "to remove any barrier which imped[es] the widest possible distribution of knowledge" and (2) a sound strategy for putting Sci-Hub out of "business" by legally requiring immediate open access to research (with provisions for publishers to be fairly compensated by the principal institutional users and funders of this work).[92] The rise of fake journals and Sci-Hub are yet further signs that the scholarly publishing market is not working in the best interests of science and scholarship. The market needs the help that legal reform can offer in curbing such excesses that impede the scientific progress associated with open access.

All of this is to say that science's long-standing "copyright problems" occur at the busy intersection of two economies: academic and

88. Alexandra Elbakyan, letter to Judge Robert W. Sweet re: Clarification of Details, September 15, 2015, OA.

89. See, for example, Federation of American Societies for Experimental Biology, "Paid Access to Journal Articles Not a Significant Barrier for Scientists," *EurekAlert!*, Washington, DC, March 30, 2011, OA.

90. On costs for such security, see, for example, S. D. Kramer, "*New York Times* Paywall Cost: More Like $25 Million," *Gigaom* (blog), April 7, 2011, OA.

91. Frischmann, Madison, and Strandburg note from their research that "shared infrastructure appears to be often central to the success of knowledge commons institutions"; Brett M. Frischmann, Michael J. Madison, and Katherine J. Strandburg, "Knowledge Commons," in *Routledge Handbook of the Study of the Commons*, ed. Blake Hudson, Dan Cole, and Jonathan Rosenbloom (London: Taylor & Francis, 2019), 86. On a much smaller scale, I can report that my Public Knowledge Project provides an open-source (free) editorial workflow and publishing platform used in 2021 by over thirty thousand active journals (OA) at an annual cost of $2 million; "Annual Report 2021," Public Knowledge Project, Simon Fraser University, OA.

92. Sci-Hub homepage, March 16, 2020.

commercial. Where the interests of aspiring novelists and literary publishing houses can be said to coincide (despite disputes about royalty rates and book tour accommodations), the researcher introduces other interests around access rights that are not currently aligned with scholarly publishers' interests. This may have been manageable in the age of print, given the benefits to science of publishers expanding their scholarly offerings by journal and book. Or at least it was relatively manageable until corporate concentration and commercialization brought the research libraries to the brink of unsustainability in the final decades of the twentieth century, with little relief since then. The convenience that researchers found in photocopying, starting in the latter half of the twentieth century, was initially little more than a lost-revenue nuisance for publishers. But now that open access has been acknowledged by all parties to be a significant advance for the circulation of research, the underlying mismatch between research's communal economy and copyright's exclusive rights has reached a major impasse.

For more than three decades, researchers, publishers, societies, librarians, and scholars have been experimenting and piloting different approaches to universal open access. The results? Well, thousands of "diamond open access" journals, which are largely run by scholars and academic units, charge neither authors nor readers. But then thousands more open access journals operated by large corporations and societies charge authors between two and three thousand dollars to publish an article. And yet thousands of other journals charge research libraries hundreds and, in some cases, thousands of dollars for subscriptions, although millions of these journal articles are available in a compromised open access form, whether after twelve- to thirty-six-month embargoes as final drafts or as rogue copies. At the same time, these libraries continue to face unrelenting price increases amid big-deal journal bundles that now combine subscriptions and open access accounting systems. This market disarray, if not outright failure, in pursuit of open access has led me to a legal remedy of statutory licensing that is narrow in application to the specific interests of scholarly publishing stakeholders while holding out the benefits of scientific progress to all.

Although my appeal for copyright reform draws much from the Constitution's intellectual property clause, I cannot resist closing this chapter on market failures with Oliver Wendell Holmes Jr.'s First Amendment argument in his dissent on *Abrams v. United States* in 1919. Holmes introduced the "marketplace of ideas" as part of what the amendment was protecting: "The best test of truth is the power of the thought to get

itself accepted in the competition of the market. . . . That, at any rate, is the theory of our Constitution. It is an experiment, as all life is an experiment."[93] In this case, the best test of truth is being hampered in the realm of research and scholarship by the forces of a literal market dominated by publishers whose exercise of copyright monopoly affects the circulation and testing of that thought. I would argue that this situation is placing an unnecessary limit on how, as Holmes adds, "we have to wager our salvation upon some prophecy based upon imperfect knowledge." This market's present failure is part of that constitutional experiment on which Congress now needs to act, given the experiments and resulting consensus around open access, in order to promote the progress of science.

93. Abrams v. United States, 250 U.S. 630 (1919), OA.

Copyright's Broken Promise

How to Restore the Law's Ability to Promote the Progress of Science

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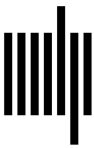

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