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# Citation Advantage of Open Access Legal Scholarship

Carol Watson

*University of Georgia School of Law Library, [cwatson@uga.edu](mailto:cwatson@uga.edu)*

James M. Donovan

*University of Kentucky College of Law Library*

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# Citation Advantage of Open Access Legal Scholarship\*

James M. Donovan\*\* and Carol A. Watson\*\*\*

*In this study focusing on the impact of open access on legal scholarship, the authors examine open access articles from three journals at the University of Georgia School of Law and confirm that legal scholarship freely available via open access improves an article’s research impact. Open access legal scholarship—which today appears to account for almost half of the output of law faculties—can expect to receive fifty-eight percent more citations than non–open access writings of similar age from the same venue.*

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## Introduction

¶1 Open access has, in recent years, become a new focus of information resource innovation. Whereas premium scholarly content was formerly available only through expensive print subscriptions or proprietary databases, the open access movement promises to realize one of the fundamental aspirations of the public library movement, which is to make information in all its forms available to any interested citizen, without regard to ability to pay.<sup>1</sup> While there are many who,

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\*\* Director and Associate Professor of Law, Alvin E. Evans Law Library, University of Kentucky College of Law, Lexington, Kentucky.

\*\*\* Director, Alexander Campbell King Law Library, University of Georgia School of Law, Athens, Georgia.

1. MICHAEL H. HARRIS, HISTORY OF LIBRARIES IN THE WESTERN WORLD 149 (4th ed. 1995) (“What we mean today by the public library is the general library that is not only publicly owned and tax-supported, but also open to any citizen who desires to use it.”). See also Thomas Augst, *Faith in Reading: Public Libraries, Liberalism, and the Civil Religion*, in INSTITUTIONS OF READING 148, 154 (Thomas Augst & Kenneth Carpenter eds., 2007) (“The public library in particular became a temple

often with good cause, criticize the Internet,<sup>2</sup> here, at least, is one outcome that perhaps everyone can agree would be a benefit.

¶2 For law schools, the open access movement surfaced as a force of major importance with the announcement in 2008 of two major initiatives. First, the Harvard Law School faculty voted unanimously to make their scholarship “freely available in an online repository.”<sup>3</sup> While other schools were early adopters of open access advocacy, with this action Harvard became perhaps the most visible law school to make open access mandatory for its faculty’s scholarly publications. The second milestone was achieved soon thereafter when the directors of several major law libraries met in Durham, North Carolina, at the Duke University School of Law, in November 2008. The talks there resulted in the Durham Statement on Open Access to Legal Scholarship, which calls for all law schools to stop publishing their journals in print format and to rely instead on electronic publication coupled with a commitment to keep the electronic versions available in stable, open, digital formats.<sup>4</sup> Although controversial in its bold scope,<sup>5</sup> when read together with the Harvard vote, the Durham Statement made clear to onlookers that open access had become a serious organizing principle for the future plans of law libraries.

¶3 Considered from the perspectives of the end users and of the libraries, the allure of the benefits promised by wide adoption of open access policies can be quite easy to understand. Many people who otherwise would never have exposure to the world’s scholarly literature can now find the latest research with the same ease, and using the same tools, with which they might find a recipe using Google. One of John Willinsky’s key arguments in his book *The Access Principle* is that, without open access, large portions of the planet will be excluded from sharing the benefits of the research of the industrialized West, consequently consigning them to permanent “third world” status.<sup>6</sup>

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to a civil religion, a site not only to borrow books but also to practice devotions of self-realization that embody freedom in liberal democracies.”).

2. See, e.g., MARK BAUERLEIN, *THE DUMBEST GENERATION: HOW THE DIGITAL AGE STUPEFIES YOUNG AMERICANS AND JEOPARDIZES OUR FUTURE* (2008); NICHOLAS CARR, *THE SHALLOWS: WHAT THE INTERNET IS DOING TO OUR BRAINS* (2010); JEAN-NOËL JEANNENEY, *GOOGLE AND THE MYTH OF UNIVERSAL KNOWLEDGE* (2007); ANDREW KEEN, *THE CULT OF THE AMATEUR: HOW TODAY’S INTERNET IS KILLING OUR CULTURE* (2007).

3. Press Release, Berkman Ctr. for Internet & Soc’y, *Harvard Law Votes Yes on Open Access* (May 7, 2008), <http://cyber.law.harvard.edu/node/4273>.

4. Durham Statement on Open Access to Legal Scholarship (Feb. 11, 2009), available at <http://cyber.law.harvard.edu/publications/durhamstatement>. See also Richard A. Danner, Kelly Leong & Wayne V. Miller, *The Durham Statement Two Years Later: Open Access in the Law School Journal Environment*, 103 LAW LIBR. J. 39, 2011 LAW LIBR. J. 2.

5. See, e.g., Margaret A. Leary, *A Response to The Durham Statement Two Years Later*, 103 LAW LIBR. J. 281, 2011 LAW LIBR. J. 17.

6. JOHN WILLINSKY, *THE ACCESS PRINCIPLE* 25 (2006):

Now, if the leading research libraries in North America have been unable to keep pace with the growth (and increased pricing) of scholarly publishing, it should give us pause to ponder what is happening to less fortunate universities, especially in developing countries. . . . [A]ccess to books and journals has always been a major struggle for these institutions, but over the last two decades, whatever modest progress they have been able to make in the development of their print collections has come to a virtual standstill. University populations are growing, and the number of qualified and interested researchers is increasing, but the global contribution of this potential research capacity is threatened at its root by empty library shelves and out-of-date literature. It adds up to a picture of declining access to knowledge across a global academic community.

¶4 Libraries, for their part, could anticipate freedom of a different kind—freedom from the need to maintain increasingly burdensome journal subscriptions. Most law school faculty members have been sheltered from the economic realities of journal publishing, happily relying on access to core legal periodicals through their library's subscriptions to conglomerate databases such as Westlaw, LexisNexis, and HeinOnline. However, these legal scholars can no longer assume that the law library can afford subscriptions beyond these basic databases to meet proliferating and increasingly narrow faculty research needs. It is ironic that law faculty expertise is becoming more specialized and cross-disciplinary at a point in time when law libraries are becoming less able to keep up with their research needs due to the high cost of research materials.<sup>7</sup>

¶5 However they are measured, law journal prices are rapidly increasing beyond the reach of institutional resources. According to the latest *Library Journal* Periodical Price Survey, law titles rose sixteen percent from 2008 to 2010, from an average cost of \$294 to \$338.<sup>8</sup> The AALL *Price Index for Legal Publications* reported a forty-two percent increase in costs for all periodicals (both law-school-subsidized and commercial) from 2005 to 2009, with the average price jumping from \$155 to \$222.<sup>9</sup>

¶6 The possibility of dropping even a portion of these titles, relying instead on open access to provide this specialized content, would be a welcome relief from library budgetary pressures. Libraries could expect not only the savings from canceling subscriptions, but also a decrease in the associated expenses of processing and storing physical volumes.<sup>10</sup>

¶7 Journals, however, are not the only area in which law libraries are feeling growing demands on their collection budgets. They are also being called on to support more practice-oriented courses in the law school curriculum.<sup>11</sup> Such practice-

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7. For a discussion of the shift in expectations for new legal scholars entering academia, see Stephanie Davidson, *Way Beyond Legal Research: Understanding the Research Habits of Legal Scholars*, 102 LAW LIBR. J. 561, 577, 2010 LAW LIBR. J. 32, ¶ 39. See also John Palfrey, *Cornerstones of Law Libraries for an Era of Digital-Plus*, 102 LAW LIBR. J. 171, 171–72, 2010 LAW LIBR. J. 11, ¶¶ 1–3.

8. Kittie S. Henderson & Stephen Bosch, *Seeking the New Normal*, LIBR. J., Apr. 15, 2010, at 36, 38 tbl.3.

Data is primarily drawn from serial renewals of titles in three ISI databases: Arts and Humanities Citation Index, Social Sciences Citation Index, and Science Citation Index. In addition, data is included on titles in EBSCO's Academic Search Premier. Data is limited to prepriced print titles (as opposed to standing-order or bill-later titles) that can be ordered through a vendor and are current as of January 27, 2010.

*Id.* at 36.

9. AM. ASS'N OF LAW LIBRARIES, PRICE INDEX FOR LEGAL PUBLICATIONS 2009, [http://www.aallnet.org/members/price\\_index-2009.asp](http://www.aallnet.org/members/price_index-2009.asp) (available to AALL members only). To calculate its results, AALL relies on the *Library Journal* Periodical Price Survey, various EBSCO studies, Ken Svengalis's *Legal Information Buyer's Guide and Reference Manual*, and actual pricing information reported by member libraries.

10. For an insightful overview of the relationships between law journals, open access, and library subscriptions, see Stephanie L. Plotin, *Legal Scholarship, Electronic Publishing, and Open Access: Transformation or Steadfast Stagnation?*, 101 LAW LIBR. J. 31, 2009 LAW LIBR. J. 2.

11. Leslie A. Street & Amanda M. Runyon, *Finding the Middle Ground in Collection Development: How Academic Law Libraries Can Shape Their Collections in Response to the Call for More Practice-Oriented Legal Education*, 102 LAW LIBR. J. 399, 409, 2010 LAW LIBR. J. 23, ¶¶ 22–23.

oriented materials are notoriously more expensive than academic resources.<sup>12</sup> Open access scholarship can help lighten this burden as well.

¶8 More than libraries and users, however, have been affected by the trend toward open scholarship. This article seeks to shed light on a less studied third participant in this transition, the producer of the scholarship. Beyond the desire to share the fruits of one's intellectual labors, what motivations does the legal scholar have to openly disseminate scholarship?<sup>13</sup> If, as the Durham Statement advocates, online publication occurs without an accompanying print version, it may be viewed as second-tier, lacking the prestige of association with a permanent volume under a traditionally respected masthead.<sup>14</sup> Furthermore, many schools have not made clear how they will treat electronic publications listed in tenure and promotion dossiers.<sup>15</sup> Reticence to jump on the open access bandwagon, therefore, is not altogether unreasonable. Although faculty may be reluctant to contribute to online-only journals and lack motivation to post articles in open access venues after traditional print distribution, with the librarian's help they can learn to appreciate the counterbalancing benefits to these perceived reputational risks.

¶9 We hope to offer arguments here that build on the most basic reasons scholars write: to find readers and to influence the course of debate within their fields of expertise.<sup>16</sup> By looking at the citation rates of open access law articles, we provide

12. The 2009 annual subscription cost for Thomson/West's popular print titles ranged from \$1,064 to \$6,994. KENDALL F. SVENGALIS, *LEGAL INFORMATION BUYER'S GUIDE AND REFERENCE MANUAL* 17 (2010).

13. The full answer to this question turns out to be rather complex. See Jihyun Kim, *Motivations of Faculty Self-Archiving in Institutional Repositories*, 37 J. ACAD. LIBR. 246 (2011).

14. We can perhaps see signs of how this impression might arise within the legal community. The most prominent of the online-only publication venues are the electronic companions to traditional law reviews. These include content that, for one reason or another, has been deemed by the editors unsuitable to appear within the journal's printed pages, but which they also thought merited some form of distribution. While it is perhaps still a coup to be published by the University of Pennsylvania's *PENNumbra*, it would be better still to be within the print volume of the *University of Pennsylvania Law Review*. There thus can arise the sense that online publication is "second best," which taints all electronic-only journals by association.

Denying full academic status to online publication could also be a result of the inherent transience of that format, undermining one of the cornerstones of the intellectual tradition, which is that texts must be stable: "The stability of citation is basic to research, and if the Internet remains unstable, the implication over time will mean that online scholarship will become a second-class citizen in education and in the medical, social, and hard sciences." MICHAEL BUGEJA & DANIELA V. DIMITROVA, *VANISHING ACT: THE EROSION OF ONLINE FOOTNOTES AND IMPLICATIONS FOR SCHOLARSHIP IN THE DIGITAL AGE* 22 (2010).

15. Lynn C. Hattendorf Westney, *Mutually Exclusive? Information Technology and the Tenure, Promotion, and Review Process*, in *DIGITAL SCHOLARSHIP IN THE TENURE, PROMOTION, AND REVIEW PROCESS* 30, 36 (Deborah Lines Andersen ed., 2004). See also C. JUDSON KING ET AL., *SCHOLARLY COMMUNICATION: ACADEMIC VALUES AND SUSTAINABLE MODELS* 2, 5 (2006), available at [http://cshe.berkeley.edu/publications/docs/scholarlycomm\\_report.pdf](http://cshe.berkeley.edu/publications/docs/scholarlycomm_report.pdf). This report on five case studies at the University of California, Berkeley, "to provide a preliminary descriptive analysis and understanding of the academic value systems associated with scholarly publication and communication" found that

Publishing in online-only resources is perceived among junior faculty as a possible threat to achieving tenure because online publication may not be counted as much, or even at all, in review.

Despite the fact that written policy indicates that online publications should not be undervalued in consideration of advancement, actual practice may vary.

16. See Yale Kamisar, *Why I Write (And Why I Think Law Professors Generally Should Write)*, 41 SAN DIEGO L. REV. 1747 (2004); Kimberly A. Yuracko, *Writing Highs and Lows*, 41 SAN DIEGO L. REV. 1783 (2004).

empirical support for the position that articles freely available on the Internet are consistently cited more frequently than non-open access articles from the same publications. To the extent that the goal of scholarship is to find an appreciative audience, legal writers should view open access initiatives as an especially effective means to a valued professional and intellectual goal, and thus deserving of their support and participation.

### Open Access Defined

¶10 In its most elemental form, open access can be defined as providing free access for all Internet users to materials that have traditionally been published in scholarly journals. The more formal phrasing from the Scholarly Publishing and Academic Resources Coalition (SPARC),<sup>17</sup> modeled after the Budapest Open Access Initiative's definition,<sup>18</sup> states:

By Open Access, we mean the immediate, free availability on the public internet . . . permitting any user to read, download, copy, distribute, print, search or link to the full text of these articles, crawl them for indexing, pass them as data to software or use them for any other lawful purpose.<sup>19</sup>

¶11 Open access may be parsed into two categories, green and gold. "Gold" open access refers to publishing only in online open access journals,<sup>20</sup> and today represents ten percent of all peer-reviewed journals.<sup>21</sup> "Green" describes all other open access publishing, such as depositing a pre- or post-print into an institutional repository or elsewhere online.<sup>22</sup> Currently, open access accounts for between 2% and 4.6% of all published articles.<sup>23</sup> Our study was limited to looking at the impact of green open access techniques to distribute and publicize law faculty scholarship.

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17. SPARC, developed by the Association of Research Libraries, "is an international alliance of academic and research libraries working to correct imbalances in the scholarly publishing system." *About SPARC*, SPARC, <http://www.arl.org/sparc/about/index.shtml> (last visited July 19, 2011).

18. See BUDAPEST OPEN ACCESS INITIATIVE, <http://www.soros.org/openaccess/index.shtml> (last visited July 19, 2011).

19. *Why Open Access*, SPARC, <http://www.arl.org/sparc/openaccess/why-oa.shtml> (last visited July 19, 2011). Following the Budapest statement, the Bethesda Statement on Open Access Publishing (June 20, 2003), <http://www.earlham.edu/~peters/fos/bethesda.htm>, and the BERLIN DECLARATION ON OPEN ACCESS TO KNOWLEDGE IN THE SCIENCES AND HUMANITIES (Oct. 22, 2003), available at [http://www.zim.mpg.de/openaccess-berlin/berlin\\_declaration.pdf](http://www.zim.mpg.de/openaccess-berlin/berlin_declaration.pdf), further refined the definition of open access to require that the copyright holder consent in advance to letting users "copy, use, distribute, transmit and display the work publicly and to make and distribute derivative works, in any digital medium for any responsible purpose, subject to proper attribution of authorship . . ."

20. Carol A. Parker, *Institutional Repositories and the Principle of Open Access: Changing the Way We Think About Legal Scholarship*, 37 N.M. L. REV. 431, 439 (2007). For a list of open access journals, see DIRECTORY OF OPEN ACCESS JOURNALS, <http://www.doaj.org> (last visited July 15, 2011).

21. Henderson & Bosch, *supra* note 8, at 39.

22. Parker, *supra* note 20, at 439.

23. Henderson & Bosch, *supra* note 8, at 39.

## Why Open Access?

¶12 The Western intellectual tradition has attained unparalleled success through cumulative incrementalism. Individual results are incorporated into a broader store of disciplinary knowledge, where they are tested, critiqued, and improved. If they survive this scrutiny, the new information itself becomes the basis for future research. By means of this process, knowledge does not merely accumulate, but progresses, approaching more accurate, or at least more useful, descriptions of studied phenomena. For this method to work, however, the proposed findings must be widely available, and not only to those who might be friendly or well-disposed to the writer or his proposals. Our modern exercise of discovering new knowledge thus necessarily requires communication of past achievements. This step is perhaps most explicit in the hard sciences, but has been adopted by most disciplines within the academy.

¶13 Law has long recognized a similar need to promulgate the texts of its primary corpus. Kant, for example, proposed “the following proposition [for] the transcendental formula of public law: ‘All actions relating to the right of other men are unjust if their maxim is not consistent with publicity.’”<sup>24</sup> He believed “the possibility of [publicity] is implied by every legal claim, since without it there can be no justice . . . .”<sup>25</sup> Similarly, Lon Fuller’s fabled Rex found that, unless one avoids the “eight ways to fail to make a law,” he cannot rule.<sup>26</sup> The second of these eight was the “failure to publicize, or at least to make available to the affected party, the rules he is expected to observe.”<sup>27</sup>

¶14 It has been argued that the need to communicate legal information extends beyond the primary materials to include the articles of secondary scholarly commentary on those laws. Law faculty “have a particular responsibility to make their work available because of the impact of law on the daily lives of the public, and the influences of legal scholarship on those who make the laws.”<sup>28</sup>

¶15 Open access technologies represent only the latest innovation in the means by which information can be placed within the reach of interested consumers. Every step in this line of improving distribution, from classical manuscript copyists to early printing presses to mass media distribution, even to proprietary electronic resources, has represented a new effort to meet the need to place texts in the hands of those who would participate in the great debates of their day.<sup>29</sup> Open access represents the completion of this convergence of the universe of information with the full population of possible readers. While there will inevitably be new issues related to scale and execution, the fundamental warrant to pursue what Willinsky calls the “open access principle”—“that a commitment to the value and quality of

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24. *Perpetual Peace: A Philosophical Sketch*, in IMMANUEL KANT, KANT SELECTIONS 427, 454 (Lewis White Beck ed., 1988).

25. *Id.* at 453.

26. LON L. FULLER, *THE MORALITY OF LAW* 33 (rev. ed. 1969).

27. *Id.* at 39.

28. Richard A. Danner, *Applying the Access Principle in Law: The Responsibilities of the Legal Scholar*, 35 INT’L J. LEGAL INFO. 355, 357 (2007).

29. For one view of the history of the means of scholarly communication, see JAMES J. O’DONNELL, *AVATARS OF THE WORD: FROM PAPYRUS TO CYBERSPACE* (1998).



research carries with it a responsibility to extend the circulation of this work as far as possible, and ideally to all who are interested in it and all who might profit by it<sup>30</sup>—need invoke nothing more than the well-established tradition of scholarly endeavor.

¶16 The case for dissemination has been framed in still stronger terms. If one accepts that all scholarship, regardless of academic discipline, is inherently built upon the foundation established by earlier scholars, then it follows that the more widespread and accessible scholarly information is, the more quickly and efficiently scholarship can advance. Many hands make light work, the maxim teaches. Because of the infinitely varied uses to which this information can be put, many of them directly affecting basic quality-of-life issues, the intellectual duty of the scholar to communicate can be argued to be mirrored by a human “right to know,” which “has a claim on our humanity that stands with other basic rights, whether to life, liberty, justice, or respect. More than that, access to knowledge is a human right closely associated with the ability to defend, as well as to advocate for, other rights.”<sup>31</sup>

¶17 This “right to know,” if it is acknowledged to exist,<sup>32</sup> demands the implementation of open access initiatives. Anything less amounts to willful withholding of the knowledge created within universities—which falls into the economic category of a “public good” in that it can be provided to everyone and remain undiminished by consumption<sup>33</sup>—from those who arguably are most in need of its guidance. These texts would instead be either unreported and lost, or, very nearly the same thing, locked behind expensive and exclusive publishers’ web pages.

¶18 As these values become more common within academia, pressures build to adopt dissemination plans compatible with human-rights-enabling open access principles. For example, government- and privately funded projects frequently expect that reports of research conducted with their support will be made widely available to maximize their impact.<sup>34</sup> Arguments that research paid for by taxpayers should remain unavailable to the average citizen become less defensible. Placing

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30. WILLINSKY, *supra* note 6, at 5 (emphasis omitted).

31. *Id.* at 143. See also Peter Suber, Open Access Overview, <http://www.earlham.edu/~peters/fos/overview.htm> (last revised Nov. 6, 2010) (“OA accelerates not only research but the translation of research into new medicines, useful technologies, solved problems, and informed decisions that benefit everyone.”).

32. As Richard Danner points out, even the most progressive of the international calls for access to legal materials falls short of advocating anything so strong as Willinsky’s “right to know”:

Although they do not argue for a right of open access to information, the Declaration on Free Access to Law and the other open access declarations do include language regarding human knowledge and common cultural heritage that resonates with the Universal Declaration of Human Rights and the International Covenant on Economic, Social and Cultural Rights. Perhaps because of its emphasis on primary sources of law issued by “public bodies that have a duty to produce law and make it public,” the Montreal Declaration comes closest to suggesting a rights-based justification for the subject of its concerns.

Danner, *supra* note 28, at 365–66 (footnotes omitted).

33. Peter Suber, *Knowledge as a Public Good*, SPARC OPEN ACCESS NEWSL., no. 139, Nov. 2, 2009, <http://www.earlham.edu/~peters/fos/newsletter/11-02-09.htm#publicgood>.

34. For example, the Federal Research Public Access Act of 2009, a bill introduced in the 111th Congress, although not enacted, would have required every federal agency with an annual extramural research budget of \$100 million or more to make their research available to the public within six months of publication. S. 1373, 111th Cong. (2009).



scholarly results in open access repositories not only levels the playing field between rich and poor information consumers, but also helps to ensure that monetary support for that scholarship will continue to flow, by allowing everyone to learn of the benefits and achievements of that work.

¶19 The current study contributes to a growing body of empirical literature documenting that these theorized benefits of open access are very real. The increased impact of scholarship can be measured through an article's more frequent citation in subsequent writing. These data can serve as the cornerstone of discussions with faculty regarding their participation in institutionally created open access initiatives, such as a school's digital repository. Inclusion of a professor's articles not only can lead to wider visibility within the legal community, but may also introduce the faculty member to an entirely new readership within other disciplines.

¶20 Such exposure heightens both the author's personal reputation and that of the home institution. This practical reality can prove especially attractive given today's pressures from widely consumed academic rankings, such as those produced by *U.S. News & World Report*. Many such rankings incorporate as a crucial variable the school's academic reputation within the legal community. Given that reputation plays such a large role, it behooves the legal scholar and academic institution to undertake proactive measures to ensure substantial distribution and publicity of the scholarship upon which its intellectual reputation is based.<sup>35</sup>

### Using Article Citations to Measure Scholarly Impact

¶21 The principal argument here—that scholars should support open access not only for the broad philosophical principles it advances but also because, at the personal and practical levels, it supports one of their professional goals by maximizing the impact of their work—is a relatively easy case to make, if the underlying premise is true.

¶22 The concept of “impact” refers to the number of subsequent citations a work receives. The rationale is that an article references previous literature that influenced the author in a significant way, either by artfully identifying and framing a problem, or by advancing a proposal for its solution. Not all such influences, of course, receive citation, but to be cited does mark an article as being of special importance for that specific discussion.<sup>36</sup>

¶23 Citation studies are especially attractive for determining a scholar's impact given the paucity of viable alternatives. Productivity, for example, might be offered

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35. See James M. Donovan & Carol A. Watson, White Paper: Behind a Law School's Decision to Implement an Institutional Repository 4 (2008), <http://digitalcommons.law.uga.edu/ir/1/>.

36. For a discussion of the pros and cons of using citation studies to measure a scholar's research impact, see Symposium, *The Use and Misuse of Bibliometric Indices in Evaluating Scholarly Performance*, 8 ETHICS SCI. & ENVTL. POL. 1–107 (Howard I. Browman & Konstantinos I. Stergiou eds., 2008). “Scholarly impact is related to but distinguishable from two other bases for ranking: quantity and quality of publications. Quantity measures output. Quality assesses merit. Impact can account for both.” Theodore Eisenberg & Martin T. Wells, *Ranking and Explaining the Scholarly Impact of Law Schools*, 27 J. LEGAL. STUD. 373, 376 (1998).

as a measure, whereby one counts the sheer quantity that an individual faculty member is able to publish.<sup>37</sup> But we need not look too deeply to realize that someone can publish a great deal without creating the slightest ripple in the ongoing discussions in the field. This gap between publication volume and scholarly impact can occur for a number of different reasons. Perhaps the scholarship focuses on a legitimate but narrow and comparatively uncontested intellectual point. Maybe the articles are largely ephemeral descriptions of current events, which, though useful at that moment, have little value over time. Or perhaps the subsequent papers add little to the initial insight offered in an earlier paper, which could be judged as having terminated all remaining questions. Whatever the cause, the tally of mere output represents an inferior indicator of faculty quality. On the contrary, qualitative measurements have become the norm.<sup>38</sup> In academia, where once the frequently quoted demand to faculty was to publish or perish, today the more appropriate adage might well be to publish and get cited or perish. If one must choose, it is far better to have one article of great significance than a dozen articles that wither after they see the light of publication.<sup>39</sup>

¶24 While not without their own limitations, citation studies offer a credible and meaningful way to speak about research impact. If open access increases an

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37. Using publication-count methodology, James Lindgren and Daniel Seltzer ranked the top seventy-five law faculties measured by the number of publications in the twenty most-cited law reviews. James Lindgren & Daniel Seltzer, *The Most Prolific Law Professors and Faculty*, 71 CHI.-KENT L. REV. 781 (1996). Their publication-count ranking was critiqued for not accounting for several factors, such as not including faculty members who publish interdisciplinary articles outside of the traditional law reviews; the major school bias of law review editors; and the selection biases of student editors who prefer choosing fashionable topics or “big think” pieces and often possess negative biases toward international law, taxation, and other specialized topical areas. Bernard S. Black & Paul L. Caron, *Ranking Law Schools: Using SSRN to Measure Scholarly Performance*, 81 IND. L.J. 83, 89–91 (2006).

38. One indicator of the greater interest in qualitative citation measure over quantitative productive measure for evaluating faculty quality, at least within legal education, is found in the work of Brian Leiter, a member of the University of Chicago law faculty who has devoted much energy to creating a law school ranking methodology superior to that of the much criticized *U.S. News & World Report*. Although he works with both approaches, a review of his web site shows his much greater interest in the former approach over the latter. See BRIAN LEITER’S LAW SCHOOL RANKINGS, <http://www.leiterrankings.com>. For example, in 2010 Leiter prepared a ranking of faculty based upon impact of faculty scholarship rather than quantity of output. Brian Leiter, *The Top 25 Law Faculties in Scholarly Impact, 2005–2009*, BRIAN LEITER’S LAW SCHOOL RANKINGS, [http://www.leiterrankings.com/new/2010\\_scholarlyimpact.shtml](http://www.leiterrankings.com/new/2010_scholarlyimpact.shtml) (last visited Aug. 14, 2011). Similarly, he also provided a ranking of faculty based on membership in the Academy of Arts and Sciences, which elects members based on their distinguished contributions to scholarship, the arts, education, business, or public affairs. Brian Leiter, *Faculty Quality Based on Membership in the Academy of Arts and Sciences*, 2010, BRIAN LEITER’S LAW SCHOOL RANKINGS (July 15, 2010), [http://www.leiterrankings.com/new/2010\\_AAAS.shtml](http://www.leiterrankings.com/new/2010_AAAS.shtml).

39. The ability to make this evaluative change depended on the development of a means of tracking and quantifying citation rates. This bibliographic innovation was achieved for general literature by Eugene Garfield with the creation of the *Science Citation Index* in the 1960s. *History of Citation Indexing*, THOMSON/REUTERS, [http://thomsonreuters.com/products\\_services/science/free/essays/history\\_of\\_citation\\_indexing/](http://thomsonreuters.com/products_services/science/free/essays/history_of_citation_indexing/) (last visited Aug. 14, 2011). He was preceded by almost a century, of course, by Frank Shepard, who provided this useful way to analyze legal cases beginning in 1873. THOMAS A. WOXLAND & PATTI J. OGDEN, *LANDMARKS IN AMERICAN LEGAL PUBLISHING: AN EXHIBIT CATALOG* 43 (1990).

article's citation rate, then it may be presumed that open access maximizes an article's research impact.

### Open Access Citation Research

¶25 Does, in fact, open access, through whatever means, result in an article's increased citation? And if this is true in the general case, does it apply equally to the special environment of legal scholarship? The first question has been answered in the affirmative, with the only remaining debates centering on the question of the magnitude of the effect, and the mediating variables that produce it.

¶26 In 2001, Steve Lawrence wrote a brief yet controversial article for *Nature* postulating that having scholarship freely available on the Internet substantially increases that scholarship's impact.<sup>40</sup> Using a citator to evaluate citations of conference proceedings in computer science, Lawrence noted a dramatic

correlation between the number of times an article is cited and the probability that the article is online. More highly cited articles, and more recent articles, are significantly more likely to be online, in computer science. The mean number of citations to offline articles is 2.74, and the mean number of citations to online articles is 7.03, an increase of 157%.<sup>41</sup>

¶27 Of particular interest for the present study is the second analysis Lawrence performed, which looked at within-venue comparisons. Looking at articles from the same publishing source (allowing him to assume that the examined articles were all of similar quality), he found "an average of 336% (median 158%) more citations to online computer-science articles compared with offline articles published in the same venue."<sup>42</sup> In other words, while the first result allowed him to suggest generally that a correlation exists between high scholarly impact and open accessibility, it is the second that identifies the likely cause of that relationship to be the greater accessibility of the article (and not, for instance, that better articles are more likely to be placed online).

¶28 Subsequent studies have largely supported Lawrence's conclusions, although they have not been immune from criticism.<sup>43</sup> In one study, Eysenbach found that

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40. Steve Lawrence, *Free Online Availability Substantially Increases a Paper's Impact*, 411 NATURE 521 (2001).

41. *Id.* at 521.

42. *Id.*

43. See, e.g., Iain D. Craig et al., *Do Open Access Articles Have Greater Citation Impact? A Critical Review of the Literature*, 1 J. INFORMETRICS 239 (2007).

The most rigorous study available to date suggests that any residual open access effect in condensed matter physics is negligible, after accounting for selection bias and early view effects. This suggests that the benefits of self-archiving for an individual article or the work of an individual author are uncertain and could be as much affected by subject area, inherent variations in publication, and citation patterns generally, and the presence and/or importance of a specialized online pre-print archive.

*Id.* at 248 (citation omitted). The authors define selection bias as "more prominent authors posting their articles, and/or authors preferentially posting their better works" and early view effects as "due to articles appearing sooner." *Id.* at 245. There is, in other words, no pure "open access" effect such as Lawrence posits. Left undetermined, however, is whether this skeptical conclusion is limited to the subject field of the mentioned study, in which open access is very common and thus could allow these variables to swamp the open access impacts seen in other disciplines, like law, where open access still represents a comparatively small percentage of the total output of legal scholarship.

for articles published in 2004 in the *Proceedings of the National Academy of Sciences* (PNAS), open access articles were cited both earlier and up to 2.1 times more often in the first four to sixteen months after publication than non-open access articles from that same venue.<sup>44</sup> If substantiated, these results suggest that all open access is not equivalent, but instead that the gold approach offers measurably superior outcomes over the green.

¶29 While this line of research has grown significantly since Lawrence's first efforts, most of the research has analyzed literature from disciplines other than law. In a recent overview of the published studies, only one of the thirty-six identified papers takes even a cursory glance at how the open access effect might play out in law.<sup>45</sup>

¶30 That study, a 2005 paper by Chawki Hajjem, Stevan Harnard, and Yves Gingrass, collected a sample of more than one million articles in ten subject disciplines including law.<sup>46</sup> They concluded, when comparing open access articles from the same year, and in the same journal, that open access produced a citation advantage from between 25% and 250%, depending on the discipline. The results specific to law found that 5.1% of law articles were available through open access (across disciplines the range was between 5% and 15%, suggesting that law lags behind

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Although most studies have supported the citation advantage of open access scholarship, a recent study of economics literature has challenged this proposition. See Mark J. McCabe & Christopher M. Snyder, Did Online Access to Journals Change the Economics Literature? (2011), <http://ssrn.com/abstract=1746243> (reporting no effect of online access on citation patterns). A similar outcome has been reported by Philip Davis. Finding that after three years open access articles were cited no more frequently than "subscription-access control articles," he concludes that

As most scientific researchers are concentrated within a relatively small number of elite research universities with excellent access to the scientific literature, a process known as social stratification, it is not surprising that providing free access has little (if any) effect on article citations. . . . The real beneficiaries of open access may not be the research community, which traditionally has excellent access to the scientific literature, but communities of practice that consume, but rarely contribute to, the corpus of literature.

Philip M. Davis, *Open Access, Readership, Citations: A Randomized Controlled Trial of Scientific Journal Publishing*, 25 FASEB J. 2129, 2133 (2011) (citations omitted), available at <http://www.fasebj.org/content/25/7/2129.full.pdf+html?sid=e30bd343-971e-4c37-b73f-e6b71d855416>. This study included no law data, looking exclusively at journals published by the American Physiological Society (11), American Heart Association (5), Duke University Press (7), Sage (10), and one each from the Federation of American Societies for Experimental Biology, the Genetics Society of America, and the American Association for the Advancement of Science.

44. Gunther Eysenbach, *Citation Advantage of Open Access Articles*, 4 PLoS BIOLOGY 692, 696 (2006), <http://www.plosbiology.org/article/info:doi/10.1371/journal.pbio.0040157>. The difference between open access and non-open access articles from the studied journal arose when PNAS announced "that authors could pay US\$1000 if they wanted their article to be immediately OA (as opposed to the usual non-OA 'moving wall' model, where articles become freely accessible after 6 mo)." *Id.* at 697.

45. Alma Swan, The Open Access Citation Advantage: Studies and Results to Date 6 (Feb. 17, 2010), [http://eprints.ecs.soton.ac.uk/18516/2/Citation\\_advantage\\_paper.pdf](http://eprints.ecs.soton.ac.uk/18516/2/Citation_advantage_paper.pdf). Of the studies she examined, Swan reports that twenty-seven found "a positive Open Access citation advantage," while only four found "no Open Access citation advantage (or an OA citation disadvantage)." The magnitude of the open access advantage ranged from a 580% increase in physics and astronomy, to only a 45% increase in philosophy. *Id.* at 17.

46. Chawki Hajjem et al., *Ten-Year Cross-Disciplinary Comparison of the Growth of Open Access and How It Increases Research Citation Impact*, IEEE DATA(BASE) ENGINEERING BULL., Dec. 2005, at 39, available at <http://sites.computer.org/debull/A05dec/hajjem.pdf>. The included disciplines were biology, psychology, sociology, health, political science, economics, education, law, business, and management.

other fields in this measure), and that within law generally (i.e., not controlled for journal and year) the open access citation advantage came to 108%, a figure bested only by sociology's 172%.

### Research Methodology

¶31 The studies discussed above form the background from which the present project proceeded. We analyzed articles from three institutional law reviews, the *Georgia Law Review*, the *Georgia Journal of International and Comparative Law*, and the *Journal of Intellectual Property Law*, and compared the citation rates of those available through open access with those not similarly available. Our goal was to extend the investigation of the effect of open access on citation patterns to the field of law, and to ascertain how legal scholarship fit within the results of similar research on different scholarly collections. If, for example, we could replicate the broad outcomes reported by Hajjem et al., we would have a more sound empirical foundation upon which to report to our law faculties that open access archiving offers real gains to the influence of their scholarship.

¶32 On first impression, legal scholarship should be especially conducive to the open access effect. Law produces texts that are heavily documented and footnoted, to a degree unimagined in most other disciplines.<sup>47</sup> The opportunities for any individual piece to be cited are arguably correspondingly greater.<sup>48</sup> This writing style should make law citation studies especially revealing of the forces influencing open access availability and subsequent citation. Given these factors, as well as the prior research from other fields, we expected open access legal articles to be cited more often, and that this effect would be consistent and significant.

¶33 Comparing open access versus non-open access articles from the same journal is a much more effective measure of impact than comparing citation rates for open access journals against non-open access journals, because it controls for the quality of the venue.<sup>49</sup> We drew our article sample from the three law journals

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47. According to Adam Kolber, fully one-third of law writing is the footnoted references. Adam Kolber, *Law Review Footnotes*, CONCURRING OPINIONS, Dec. 12, 2007, [http://www.concurringopinions.com/archives/2007/12/law\\_review\\_foot.html](http://www.concurringopinions.com/archives/2007/12/law_review_foot.html). See also Edd D. Wheeler, *The Bottom Lines: Fifty Years of Legal Footnoting in Review*, 72 LAW LIBR. J. 245 (1979). For a discussion of the history of criticism of law reviews, see Plotin, *supra* note 10. Historically, one of the consistent criticisms of law review scholarship is the length of articles and the number of footnotes.

48. We recognize that this characterization cuts against the other emerging finding concerning the relationship of online accessibility to scholarly writing practices. James Evans, studying thirty-four million articles, found that "As deeper backfiles became available [online], more recent articles were referenced; as more articles became available, fewer were cited and citations became more concentrated within fewer articles." James A. Evans, *Electronic Publication and the Narrowing of Science and Scholarship*, 321 SCI. 395, 398 (2008). In other words, as more articles became available, scholars did not expand the population of research they cited, but rather that pool shrank. Evans theorizes that scholars following hyperlinks can quickly identify the consensus regarding important prior work while ignoring tangential articles. Our model, however, assumes that legal scholars use keyword searching and identify a wide range of articles for research and citation based on similarity of concepts rather than predetermined connections. This distinction would account for the seemingly discordant outcomes.

49. See Stevan Harnad & Tim Brody, *Comparing the Impact of Open Access (OA) vs. Non-OA Articles in the Same Journals*, D-LIB MAGAZINE, June 2004, <http://www.dlib.org/dlib/june04/harnad/06harnad.html>.

published at one law school, the University of Georgia School of Law—the *Georgia Law Review*, the *Journal of Intellectual Property Law*, and the *Georgia Journal of International and Comparative Law*.

¶34 The *Georgia Law Review*, established in 1966, is the flagship publication of the school.<sup>50</sup> It is a general law review, with new issues published quarterly. The *Georgia Journal of International and Comparative Law* was created in 1971 and is a forum for academic discussion on global legal issues, theories, and developments.<sup>51</sup> Established in 1993, the University of Georgia School of Law's newest publication, the *Journal of Intellectual Property Law* (JIPL), is also the nation's oldest student-edited journal on intellectual property law.<sup>52</sup> It features articles by students, scholars, judges, and practicing attorneys on topics like trademarks, patent law, trade secrets, entertainment and sports law, copyright, and Internet law. Each of these three publications is staffed entirely by second- and third-year law students. As none of the three journals currently puts its contents online, ours is a study of green, rather than gold, open access effects.

¶35 From each of these journals we took the content published in the eighteen-year span from 1990 (excepting JIPL, which was not founded until 1993) through 2008. Although citation analyses typically use data from a much shorter range of dates,<sup>53</sup> we selected this time period in the belief that it offered extensive enough opportunity for any open access advantage to become established and discernible to our study. Student writings were omitted from our analyses.

¶36 Journal articles were categorized as being open access if a Google search for the article title yielded any free, full-content access to the work. For older articles, online availability usually followed publication, often at a delay of many years; for newer pieces, posting in an open access repository frequently preceded actual publication in hard copy from the official source. We did not attempt to determine when an article was made available online relative to the time that it was first published.

¶37 Citation counts were obtained by entering article citations into Shepard's on LexisNexis.<sup>54</sup> In the few instances in which no Shepard's reports were available, a KeyCite report from Westlaw was substituted. To obtain more detailed analytical information, journal and case law citations were counted separately. Author self-citations were not excluded.

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50. *Georgia Law Review*, UNIV. OF GA. LAW, <http://www.law.uga.edu/georgia-law-review> (last visited July 20, 2011).

51. *Georgia Journal of International & Comparative Law*, UNIV. OF GA. LAW, <http://www.law.uga.edu/georgia-journal-international-comparative-law> (last visited July 20, 2011).

52. *Journal of Intellectual Property Law at the University of Georgia School of Law*, UNIV. OF GA. LAW, <http://www.law.uga.edu/jipl> (last visited July 20, 2011).

53. For example, the Hajjem et al. study discussed earlier, although exceptional in the longitudinal span studied, still included data from only twelve years, 1992–2003. Hajjem et al., *supra* note 46.

54. It should be noted that this method underreports the number of citations received by the legal scholarship, because it looks only at citation by other legal scholarship, ignoring any citations to this literature from other disciplines. While this may be a significant factor when discussing particular sorts of articles—e.g., international and comparative law articles, as well as law and society pieces, could be expected to be especially affected by this omission—we have no reason to anticipate that it cuts differently between open access and non-open access articles.



## Research Results

### Open Access Availability of Legal Scholarship

¶38 From 1990 through 2007 (vols. 35–41), the *Georgia Law Review* published 272 articles (excluding student-authored pieces). Of these, seventy-five articles (28% of the total published) were freely available on the Internet at the time of this study. The *Georgia Journal of International and Comparative Law* published 199 articles between 1990 and 2008 (vols. 20–36), of which only twenty-six (13%) qualified as open access. Tallies for the third periodical, the *Journal of Intellectual Property Law* (vols. 1 [1993] through 15 [2007]), were ninety-five total articles, of which twenty-three (24%) were open access.

¶39 All three journals were pooled and analyzed by year to produce a single representation of the rate of increase of open access availability of legal scholarship (see figure 1). Although uneven, the data show a clear rise in accessibility from 1990, when no articles were available, to 2007–2008, when more than forty-four percent of the published articles were accessible.

¶40 The simple aggregate of the data (566 articles, 124 [22%] of which are open access) suggests that the earlier discussed finding by Hajjem et al.—that only 5.1% of law articles are open access—dramatically underrepresents the extent to which open access initiatives among legal institutions and individual authors have become common. This result remains significant even when the present data are trimmed to match the 1992–2003 span of the Hajjem et al. study: 357 articles, 67 (19%) of which are open access.

### Citation Advantage of Open Access Articles

#### *Citation by Articles*

¶41 The data show a discernible difference in the mean citation rates of open access articles and those that are not freely available online. Treated as a group, *Georgia Law Review* articles within this sample were cited an average of 15 times by journals and 0.4 times by courts. As indicated in figure 2, almost every year after publication, an open access article's likelihood of citation is either the same or higher than that of a non-open access article. Only after approximately seventeen years does open access no longer have an impact on an article's citation rate.

¶42 *Georgia Journal of International and Comparative Law* articles were cited an average of 5.5 times by journals and 0.1 times by courts. Figure 3 shows the citation rate for open access articles compared with non-open access articles in the *Georgia Journal of International and Comparative Law*. There is an inexplicable dip in the citation of open access articles during years eight through ten. Also, as experienced with the *Georgia Law Review*, the impact is negligible after approximately seventeen years.

¶43 Articles from the *Journal of Intellectual Property Law* were cited an average of 7.7 times by journals and 0.15 times by courts. Figure 4 demonstrates that, as with the *Georgia Journal of International and Comparative Law*, there are a few decreases in citation rate without explanation during year eight and years thirteen



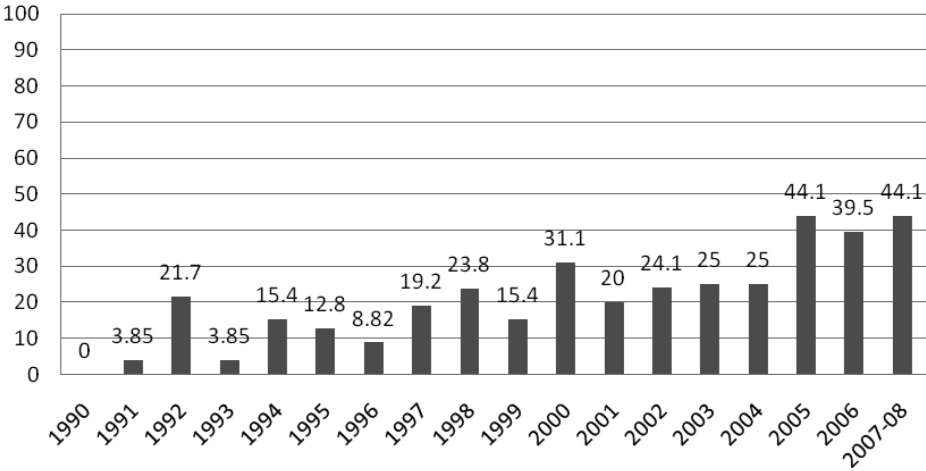


Figure 1. Percentage of Open Access Articles by Year of Publication

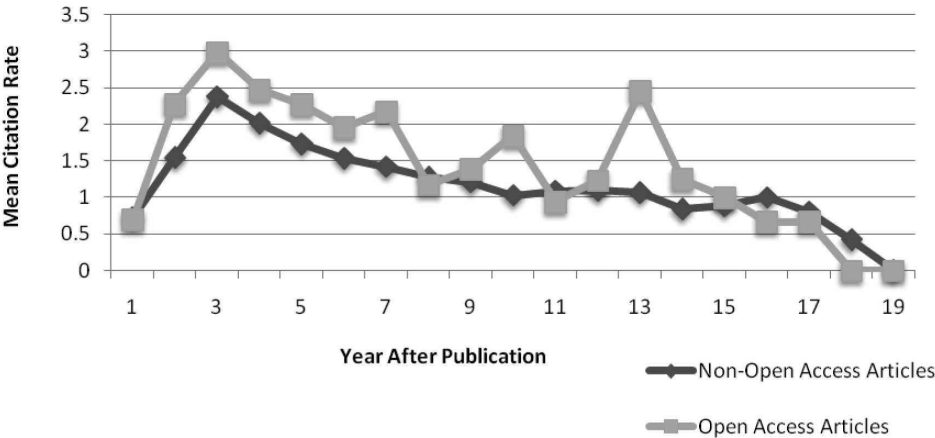
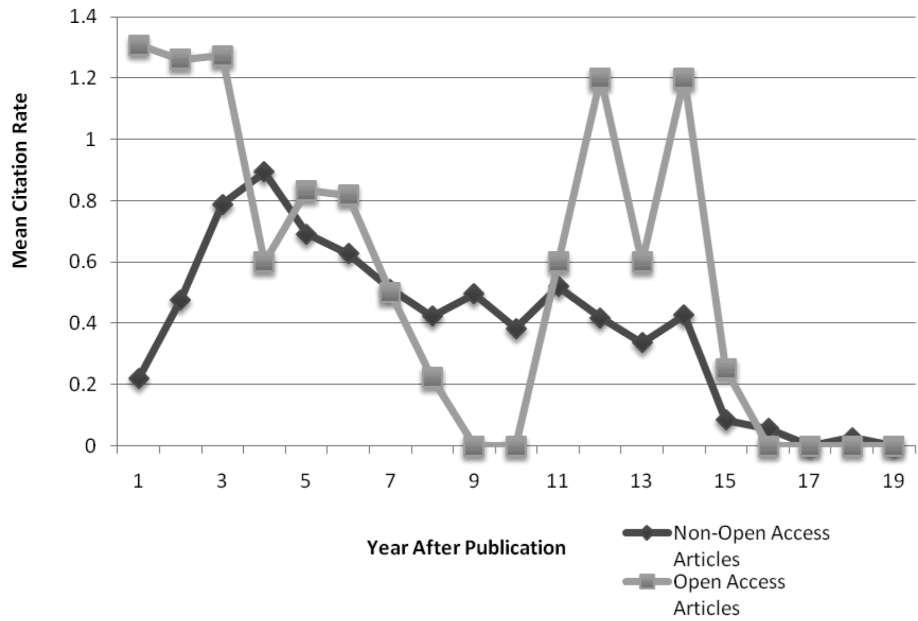


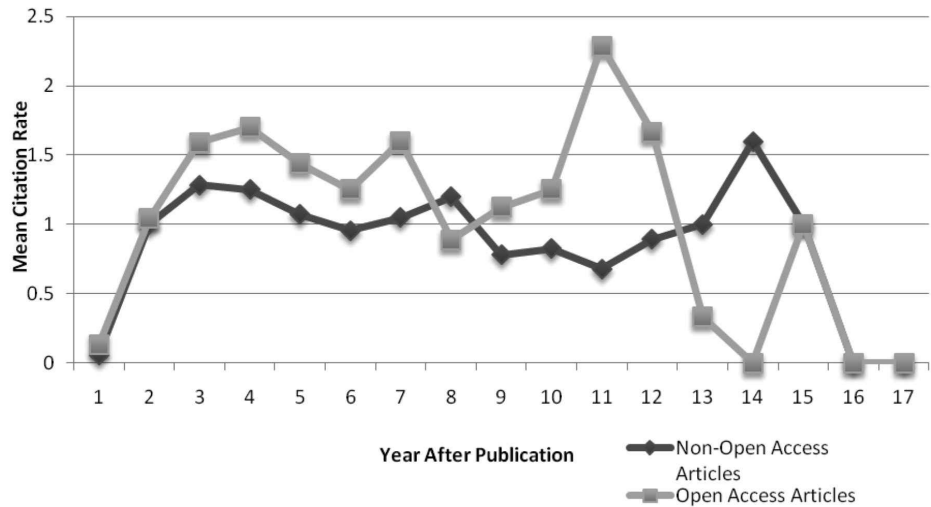
Figure 2. Effect of Open Access on Citation Rates of Articles in the *Georgia Law Review*, 1990–2007

through sixteen. Again it should be noted that after seventeen years, articles appear to lose their luster and are rarely cited.

¶44 The idiosyncrasies of the individual titles can be at least partially smoothed by aggregating all the data; figure 5 shows the citation rates from all Georgia School of Law journals. We feel some confidence in offering this graph as a generally accurate characterization of the life cycle of the open access article citation advantage for legal scholarship. Open access availability offers a consistent citation advantage, especially during the years immediately following publication. The trend becomes more difficult to interpret, though, over the long term, due largely to the limits of the methodology.

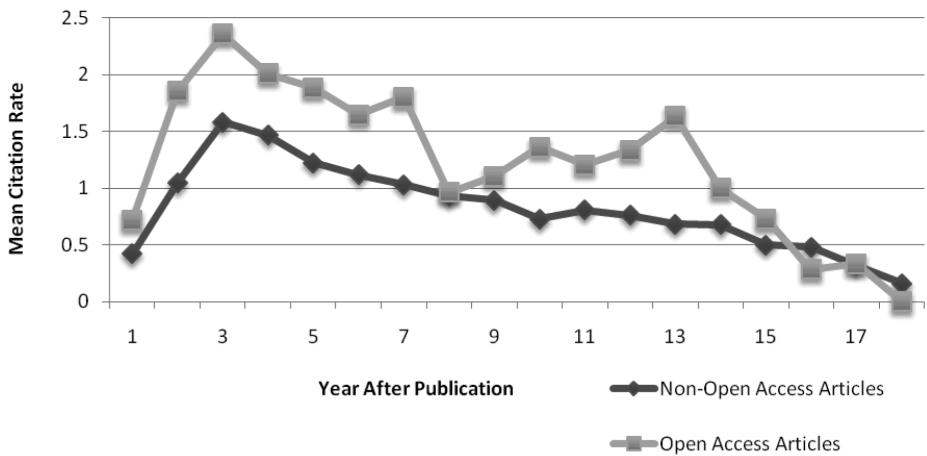


**Figure 3.** Effect of Open Access on Citation Rates of Articles in the *Georgia Journal of International and Comparative Law*, 1990–2008

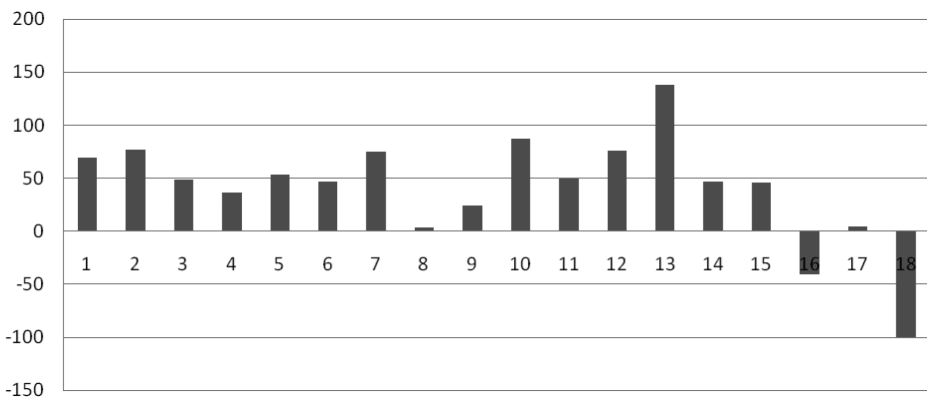


**Figure 4.** Effect of Open Access on Citation Rates of Articles in the *Journal of Intellectual Property Law*, 1993–2007

¶45 Our analysis compresses the data toward the left side of the graph; that is, the data set has more articles with citation information for a year or two after publication than it does for those with information about its citations seventeen years later. Our initial pool of 566 articles dwindles to a mere thirty-two by the end of the examined span. Consequently, the information on the right side of the graph is comparatively less reliable, representing as it does substantially fewer data points.



**Figure 5.** Combined Effect of Open Access on Three Georgia Law School Journals



**Figure 6.** Percentage of Citation Advantage of Open Access Articles by Number of Years After Publication

¶46 Graphing the differential rates of citation over the years (see figure 6), we see two primary results. First, the citation advantage is relatively consistent for the majority of the years, but becomes uninterpretable for years sixteen and beyond for the reasons described earlier.<sup>55</sup> Second, looking only at the first fifteen years of data, we find that an open access article can expect to accrue approximately fifty-eight percent more citations than non-open access articles from the same venue and of similar age.

55. We characterize a negative outcome as “uninterpretable” because in all our cases the green open access articles are also available in print. No scenario comes to mind in which a print article would not be cited or used to support a research proposition simply because it is also available in an open access format. A negative outcome could be meaningful if one of the samples represented gold version open access.

¶47 While it may seem safe to suggest that decades after publication, the rates of differential citation between open access and non-open access converge to zero, we cannot conclude from the present analysis that the open access advantage seen so clearly in the earlier years in fact disappears altogether.

### *Citation by Courts*

¶48 Due to the relative infrequency with which law review articles are cited by courts, we pooled all data for this analysis.<sup>56</sup> The citation advantage of open access for legal scholarship, so evident within other scholarly writing, does not appear to carry over into citations by courts. The 442 non-open access articles received a total of 116 court citations, averaging about 0.26 cites per article, while the 124 open access articles received 28 case cites, for an article average of 0.23.

¶49 This result—to our knowledge the first to look at the relationship between open access and case citations—should be further investigated. If replicated, one likely explanation is that judges and law clerks are less likely to do research on the web, relying instead on proprietary databases such as Westlaw and LexisNexis. In that instance, their choice of writings to cite would be unaffected by whether the article was also available in a free format.

### **Discussion**

¶50 By looking at an eighteen-year range of articles from three law journals, we have been able both to establish the existence of a citation advantage enjoyed by open access legal scholarship, and to suggest the likely magnitude of that advantage. Open access legal scholarship—which today appears to account for almost half of the nonmonographic output of law faculties—can expect to receive fifty-eight percent more citations than non-open access writings of similar age from the same venue.

¶51 If the phenomenon is real, we may then entertain other questions, not least those touching on the likely causes. The literature has proposed three major theories to explain why open access increases the impact of scholarship.<sup>57</sup> The *open access postulate* theorizes that because open access articles are more easily accessed, they are read more often. Convenient access alone, according to this argument, increases the likelihood of citation. The *early access postulate* suggests that articles benefit from their quicker “start out of the gate” over competing articles on the same topic, and therefore the citation rate is higher for articles that are posted early in the publication process. The third offered explanation is the *self-selection bias postulate*, which argues that authors select their best articles to publish online, thus increasing their citation rate, assuming that these are also the “better” articles in their respective subject areas.

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56. A 1998 study confirmed a long-standing, though controversial, proposition from Judge Benjamin Cardozo that law review articles provide little utility for courts. The study identified a trend of substantial decline in the citation of law reviews by the courts. Michael D. McClintock, *The Declining Use of Legal Scholarship by Courts: An Empirical Study*, 51 OKLA. L. REV. 659 (1998).

57. Michael J. Kurtz et al., *The Effect of Use and Access on Citations*, 41 INFO. PROCESSING & MGMT. 1395, 1396 (2005); see also Swan, *supra* note 45, at 2.

¶52 Does the open access postulate explain the increased citation rate observed in this study? This suggestion does seem to have high initial plausibility. Writers will cite what they can lay their hands on, especially when they are at the stage not of debating the current literature, but of finding substantiation for points they have already included in the text. Keyword searching in a search engine such as Google seems tailor-made for that kind of problem, and can thus lead to citations for articles that would otherwise not have been selected.

¶53 Upon reflection, however, this explanation appears particularly weak in the context of legal writing. Much, if not the majority, of legal scholarship is available in Westlaw and LexisNexis, to which academic faculty have unlimited access. This limitless use in many senses mimics the advantages of open access.<sup>58</sup> Since an assumption of this proposed explanation is that freely available scholarship is more likely to be cited because access barriers have been removed, the effect of ubiquitous access to Westlaw, LexisNexis, and similar subscriptions would arguably minimize that benefit. In other words, law faculty already have as much access to the periodical literature as they can use.<sup>59</sup>

¶54 That legal writing should still show an open access citation advantage could therefore be largely coincidental, an artifact of preferentially citing the most recent articles, which we now know have approximately even odds of being available in some open access format (see figure 1). This possibility should deter the too-ready acceptance of the open access postulate as offering sufficient explanation for our data.

¶55 Open access scholars who support the second possible cause—the early access postulate—adhere to the proposition that the sooner an article is made freely available, the larger the increase of its citation rate. It would stand to reason, then, that early posting of draft articles should have a significant effect on an article's impact.

¶56 Although articles in our study were not differentiated by when they became available online, most were certainly posted well after traditional publication. A large swath of our data covers time spans when self-archiving was far from common, at least within law. The Social Science Research Network (SSRN), the most popular platform among law faculty for self-dissemination of their written works, was not founded until 1994.<sup>60</sup> Were the early access postulate the primary explanation for the open access advantage, we would not expect the observed benefit to appear until at least the mid- to late 1990s, when SSRN and similar services had penetrated into the legal community. Moreover the effect would be short-lived, restricted primarily to the first months or years of the article's public life. Yet, look-

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58. Jessica Littman, *The Economics of Open Access Law Publishing*, 10 LEWIS & CLARK L. REV. 779, 791 (2006) (suggesting that law faculty have quasi-open access to law review articles through their law-library-mediated, unfettered access to periodicals databases).

59. Access to proprietary databases might in theory lead law faculty to cite literature with a slightly different descriptive profile than that expected to be available through open access, but recent investigations have shown this not to be the case, at least as regards whether scholars cite to older articles. See M. Sara Lowe & Karen L. Wallace, *HeinOnline and Law Review Citation Patterns*, 103 LAW LIBR. J. 55, 2011 LAW LIBR. J. 3.

60. *About Us*, SOC. SCI. RES. NETWORK, <http://ssrnblog.com/about>.

ing at figure 5, we see that articles ten years and older within our sample were continuing to enjoy a substantial citation advantage. This suggests to us that early access cannot be a complete explanation for the observed results.

¶57 In many academic disciplines, the question has been raised as to whether cited articles had been self-selected for open access because they *a priori* were deemed of higher quality, or perhaps because frequently cited authors are also more likely to self-archive on the web. We can think of at least one serious counterargument to both these self-selection bias postulate scenarios.

¶58 While few law schools have followed in Harvard's footsteps to mandate faculty contribution to an institutional open access repository, many have invested in something functionally similar by creating research paper series in the Legal Scholarship Network (LSN) within SSRN.<sup>61</sup> These series collect and publish faculty writings, many of which would not, one imagines, have been posted had it been left solely to the initiative of the author. Pressures to contribute will only rise now that SSRN has begun to publish its own law school rankings based on the number of papers a school has contributed to LSN, and the number of times those papers have been downloaded.<sup>62</sup>

¶59 These recent developments have pushed more and more scholarship to be made open access (as seen in figure 1), leaving less opportunity for a selection bias to operate. Were bias the primary explanation for the observed effects, we would expect to see in figure 5 a flattening of the citation rate of the non-open access papers. Yet we see that, despite the growing prominence of open access literature, non-open access pieces continue to find their own audiences and receive consistent recognition. The number of papers falling into this category will, we predict, continue to decline, but thus far we see no evidence to suggest that these works are of inferior quality to those that receive open access treatment, a variable specifically controlled for in our methodology.<sup>63</sup>

¶60 At least in the case of law, none of the three postulated explanations for the open access citation advantage suffices. The likely answer will rest in some combination of the three. Further research, incorporating a more nuanced data set than ours, will be required to achieve the requisite fine-grain analysis to resolve this question.

¶61 There are other important and interesting questions that must likewise await future projects. Consider that we, and indeed the literature as a whole, have spoken as though the citation advantage will be enjoyed uniformly by articles on the web. In fact, it is possible that this effect could vary systematically depending

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61. Currently nearly 110 law schools have established research paper series in the Legal Studies Research Series of SSRN. See *Browse E-Library*, SOC. SCI. RES. NETWORK, <http://papers.ssrn.com/sol3/DisplayJournalBrowse.cfm> (last visited July 28, 2011).

62. SSRN *Top 350 U.S. Law Schools*, SOC. SCI. RES. NETWORK, [http://hq.ssrn.com/rankings/Ranking\\_Display.cfm?TMY\\_gID=2&TRN\\_gID=13](http://hq.ssrn.com/rankings/Ranking_Display.cfm?TMY_gID=2&TRN_gID=13) (listings other than the top ten schools limited to registered users).

63. One study of scientific literature determined that within a single journal, 15% of articles accounted for 50% of citations, and almost 90% of citations were to just 50% of the articles. Citation rates were skewed even for articles written by the same author. Per O. Seglen, *The Skewness of Science*, 43 J. AM. SOC'Y INFO. SCI. 628, 631 (1992). By analyzing three different journals, one publishing general legal subject matter and two publishing on specialized legal subjects, our study sought to obviate the so-called "skewedness" effect.

on the stature of a school and its journals. Due to its high prestige, for example, it could be argued that articles in the *Harvard Law Review* will receive notice and citation regardless of whether they are also available in open access outlets. This would perhaps not be the case for an article published in the law review of a third- or fourth-tier school. If not for the ease of open access, such articles might get lost within the traditional outlets, crowded out by more glamorous competitors. For *Harvard Law Review* articles, then, one might hypothesize that the open access citation advantage will be comparatively smaller than what we see in the second situation.<sup>64</sup> Advantage, in other words, might vary inversely with the prestige of the journal. If such a pattern exists, this could add impetus to create institutional repositories in precisely those environments where they will generate the most attention for both the school and its faculty authors.

## Conclusion

¶62 In her highly regarded article reviewing the impact of open access issues on legal scholarship, Carol Parker had this to say about faculty participation:

[L]egal scholars' access to the work of their peers has never been limited or jeopardized by cost and there has been little call to make "postprints" freely available simply for the sake of retaining access to the material.

Instead legal scholars appear to use repositories because they realize a professional benefit from doing so.<sup>65</sup>

¶63 When seeking to launch a local repository project, the lesson appears to be that faculty enthusiasm depends less upon the high-minded values of dissemination and preservation that might appeal most immediately to librarians, and more on the possible practical returns such as readers and citations. Whether proposing these endeavors to administrators for funding, or to faculty for contributions, we suggest that the conversation highlight these understandably appealing and measurable outcomes.

¶64 The present article offers empirical justification to assert that these benefits are real, consistent, and sizable. The open access advantage reported for other bodies of literature extends to legal scholarship, albeit with some identified caveats. Open access is most likely to impact other legal scholarship, less so the citations within court opinions. The expected impact of the average article is an additional fifty-eight percent above that made by works of similar quality appearing in the same or a similar publication venue.<sup>66</sup> Open access offers the law scholar a classic opportunity, as Benjamin Franklin might say, "to do well by doing good."

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64. A precedent for this possible behavior was reported by John Joergensen, who found that "middle of the road journals are much more widely used when they are available online." John P. Joergensen, *Second Tier Law Reviews, Lexis and Westlaw: A Pattern of Increasing Use*, LEGAL REFERENCE SERVICES Q., Jan. 2002, at 43, 52.

65. Parker, *supra* note 20, at 443 (footnote omitted).

66. In light of the study's outcome, law faculty would be wise to heed the advice of Nancy Levit to retain permission to publish their law review articles on their own web pages or in their institutional repositories. Nancy Levit, *Scholarship Advice for New Law Professors in the Electronic Age*, 16 WIDENER L.J. 947, 981 (2007). For a discussion of the types of licenses available from law reviews, see Benjamin J. Keele, *Copyright Provisions in Law Journal Publication Agreements*, 102 LAW LIBR. J. 269, 2010 LAW LIBR. J. 15.