

1993

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## Recommended Citation

Patti J. Ogden, "Mastering the Lawless Science of Our Law": A Story of Legal Citation Indexes, 85 Law Libr. J. 1 (1993).  
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# “Mastering the Lawless Science of Our Law”: A Story of Legal Citation Indexes\*

Patti Ogden\*\*

*Ms. Ogden presents a history of American legal citation indexes, covering early nineteenth-century attempts, the development of modern citator systems by Frank Shepard and others, online citation systems, and the potential for future improvements in an essential tool of legal research.*

Mastering the lawless science of our law,  
That codeless myriad of precedent,  
That wilderness of single instances,  
Thro' which a few, by wit or fortune led,  
May beat a pathway out to wealth and fame.  
Tennyson, “Aylmer’s Field” (1793)

There is a considerable body of literature on the history of such legal publications as case reports, statutes, periodicals, digests, periodical indexes, and treatises. Lately, a core group of authors has begun speculating about the future of some of these publications.<sup>1</sup> Legal citators—those “useful but unloved” volumes<sup>2</sup>—also have a history and presumably a future, but there exists little documentation or speculation about either. This unfortunate omission should be remedied, if for no other reason than to recount the interesting events and circumstances surrounding the evolution of the citation index. Many people, ranging in prominence from a United States Supreme Court Justice to a pair of attorneys from Dublin, Texas, had a hand in the development of the modern legal citator. Other than the oft-repeated tale of Frank Shepard, few of their stories have been told. Even less attention has been given to the

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\* © Patti Ogden, 1993. My thanks to Tom Woxland for encouraging me to tackle this project and insisting that I finish it, Ken and Carmela Kinslow for their interlibrary loan efforts, and Roger Jacobs and Jack Pratt for their comments.

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1. See, e.g., John Doyle, *WESTLAW and the American Digest Classification Scheme*, 84 *LAW LIBR. J.* 229, 253-58 (1992) (discusses future developments of the digest classification scheme); SUSAN W. BRENNER, *PRECEDENT INFLATION* 257-310 (1992) (examines online case reports and the future of precedent); MORRIS L. COHEN, *The Legal Publishing Industry in the 20th Century and Beyond*, in *SYMPOSIUM OF LAW PUBLISHERS* 9 (Thomas A. Woxland ed. 1991).

2. LAWRENCE M. FRIEDMAN, *A HISTORY OF AMERICAN LAW* 357 (1973).

question of what forces and influences sparked the interest of these individuals in this particular form of legal literature, or what effect legal citators may have had on the practice of law and on the law itself. Finally, the future role and format of the citation index, truly a tool for "mastering the lawless science of our law," has yet to be explored.

These questions, stories, and issues are the subjects of this article.

A few points should be made about the parameters and organization of this study. The focus of this discussion is the legal citator, which is one example of a general class of documents known as "citation indexes." A citation index is "a structured list of all the citations in a given collection of documents . . . usually arranged so that the cited document is followed by the citing documents."<sup>3</sup> This definition is, of course, a modern conception.<sup>4</sup> In tracking the history of the legal citation index, it was necessary to take a broad view of this term. It also proved helpful to organize this study in the following order: a sketch of the first citation index, an examination of some factors leading to the development of legal citation indexes, an account of the rise of the modern legal citator, a look at the citator's impact, and a discussion of the citator's future.

### I. Simon Greenleaf and Overruled Cases

The first compiler of a legal citation index was Simon Greenleaf. In 1807 Greenleaf was the first and only lawyer in the small town of Gray, Maine; he was, in fact, one of about fifty attorneys in the entire Maine territory.<sup>5</sup> Like many of his colleagues, Greenleaf was not a college graduate. He began at the age of eighteen to "read" for the law in an attorney's office and, after five years, he was admitted to the bar. He soon opened his own office in Gray, where he practiced for twelve years. The typical legal practice of this period involved frequent appearances in court, and Greenleaf undoubtedly argued his share of cases before the bench. In one of those arguments, he relied upon and cited an English decision which seemed applicable and decisive of the issue. Unfortunately, the case had been overruled, and the court declared it of no authority whatever. "[Greenleaf's] first law book sprang, as we have his own authority for saying, from this circumstance . . . . He determined at once to ascertain, as far as he could, which of the apparently authoritative cases in the Reports had lost their force, and to give the information to the profession."<sup>6</sup>

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3. 5 ENCYCLOPEDIA OF LIBRARY AND INFORMATION SCIENCE 16 (1971).

4. Ironically, this very definition is a product of the influence of legal citators. See *infra* p.

5. For a fairly complete account of Simon Greenleaf's life, see WILLIAM WILLIS, A HISTORY OF THE LAW, THE COURTS, AND THE LAWYERS OF MAINE 522-36 (Portland, Bailey & Noyes 1863).

6. Professor Theophilus Parsons, Commemorative Address at Cambridge, Mass. (Oct. 20, 1853), excerpted in 16 MONTHLY L. REP. 413, 414 (1853).

Greenleaf's ill-fated argument did not arise from any lack of skills as an attorney. On the contrary, the success of his practice in Gray and his later eminence as a legal scholar suggest that he probably was more proficient than the average attorney of his day. Greenleaf was simply working under the normal handicaps of early nineteenth-century lawyers. Sources for researching the law were scarce, which is not surprising given that the nation was less than a generation removed from its birth. No more than twenty states were in the Union, and the first case reports from these states had appeared only within the last twenty-five years. By 1810 there were merely eighteen published volumes of American reports.<sup>7</sup> Lawyers desperate for authority cited English cases freely; in fact, they cited English reports more frequently than American.<sup>8</sup> Beyond case reports, the sources of law were few: treatises on American law were virtually nonexistent, legal periodicals were in a very embryonic stage, Nathan Dane had not yet compiled the first American digest—and Frank Shepard had not even been born. Under these circumstances, Greenleaf's frustration is understandable. Locating a pertinent case was challenge enough; ascertaining the authority of that case added another burdensome level to the research, especially for a sole practitioner in a small Maine town.

Practicing law in Gray did have its benefits; the ample time for Greenleaf to read and study the law enabled him to begin work on his table of overruled cases. In 1818 he moved his family to nearby Portland, where his business and fame increased. Although Maine was not yet a state, there was a U.S. Circuit Court in Portland, and the Supreme Court Justice assigned to "ride" this circuit was Joseph Story. Story took a deep interest in educating and encouraging the development of the judges and lawyers of his circuit.<sup>9</sup> The working relationship between Greenleaf and Story, which would become extraordinarily close and span their later careers at the Harvard Law School, began with Greenleaf's table of overruled cases. Story learned of Greenleaf's plan to publish the table and offered to supply him with his personal list of overruled cases, extracted from his extensive reading. He also promised to continue forwarding supplements to the list.

It is of great importance to the profession to have the list as complete as possible, and I could wish that you could find leisure to extend your examination backward to the time of Dyer.

. . . .  
I rejoice that there are gentlemen of the Bar who are willing to devote their leisure to the correction and ministration of the noble

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7. CHARLES WARREN, A HISTORY OF THE AMERICAN BAR 557 (1911).

8. FRIEDMAN, *supra* note 2, at 98.

9. R. KENT NEWMYER, SUPREME COURT JUSTICE JOSEPH STORY 316-22 (1985).

science of the law. It is redeeming the pledge, which Lord Coke seems to think every man implicitly grants to his profession on entering it. [The list of overruling cases] is eminently useful, because it accustoms lawyers to reason upon principle, and to pass beyond the narrow boundary of authority. I think you would do well to give public notice of your being engaged in this undertaking, as other gentlemen may otherwise engage in the same project.<sup>10</sup>

This last bit of advice is interesting. Just the year before, Story recommended to the U.S. Supreme Court Reporter, Henry Wheaton, that a proposed digest of Supreme Court cases include a table much like the one that Greenleaf was constructing. He even outlined the table's basic design, which would use letter abbreviations to indicate the treatment of a case<sup>11</sup>—a design that would not take form until the citation indexes of the late nineteenth century were produced.

The correspondence between Greenleaf and Story reveals some of the difficulties and technical problems Greenleaf encountered in his project. Determining the authority of a case required a strong grasp of precedent and legal analysis, not to mention the stamina required to read all the cases. As Story pointed out in one letter to Greenleaf, cases were not always directly overruled: a holding might be “shaken” or “impugned only as to a single point” and (worse) “[s]ometimes the Court have commented on a case very much at large, intimating doubt of it, but so mixing up their remarks, that it was difficult to detach them from the case.”<sup>12</sup> To be of maximum service to the legal profession, the list had to reflect the spectrum from the total loss of authority (overruled cases) to the erosion of precedential value (doubted, questioned, limited cases). Presenting all of this information in a concise and accurate manner was a daunting task.

Greenleaf's work on his table was likely slowed by events in 1820. Maine entered the Union in that year, and one of the early acts passed by the new state required the governor to “appoint some suitable person learned in the law, to be a Reporter of the decisions of the Supreme

10. Letter from Joseph Story to Simon Greenleaf (Sept. 5, 1819), in 1 LIFE AND LETTERS OF JOSEPH STORY 328-29 (William W. Story ed., Boston, Little, Brown 1851).

11. There is one title which I think is very important, and it is omitted in Johnson's Digest]. It is a list of the cases which have been doubted, overruled, explained, or specially commented on. These should be collected and an explanatory letter should be added, as D. for doubted, O. for overruled, &c. with the case where the doubt, &c., has been made. . . .

. . . The list of cases doubted, overruled, &c. will fall to your lot, but as I read, I will keep a memorandum of those which pass under my view.

Letter from Joseph Story to Henry Wheaton (Aug. 12, 1818), in *id.* at 290-92. Wheaton's digest, when published, did not include the proposed table.

12. Letter from Joseph Story to Simon Greenleaf (Nov. 11, 1819) in *id.* at 329.

Judicial Court.”<sup>13</sup> The governor immediately appointed Simon Greenleaf. Still keeping his practice in Portland, Greenleaf rode the circuit in the various counties to record the arguments of counsel and the decisions of the court.<sup>14</sup> During this same period (1820-1822), he also joined the new state legislature in Portland, where he helped put the fledgling government into operation. Despite these responsibilities, Greenleaf eventually completed his work; *A Collection of Cases Overruled, Doubted, or Limited in Their Application* was printed in 1821.<sup>15</sup> An advertisement leaf in the volume stated:

The following collection was intended as an appendix to the edition of Hobart’s Reports, now in preparation for the press. But some respected friends, to whom the manuscript was known, having advised its separate publication, I concluded to print a few copies; in order to obtain the judgment of the profession as to the utility of the work, and the manner of its execution, and their aid in augmenting the collection should this attempt be favorably received.<sup>16</sup>

The plan of the collection was straightforward and can be grasped from a few sample entries:

Brown v. Dawkes Cro. E. 11

The words “thou art a pillory knave” held actionable. Contradicted by *Smith’s* case Cro. El. 31

*Walker v. Chapman* Lofft’s Rep. 342. cited Doug. 454

Mansfield C.J. called this “a very strange case.” *Aubert v. Walsh* 3. Taunt. 283<sup>17</sup>

Although cases were the focus of the collection, Greenleaf’s alphabetical list of authorities reflected the range of sources cited in counsel arguments and court opinions of this period. He included, for example, assessments of treatises, abridgments, and entire sets of reports. He also analyzed both American and English authorities and indicated how the latter had been received or modified in American courts. All of this was valuable information for the bench and bar. Realizing that his list would require additions and emendations, he published the volume in interleaved form (blank pages bound in at intervals).

Story sent his congratulations, a new list of overruled cases, and a promise to send further supplements within a week after the volume was

13. Act of June 24, 1820, ch. 17, § 9, 1820 Me. Laws 14, 18.

14. Greenleaf’s skill as a reporter was such that Joseph Story considered him for the post of Supreme Court reporter, to replace Henry Wheaton. NEWMYER, *supra* note 9, at 260.

15. SIMON GREENLEAF, *A COLLECTION OF CASES OVERRULED, DOUBTED, OR LIMITED IN THEIR APPLICATION* (Portland, Shirley 1821).

16. *Id.* (“Advertisement” on preliminary page).

17. *Id.* at 15, 85.

printed. The *North American Review* soon published a review of Greenleaf's work. The conclusion was: "Of the utility of the work there can be but one opinion. A manual, which should present at a glance, or furnish the means of readily ascertaining what has been repudiated, denied, doubted, or limited in its application, in the voluminous and evergrowing volumes of judicial decisions, has long been a desideratum."<sup>18</sup> The reviewer did note, however, that the list was not exhaustive and urged the bar to answer Greenleaf's request for aid in completing the work. The bar did respond, and Greenleaf's volume was issued in three further editions—all done, however, without Greenleaf's involvement.<sup>19</sup> The number of overruled cases listed in the volume swelled from 600 in the first edition (1821) to 3,000 in the third edition (1840). During its time, *Greenleaf's Overruled Cases* had few competitors. The last edition of *Overruled Cases* was issued in 1856, shortly before the boom period in legal citation indexes began. The direct influence of Greenleaf's original idea on these later citation indexes is not measurable but can be imputed.<sup>20</sup> During much of the nineteenth century, Greenleaf's name was almost synonymous with the word "overruled."<sup>21</sup>

Before proceeding with the story of the development of legal citation indexes, it seems proper that some space be given to complete the story of Simon Greenleaf's remarkable life and career. He did, after all, do much more than simply publish a citation table. After the book came out in 1821, he continued his law practice in Portland, his job as the state reporter, and his friendship with Joseph Story. Story had gone on to become one of two faculty members at Harvard Law School, and in 1833 he asked his friend to join him on the faculty. At age fifty, Simon Greenleaf became a law professor. Together, Story and Greenleaf (known to his students as "Old Green") ran the school until Story's death in 1845.<sup>22</sup> During that period,

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18. Book Review, 15 N. AM. REV. 65, 71. The reviewer estimated that there were 140 volumes of American reports and 400 volumes of English and Irish reports. *Id.* at 65.

19. J.G. MARVIN, LEGAL BIBLIOGRAPHY 348 (photo. reprint 1953) (1847).

20. Greenleaf's work did directly influence at least one later citation index. In 1888 his grandson, Simon G. Croswell (the "G." for Greenleaf), a graduate of Harvard Law School, published *A Collection of Patent Cases Criticised, Explained, Overruled, or Otherwise Limited by Subsequent Decisions of the Federal Courts*.

21. In the first fifteen editions of Bouvier's *Law Dictionary* (1839-1891) the definition of the term "overruled" included this statement: "Mr. Greenleaf has made a very valuable collection of overruled cases, of great service to the practitioner." See, e.g., JOHN BOUVIER, A LAW DICTIONARY 257 (2d ed. Philadelphia, T. Johnson 1843).

22. Both men also continued their outside work—Story on the bench of the Supreme Court and Greenleaf in the practice of law. (Greenleaf prepared the original Constitution adopted by Liberia.) Their paths crossed once in their respective roles when Greenleaf argued the famous *Charles River Bridge v. Warren Bridge* case before Story and the rest of the Supreme Court. Greenleaf was counsel

student enrollment quadrupled and Harvard Law School rose to eminence. In 1842 Greenleaf published *A Treatise on the Law of Evidence*, which was “at once hailed as the ablest extant work on the subject.”<sup>23</sup> He resigned from Harvard a few years later and died in 1853. In a commemorative address at Harvard, Professor Theophilus Parsons paid one last tribute to Greenleaf’s *Overruled Cases*: “The idea was original, the execution good, and the book very useful.”<sup>24</sup>

## II. Backdrop for the Legal Citation Index

A predicate for citation indexing is the legal citation itself: “As human phenomena go, the simple citation has . . . proved to be a highly reliable and little abused manner of marshaling authority in an opinion . . . .”<sup>25</sup> In law, the practice of marshaling authority through citations dates back to at least the eleventh century,<sup>26</sup> but the development of legal citation indexes did not begin until the early nineteenth century.<sup>27</sup> Why do so many centuries separate these two events? There is no conclusive answer, but several intertwining (and independently interesting) stories come to mind: how cases came to be cited, the history of case reporting, the role of stare decisis, the appearance of the modern appellate brief, and the rise of other legal research tools. These factors may also explain why the American legal system, with its tradition of borrowing legal concepts and tools from the British, first developed and later refined the legal citation index.

### A. Citation and Reporting of Case Law

The citation of legal authorities has many of its roots in England. English lawyers and judges of the Middle Ages first cited statutes by quoting the opening words, and later settled on an early version of the

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for the Warren Bridge, arguing against the interests of Harvard University, which received tolls from the Charles River Bridge. Greenleaf won—against Story’s dissent. HARVARD LAW SCHOOL, CENTENNIAL HISTORY OF THE HARVARD LAW SCHOOL 1817-1917, at 217-19 (1918).

23. 7 DICTIONARY OF AMERICAN BIOGRAPHY 584 (1931). Greenleaf dedicated his treatise to his friend and colleague, Joseph Story. This work on evidence stood for half a century and was replaced only when John Henry Wigmore produced his famous work on evidence, which was immediately declared “the most complete . . . treatise on a single branch of our law that has ever been written.” Joseph Beale, Book Review, 18 HARV. L. REV. 478 (1905).

24. Parsons, *supra* note 6, at 414.

25. KARL N. LLEWELLYN, THE COMMON LAW TRADITION 103 (1960).

26. For a fascinating account of this history, see Byron D. Cooper, *Anglo-American Legal Citation: Historical Development and Library Implications*, 75 LAW LIBR. J. 3 (1982).

27. By contrast, scientific writing established the convention of bibliographic citation only in the early twentieth century, and the scientific community began work on citation indexing in the 1950s. EUGENE GARFIELD, CITATION INDEXING 96 (1979).

now-familiar combination of chapter numbers and regnal years.<sup>28</sup> Case citation proved more intractable. Court clerks maintained records of cases on manuscript plea rolls, but the information was minimal and access limited. The facts of the case and the reasons for the decision were not part of these records. Consequently, the few times that lawyers and judges of this period cited precedent at all, they did so from memory or personal notes of observed cases. Around 1250, Henrici de Bracton recognized that the judgments of the courts provided principles which should be applied to analogous cases and, more importantly, realized that these judgments had to be *written* if law was to be properly studied.<sup>29</sup> Accordingly, he gathered the plea rolls, amassed some two thousand cases into his *Note Book*, disentangled from this raw data a set of legal principles, and finally produced his *De Legibus et Consuetudinibus de Angliae* ("Of the Laws and Customs of England"). His work represented the first detailed and comprehensive account of English common law extracted from and cited to judicial opinions: "Nothing is more remarkable in Bracton's book[s] than his profuse references to decisions. His law is case law."<sup>30</sup> Common law was marking a turning point.<sup>31</sup>

If the law had to exist in written form to be studied properly, then it needed to be in printed form to be cited easily and precisely. Manuscripts posed two significant citation problems: foliation differed from one manuscript to another, and circulation of the manuscripts was so limited that citation was pointless.<sup>32</sup> Caxton introduced printing to England in 1476, and within six years Sir Thomas Littleton published the first major book on the law, *Tenures Novelli* (New Tenures). Coke, the premier

28. Cooper, *supra* note 26, at 6-7.

29. See Travers Twiss, *Introduction to 1 HENRICI DE BRACON, DE LEGIBUS ET CONSUEUDINIBUS ANGLIAE IX, xxxii* (Travers Twiss ed., photo. reprint 1990) (1878).

30. F. W. Maitland, *Introduction to 1 HENRY OF BRATTON, BRACON'S NOTE BOOK I, 11* (F.W. Maitland ed., London, Clay 1887).

31. The legal community did not immediately embrace the innovation of looking to cases for principles of law:

The common law did not develop a system of case-law by adopting explicit premises as to the authority of cases. It passed imperceptibly from a time when what was said in the course of cases was evidence of the law . . . to a time when the law pronounced in the cases was itself the material of a substantial part of the system of law.

Jim Evans, *Change in the Doctrine of Precedent During the Nineteenth Century, in PRECEDENT IN LAW 35, 35-36* (Laurence Goldstein ed., 1987).

32. Cooper, *supra* note 26, at 9. Because of the foliation problem, cases were cited by regnal year and term to the manuscript versions of the *Year Books*. Finding a particular case meant searching all the cases of that term. *Id.* at 10. Authenticity of manuscripts was another problem; accuracy deteriorated with each generation as transcribers inadvertently made errors or purposely supplemented, annotated, and changed the original document. For example, about fifty manuscript copies of Bracton's *De Legibus Angliae* survive today, and there is "bewildering diversity" in their organization and content. 2 WILLIAM HOLDSWORTH, *HISTORY OF ENGLISH LAW* 238 (3d ed. 1927).

interpreter of this treatise, asserts that Littleton firmly endorsed the practice of using written cases as an interpretive aid: “[I]t appeareth that our booke cases are the best proofes [of] what the law is . . . And after the example of *Littleton*, booke cases are principally to be cited for deciding of cases in question, not any private opinion, *teste meipso*.”<sup>33</sup>

Since English judges did not (and generally still do not) issue written opinions, “booke cases” had to evolve from the published notes of lawyers and students who witnessed cases in the courtroom. There was, however, no settled style of case reporting, and typically these early reports were a jumbled account of facts, pleadings, arguments, decisions, dicta, and commentary. Some of this confusion possibly can be attributed to the nature of the proceedings themselves, in which judges openly disagreed with their colleagues, serjeants interjected and debated points, and counsel frequently got bogged in the “web of writ, declaration, counterplea, [and] double plea.”<sup>34</sup> Early reporters indiscriminately noted it all; the formal decision was not yet distinguished from the opinion or dictum as a source of law.<sup>35</sup> By the mid-1600s, however, the die for the modern English report was fairly well cast by the reports by Plowden, Coke, Dyer, and Burrow. As these and other report volumes became available, citation of cases in court became more effective and more frequent. Winfield describes the effect of these case reports:

“I have seen,” “I remember,” “This has already been adjudged”—all such vague phrases tend to disappear. There is no need to trust any longer to the accident of an accident, and to hope that by chance the judge who is trying the case also tried the case cited, and that by chance he will recollect it.<sup>36</sup>

Demand for printed cases quickly grew and the doctrine of *stare decisis* gradually hardened as the number and quality of the reports increased. Case reporting became virtually a cottage industry in eighteenth-century England, and competition was unchecked; often several reporters attended

33. 2 EDWARD COKE, *THE FIRST PART OF THE INSTITUTES OF THE LAWS OF ENGLAND, OR A COMMENTARY UPON LITTLETON* \*254a. Coke also notes Littleton’s use of the word “Report,” which he explains “signifieth a publike relation, or a bringing againe to memory cases judicially argued, debated, resolved, or adjudged in any of the king’s courts of justice, together with such causes and reasons as were delivered by the judges of the same; and in this sense *Littleton* useth the word in this place.” *Id.* at \*293a. Coke began publishing his own famous case reports in 1600 and singlehandedly doubled the number of report volumes available in England.

34. PERCY H. WINFIELD, *THE CHIEF SOURCES OF ENGLISH LEGAL HISTORY* 155 (1925). Appellate practice in the modern English court is still less than a model of efficiency and effectiveness. See ROBERT J. MARTINEAU, *APPELLATE JUSTICE IN ENGLAND AND THE UNITED STATES* 120-32 (1990).

35. J.H. BAKER, *AN INTRODUCTION TO ENGLISH LEGAL HISTORY* 272 (3d ed. 1990).

36. WINFIELD, *supra* note 34, at 158.

the same case and each then wrote up his separate accounts. Like the Gospels, each report provided a unique (and occasionally disparate) narration of the same set of events.<sup>37</sup> This situation sometimes created frustrations for the attorney citing precedent in court. The judge could contradict any version of the case cited in favor of a more accurate report<sup>38</sup> or reject the report altogether for reasons of reporting error.<sup>39</sup> Judges could legitimately and necessarily control precedent by discriminating among the collateral reports.<sup>40</sup>

About the same time that modern case reports appeared in England, the American colonies began their search for a body of law. In 1647 the officers of the Massachusetts Bay Colony Court purchased for their study a set of Coke's *Reports*.<sup>41</sup> The resulting body of laws, *The Laws and Liberties of Massachusetts*, required that "everie Judgement given in any

37. In 1855 American author John Wallace suggested arranging into parallel columns these variant texts of the same case, the juxtaposition of which would conveniently provide a single view of the case. JOHN W. WALLACE, *THE REPORTERS* 41-42 (3d ed. Philadelphia, T. Johnson 1855). Wallace also suggested recompiling all these versions into a single set of reports, which would be done in a new, orderly, and modern manner with "each case so reported to be accompanied by *pervading and accurate references to all prior and subsequent decisions*." *Id.* at 42 (emphasis added). *The Revised Reports* (1891-1920) incorporate, in a less ambitious fashion, Wallace's latter suggestion.

38. "[A] report has not, in this jurisdiction, any authentic or even official character, and can always be contradicted by a more accurate report or even by the clear recollection of the Court or counsel . . . ." FREDERICK POLLOCK, *ESSAYS IN THE LAW* 233 (1922). Where this situation arose in the United States, conflicting reports simply diminished the authority of the case. HENRY BLACK, *HANDBOOK ON THE LAW OF JUDICIAL PRECEDENTS* 145 (1912).

39. "It is but little consolation to say, on the trial of a cause, 'That case is not law,' after it has misled half the kingdom." W.T. DANIEL, *THE HISTORY AND ORIGIN OF THE LAW REPORTS* 11 (London, W. Clowes & Sons 1884) (quoting Preface to Watkins' *Conveyancing*).

40. See 12 Holdsworth, *supra* note 32, at 154 (1938). For this reason, nineteenth-century legal scholars in both England and America devoted much energy and ink to assessing the authoritative value of the various reports. Practitioner guides, periodical articles, and even entire texts were consigned to this task. See, e.g., RICHARD W. BRIDGMAN, *A SHORT VIEW OF LEGAL BIBLIOGRAPHY: CONTAINING SOME CRITICAL OBSERVATIONS ON THE AUTHORITY OF THE REPORTERS AND OTHER LAW WRITERS* (London, W. Reed 1807); WALLACE, *supra* note 37. Greenleaf's *Collection of Overruled Cases* also contains many entries about reporter sets. The duplicative system of reporting that originally beget this problem remains in existence today in England, but standardization of reporting style has virtually eliminated the concern about authoritativeness. Much of the credit for standardization goes to the Incorporated Council of Law Reporting, established in 1865, which publishes the Law Reports series. Although these reports are not official, they do enjoy preferred status. JEAN DANE & PHILIP A. THOMAS, *HOW TO USE A LAW LIBRARY* 11-12 (2d ed. 1987).

41. The records state:

It is agreed to by this Corte, to the end we may have the better light for making & proceeding about laws, that there shalbe these books following procured for the use of the Corte from time to time:—

Two of Sir Edward Cooke upon Littleton; two of the Books of Entryes; two of Sir Edward Cooke upon Magna Charta; two of [Rastell's] Newe Tearmes of the Lawe; two Daltons Justice of Peace; two of Sir Edward Cooks Reports.

Journal entry for Nov. 11, 1647, in 2 *RECORDS OF THE GOVERNOR OF MASSACHUSETTS BAY COLONY* 212 (Nathaniel Shurtleff ed., Boston, White 1853).

Court, with all the substantial reasons shall be recorded in a book” for use as “president to posterity.”<sup>42</sup> Because these judgments were not published, lawyers generally relied upon the reports of English cases and other English authors, such as Blackstone and Coke, for authority.<sup>43</sup> American court reports eventually did arise from the same source as English reports: lawyers attended court, took notes of the arguments and the decisions, and eventually began publishing their notes. In 1789, noting that the law developed in American courts in the preceding years was “soon forgot, or misunderstood, or erroneously reported from memory,” Ephraim Kirby published his report of Connecticut Supreme Court cases.<sup>44</sup> Within a year, Alexander Dallas began reporting the cases of the United States Supreme Court.<sup>45</sup> This “nominative” style of reporting carried over to the nineteenth century, but as the century progressed, case reporting became more formal (and even rather mechanical) as states appointed official reporters and required courts to issue and publish written opinions. The body of American case law grew rapidly, as did the pressure to abandon the servile citation of English authorities—to quit “this everlasting copying of British publications, this everlasting waiting for the word of the fugeleman beyond [the] sea.”<sup>46</sup> American lawyers and judges began to look toward decisions of other American jurisdictions for citations to enhance their arguments and opinions.<sup>47</sup>

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42. THE LAWS AND LIBERTIES OF MASSACHUSETTS 46 (1929) (reprint of the 1648 edition in the Henry E. Huntington Library). Some of these mandated “judgment books,” summarizing pleadings, verdicts, and judgments, survive today. See Robert J. Brink, “Immortality Brought to Light”: An Overview of Massachusetts Colonial Court Records, 62 PUBLICATIONS OF THE COLONIAL SOCIETY OF MASSACHUSETTS 471 (1984).

43. Colonial court records indicate that lawyers “possessed a working knowledge of virtually every collection of English law reports available prior to the Revolution.” RICHARD S. ECKERT, “THE GENTLEMEN OF THE PROFESSION” 259 (1991). A study of Josiah Quincy’s case reports, covering the period 1722-1761, show that lawyers used a “multitude” of citations, mostly reports, to support their arguments. *Id.* at 258-59. Use of English authority persisted after Independence; Kent, in his *Commentaries*, suggested that new editions of the old English reports append notes “to show, by a reference to other decisions, how far it might still be regarded as an authority, and when and where it had been confirmed, or questioned, or extended, or restricted, or overruled.” JAMES KENT, COMMENTARIES ON AMERICAN LAW \*486.

44. EPHRAIM KIRBY, REPORTS OF CASES ADJUDGED IN THE SUPERIOR COURT OF THE STATE OF CONNECTICUT FROM THE YEAR 1785 TO MAY 1788 at iii (photo. reprint 1899) (1789). Kirby also correctly predicted: “[S]hould histories of important causes be taken and published . . . it would in time produce a permanent system of common law.” *Id.* at iv.

45. See generally Craig Joyce, *Wheaton v. Peters: The Untold Story of the Early Reporters*, 1985 Y.B. SUP. CT. HIST. SOC’Y 35.

46. *To the Public*, 1 AM. JURIST iv (1829)(quoting a letter from an unnamed “American Jurist”). By the end of the century, a study of state supreme court decisions found that only about three percent of the cases cited were English. Frank C. Smith, [Appendix to] *Report of the Committee on Law Reporting*, 1895 REP. EIGHTEENTH ANN. MEETING A.B.A. 362, 367.

47. Erwin C. Surrency, *Law Reports in the United States*, 25 AM. J. LEGAL HIST. 48, 54 (1981).

### B. *The Role of Precedent*

Thus far, the stories of reporting and citation practices in England and the States are roughly parallel. In the nineteenth century, however, the effects of some factors unique to the United States judicial system sharpened the need for a device to help the bench and bar gauge the authority of a case. The first factor was the presence of multiple court systems in the United States, as opposed to the centralized system in England. An American attorney often cited cases from his own state, sister states, and England, but the courts in each state could and did operate independently in interpreting these various cases. Also, the greater number of courts, the easier right of appeal, and the larger population resulted in a larger volume of cases, which required an army of judges—"men of very unequal talents, experience, and learning"—to interpret the law.<sup>48</sup> These centrifugal forces created a splintered common law in America. Even as early as 1822, it was ruefully acknowledged that "[t]here is little or no hope of a uniform national common law."<sup>49</sup> This diversity meant that the authority of a single case could vary significantly from jurisdiction to jurisdiction; precedent had become a more elastic notion.

The comparative role of precedent in American and English jurisprudence may also have influenced the development of legal citation indexes. Although scholars debate the degree of difference, there is consensus that the English courts of the nineteenth century generally applied rules of precedent more strictly than their American counterparts.<sup>50</sup> Although the House of Lords, for example, was not bound by any law or rule to its previous decisions, it acted during much of the nineteenth century as though such a rule were in force,<sup>51</sup> and it was not until 1966 that the House of Lords expressly empowered itself to overrule previous cases.<sup>52</sup> Prior to that modification, generations of judges fashioned a variety of

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48. Book Review, *supra* note 18, at 68.

49. *Id.*

50. See generally 12 HOLDSWORTH, *supra* note 32, at 147-62; PRECEDENT IN LAW, *supra* note 31; John W. Salmond, *The Theory of Judicial Precedents*, 16 LAW Q. REV. 376 (1900).

51. MAX RADIN, HANDBOOK OF ANGLO-AMERICAN LEGAL HISTORY 356 (1936).

52. *Practice Statement*, [1966] 3 All E.R. 77. Actually, the Lord Chancellor, in announcing this change of practice, stated that the House of Lords would "depart from" prior decisions. In subsequent cases where the members of the House of Lords exercised their new power, they employed similar euphemisms to describe the action of overruling their own precedents. One judge subsequently chided his colleagues about this semantic practice; a wise decision was more likely, he argued, if the reality of overruling was faced by expressly using the term. Richard Bronaugh, *Persuasive Precedent*, in PRECEDENT IN LAW, *supra* note 31, at 217, 242. The *Oxford English Dictionary* (2d ed. 1989) notes the earliest legal use of "overrule" in 1660, but neither Rastell's *Terms of the Law* nor Cowell's *Legal Interpreter* (both eighteenth-century English law dictionaries) defines the term.

devices to deal with “bad” cases, including elevating the technique of distinguishing precedents “to a very high pitch of ingenuity.”<sup>53</sup>

In the United States, on the other hand, the right to overrule cases was established, even encouraged, from early on. Faced with a clean slate after Independence, American judges applied the doctrine of *stare decisis* “hesitantly and qualifiedly” as they struggled to establish law based on principles.<sup>54</sup> A leading proponent for this principled approach was Justice John J. Marshall, Chief Justice of the U.S. Supreme Court from 1801 to 1835.<sup>55</sup> Ironically, it is Marshall who holds the distinction of writing the first Supreme Court decision to be overruled. The Court established in 1810 the right to reevaluate its earlier decisions by overruling a two-year-old decision by Marshall.<sup>56</sup>

American nineteenth-century judges did not use explicit “overruling” on a daily basis to deal with precedent. They were not at all reticent, however, about employing the less radical techniques of modifying, limiting, or questioning earlier opinions, especially opinions cited only as persuasive authority. By 1871 one commentator estimated that some six thousand American and English cases were overruled or doubted.<sup>57</sup> Given

53. Max Radin, *The Trail of the Calf*, 32 CORNELL L.Q. 137, 143 (1946). In 1616 Sir Francis Bacon, attorney general of England under King James, devised an interesting plan for ridding English law of bad cases and avoiding the mental gymnastics of distinguishing precedents. He suggested throwing out all the obviously bad cases, collecting all the conflicting and doubtful cases, and submitting them to a panel of judges to “be put into certainty.” *A Proposition to His Majesty Touching the Compiling and Amendment of the Laws of England*, in 2 THE WORKS OF FRANCIS BACON 229, 232 (Basil Montagu ed., Philadelphia, A. Hart 1851). This plan never received action.

54. RADIN, *supra* note 51, at 357. See also WILLIAM E. NELSON, *THE AMERICANIZATION OF COMMON LAW 171-72* (1975).

55. “A . . . characteristic of Marshall’s opinions, remarkable in our legal culture, is the absence of citations to previous decisions, American or English (and there were plenty he could have cited) . . .” RICHARD A. POSNER, *LAW AND LITERATURE* 290 (1988). Indeed, in four of Marshall’s leading cases, he cited a total of one case decision. See *Marbury v. Madison*, 5 U.S. (1 Cranch) 137 (1803); *McCulloch v. Maryland*, 17 U.S. (4 Wheat.) 316 (1819); *Dartmouth College v. Woodward*, 17 U.S. (4 Wheat.) 518 (1819); *Gibbons v. Ogden*, 22 U.S. (9 Wheat.) 1 (1824). Joseph Story, who diligently tracked the precedential value of cases and peppered his opinions with scores of citations, was a colleague of Marshall’s at the Supreme Court. The story goes that Marshall would sometimes deliver his opinion from the bench and then conclude by adding: “Mr. Justice Story will furnish the authorities.” KARL N. LEWELLYN, *THE BRAMBLE BUSH* 36 (1951).

56. *Hudson v. Guestier*, 10 U.S. (6 Cranch) 281 (1810) (Marshall dissenting). See Albert P. Blaustein & Andrew H. Field, “*Overruling*” *Opinions in the Supreme Court*, 57 MICH. L. REV. 151 (1958). Since 1810, the Court has reaffirmed this principle by overruling precedents on some 100 other occasions. ELDER WITT, *CONGRESSIONAL QUARTERLY’S GUIDE TO THE U.S. SUPREME COURT* 292 (2d ed. 1990). State courts also recognized the power to overrule decisions. See, e.g., *Baker v. Lorillard*, 4 N.Y. 257, 261 (1850) (asserting that it is the “duty of every judge and every court to examine its own decisions . . . without fear, and to revise them without reluctance”).

57. JAMES RAM, *THE SCIENCE OF LEGAL JUDGMENT* 228 (John Townshend ed., New York, Baker, Voorhis 1871).

this practice, both the practitioner and the court faced the same risk when citing a case as authority: precedents valid for centuries or established for less than a year could fall at any time. Or, to use Llewellyn's colorful warning: "Like a freeze or a hurricane in Florida, [overrulings] must be reckoned with—perhaps tomorrow."<sup>58</sup>

### C. *The Appellate Brief*

The appearance and evolution of the modern appellate brief provided another catalyst for citation indexes. Initially, appellate practice in the United States followed the English tradition of presenting both the facts and the arguments in an oral presentation. Arguments for a single case could and did span several days. As early as 1795, the U.S. Supreme Court notified the "Gentlemen of the Bar . . . that the Court will hereafter expect to be furnished with a statement of the material points of the Case."<sup>59</sup> Some state courts soon made similar requirements. These first written arguments did not supplant oral argument as a court's primary means of learning about the case. But as the caseload increased, the Supreme Court began more and more to rely upon and expand the role of the written arguments. In 1849 the Court issued a rule that simultaneously limited oral argument to two hours and ordered: "Counsel will not be heard, unless a printed abstract of the case be first filed, together with the points intended to be made, and the authorities intended to be cited in support of them arranged under the respective points. And no other book or case be referred to in the argument."<sup>60</sup> This printed abstract eventually became known as the "brief," and the rules of the Court have continually elaborated on the requirements of this document.<sup>61</sup>

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58. LLEWELLYN, *supra* note 25, at 91.

59. Sup. Ct. R. 4, 3 U.S. (3 Dallas) 120 (1795). See also 1 DOCUMENTARY HISTORY OF THE SUPREME COURT OF THE UNITED STATES 1789-1800, at 232-33 (Maeva Marcus & James R. Perry eds., 1985).

60. Sup. Ct. R. 53, 48 U.S. (7 How.) at [v] (1849). Sheer boredom may also have been a motivating factor in limiting oral arguments. "The acme of judicial distinction," Justice Marshall wryly contended, "means the ability to look a lawyer straight in the eyes for two hours and not hear a damned word he says." 4 ALBERT J. BEVERIDGE, THE LIFE OF JOHN MARSHALL 83 (1919).

61. The Court first used the term "brief" in an order issued in 1821. See Sup. Ct. R. 30, 19 U.S. (6 Wheat.) at [v] (1821). It was not until the 1858 term that the Court began to use the term regularly to refer to the document containing "the authorities intended to be cited." Sup. Ct. R. 21, 62 U.S. (21 How.) at xii (1859). Despite the guidance of the rules, the quality of briefs submitted by the bar varied widely, forcing the Court to prescribe in detail how a brief was to be organized. 6 CHARLES FAIRMAN, HISTORY OF THE SUPREME COURT OF THE UNITED STATES 1447-48 (1971). The ultimate penalty for violation of these rules—dismissal of the appeal—was first imposed by the Court in *Portland Company v. United States*, 82 U.S. (15 Wall.) 1 (1873). Chief Justice Chase, after explaining that the new rules on briefs were intended to remedy the "inattention of the bar" to the old rules, emphasized that the "necessity of strict compliance with these rules, especially in view of the greatly augmented business of the court, is evident." 82 U.S. (15 Wall.) at 2.

The impact of this written tradition in the United States can best be appreciated when comparison is made with the purely oral tradition in England.<sup>62</sup> Until recently, every aspect of appellate practice in the courts of England was oral: the facts of the cases and arguments were presented exclusively in an oral hearing, and the judge, relying solely on the authority and arguments made in the hearing, immediately pronounced an oral extemporaneous judgment.<sup>63</sup> By contrast, in the United States, counsel submitted briefs containing the arguments and supporting authorities to the court before oral argument, and the court had the added benefit of studying the brief while preparing the written decision. Clearly, the American system provided greater opportunity for the court to assess the precedential merit of the authorities cited—and, thus, greater incentive for the lawyers to make their own check of authorities before going to court. Also, as the body of precedent swelled, commentary on briefing techniques continually exhorted lawyers to focus their arguments and to be selective in compiling a list of authorities;<sup>64</sup> lawyers could no longer simply cite as many cases as possible in the hope that one would meet the approval of the court. This selectivity required some tool to help the bench and bar measure the relative authority of cases and discern the thread of reason running through the maze of precedents.

#### D. *Alternatives to the Citation Index*

Indeed, the mass of cases had already spawned a number of other types of publications designed to make the lawyer's life easier (and to make a profit for the publisher). The genesis of the legal citation index should be examined in light of this whole milieu of nineteenth-century legal publishing. At the base of the publication pyramid were the growing volumes of case reports. Friedman aptly describes the situation:

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62. See generally MARTINEAU, *supra* note 34, at 109-39 (1990); Stephen M. Shapiro, *Oral Argument in the Supreme Court: The Felt Necessities of Time*, 1985 Y.B. SUP. CT. HIST. SOC'Y 22.

63. The only major change in this system occurred in 1989 when the Court of Appeal mandated the filing of "skeleton arguments" in the Court of Appeal. Practice Note, [1989] All E.R. 891. For background on this change, see also Practice Note, [1983] All E.R. 34; Practice Note, [1985] All E.R. 384.

64. In 1889 Justice Samuel Miller chastised the bar:

If it were not so common it would be a matter of wonder that counsel, in making what they call a 'brief,' or even in a printed argument, where a proposition of law is suggested as applicable to the case, would append to it from twenty to a hundred citations of adjudged cases, with their names and the books where they are to be found . . . I do not hesitate to say that in the condition of business in the courts of higher jurisdiction in this country it is an absolute necessity to disregard such a list as that.

Hon. Samuel Miller, *The Use and Value of Authorities*, 23 AM. L. REV. 165, 175 (1889). The Supreme Court eventually despaired of using mere persuasion to control the length of briefs; in 1980 the rules imposed a fifty-page limit on briefs. Sup. Ct. R. 34, 445 U.S. 1028 (1980).

Each generation taught the older one a lesson in sheer voluminousness. In 1810, there were only eighteen published volumes of American reports; in 1848, about eight hundred; by 1855, about 3,798; by 1910, over 8,000. The end is not yet in sight . . . Lawyers simply gave up any attempt to follow the whole of the law; they concentrated on problems at hand, and corners of the law they habitually dealt with, and they grumbled about the expense and the confusion of the law reports. Yet basically, it was the lawyers' own hunger for precedent that kept the system alive.<sup>65</sup>

Treatises were one means of compartmentalizing cases; they offered a tidy package of precedent and commentary on a particular topic. Legal publishers produced an estimated thousand or so treatises in just the last half of the nineteenth century.<sup>66</sup> Digests, less numerous, were also a very popular tool for marshalling case authority. The first digests of American law began to appear early in the nineteenth century, but the individual compilers generally limited their efforts to the cases of a particular jurisdiction. Comprehensive national digests were mainly products of editors at major legal publishers and were not available until the last half of the nineteenth century.<sup>67</sup>

Treatises and digests alike were effective (but not flawless) tools for the attorney in search of cases to support a point of law, but neither offered much guidance about the relative precedential value of these cases.<sup>68</sup> Having no convenient means of distinguishing these cases on the basis of their subsequent judicial treatment, some lawyers simply copied the list of cases—sometimes a long list—from the digest to their briefs. The pejorative term “case lawyers” was coined to describe these individuals,<sup>69</sup>

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65. FRIEDMAN, *supra* note 2, at 539.

66. *Id.* at 541. The quality of these treatises was almost uniformly bad. Even contemporaneous observers recognized that many authors composed:

in the most disorderly, vague, and jejune manner. Often [treatises] are mere digests of adjudicated cases, copied in the precise words of the head-notes of the reports, strung together at random by a feeble thread of common-place criticism, and requiring for their composition no more intellect than would be necessary to compile the indexes of a hundred volumes of the reports into one.

*The American Bar*, 28 U.S. MAG. & DEMOCRATIC REV. 195, 205 (1851).

67. See ERWIN C. SURRENCY, *A HISTORY OF AMERICAN LAW PUBLISHING* 113-23 (1990).

68. Some claims to the contrary were made. One noted student manual, in extolling the virtues of a good treatise, sketches a scene worthy of a modern television courtroom drama: a young lawyer, in the course of argument, rebuts an unfamiliar authority by turning to the “good elementary treatise” he has “at hand,” locating the discussion of the case, and determining that the case “has been overruled, or limited in its application, or that it is borne down by the weight of other decisions having a different significance.” The treatise enabled him “at once to dispose of the difficulty.” JOEL P. BISHOP, *THE FIRST BOOK OF THE LAW* 286 (Boston, Little, Brown 1868).

69. Case lawyers were “a class with whom every case, wherever, whenever, and however decided, seems to be equally regarded; who do not stop to canvass the grounds of the decision or to

and the dreaded “string citation” thus became a standard element of many legal briefs (and court decisions) of the late nineteenth century.<sup>70</sup>

Despite the absence of legal citation indexes (save editions of Greenleaf’s *Overruled Cases*), the lawyer of the early nineteenth century was not completely powerless to track the authority of a case. Given suitable resolve and a high tolerance for tedium, a lawyer could accomplish the task using one of the methods recommended by legal educators. David Hoffman, for example, was a great advocate of “notebooks” as aids in the study and practice of law. In his popular and respected *Course of Legal Study*, Hoffman advised the student to compile and maintain a “Note Book of Remarkable Cases Modified, Doubtful, or Denied”: “The student may insert in the note book such great or leading cases as have been modified, doubted, denied, or held to be inaccurately reported, which should be arranged either under proper titles, or *alphabetically*, sometimes accompanied by a concise statement of the point so modified, &c.”<sup>71</sup> Samuel Warren, in a competing guide for law students, reserved his suggestions on the topic of commonplace books

for the last, on account of its special importance. Let the student—or rather young practitioner—set himself down resolutely to the task of reading, with the utmost care, each new number of the Reports; and after *noting up* every decision, *i.e.* minuting it on the margin of some previous case in the Reports, which it materially affects—either corroborating, over-ruling, or qualifying it—distribute their contents under their appropriate heads in any favourite text-book. . . . [Thus] the student will be enabled easily and leisurely to keep pace with the decisions which now, truly,

—“Come not [as] single spies,  
But in battalions.”<sup>72</sup>

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compare them with cases of opposite character, but appear to consider that questions of law, ever so intricate and important, are to be decided by the number of cases hunted up on either side . . . .” RALPH LOCKWOOD, AN ANALYTICAL AND PRACTICAL SYNOPSIS OF ALL THE CASES ARGUED AND REVERSED IN LAW AND EQUITY IN THE COURT FOR THE CORRECTION OF ERRORS OF THE STATE OF NEW YORK, at xxxix-xl (New York, Banks, Gould 1848).

70. Tracing the beginnings of the string citation is something of a chicken-or-egg problem. Attorneys did use string citations, but perhaps they got their inspiration from the judicial opinions of the period. Compare Miller, *supra* note 64, at 175 (accusing lawyers of shirking duty to examine and distill lists of cases) with Edward Q. Keasbey & Adolph Moses, *Report of the Committee on Law Reporting and Digesting*, 1899 REP. TWENTY-SECOND ANN. MEETING A.B.A. 454, 456 (asking for relief from judges’ use of “numerous citations in support of conclusions on which there is no difference of opinion”). Modern appellate advocacy still vigilantly guards against string citations, regarded as “hideous on the page and useless to the judge reading it.” Irving Younger, *Citing Cases for Maximum Impact*, A.B.A. J., Oct. 1, 1986, at 110, 110.

71. DAVID HOFFMAN, A COURSE OF LEGAL STUDY 787 (Baltimore, Neal 2d ed. 1836). Hoffman also “was gratified” to note that Greenleaf’s *Collection of Cases Overruled* confirmed the utility of this type of notebook. *Id.* at 795.

72. SAMUEL WARREN, A POPULAR AND PRACTICAL INTRODUCTION TO LAW STUDIES 413-14 (London, Maxwell 1835).

“Noting up” may have been sufficient to keep up with the battalion of cases in 1835, but it did not pass muster in dealing with the brigades, divisions, and armies of cases reported as the century progressed. The number of cases eventually overwhelmed any individual effort to keep apace: in 1895 a study calculated that “a lawyer who devotes three hundred days in the year to the reading of the reports published in the United States must read two hundred pages every day in order to complete the work.”<sup>73</sup>

### III. The Development of the Legal Citation Index

It is, of course, possible to argue that the exploding number of reported cases was by itself a sufficient impetus for the development of legal citation indexes. If so, the factors described in the foregoing discussion perhaps only catalyzed the process. Regardless of the exact reasons, the fact remains that the legal profession began in the nineteenth century to generate the first in a long series of legal citation indexes. Like most legal publications, the citation index did not begin as a commercial product. The efforts and ideas of many individuals, over the course of about eighty years, gave the citation index its present form. This section will describe some of the more notable indexes and the men who created them.<sup>74</sup>

#### A. Citation Tables in Digests and Reports

Simon Greenleaf's *Overruled Cases* was a good beginning and valued by the profession, but in the end it was only a prototype. From the time it was published, commentators noted deficiencies. The first complaint was that the collection was not complete, that cases which had been overruled, modified, or limited were missing from the list. Acknowledging that this undertaking was a “work which no single hand can rationally hope to render complete,” the reviewer simply endorsed Greenleaf's call for aid in completing the list.<sup>75</sup> The “one great fault” was that Greenleaf did not consistently note the particular point overruled, doubted, or limited in a case.<sup>76</sup> Other suggested enhancements included showing more fully how different states interpreted the same case and how they departed from

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73. J. Newton Fiero et al., *Report of the Committee on Law Reporting*, 1895 REP. EIGHTEENTH ANN. MEETING A.B.A. 343, 345 (referring to Virginia Bar Association study).

74. Although no particular effort was made to research the gender issue, it does appear that men played a predominant role in the development of legal citation indexes. This is not surprising, as the legal profession of the nineteenth century did not encourage the participation of women. It should be noted, however, that at least one woman compiled an early legal citation index: Elizabeth Finley, a law librarian, who compiled *Hawaiian Citations* in the 1920s.

75. Book Review, *supra* note 18, at 71.

76. *Id.* This lament was even echoed in Greenleaf's eulogy. Parsons, *supra* note 6, at 414.

English common law. Subsequent editions did not completely remedy these shortcomings. As the body of case law multiplied over the next thirty years, it was almost laughable to think that any one volume could *possibly* meet all these requirements. After the last edition of *Overruled Cases* in 1856, few would even attempt to duplicate the task of tracking the treatment of every overruled American and English case in all American courts.

The first refinement of the legal citation index, therefore, was to limit the scope of coverage to a particular jurisdiction. For a single state, the logical place to provide information about which cases had been overruled was in the report volumes themselves. Indeed, a reviewer of Greenleaf's book sensibly noted that an "*index expurgatorius* is needed for many a volume of reports."<sup>77</sup> Various state reporters began, in some circumstances under order of law, to include a table of overruled cases in each volume of reports. The Indiana legislature, for example, incorporated this feature in establishing the *Indiana Reports* in 1852.<sup>78</sup> Although convenient, this type of table did not fully meet the needs of the bar. Overrulings, it has been noted, sometimes only recognize "*a fait accompli*."<sup>79</sup> For maximum utility, therefore, the citation index also had to allow the attorney to anticipate an overruling by following the decline in the authority of a case as it was limited, doubted, or questioned by later courts. In 1855 Justice Benjamin Curtis offered a more acceptable arrangement in his retrospective edition of the U.S. Supreme Court decisions.<sup>80</sup> After the text of each case, he appended a note referencing all subsequent Supreme Court decisions that cited the reported case. Curtis limited his list of citing cases to bare citations, but other compilers used more elaborate schemes.

Logan Bleckley, reporter for the Georgia Supreme Court, appended to a volume of the *Georgia Reports* a cumulative list of all the state's supreme court cases that had been cited in subsequent cases of the same court. For each case, he described in a brief phrase the point of law cited, then listed two numbers: the volume and page numbers of the citing case. Typography clearly distinguished the two sets of numbers, as the following sample shows:

1 Kelly.

Page.

72. Lockwood vs. Saffold - Eventual condemnation money, 2,343.

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77. Book Review, *supra* note 18, at 66.

78. 1 Rev. Stat. Ind. ch. 93 (1852).

79. WILLIAM O. DOUGLAS, *STARE DECISIS* 22 (1949).

80. Reports of the Decisions of the Supreme Court of the United States, with Notes and Digest (Benjamin R. Curtis ed., Boston, Little, Brown 1855).

75. Broughton v. Badgett, Negotiable paper, 1,236; 8,53; 27,463. Action on warranty, 27,463.<sup>81</sup>

Bleckley's little table was mentioned not once, but twice, by the editors of *The American Law Review*, who found it "most useful"<sup>82</sup> and a "marvel of patient and laborious industry."<sup>83</sup>

Another major case tool was, of course, the digest. The marriage of legal citation indexes and digests was natural and common in the nineteenth century. Justice Story's proposal in 1819 to add a table of citing cases to a Supreme Court digest probably ranks as one of the first references to this scheme, although it is unknown who first implemented it. An early example, however, can be found in George Clinton's 1852 digest of New York cases, which included an alphabetical list of cases affirmed, reversed, overruled, questioned, or qualified by subsequent New York decisions.<sup>84</sup> The format was very simple:

Allen v. The Merchant's Bank, 15 Wend. 482; rev'd 22 Wend. 215

Allen v. Pell, 4 Wend. 505; explained, Whitbeck v. Skinner, 7 Hill 53.<sup>85</sup>

By the 1870s a table of citing cases was an "important, but too often neglected part" of a digest.<sup>86</sup> These digest tables were handy, but they suffered from the same problem as the parent digest volume—the lack of regular updating. Digests were compiled by individuals, and updating was at the pleasure of the compiler, who often did not bother.

Little, Brown's *United States Digest (New Series)*, introduced in 1870, was a promising solution to this problem. These annual volumes not only digested cases, they also included a "Cases Criticised" table, which indicated cases "affirmed, approved, doubted, disapproved, overruled, or reversed."<sup>87</sup> The table also included a short statement about the rule of the

81. LOGAN E. BLECKLEY, 35 REPORTS OF CASES IN LAW AND EQUITY ARGUED AND DETERMINED IN THE SUPREME COURT OF GEORGIA (Atlanta, Intelligencer 1868).

82. Book Review, 3 AM. L. REV. 144, 144 (1868). The reviewer also found it a matter for regret that an index of cited cases was not added as a matter of course in each new volume of reports. *Id.*

83. Book Review, 3 AM. L. REV. 159 (1868) (review of Bleckley's table after it was published as a separate pamphlet). Bleckley, "methodical to a remarkable degree," kept notebooks from his reading of cases; it was the results of this study that he gave to the profession in publishing the table. GEORGIA BAR ASSOCIATION, A MEMORIAL OF LOGAN EDWIN BLECKLEY 9-10 (1909). Bleckley went on to become an illustrious member of the Georgia Supreme Court.

84. GEORGE W. CLINTON, DIGEST OF THE DECISIONS AT LAW AND IN EQUITY OF THE SEVERAL COURTS OF THE STATE OF NEW YORK (Albany, Little, Brown 1852). See also FREDERICK C. BRIGHTLY, A DIGEST OF DECISIONS OF THE STATE OF PENNSYLVANIA (Philadelphia, Kay 1877); HOMER C. ELLER, DIGEST OF DECISIONS OF THE SUPREME COURT OF MINNESOTA (St. Paul, West 1881); A.L. RHODES, CALIFORNIA DIGEST (San Francisco, Bancroft 1882).

85. 3 CLINTON, *supra* note 84, at 1709.

86. Book Review, 1 AM. L. REV. 733, 733 (1867) (reviewing BENJAMIN V. ABBOTT & AUSTIN ABBOTT, A DIGEST OF NEW YORK STATUTES AND REPORTS (New York 1867)).

87. SURRENCY, *supra* note 67, at 182.

case and how subsequent decisions had interpreted that rule. This at least gave the bar a consistent and current source for checking the authority of cases. It was not necessarily a convenient means, however. As the years passed and the annual volumes amassed, the researcher who needed all citing cases for a reported decision had to plow through the "Cases Criticised" tables in up to twenty-five annual volumes. West Publishing then purchased the digest series from Little, Brown and in 1897 announced the massive new compilation of all American cases: the *American Digest Century Edition*. This new publication revolutionized legal digesting by consolidating all American cases under one classification scheme, but it did nothing to reform legal citation indexing. With its new key-number digest series, West dropped the idea of listing all citing cases; citation information was limited to the direct history of the case. The very success of the new key-number digest probably did much to seal the fate of the integrated digest/citation index. Other publishers continued to incorporate citation indexes into their digests, but the impact of these efforts was minimal given the blanketing effect of West's digests.<sup>88</sup> The link between citation indexes and digests would enjoy a brief resurgence under an interesting Shepard's scheme in the early twentieth century—and then simply fade.<sup>89</sup> (A wily publisher, West soon would reenter the legal citation index market with a new product.)

### B. Samuel Linn's Analytical Index

The legal citation index was most successfully compiled as a separate publication, rather than a hybrid of reports or digests. One of the first of these publications was Samuel Linn's "analytical index" of Pennsylvania cases.<sup>90</sup> Like Greenleaf, Linn originally compiled his volume for personal use, then published it for the use of the profession in 1857. He divided his index into two parts. In the first section, he listed alphabetically all Pennsylvania Supreme Court cases and references to citing cases from the same court. In the references, he conveniently pinpointed the exact page where the citation to the principal case could be found, and, by cleverly using asterisks, even distinguished citations in counsel arguments from citations in the court opinion. Some sample entries are reproduced below:

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88. See, e.g., 15 DECIMAL DIGEST OF THE INDIANA SUPREME COURT AND APPELLATE COURTS DECISIONS 97 (Lifetime ed. 1938) (Table of Cases & Cases Judicially Noticed); PETER V. ROSS, DIGEST OF THE DECISIONS OF THE SUPREME COURT OF ARIZONA 805-52 (1915).

89. See *infra* p. 34.

90. SAMUEL LINN, AN ANALYTICAL INDEX OF PARALLEL REFERENCE TO THE CASES ADJUDGED IN THE SEVERAL COURTS OF PENNSYLVANIA, WITH AN APPENDIX CONTAINING A COLLECTION OF CASES OVERRULED, DENIED, DOUBTED OR LIMITED IN THEIR APPLICATION (Philadelphia, Kay 1857).

Armstrong v. McGhee, Add. 261

5 P.S.R. 341

Arndt v. Arndt, 1 S. & R. 256

S. & R. 47; 3 R. 20\*; 4 R. 328; 5 Wh. 396\*; 1 W. 464\*; 10 P.S.R. 89<sup>91</sup>

Linn apparently was aware that an unadorned list of citations was not a satisfactory way to present complete information about cases that were significantly affected by later decisions. In the second section of this volume, he narrowed his list to cases that had been in any way affected by remarks of the Supreme Court. For each case, he characterized the nature of the citing court's treatment (overruled, questioned, etc.) and then actually quoted (sometimes a full paragraph) from the language of the court's ruling on the cited case. Modified, limited, doubted, questioned, or overruled cases were listed in this section, but Linn took pains to point out that no case was declared overruled unless the court used that term explicitly. Aware that "many cases are *in effect* overruled by subsequent decisions," he nevertheless felt that his course was less misleading and less inclined to be "productive of mischief rather than good."<sup>92</sup>

Considering that this volume represents the infancy of the legal citation index, it is an amazingly sophisticated tool. It is also surprising to find that Linn fully realized the potential application of his tool. Aware that his reader might not grasp the significance of its features, he elaborated in his preface about how the index, as an auxiliary aid to the state digest, could further research. Legal principles, he noted, were relatively easy to trace backwards to their source through internal citations in a case.

But a principle cannot by the same process be traced forward from its rise to its later development, for the very obvious reason that no case can refer to future cases which then have no existence. But by means of [the] simple arrangement [in this volume], a principle may be readily pursued through the books from its origin to its latest growth - from its infancy until it arrives at full stature.

Another advantage intended to be derived therefrom is the means which it will afford to test the value of any case, as authority for the principle which it purports to decide, by the references to all the subsequent cases wherein it is mentioned or commented upon in the opinion of the court.<sup>93</sup>

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91. *Id.* at 21.

92. *Id.* at preface. Many later citation indexes, including the Shepard's citators, implemented a similar policy about overruled cases. The strict application of this policy can lead to some strange results. *Shepard's United States Citations*, for example, still does not characterize *Plessy v. Ferguson* as "overruled." Also, many of the cases that Justice Douglas included in his list of "overruled" cases are not so noted in Shepard's. See DOUGLAS, *supra* note 79, at 32-34.

93. LINN, *supra* note 90, at preface.

Linn goes on to quote the endorsement of his volume by the Hon. George Sharswood of the Pennsylvania Supreme Court: "To be able to ascertain almost at a glance, whenever a case is cited, the extent of its authority, will make it an essential *vade mecum* of the practitioner . . . and will so materially assist legal investigation, that its importance can hardly be over-estimated."<sup>94</sup> A reviewer in *American Law Register*, initially skeptical of the plan, tested the references for several cases. He then (almost giddily) described the labor-saving results and concluded: "It is not often that a professional book falls under our editorial attention that has challenged so much investigation at our hands, and has left so little to complain of."<sup>95</sup>

### C. Other Pre-Shepard's Citation Indexes

The decade of the 1870s is significant in the history of citators, not simply because it is associated with Frank Shepard, but because it marked a milestone in the development of this tool. In the fifty years that had elapsed since Greenleaf published his volume in 1821, examples of citation indexes generally were limited to tables in state reports and digests. The 1870s, however, produced some dozen citation books and in succeeding years the trickle quickly became a torrent. What was so special about the 1870s? Perhaps the number of volumes of case reports, which numbered 2,012 in 1870, reached a critical mass.<sup>96</sup> Or, more likely, because of their increasing number and size, legal publishers were making their impact on citation indexes, much as they did with digests, reports, legal directories, and other legal publications.<sup>97</sup> The lure of commercial success should not be discounted as a factor in the development of the legal citation index.

Linn was not the only person in this pre-Shepard's era to wade into the stream of legal citation indexes. In 1872 William Wait, author of *Digest of New York Reports* and other practice manuals, published *A Table of Cases Affirmed, Reversed or Cited in Any of the Volumes of Reports of the State of New York*. A reviewer, recognizing the value of the volume and of the entire genre of legal citation indexes, declared that "[e]very State in the Union ought to have a similar work executed."<sup>98</sup> Actually, the volume is in

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94. *Id.*

95. Book Review, 5 AM. L. REG. 573, 574 (1857).

96. RAM, *supra* note 57, at 195.

97. The list of commercial legal publications making their debut in this decade include *Syllabi* (initial entry of the National Reporter System), *United States Digest* (parlayed into the American Digest system), *American Reports* (first of the "Trinity Series"), *Hubbell's Legal Directory* (second half of the famed duo), and Langdell's *A Selection of Cases on the Law of Contracts* (inaugural casebook).

98. Book Review, 7 AM. L. REV. 336, 336 (1873).

many respects inferior to Linn's work, but it is deserving of a brief aside simply because it so prominently declared that it treated "affirmed" and "reversed" cases. The modern researcher might be struck by the fact that many of the indexes from these early years focused on overruled cases and seemed to ignore or slight reversed and affirmed cases. (In modern citator parlance, these indexes dealt with precedential, not direct, history.) Indeed, many catalogs and bibliographies of the day listed these early citation indexes under the heading "Overruled Cases." Attorneys of this period were not ignorant of the precedential impact of direct history; it was merely that, in most states, the only reports available to cite were from the highest appellate court. Most states did not establish intermediate appellate courts until the last quarter of the nineteenth century.<sup>99</sup> The only reversals (or affirmances) of reported state decisions, therefore, were the few heard by the U.S. Supreme Court. Overrulings were a much more likely threat to the authority of a state case. New York was one of the states that did have reported decisions from different court levels, and the title of Wait's table reflects that distinction.<sup>100</sup> As other states adopted tiered appellate court structures, the citation indexes routinely included citations to reversing and affirming cases.

One of the most notable legal citation indexes of the day was Melville Bigelow's *An Index of Cases Overruled, Reversed, Denied, Doubted, Modified, Limited, Explained, and Distinguished, by the Courts of America, England, and Ireland from the Earliest Period to the Present Time*, published by Little, Brown. The title reflects the enormous scope of this project, and Bigelow's preface quickly gives credit for the original idea and much of the work to Franklin Fiske Heard.<sup>101</sup> Both men were well suited to their task. Bigelow, one of the founding members of the faculty at Boston University Law School, was "not fit for a practicing lawyer . . . . He was a scholar, if ever a pure scholar was born on earth . . . ." <sup>102</sup> Heard was a prominent appellate attorney, who "was said to have a more intimate knowledge of books and cases than any other lawyer in Boston."<sup>103</sup> In their respective careers, the two men published over thirty-

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99. ROSCOE POUND, ORGANIZATION OF COURTS 227-41 (1940).

100. A limited precursor to Wait's New York index appeared as early as 1848, when Ralph Lockwood, one of the founding editors of *United States Law Magazine*, published *An Analytical and Practical Synopsis of All the Cases Argued and Reversed in Law and Equity in the Court for the Correction of Errors of the State of New York from 1799 to 1847*.

101. MELVILLE M. BIGELOW, AN INDEX OF THE CASES OVERRULED, REVERSED, DENIED, DOUBTED, MODIFIED, LIMITED, EXPLAINED, AND DISTINGUISHED BY THE COURTS OF AMERICA, ENGLAND, AND IRELAND, FROM THE EARLIEST PERIOD TO THE PRESENT TIME 3 (Boston, Little, Brown 1873).

102. Brooks Adams, *Melville M. Bigelow*, 1 B.U. L. REV. 168, 169 (1921) (memorial).

103. 8 DICTIONARY OF AMERICAN BIOGRAPHY 484 (1932).

five books on the law. *Index of Cases* was not among the more prominent, but surely it figured among the more arduous. This book was a successor to Greenleaf's work in terms of its attempt to present *all* the cases which had been reversed, overruled, denied, doubted, or modified. Bigelow claimed that he gathered the data by examining every volume of reports in America and England—a total of over 4,000 volumes;<sup>104</sup> he also included references to cases from the major treatises of the day. From that raw data, he extracted 20,000 cases to present in his index. “[E]conomy of space” was a crucial feature in the design of the volume: “the idea of adding comments to the cases was totally impracticable” and to make the book anything more than just an index was found “impossible, even if desirable.”<sup>105</sup> Bigelow, like Greenleaf, did not specify the point of law overruled where the case embraced several points. He did, however, add the dates of the citing cases and used a half dozen terms to characterize how the case had been treated in subsequent decisions. (This treatment was limited to cases having a “negative” impact; Bigelow excluded cases affirming or following the cited case.) A typical entry appears as:

**Palmer v. Stephens**, 1 Denio, 471 (1845).  
*Denied.* **Bartlett v. Tucker**, 104 Mass. 336, 343 (1870). *Doubted.* 1  
 Parsons, Contracts, 69, note (5th ed.)<sup>106</sup>

Bigelow received praise for his volume: “Few people would have had the courage to attempt such a labor, fewer still the energy to carry it through with such faithful care.”<sup>107</sup> Another reviewer astutely noted:

In the multiplicity of law reports it is easy for an industrious man to find a precedent somewhere on almost any side of any point of law not altogether free from doubt. This is a daily increasing evil. Mere plodding labor will take the place of discriminating intellect, [if] precedent is all that is required to control decisions. . . . To enable the Judges to find out the conflicting decisions, and ascertain and weigh the reasons upon which they are made to rest, some such work as the one before us is indispensable.<sup>108</sup>

Reviewers, perhaps awestruck by the monumental scope of Bigelow's volume, ignored a second legal citation index published in that same year. Francis Murray was surely disappointed to find that Bigelow's larger work eviscerated his *Table of Cases Affirmed, Reversed, Cited and Overruled in*

104. Estimated number of report volumes from JOHN F. DILLON, *THE LAWS AND JURISPRUDENCE OF ENGLAND AND AMERICA* 265 (Boston, Little, Brown 1894).

105. BIGELOW, *supra* note 101, at 3.

106. *Id.* at 367.

107. Book Review, 7 AM. L. REV. 716, 716 (1873).

108. Book Review, 2 S. L. REV. 733, 733 (1873).

*the Supreme, Circuit and District Courts of the United States*. All that remained was the list of affirmed and cited cases that Bigelow had elected to exclude from his list.

The next year, 1874, saw the publication of two more citation books. Again, one was compiled by a man who later achieved fame in legal literature, and the other by a man doomed to relative obscurity.

George R. Wendling, a young Shelbyville, Illinois, practitioner and sometime politician, later made his name as a lecturer on popular subjects.<sup>109</sup> Early in his career, Wendling compiled a citation index of Illinois Supreme Court cases.<sup>110</sup> In the preface to his work, he stated that he had "often observed the necessity" of a citation index; he admitted, however, that the design for the table of citing cases was not original, as there were "several similar works in use in several of the Eastern States."<sup>111</sup> Indeed, there was nothing original or exceptional about this particular index. The references to cited and citing cases were nothing more than bare citations; no editorial features helped the user assess the value or trace the development of the cited case. Citation indexes could do more to ease the lawyer's task, as Robert Desty's index, published in that same year, demonstrates.

Robert Desty, descendant of a wealthy French family, had an early career in California as a gold prospector, politician, judge, and soldier before turning to making law books. He is best known for his work as editor of West's *Federal Reporter* and *Supreme Court Reporter* and later as the editor of Lawyers Co-op's *Western Reporter* and *Lawyer's Reports Annotated*.<sup>112</sup> In 1874, before his association with either of these companies, Desty compiled *California Citations*, published by Sumner Whitney. The object of the work was to create an alphabetical table of all the cases cited in California Supreme Court opinions and all instances in which reports of other states followed, criticised, or denied California cases. He included a brief statement of the subject discussed in each of the principal cases and, for each citing case, a statement of the point cited. A review contended: "If every state in the Union had an index of this character, it would be easy, by putting them together, to make a concordance of American cases which would be of infinite value to the

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109. See 1 WHO WAS WHO IN AMERICA 1322 (1960); 15 LUCIAN L. KNIGHT, LIBRARY OF SOUTHERN LITERATURE 462 (1910).

110. GEORGE R. WENDLING, AN ALPHABETICAL INDEX SHOWING BY PARALLEL REFERENCES THE SEVERAL CASES IN THE ILLINOIS REPORTS SUBSEQUENTLY REVERSED, MODIFIED, EXPLAINED, APPROVED OR MAINTAINED BY THE SUPREME COURT OF ILLINOIS (Chicago, E.B. Myers 1874).

111. *Id.* at Preface.

112. *Robert Desty*, 2 LAW BOOK NEWS 290 (1895) (memorial).

practitioner."<sup>113</sup> Reviews also compared Desty's effort to that of Linn, Bigelow, Wait, and Wendling. *California Citations* was found superior because it described the points of law cited.<sup>114</sup>

#### D. Frank Shepard's Debut

The next plot point in the tale of legal citation indexes was marked on September, 25, 1875, by a small announcement in the *Chicago Legal News*:

The firm of James Cockroft and Co. of New York, formerly of this city, have opened a branch office in this city at No. 7 Honore Block, for the sale of their publications, which will be under the charge of Frank Shepard, who is well known to the bar as having been in the law book house of E.B. Myers of this city for the last four years, and formerly with Mr. Cockroft. Frank is an efficient and obliging young man, and we hope he may succeed in his undertaking.<sup>115</sup>

Frank Shepard not only celebrated 1875 by opening his own shop, but he also designed and published in this year the first of his many citation books, *Illinois Citations*.<sup>116</sup> This move was intriguing since, of course, Wendling had just published his Illinois citation index. Shepard was surely aware of this work, since it was published by the very firm for whom he had worked as a salesman, E.B. Myers & Co. Shepard's idea for a citation index may not have been unique, but his format was certainly different. Although no copy of this first set of Shepard's citations could be found for this article, an excerpt from an annotation sheet published in 1887 for the *Massachusetts Reports* appears as:

#### Vol. 1 - Massachusetts Reports

1	1
21p	245
6m	277
4a	564
<u>129</u>	<u>60</u>
1	8
<u>128</u>	<u>53</u>
1	2
9a	68
<u>100</u>	<u>260</u> <sup>117</sup>

113. Book Review, 1 CENT. L.J. 73 (1874).

114. *Id.*; Book Review, 8 W. JURIST 125 (1874).

115. *Cockroft & Co.'s Publications*, CHI. LEGAL NEWS, Sept. 25, 1875, at 8.

116. There is considerable confusion about when Frank Shepard actually began his citation business. Traditionally, the date is given as 1873, but there is evidence that he did not begin until 1875. Compare 2 AMERICAN LAW PUBLISHING 1860-1900, at 343-44 (Betty W. Taylor & Dr. Robert J. Munro eds., 1984) (gives 1873 date based on information provided by Shepard's company) with SURRENCY, *supra* note 67, at 182 (citing date of 1875 for Shepard's first citator, *Illinois Citations*) and *Cockroft & Co.'s Publications*, *supra* note 115 (stating that Shepard opened his own shop in 1875).

117. Sheet found pasted in Volume 1 of *Massachusetts Reports* at University of Minnesota Law Library. Caption reads "Copyright, 1887, by Frank Shepard, Chicago. (Patent applied for.)" A photocopy of the sheet is on file with the author.

The first set of numbers in each section of the table (separated by lines) represented the volume and page number of the cited case. The list of numbers following the cited case provided the volume and page numbers of the citing cases. All citations were to the official reports, unless a letter abbreviation indicated a nominative report ("p" for *Pickering's Reports*). Curiously, Shepard printed his table on gummed paper. According to instructions found in later publications, the user was to cut and affix the list of citing cases to the margin of the cited case in the report volume.<sup>118</sup> The directions assured the lawyer that the "work can be done by any office boy, it being impossible to make a mistake, as the page is given in every instance where the reference is to go."<sup>119</sup> Some lawyers, however, shunned this tedious routine in favor of simply pasting the entire list in the end papers of the referenced volume of reports.

On its face, there was little about this citator to suggest its future success. It was, after all, just a skeletal list of citing cases. The layout—stark columns of numbers—looked more suited for the science of dead reckoning than the art of practicing law. Numerical tables had potential in citation indexing, but as first implemented by Shepard, they achieved an efficiency of space at the price of excluding valuable information. The whole plan was utterly devoid of any treatment analysis or indication of the point of law cited. The omission of this information forced the attorney to look up every citing case to determine its relevance. Even if the gummed labels were a nifty innovation, they were, in the end, a labor-intensive format for a busy lawyer. It is difficult to escape the conclusion that *Illinois Annotations*, in terms of the quality of information it provided, was not among the outstanding citation indexes of the late nineteenth century.

On the other hand, it is impossible to deny the ultimate success of Frank Shepard's new enterprise. The key to this apparent incongruity might be traced to one simple fact: Frank Shepard was a businessman, not a lawyer.<sup>120</sup> This detail made him unique among his contemporaries in the citation index field. It may explain why for many years he elected not to include editorial analysis to his index. Untrained in the law, he probably

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118. SURRENCY, *supra* note 67, at 182.

119. *Id.* (quoting "Directions" in *Shepard's National System of Adhesive Annotations: Arkansas Decisions* (1891)).

120. In fact, Shepard did not rely solely upon his annotations for income. An 1889 journal carried an ad for "Frank Shepard, Law Book Seller and Publisher, 184 Dearborn St., Chicago." The ad announced that he sold the new *American and English Encyclopedia of Law*. It also indicated that he manufactured "[g]enuine gold leaf book labels, collection registers, legal file covers, reference book stands, legal blank cases, [and] steel engravings of eminent lawyers." No mention was made of his annotations. 10 CHI. L.J. (Feb. 1889) (advertisement).

felt inadequate to judge how a citing case treated an earlier decision.<sup>121</sup> Shepard did, however, know the law book business, and this background probably enabled him to recognize the commercial promise of citation indexes. Also, the post-Civil War years, in which he began publishing his citators, were marked by intense business expansion.<sup>122</sup> Accordingly, Shepard envisioned and announced in his first publication that he would issue citation books for all the states.<sup>123</sup> Other compilers seemed content to publish a single volume of citations and then move on to other projects, leaving their books in almost immediate need of revision as new cases were reported. Shepard, committed to a long-term publication, offered supplements for his annotations. Uniform, reliable, and current citation information seem to have been the hallmarks of Shepard's annotation system, and these distinctions rescued what was otherwise a mediocre product.<sup>124</sup>

### E. *The Competition: Desty, King & Leonard*

The competition did not simply give up and die after Frank Shepard introduced his first citator. Even as Shepard expanded his enterprise to create *Shepard's National System of Adhesive Annotations*, other citation indexes appeared and even briefly thrived. The chronicle of Shepard's later development is best viewed with some knowledge of these competing products. For example, in 1878 Robert Desty published a second citation index, *Federal Citations*,<sup>125</sup> which was greeted as "something new in book-making."<sup>126</sup> For this new work, he examined every federal court decision and extracted all cases—federal, state, or English—cited in the court opinion or arguments of counsels. He presented these 27,000 cases in an alphabetical list.<sup>127</sup> Under each case, he listed references to the citing

121. Another possible explanation is that Shepard had an editorial policy against this information because treatment analysis, however modest, could mislead an attorney. There is no evidence, however, that attorneys misused or mistrusted other indexes which included this analysis. Shepard's reluctance to include this information could also have centered on the enormous burden this would add to the production process. Compiling a bare list of citations from cases undoubtedly demanded meticulous care, but the task was fairly mechanical and clerical. The editorial work of describing the effect of the citation on the principal case would have required more discretion, time, and expense.

122. See 3 SAMUEL E. MORISON, *OXFORD HISTORY OF THE AMERICAN PEOPLE* 50-76 (1972).

123. SURRENCY, *supra* note 67, at 183.

124. "Accuracy and completeness. These two words have characterized Shepard's philosophy for 118 years." Brian H. Hall, *Shepard's McGraw-Hill*, in *SYMPOSIUM OF LAW PUBLISHERS* 121, 127 (Thomas A. Woxland ed., 1991) (Hall is the President of Shepard's/McGraw-Hill).

125. ROBERT DESTY, *FEDERAL CITATIONS* (San Francisco, Sumner Whitney 1878).

126. Book Review, 6 *CENT. L.J.* 399, 399 (1878).

127. Desty's work presents a unique source for the study of case precedent in nineteenth-century federal courts. According to his list, fully half the cases cited by federal courts were English, another quarter were state cases, and the remainder were from the federal courts. See *id.*

federal cases, along with a phrase describing the point of law cited and a letter code to show the effect of the federal citation on the principal case. Typical of the entries were

Ogden v. Cowley, 2 Johns. 274. Negotiable paper, demand and notice,  
<sup>E</sup>2 Peters, 103.

Ogden v. Orr, 12 Johns. 143. Seamen's wages, on sale of vessel,  
<sup>Q</sup>Blatchf. & H. 345; Gilp. 201.<sup>128</sup>

Desty's legend of thirteen letter codes was a clever mechanism to indicate the impact of a case on a prior decision. It also, at last, implemented the format first proposed by Justice Story back in 1819.<sup>129</sup>

Robert Desty, like most of his peers in this field, probably had no intention of making a career compiling citation indexes. He offered *California Citations* and *Federal Citations* for the service of the profession but made no promises about keeping the contents up-to-date. Stewart Rapalje and Robert L. Lawrence, a pair of Boston attorneys, did make such a pledge when they published their citation index in 1882.<sup>130</sup> Effective legal research, they stated in the preface, required two tools: an annual digest of all cases reported in the United States and an annual table of cases criticized and cited. The first requirement was already met by the well-known *United States Digest*. Rapalje and Lawrence proposed their work as the first in a series of volumes designed to meet the second need. Their table, which resembled Bigelow's in format and scope, was manageable because it covered only decisions reported in the year 1881. The plan was reasonable but, for unknown reasons, the compilers released no subsequent volumes of this title.

Before the turn of the century, the legal literature regularly included announcements of these and other citators.<sup>131</sup> Few offered any challenge to

128. DESTY, *supra* note 125, at 504.

129. See *infra* note 11 and accompanying text.

130. STEWART RAPALJE & ROBERT L. LAWRENCE, A TABLE OF AMERICAN AND ENGLISH CASES IN REPORTED DECISIONS OF THE AMERICAN, ENGLISH, CANADIAN AND NOVA SCOTIAN COURTS (Jersey City, Linn 1882).

131. See, e.g., FRANK N. BEEBE, CATALOGUE OF THE SUPREME COURT LAW LIBRARY OF OHIO 301 (Norwalk, Laning 1894) (lists supplement to Bigelow's table); CATALOGUE OF THE BOOKS IN THE LIBRARY OF THE NEW YORK LAW INSTITUTE 509, 562 (New York, Martins 1874) (lists some half dozen citators); *List of New Law Books*, 13 AM. L. REG. (N.S.) 63, 64 (1874) (noting supplement to Linn's *Index*); Book Review, 6 CENT. L.J. 257 (1878) (review of Connecticut citation index); Book Review, 8 CENT. L.J. 59 (1879) (review of Massachusetts citator); Book Review, 15 CENT. L.J. 60 (1882) (review of Kansas table of cited cases); 2 LAW BOOK NEWS 102 (1895) (announcing citators for California statutes and *Revised Statutes of 1873*); Book Review, 58 ALBANY L.J. 308 (1898) (review of New York citation book).

Frank Shepard and his growing enterprise, however.<sup>132</sup> A.C. King and H.B. Leonard, two lawyers from the small town of Dublin, Texas, were an obscure exception.<sup>133</sup> In 1892, they published *Annotations of the Texas Court of Appeals Criminal Cases and Civil Cases*. Employing numerical columns, much like Shepard's, King and Leonard added superscript numbers (to show which numbered point in the syllabus of the principal case had been cited) and letter abbreviations (to characterize the treatment of the cited case).<sup>134</sup> A representative entry, from their 1894 *California Citations*, shows the following format:

Vol. 1 - California Reports

	438
6	240
	441
3	<sup>1</sup> 329
c 2	<sup>1</sup> 66
37	<sup>4</sup> 675
p 2	81 <sup>135</sup>

Modern users of Shepard's will immediately understand the information presented. The only disparity is that the abbreviation of the citing

132. "[The citation] field . . . has been so long and largely occupied by Frank Shepard, of Chicago." 1 LAW BOOK NEWS 102 (1894). The exact extent of Shepard's coverage is difficult to determine, largely because the adhesive slips were treated as ephemeral material and not preserved. Despite his growing prominence in the national market, Shepard continued to face competition even in his home state of Illinois. See, e.g., Book Review, CHI. LEGAL NEWS, Feb. 19, 1898, at 215 (review of RALPH W. BOWMAN, A TABLE OF CASES AND CITATIONS IN THE ILLINOIS SUPREME AND APPELLATE COURT REPORTS (1898)); Book Review, CHI. LEGAL NEWS, Sept. 23, 1899, at 39 (review of LYNDEN EVANS, ILLINOIS CITATIONS AND OVERRULED CASES (1899)).

133. Little is known about King and Leonard, aside from their citation books. King was involved in local politics, and Leonard was best known for his defense role in a celebrated Dublin murder case. Telephone interview with Carolyn Holden, Librarian, Dublin Public Library, in Dublin, Texas (Sept. 9, 1991).

134. There were advantages and disadvantages to the numerical arrangement of citations favored in this publication, as well as in Shepard's annotations. Although efficient of space, the numerical system had its critics. The traditional alphabetical case title method was superior, some claimed, because "the possibility of mistakes is much lessened and the labor of research, lightened." Book Review, 15 CENT. L.J. 60 (1882) (review of GEORGE R. CHANEY, INDEX DIGEST OF THE DECISIONS OF THE SUPREME COURT OF THE STATE OF KANSAS).

Alphabetical tables presented a different set of problems. Rapalje and Lawrence, in compiling their alphabetical table of citations, reported difficulties "owing to the various modes of citing the same case in different series of reports." To find all the citing information for a particular case, the compilers recommended looking up a case in their citator all variations of the case name. RAPALJE & LAWRENCE, *supra* note 130, at v-vi. In 1899 an American Bar Association committee noted the annoyance of having to look under several case names to get complete citator information and suggested that the case reporters adopt a uniform plan for citing case names. Keasbey & Moses, *supra* note 70, at 456-67.

135. A.C. KING & H.B. LEONARD, CALIFORNIA CITATIONS AND CONFLICTING CASES (2d ed. Dublin, [Tex.], National Citation Co. 1894).

reporter is not presented; this was unnecessary because all citing cases were from the *California Supreme Court Reports*. The first King and Leonard's volumes, bound in flexible leather, had blank pages in the back for the attorney to note newer cases. The men formed the National Citation Company and, within three years, published citation books for Arkansas, Kansas, Colorado, California, Nebraska, Indiana, and the United States Supreme Court. The pair also made several changes in the format of their citator. They eliminated the blank pages in favor of a cumulative pocket-part supplement, added a separate table with parallel references between the official reports and the West regional reporter, and included citations of state cases by the United States Supreme Court.

A reviewer in *Law Book News* (a publication of the West Publishing Company) thought that King and Leonard's books "seemed to cover the requirements of the lawyers better than anything in this line which had come before."<sup>136</sup> The reviewer discussed the need for a good citator and then singled out for criticism the

several systems of annotation pasters, which have come into use for want of something better . . . .

These annotation pasters . . . have been found bothersome, as they involve continual cutting and pasting . . . . Anything that imposes much mechanical labor on the lawyer is apt to be unsatisfactory to him! All these annotation systems have, we believe, confined themselves to indicating the citation of the case, without defining the point of law for which it may have been cited, or showing the character of the later ruling. This creates a great deal of profitless work, as the lawyer is led to look up citation after citation, only to find that they are irrelevant to his purpose.<sup>137</sup>

This criticism of the "pasters" could have been nothing more than a clever advertising ploy later that same year, West announced that King and Leonard would compile a series of "Citation Manuals" for the National Reporter System.<sup>138</sup> The company's new interest in citation manuals was probably motivated by a much larger concern with its new product, the National Reporter System. Other citation books of the period generally disregarded the West reporters; references to cited and citing cases were made to the official reports. King and Leonard's "Citations and Conflicting Cases," however, were to be issued in series corresponding to

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136. *In the Matter of Citations*, 1 LAW BOOK NEWS 258, 258 (1894).

137. *Id.*

138. *National Reporter System Citations*, 1 LAW BOOK NEWS 324 (1894).

the various regional reporter sets.<sup>139</sup> King and Leonard, as the National Citation Company, would publish the volumes, but West Publishing, as “exclusive special agents,” would sell the new citators.<sup>140</sup> West pointed out (rather unnecessarily) that the “application of this Citation System to the Reporters will add very largely to the practical usefulness of the latter.”<sup>141</sup> It was, the company stated, simply all part of a “long and remarkable list of appliances with which the publishers of the Reporters have sought to make their reporters complete and convenient.”<sup>142</sup>

In 1895 West began selling the first of the series, *Federal Reporter Citations*, for \$7.50 per volume. “Citations and Conflicting Cases” for the NorthEastern, NorthWestern, Pacific, and SouthEastern Reporters followed shortly in that same year. And then—nothing. The company may have continued issuing supplements for these volumes, but no references to any new volumes (or to the National Citation Company) were found.<sup>143</sup> The project perished. One can only guess about the reasons for the failure: lack of subscribers, the expensive nature of the editorial work, or the dissolution of National Citation Company. It is more interesting, however, to imagine how the course of legal publishing might have altered if West, the dominant force in reporters, had also managed to succeed in the citator market.<sup>144</sup>

#### F. *The Refinement of Shepard’s*

Shepard’s reputation, as the new century approached, was probably much like that of IBM’s some fifty years later: strong in sales but short on innovation.<sup>145</sup> Frank Shepard, after all, must have realized that his citation

139. West boasted:

These tables show where any case in any Reporter has been cited, not only in the subsequent volumes of the Reporter, but in any volume of the entire National Reporter System, and thus will be of great value as showing the relation of the decisions in one jurisdiction to those in all others.

The citation of these cases in any editorial note in the System is also indicated, but is distinguished by an asterisk from a citation in an opinion.

2 LAW BOOK NEWS, at vii.a (1895) (advertisement).

140. *Id.*

141. *National Reporter System Citations*, *supra* note 138.

142. *Id.*

143. King and Leonard’s Texas citation manual was issued in third and fourth editions in 1900 and 1903. These editions, however, were not published by the National Citation Company.

144. Other major legal publishers also ventured to publish legal citators. In 1908, for example, Matthew Bender & Co. and Baker, Voorhis & Co. announced the purchase of a citation service by Charles Kreidler. This set provided more textual explanations than Shepard’s tables. It is not clear exactly when the publication ceased. SURRENCY, *supra* note 67, at 183.

145. Thomas Watson, Jr., the son of IBM’s founder, admits:

In the history of IBM, technological innovation often wasn’t the thing that made us

books lacked many of the features offered by competing citation books. Whether Shepard himself was moved by this pressure is not known; in 1900 Shepard died from a "stroke of apoplexy"<sup>146</sup> and the company, now incorporated as The Frank Shepard Company, moved its operation to New York. It was around this time that Shepard's annotations began to undergo some badly needed restyling, and it was also about this time that the company abandoned the adhesive format in favor of bound volumes.<sup>147</sup> In 1903 reviewers of Shepard's noted major improvements in this standard work. Although the reviewers inspected several different Shepard's titles, they highlighted the same new points. First, parallel citations to other reports (including the West regional reporters) were supplied. Second, small figures to the left of the page number showed the precise point in the syllabus that was cited, averting the necessity of examining every volume where a case has been cited to find an authority on point. Third, any disposition by the United States Supreme Court was noted. Fourth, a system of letters at the left of the volume number showed whether the case had been affirmed, criticised, distinguished, explained, followed, harmonized, limited, modified, or overruled.<sup>148</sup> One review also approved of the new practice of boldfacing the page of the cited case in the columns, making it easier to find on the page. These enhancements prompted one reviewer to proclaim: "Quite a unique and colossal undertaking in its way is the new uniform system of annotations, devised by Mr. Frank Shepard

. . . .'<sup>149</sup>

Since these changes, Shepard's basic format has remained stable. The only other refinements were attempts to provide subject access to the citations. For a time, the Shepard's editors placed catchwords like "TORTS" or "CONTRACTS" above the citing cases. The attorney could then more easily find which citing cases were relevant to his problem.<sup>150</sup> A much more ambitious undertaking, Shepard's series of state *Classified*

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successful. Unhappily there were many times when we came in second. But . . . we consistently outsold people who had better technology because we knew how to put the story before our customer, how to install the machines successfully, and how to hang on to customers once we had them.

THOMAS J. WATSON JR. & PETER PETRE, *FATHER, SON & Co.* 242 (1990).

146. FRANK SHEPARD COMPANY, *A RECORD OF FIFTY YEARS OF SPECIALIZING IN A FIELD THAT IS OF FIRST IMPORTANCE TO THE BENCH AND BAR OF THE UNITED STATES* [ii] (1921).

147. The first of the bound citators was *Shepard's Consolidated Illinois Supplement*. Surrency, *supra* note 67, at 182.

148. *See, e.g.*, Book Review, 56 *CENT. L.J.* 72 (1903) (review of Shepard's citators for the Missouri Supreme Court, the Missouri Court of Appeals, the *Federal Reporter*, and the United States Supreme Court); Book Review, 11 *AM. LAW.* 32 (1903) (review of Shepard's New York Court of Appeals citator).

149. Book Review, 56 *CENT. L.J.* 72, 72 (1903).

150. FRANK SHEPARD COMPANY, *supra* note 146, at 57.

*Topical Indexes*, was launched sometime around the 1920s. The plan was billed as a development of and improvement upon the digest. The backbone of the index was an alphabetical list of all the topics from West's American Digest classification scheme. Under each of these headings was a list of subtopics and their corresponding key numbers, and appended to each of these key numbers was a list of citations to cases from that jurisdiction. The index was, in effect, a mini-digest. All it lacked were the digest annotations, which were deliberately omitted because they reflected the "personal views of the digest editors" and were, therefore, considered misleading.<sup>151</sup> The Shepard's editors asserted that the one-volume Classified Topical Index eliminated the need for a state digest, because their product was "more accurate, more comprehensive, more efficient and considerably less expensive."<sup>152</sup> Shepard's issued *Classified Topical Indexes* for over fifteen states and continued supplementing these volumes until at least 1940. It is not known why Shepard's discontinued this publication or how West Publishing Company felt about this use of their digest plan.<sup>153</sup>

As the years passed, the Frank Shepard Company expanded the scope of its publications. Around 1903, picking up where King and Leonard left off, the company began issuing separate citators for the various sets of West regional reporters. The company also continued extending the scope and coverage of the individual state citators. Eventually, there was a Shepard citation book covering the cases and statutes for each state and federal jurisdiction.<sup>154</sup> The company also added popular name tables for cases and statutes to their product line.<sup>155</sup> Despite the company's strong position in the market, competition from other citators continued well into

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151. *Id.* at 71.

152. *Id.* at 72.

153. The preface of *Shepard's Indiana Classified Topical Index* (2d ed. 1927) "acknowledge[s] obligation to the West Publishing Company for editorial courtesies in connection with the preparation of this work."

154. The move to track changes in statutes and cases citing statutes began in 1900, with the publication of *Shepard's Consolidated Illinois Supplement*. SURRENCY, *supra* note 67, at 182-83. Examples of statute citators from other compilers can be found as early as 1852. *See, e.g.*, ARCHER GIFFORD, A DIGEST OF THE STATUTORY AND CONSTITUTIONAL CONSTRUCTIONS DELIVERED IN THE SUPREME COURT, AND COURT OF ERRORS AND APPEALS, OF THE STATE OF NEW JERSEY (Newark, Newark Daily Advertiser 1852); CLARENCE F. BIRDSEYE, A TABLE, CHRONOLOGICALLY ARRANGED, OF THE STATUTES OF THE STATE OF NEW YORK, AMENDED, REPEALED, CONTINUED, OR OTHERWISE MODIFIED OR AFFECTED (New York, Strouse 1887); Book Review, 2 LAW BOOK NEWS 102 (1895) (announcements of a citation book for the U.S. Revised Statutes and of a gummed-paper citator for California statutes and Constitution).

155. As early as 1914, an American Association of Law Libraries committee noted the importance of statute popular name tables and urged publishers to include such tables in their indexes. *Report of the Committee on Legal Bibliography*, 7 LAW LIBR. J. 53, 57 (1914). *See also* A.M. Hendrickson, *Alphabetical List of State Acts Cited by Popular Name*, 9 LAW LIBR. J. 23 (1916).

the twentieth century. In 1899, for example, Walter Rose published a twelve-volume set, *Notes on the United States Reports*,<sup>156</sup> which harkened back to older citation indexes by summarizing the points of law cited and stating in sentences or phrases how the subsequent cases treated the principal case. The popularity of this set generated a series of sentence-type citation books.<sup>157</sup> In 1901 Reed Adams had the audacity to introduce *The Citator* in Shepard's home state of Illinois. *The Citator* could eventually be found in many states.<sup>158</sup> And for a time in the 1920s, Lawyers Co-op had a service bureau that would send by wire a list of cases citing a particular case.<sup>159</sup> These publications are just a few of the numerous citators listed in various bibliographies, catalogs, book reviews and advertisements of this period.<sup>160</sup> Eventually, however, Shepard's citators saturated the market and replaced the wild diversity of this earlier period with a uniform format.

#### IV. Online Citation Indexing

To date, the final revolution in citation indexing has been the merger of citation information and computers.<sup>161</sup> The potential use of a citation database was noted as early as 1970, before LEXIS and WESTLAW were

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156. Rose based his work on the "theory that the profession wants something more than bald, unclassified numerical tables of citations," and his notes were sort of mini-memos about the subsequent history and treatment of decisions. 1 WALTER M. ROSE, *NOTES ON THE UNITED STATES REPORTS* at v (1899).

157. Bancroft-Whitney updated the citations in this set through a monthly periodical, *Cases Cited*. Texas, Minnesota, California and many other states had sentence-type citation books based on Rose's format.

158. Book Review, 33 *CHI. LEGAL NEWS* 281 (1901). My thanks to Kent Olson for bringing this review to my attention. This publication, incidentally, also marks the earliest reference I found to the term "citator."

159. 26 *CASE & COM.* 185 (1920) (advertisement).

160. For example, a list in a 1914 publication shows that over half the states had access to citators other than Shepard's. WILLIAM M. LILE ET AL., *BRIEF MAKING AND THE USE OF LAW BOOKS* 486-87 (Roger W. Cooley & Charles L. Ames eds., 3d ed. 1914).

161. There was a semi-major event in 1959, when Shepard's issued *Federal Labor Law Citations*, the first of its (in)famous subject citators. This new product cut across jurisdictional lines to treat authority in a specific substantive area of the law. The labor citator and the bankruptcy, administrative law, patents and other citators which followed found a niche in the practitioner market, because they offered specialists a more economical alternative to buying citation information in jurisdiction format. But after a steady diet of these new citators for fifteen years, at least one law librarian felt compelled to ask: "How long can it be before the number of citators will equal the number of Big Macs served?" Arturo A. Flores, *Shepard's: Sometimes Enough Can Be Too Much*, 4 *LEGAL REFERENCE SERVICES Q.*, Vol. 4, No. 1, Spring 1984, at 77, 78. Flores attributed the growth in Shepard's specialized citators (which now number thirty-three) to the acquisition of the company by McGraw-Hill in 1966. *Id.* This transaction also undoubtedly explains why Shepard's citation volumes began, around 1982, to include references to Shepard's/McGraw-Hill treatises. Richard Sloane, *Shepard's Citations - Latest Innovations*, N.Y.L.J., June 21, 1983, at 4.

even available to the public.<sup>162</sup> After LEXIS and WESTLAW came online, however, the focus of concern was how to implement keyword and Boolean logic to develop effective searching strategies. In 1974 Colin Tapper suggested that databases could also be used to computerize the traditional citation search, especially since these printed indexes were already so well developed in the United States.<sup>163</sup> Computerization of this process, he wagered, would relieve the researcher's physical effort of flipping through volumes and promote the researcher's peace of mind with the certainty that a case had been updated.

Within a year, LEXIS offered the first online citation system, Auto-Cite, to subscribers in certain regions of the country.<sup>164</sup> Auto-Cite was initially developed in the late 1960s by Lawyers Co-op as an internal case verification system—sort of a corporate noter-up computer—for the company's editors. This system automated case records kept from the 1880s and produced parallel citation information and a limited history of each case.<sup>165</sup> Even as Auto-Cite was being tested, one commentator pointed out: “[T]his system is *not* a type of automated *Shepard's Citator*. The history involved is only that of the case itself and not how the case has affected other decisions.”<sup>166</sup> Still, Auto-Cite did offer significant time and cost savings. In 1980 WESTLAW responded by making Shepard's available online,<sup>167</sup> and the race between the two companies to provide citation information was on. In 1983 a law review article noted: “Mead Data Central has recently added Shepard's Citations to LEXIS, possibly after a realization that Shepard's was WESTLAW's leading edge over LEXIS.”<sup>168</sup> West evened the score in 1984 by putting Insta-Cite, a commercial version of the company's online internal case control system, on WESTLAW.

LEXIS and WESTLAW have continued to upgrade their respective citation systems, emphasizing speed and convenience. Ironically, the

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162. See Stephen M. Marx, *Citation Networks in the Law*, 10 JURIMETRICS J. 121 (1970). See also Franz L. Alt & Russell A. Kirsch, *Citation Searching and Bibliographic Coupling with Remote On-Line Computer Access*, 72B J. RES. NAT'L BUREAU STANDARDS 61 (1968). Mead Data introduced LEXIS to the world in 1973, and WESTLAW went online in 1975. William G. Harrington, *A Brief History of Computer-Assisted Legal Research*, 77 LAW LIBR. J. 543, 553 (1984-1985).

163. Colin Tapper, *Legal Information Retrieval by Computer: Applications and Implications*, 20 MCGILL L.J. 26, 37 (1974).

164. Peter Nycum, *Law and Computers: Overview Update 1975*, 68 LAW LIBR. J. 234, 244 (1975).

165. Barbara Bintliff, *Auto-Cite and Insta-Cite: The Race to Update Case Histories*, 15 COLO. LAW. 1675, 1676 (1986).

166. Nycum, *supra* note 164, at 244.

167. Telephone interview with John Miller, Citation Service Coordinator, West Publishing Company (Sept. 12, 1991).

168. John T. Soma & Andrea R. Stern, *A Survey of Computerized Information for Lawyers: LEXIS, JURIS, WESTLAW, and FLITE*, 9 RUTGERS COMPUTER & TECH. L. J. 295, 300 (1983).

companies were handicapped in this regard by the fact that Shepard's information was no more current online than the print equivalent. In an environment where the full text of cases was available within days, or sometimes even hours of their publication, it was senseless to wait months for the citation to appear in a Shepard's display.<sup>169</sup> In response to this lag, WESTLAW worked with Shepard's to develop Shepard's Preview. Introduced in 1989, this service pulls citations from the text of cases in West's advance sheets and displays the information in the familiar Shepard's layout.<sup>170</sup> Mead Data and West then automated the entire citation-checking process, with software that extracts case citations from a word-processed document, automatically runs those cases through Shepard's and Auto-Cite or Insta-Cite, and downloads the results to the local terminal.<sup>171</sup> Finally, to retrieve the most current citing cases, LEXIS and WESTLAW offer respectively the "lexcite" and "quickcite" commands. The pressure from these online sources apparently spurred Shepard's; the company recently announced its *Express Citations*, designed to provide more current and more complete citation information.<sup>172</sup>

Online access to citation information, generally speaking, is an incredible boon to legal research. Lawyers and law students—for years befuddled by the "What Your Library Should Contain" message on Shepard's pamphlets<sup>173</sup>—can now simply press a button and read, print, or download a computer display. Colin Tapper's prediction about the physical and psychological benefits of having citation information online has been

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169. A Shepard's representative volunteered an explanation for this delay:

[T]he laborious and expensive work that must be done to match headnotes in cases is very time-consuming. So here you have a classic instance of the old observation that quality products take longer to make. . . . [W]e cannot do our headnote comparison work until we receive a version of each case from West that contains headnotes, usually about 3 months after a case has been decided. *This is in no way meant to be critical of West.* It simply points out that the process of writing and classifying headnotes and then conducting headnote comparison analysis takes time.

Letter from Donald T. Kramer, Vice-President & General Manager, Citations and Electronic Products, Shepard's/McGraw-Hill, to author (Jan. 13, 1992) (on file with author).

170. *Id.*

171. See Barry D. Bayer et al., *Cite Checking Update: WestCheck, SuperCite*, 136 CHI. DAILY L. BULL., Aug. 22, 1990, at 2; Barry D. Bayer & Mark J. Welch, *CheckCite Automatically Collects Case Citations*, 136 CHI. DAILY L. BULL., Feb. 14, 1990, at 2.

172. Why, one law librarian asks, can Shepard's generate citations for their *Express Citations* but not for online use? "They apparently can print and mail blue-covered pamphlets before they can put the information in a database." Message posted on Law Library Conference by Kent Olson, Head of Reference, University of Virginia Law Library (Jan. 27, 1992) (on file with author).

173. The retention instructions on the "What Your Library Contain" are not only confusing, they are sometimes inaccurate. One library no longer relies on these instructions, using instead the list of citation sources in the front matter of the Shepard's advance sheets to avoid gaps in the coverage. Message posted on Law Library Conference from Lee Ryan, Reference Librarian, University of San Francisco Law Library (Dec. 17, 1991) (on file with author).

realized. The danger, of course, is that the simplicity of the process is luring these same researchers, in hordes, into a false "peace of mind." Many of them are totally unaware of the intricacies and potential pitfalls of the online citation systems. This ignorance is not always the result of negligence or laziness; even expert users can be surprised by the errors, omissions, and complexities in the systems.<sup>174</sup>

## V. Impact of Legal Citation Indexes

With the online citation systems, the story of the legal citation index has been brought up to the present day. The next logical step would be to consider the future of the citator. On the theory that "you have to know where you've been to see where you are going," however, it seems worthwhile to step back and consider that impact citators have already had. At any given time, citation books have been just one of many influences acting on the law and legal profession. Isolating and measuring the effect of any single factor in a complex environment requires sophisticated statistical techniques, such as multiple regression analysis. Unfortunately, these calculations also require proper empirical data. Lacking that, this analysis will rely upon a mix of anecdotal evidence, scholarly research, and personal reflection.

Back in the early nineteenth century, Simon Greenleaf conceived the notion of a table of overruled cases as a way to check the authority of a case. Greenleaf may have created his collection for purely practical purposes, but others did not necessarily receive it solely in that vein. Story, for example, praised the list because it "accustoms lawyers to reason upon principle, and to pass beyond the narrow boundary of authority."<sup>175</sup> The editors of *North American Review* also noted this jurisprudential thread. Much of an eight-page review of Greenleaf's collection was devoted to a discussion of error in court decisions and the remedy of overruling. The conclusion was: "Mr. Greenleaf will have rendered . . . a most eminent service, if by presenting so many examples of corrected error, he shall induce his brethren to examine decisions without fear, and the courts to revise them without reluctance."<sup>176</sup> At least one court took this cue. In 1857

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174. See, e.g., Bintliff, *supra* note 165, at 1676 (finding that neither Insta-Cite nor Auto-Cite reliably noted pending appeals or grants of certiorari); Ben Cole, *Shepardizing: A Comparison of the Printed Citators and On-Line Shepardizing Services*, 7 LEGAL REFERENCE SERVICES Q. 261 (1987) (finding variations in the Shepard's information available on LEXIS and WESTLAW); Daniel Dabney, *Errors in Shepard's, Auto-Cite, and Insta-Cite in the Histories of Cases Affected by Table Cases*, 4 LEGAL REFERENCE SERVICES Q., Vol. 4, No. 1, Spring 1984, at 73 (finding that Auto-Cite and Insta-Cite generally omit table cases, even if they affect the subsequent history of a case).

175. Letter from Joseph Story to Simon Greenleaf, *supra* note 10, at 329.

176. Book Review, *supra* note 18, at 72.

a New York court, asked to overrule an earlier decision, specifically cited Greenleaf's *Overruled Cases* as evidence that many courts ignored precedent to follow principle.<sup>177</sup>

As the citation index developed and became more than a list of overruled cases, it also became a more balanced tool, with the potential for broader applications. Focusing on overruled cases, Justice Douglas once asserted, constructs a distorted view of the law: "It is like the study of pathological cases in social or medical sciences. The norm is robust and enduring. The great body of law is unperturbed by events that may rock a nation."<sup>178</sup> By extending the scope of citation indexes to include all citing cases, the compilers made full use of this "great body of law." This move also coincided with the shift in court opinions away from a principle-based methodology toward a more rigid precedent-based approach.<sup>179</sup> The tendency to follow precedent became more dominant, the number of cases steadily mounted, and the convergence of the two trends generated confusion. The citation index offered some guidance. Ironically, the same citation index that had been cited earlier as an invitation to flout judicial precedent later became an instrument that allowed judges and attorneys to follow precedent assiduously.<sup>180</sup> "Case lawyer," once a term of reproach, came to signify one who "wins cases because he has examined the books thoroughly."<sup>181</sup> Among the books used by case lawyers were the sophisticated citators of the late nineteenth century, with their treatment analyses and devices for tracking particular legal points within a case. With the citation index, the lawyer or judge could check the authority of a case, put a value upon it as precedent, or follow the thread of reason from it to other cases. Citators took a place alongside digests in law libraries.

As noted earlier, Greenleaf probably gave little thought to the relationship between his publication and judicial appellate styles. To return

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177. *Olcott v. Tioga R.R. Co.*, 26 Barb. 148, 157-58 (1857).

178. DOUGLAS, *supra* note 79, at 29.

179. These two periods correspond to Llewellyn's "Grand" and "Formal" labels for judicial styles. Llewellyn, *supra* note 25, at 36-41. Friedman concurs with this impression about changes in judicial style: "[L]awmaking, in a generation of bulging law libraries, no longer required the style of the great pioneers, who invented whole areas of law in a few strokes of a masterful pen." Friedman, *supra* note 2, at 334-35. The impression that judicial opinions rely more and more upon precedent is also borne out by empirical study. A study of state court opinions over the last century show that, in 1870-80, an average of 5.8 cases were cited in each decision. That figure climbed steadily in the next century to an average of 14.3 cases cited per opinion in 1960-70. Lawrence M. Friedman et al., *State Supreme Courts: A Century of Style and Citation*, 33 STAN. L. REV. 773, 795 (1981).

180. "By the 1950s, it seemed as if the West Publishing Company, Sheppard's [sic] Citations, and the Commerce Clearing House Loose Leaf Service had taken over responsibility for recording and systematizing doctrine [in the law] . . ." ROBERT STEVENS, *LAW SCHOOL* 274 (1983).

181. Fiero, *supra* note 73, at 354.

to his intention, one should look at the impact of citation indexes on the ordinary, everyday practice of law. There is some difficulty in that task, because studies of how lawyers use research tools were no more common in the early twentieth century than they are now.<sup>182</sup> There is evidence, however, that the bar valued citators. In 1895 an American Bar Association committee, while decrying the “evils” of the number of reports, found merit in the “labor-saving devices” of the marginal annotation systems.<sup>183</sup> The report credited legal citation manuals, among other research tools, for bringing the “whole range of the common law” nearer to the practitioner, enabling him to examine authorities more readily and conveniently than in the past.<sup>184</sup> On a more individual note, Theron Strong, a New York appellate attorney who began practicing law in 1870, went so far as to discuss the use of citation indexes in his autobiography. As he described it, his preliminary research usually began by collecting cases from the digests or encyclopedias. He then took those cases to the “citations of authorities which have been carefully tabulated and published” to gather an additional array of cases.<sup>185</sup> One of the final steps was to determine which of those cases was the strongest authority: “Thanks . . . to those very excellent publications, the tables of cases affirmed, reversed or modified, the practitioner is enabled to ascertain without difficulty whether an authority on which he places reliance has been impaired by subsequent decisions.”<sup>186</sup> He concluded: “These are genuine tools of the trade without which the modern law office would be incomplete, and the modern lawyer helpless.”<sup>187</sup>

Strong does not mention how he learned the value and use of citators. Legal research was not yet an accepted part of the law school curriculum, and the first modern legal research treatise, published in 1906, glossed over citation books in one paragraph.<sup>188</sup> By 1930, however, the uninitiated researcher could find discussions and explanations of citators in any number of legal research books, articles, and publisher’s promotional materials.<sup>189</sup> By the mid-twentieth century, the process of citation checking

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182. See Morris L. Cohen, *Research Habits of Lawyers*, 9 JURIMETRICS J. 183, 183-84 (1969).

183. Fiero, *supra* note 73, at 353, 356.

184. *Id.* at 356.

185. THERON G. STRONG, LANDMARKS OF A LAWYER’S LIFETIME 430-31 (1914).

186. *Id.* at 434.

187. *Id.* at 403.

188. WILLIAM M. LILE ET AL., BRIEF MAKING AND THE USE OF LAW BOOKS 36 (Nathan Abbott ed., 1906).

189. A series of articles in *Case and Comment* discuss legal citators in relation to other research tools. Henry P. Farnham, *Evolution in Annotation*, 20 CASE & COM. 114 (1913); George F. Longsdorf, *The Common Law’s Debt to Annotations*, 20 CASE & COM. 192 (1913); George H. Parmele, *The*

was so routine and the permeation of Shepard's so complete that "Shepardize" became an arcane verb in the vocabulary of practitioners and law students.<sup>190</sup>

At some point, the legal citator was transformed from a tool of convenience into a tool of necessity for the practitioner. Jerry Giesler, the famous "sex scandal" defense lawyer, tells about losing one of his early cases by relying on a case that subsequently had been reversed. The judge called him into chambers and said: "I know you must feel very small and very ashamed, and I suggest you regard this as a useful lesson rather than a humiliating experience. Your lesson is: Always Shepardize your case."<sup>191</sup> Giesler, who attended law school before legal research classes were prevalent, did not know what Shepardize meant. He soon learned, and from that day forward, Giesler swore that he Shepardized every case he handled. He even kept two sets of Shepard's, one in his office and one at home. Legal research instructors recount endless variations on the Giesler disaster to impress upon students the importance of checking the authority of cases. Lurking behind the scare tactics is the suggestion or threat of legal malpractice for failure to check the authority of a case properly. With the advent of the computerized citation services, the question about what constitutes negligence in research of citation authority and how far the attorney must go in checking that authority is very murky. The complexity and expense of online citation services add a troubling aspect to the issue that has not been adequately addressed.<sup>192</sup>

The influence of legal citation indexes also extends beyond the boundaries of the United States and even beyond the field of law. In England one of the best early examples of a citation index was Lehmann and Dale's digest of overruled cases, published in 1887.<sup>193</sup> The work was divided into two parts. The first was an alphabetical table of decisions and their citing cases. Thirty-two different abbreviations were used to describe the treatment of the cited case. The second part was a digest, with cases arranged by subject. Under each case was a list of citing cases, with

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*Annotator's Problem*, 20 CASE & COM. 259 (1913); Burdett A. Rich, *A Short Way to Find Legal Authorities*, 23 CASE & COM. 821 (1917). Research books also devoted more space to citation books. See, e.g., FREDERICK C. HICKS, MATERIALS AND METHODS OF LEGAL RESEARCH WITH BIBLIOGRAPHICAL MANUAL 278-79, 400-18 (1923).

190. Shepard's, in registering "Shepardize" as a trademark, cites the date of first use of the term as March 1955. Trademark registration, filed Dec. 5, 1990 (WESTLAW, Trademarks database).

191. JERRY GIESLER & PETE MARTIN, THE JERRY GIESLER STORY 282 (1960).

192. See Robert C. Berring, *Terminal Awareness*, CAL. LAW., Nov. 1985, at 15.

193. CHARLES W. DALE & RUDOLF C. LEHMANN, A DIGEST OF CASES OVERRULED, NOT FOLLOWED, DISAPPROVED, APPROVED, DISTINGUISHED, COMMENTED ON AND SPECIALLY CONSIDERED IN THE ENGLISH COURTS FROM THE YEAR 1756 TO 1886 INCLUSIVE (London, Stevens & Sons, Sweet & Sons, Maxwell & Son, 1887).

relevant quotations about the principal case. The *Albany Law Journal* reviewed the work and declared: "We regard collections of overruled cases among the most useful tools of the lawyer, and we have never seen another so well conceived and executed as this."<sup>194</sup> The merger of digest and citator, which was tried and abandoned in the United States, became the norm in England. Other common law jurisdictions, like Canada, India, Scotland, and Australia also developed citation systems, but the American system of citators is considered "the most far-reaching and sophisticated citation reference system ever devised."<sup>195</sup>

The most recent impact of legal citation indexes has been in the field of information science. After World War II, the federal government sharply increased sponsorship in scientific research and development. Concerned that existing distribution systems could not handle the increased load of scientific literature, the government also sponsored a number of projects to study ways to improve and manage scientific information. One of these projects was a 1953 symposium, held by the John Hopkins Welch Medical Library Indexing Project, to study machine-generated subject indexing for medical literature.<sup>196</sup> William C. Adair, a former vice-president of Shepard's, read about the symposium and wrote a letter to the Project proposing the use of citations as a basis for indexing. He, of course, pointed to the Shepard's publications as models.<sup>197</sup> Eugene Garfield, an investigator for the Welch project, corresponded with Adair as he investigated this notion. In 1955 Garfield proposed a citation index, based on the example of Shepard's, for scientific literature.<sup>198</sup> Subject indexes and classified indexes, he argued, did not reflect the multiplicity of subjects covered within a given article, did not account for changes in terminology over time, and did not allow for specialized vocabularies within disciplines. He suggested that an "association-of-ideas" or a "thought" index was needed.<sup>199</sup> By compiling and indexing the list of references used within scientific articles, the researcher was not bound by terminology or even by a single concept. A citation reference could represent many different

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194. Book Review, 35 *ALBANY L.J.* 440 (1887). Mr. Lehmann was also a popular fiction writer for *Punch* magazine, and at least one of his fiction fans was dubious about Lehmann's legal volume, finding it a "compilation of immense value to the practising lawyer, but not a particularly fascinating volume either to him or anyone else, and certainly not to be placed in the same category with 'The Billsbury Election.'" *WESTMINSTER GAZETTE*, Oct. 17, 1898, at 3.

195. Colin Tapper, *The Use of Citation Vectors for Legal Information Retrieval*, 1 *J.L. & INFO. SCI.* 131, 136 (1982).

196. GARFIELD, *supra* note 27, at 6.

197. 5 *ENCYCLOPEDIA OF LIBRARY AND INFORMATION SCIENCE* 19-20 (1971).

198. Eugene Garfield, *Citation Indexes for Science*, 122 *SCI.* 108 (1955). See also W.C. Adair, *Citation Indexes for Scientific Literature?*, 6 *AM. DOCUMENTATION* 31 (1955).

199. Garfield, *supra* note 198, at 108.

subject headings or a complex set of ideas, and the ideas represented by that single citation remained stable over time and across disciplines, regardless of terminology. In 1963 Garfield and his firm, the Institute for Scientific Information, published *Science Citation Index*, and its success led directly to other citation indexes for genetics, arts and humanities, social science, and statistics.<sup>200</sup> More importantly, information scientists began studying the underlying theories and potential applications of citation analysis. Some of these ideas lately have begun migrating back to the field of law.

## VI. The Future of Legal Citation Indexes

Like many other legal research tools, the legal citation index has remained essentially unchanged for the past century. Recently, commentators have begun questioning the relevance of these traditional research systems—and the legal concepts on which they are based. The creaky West Digest system, for example, is grounded in the notion that there is an underlying structure of American law. Some argue that there is no structure other than that imposed over the years by the West editors.<sup>201</sup> Given the pervasiveness and longevity of this particular classification system, it is probably safe to say that custom, rather than any natural order, largely determines how a case is indexed. Even more damning in the legal environment, however, is the accusation that bias and political judgments play a role in the development, or lack of development, of the digest system. Similar criticisms are levelled at other legal index tools that rely upon the imposition or infusion of some intellectual scheme or classification system.<sup>202</sup> On the whole, the established research tools are regarded as comfortable but confining. The fear is that members of the profession, who are not cognizant of the constraints, are unwittingly crippling the law.

Computerized access to cases offered some promise of relief. The full text of the law is still there, but it is in the form of bytes and logical addresses. Instead of an index or thesaurus, the researcher now has to grapple with the problems of semantics, syntax, and Boolean searching. Legal databases, without a doubt, opened whole new avenues of research,

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200. GARFIELD, *supra* note 27, at 6-18. Ironically, the federal government, which had sponsored the original study, rejected the recommendation for the science citation index. The Institute for Scientific Information decided to publish the work on its own and to continue the updating. *Id.* at 16.

201. See Robert C. Berring, *Legal Research and Legal Concepts: Where Form Molds Substance*, 75 CAL. L. REV. 15, 25 (1987).

202. See Richard Delgado & Jean Stefancic, *Why Do We Tell the Same Stories?: Law Reform, Critical Librarianship, and the Triple Helix Dilemma*, 42 STAN. L. REV. 207 (1989).

but they are not the ideal solution. They deal best with discrete, narrow legal issues and facts and are generally weak or useless in dealing with broad legal concepts. The stumbling block is that text retrieval in the existing systems requires an identical match between the search request and the textual properties of the document. This *identity function* ignores the link between words and the many ideas and understandings conveyed by those words.<sup>203</sup> Adding controlled language to free-text searching recaptures some of the lost cases, which is why WESTLAW touts its "full-text plus" system. The automation of a flawed classification system, however, does not instill much confidence in search results.<sup>204</sup> The limitations of the identity function are even more apparent when the user must use exact language to search for *analogous* cases, cases which are persuasively similar but not exactly on point.<sup>205</sup>

The problem here is a familiar one: how to span the gap between the ideas of the authors (the judges writing the opinions) and the ideas of the searcher (the lawyer looking for relevant cases). Garfield addressed this very point in his work in science literature, and his solution was citation indexing. In law a single case citation represents many ideas. Those ideas were expressed in specific language in the opinion, but the case citation itself is not tied to the exact words of the opinion; the citation represents the complete package of facts, issues, arguments, and conclusions presented in the case. A legal citation index, therefore, is just a different sort of information retrieval system. Instead of relying upon the identity function to retrieve cases, it employs Garfield's "association-of-ideas" approach to gather all cases which have referenced a particular case citation. Presumably, these cases also all share some ideas. There are, of course, deficiencies in citation indexing. Anyone who has ever Shepardized *Brown v. Board of Education* is aware of the most glaring problem. Since Shepard's cites every instance in which a reported decision has been cited, it is likely to lead to relevant subsequent cases, but "is also certain to lead . . . to many cases where the citation [was] casual or thrown in for good measure."<sup>206</sup> So many cases are retrieved that the entire exercise is almost

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203. Jon Bing, *The Problem of Finding a Precedent*, in LAW, DECISION-MAKING AND MICROCOMPUTERS 285, 288 (Stuart S. Nagel ed., 1991).

204. See John Doyle, *WESTLAW and the American Digest Classification Scheme*, 84 LAW LIBR. J. 229 (1992).

205. See generally Rita Reusch, *The Search for Analogous Legal Authority: How to Find It When You Don't Know What You're Looking For?*, LEGAL REFERENCE SERVICES Q., Vol. 4, No. 3, Fall 1984, at 33.

206. NOEL T. DOWLING ET AL., MATERIALS FOR LEGAL METHOD 259 n.11 (1946).

useless for finding analogous cases. This example supports the view that citation indexing is, in information science terms, inherently noisy.<sup>207</sup>

At this juncture, the researcher is in need of the true computational power of the mainframe. This power is absent in the present online citation systems, which are nothing more than automated versions of a manual process. (The user does not get any better or different information using Shepard's online than in the books.) In a new model, after retrieving all cases that cite *Brown v. Board of Education*, the computer could assign weights to the cases according to a mathematical formula or algorithm, which takes into account certain legal considerations and quantifiable parameters of the citation: the age of the citing case, the frequency of reference to the principal case, the level of the citing court, the geographical proximity of the citing court. Various weights can also be assigned based on the treatment of the cited case—whether the case was questioned, followed, or overruled. The user could then retrieve the group of citing cases in order by their calculated weights and, with any luck, their logical relevance to the principal case. The “closest” cases would fall at the top of the rank and the “furthest” cases at the bottom. This system of weighing elements and then using a *nearness function* to rank documents is called vector-based retrieval.<sup>208</sup> Although there are problems to overcome, experiments in the use of citation vectors have already had some success at Stanford University and the University of Oslo.<sup>209</sup> Further research is needed to determine how citation vector retrieval might interact with and improve word-based retrieval.<sup>210</sup> Perhaps citation indexing could be used as a subsystem in the knowledge base of a legal expert system. With this component, the expert system could be fed a single relevant case, then would automatically check for citing cases, assign weights to those citations, calculate the closest cases using the citation vectors, and predict a case-law outcome for a given problem. Where the solution was not

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207. John Martyn, *An Examination of Citation Indexes*, 17 ASLIB PROCEEDINGS 184 (1965).

208. Bing, *supra* note 203, at 288. Vector-based systems tell us “not that documents are or are not relevant to the question, but that they are more or less relevant. . . . [A] matching system takes a digital, and a vector system takes an analogue, view of the world.” Colin Tapper, *Citations as a Tool for Searching Law by Computer*, in *COMPUTER SCIENCE AND LAW* 209, 211 (Bryan Niblett ed., 1980).

209. COLIN TAPPER, *AN EXPERIMENT IN THE USE OF CITATION VECTORS IN THE AREA OF LEGAL DATA* (1982); Tapper, *supra* note 208, at 215-16; Tapper, *supra* note 195. Other researchers have applied vector-based retrieval to facts, rather than to citations. See, e.g., ALAN TYREE, *EXPERT SYSTEMS IN LAW* 139-43 (1989). See also Reed L. Lawlor, *Analysis and Prediction of Judicial Decisions*, in *COMPUTERS AND THE LAW* 81 (Robert P. Bigelow ed., 3d ed. 1981) (discusses how the weight of facts can be described by numbers).

210. See Miranda L. Pao & Dennis B. Worthen, *Retrieval Effectiveness by Semantic and Citation Searching*, 40 J. AM. SOC'Y FOR INFO. SCI. 226 (1989).

apparent, a built-in report generator could at least delineate the strands of precedents found through the citation analysis.<sup>211</sup>

Other, more established computational tacks also are available. If the basic assumption behind the citation index is that a "unique, highly specific group" of cases cite a single case, then it follows that even more unique groupings can be found by looking simultaneously at two or more citations.<sup>212</sup> Information scientists have developed two measures of the relationships between two documents: bibliographic coupling and co-citation analysis.<sup>213</sup> Bibliographic coupling counts the number of internal citations shared by two documents or cases: the relationship between two documents is stronger if they both cite many of the same references in support of their conclusions. Co-citation analysis, by contrast, measures the strength of the relationship between two cases based on how many times later cases cited both of them together. Cases that are cited in pairs (or in groups) by later cases have a higher co-citation strength, and are much more likely to discuss similar ideas. Co-citation patterns among groups of citations have been used in scientific literature to model the intellectual structure of specific discipline areas. Shifts in co-citation patterns among a group of legal cases could, over a period of years, help scholars detect the emergence, or chart the development, of certain specialized areas of the law. This ability is significant, because law is becoming ever more specialized and traditional indexes often are slow to track the imprecise nomenclature and indistinct ideas found in nascent specialties.<sup>214</sup> These techniques of combining citations and measuring the strength of relationship between cases offer hope for new dimensions in information retrieval, and there is no reason this breakthrough should not apply to law.<sup>215</sup>

Unless precedent is rejected completely as a building block for judicial decisions, it is unlikely that the future will see any drastic changes in the law. Precedents are the "relatively frozen" or "deadish" materials from

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211. For discussions of legal expert systems, see generally TYREE, *supra* note 209; RICHARD E. SUSSKIND, *EXPERT SYSTEMS IN LAW* (1987); LAW, COMPUTER SCIENCE AND ARTIFICIAL INTELLIGENCE (Ajit Narayanan & Mervyn Bennun eds., 1991).

212. Eugene Garfield, *History of Citation Indexes for Chemistry*, 25 J. CHEM. INFO. & COMPUTER SCI. 170, 171 (1985).

213. Henry Small, *Co-citation in the Scientific Literature: A New Measure of the Relationship Between Two Documents*, 1973 J. AM. SOC. FOR INFO. SCI. 265, 265.

214. Garfield, *supra* note 198, at 111.

215. Some legal scholars have already used forms of citation analysis in their research. See, e.g., Peter Harris, *Ecology and Culture in the Communication of Precedent Among State Courts 1870-1970*, 19 LAW & SOC'Y REV. 449 (1985); John H. Merryman, *Toward a Theory of Citations: An Empirical Study of the Citation Practice of the California Supreme Court in 1950, 1960, and 1970*, 50 S. CAL. L. REV. 381 (1977); Fred R. Shapiro, *The Most-Cited Law Review Articles*, 73 CAL. L. REV. 1540 (1985).

which the legal system is constructed;<sup>216</sup> as such, they create a built-in inertial drag on the development of the law. If publication form and research methods truly mold legal concepts and if these precedents are locked into the inadequate pigeon-holes of traditional classification and indexing schemes, this problem of drag is only exacerbated.<sup>217</sup> Legal literature, however, is not wholly responsible for this problem. Part of the blame for stagnation can also be laid at the feet of judges and lawyers who, “with the whole bright tool kit gleaming before them,” overwhelmingly choose to follow decisions with a simple citation, ignoring the many other techniques for dealing with precedent.<sup>218</sup> This laziness must be overcome if lawyers and judges are going to find new tricks and better solutions for dealing with the “wilderness of single instances” that is the law. Citation indexing itself must escape the fetters of its old mechanics. Legal citation indexes have a long and venerable history, and this history threatens to become a trap that limits the format and application of future citation indexes. If legal research is moving (or ever moves) into an enlightened age, legal citators should go along for the ride.

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216. JULIUS STONE, *LEGAL SYSTEM AND LAWYERS' REASONINGS* 286 (1968) (adopting words used in a letter by Karl Llewellyn).

217. See generally Delgado & Stefancic, *supra* note 202; Berring, *supra* note 201.

218. Llewellyn, *supra* note 25, at 105.