

Legal Information and the Development of American Law: Writings on the Form and Structure of the Published Law*

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Robert C. Berring's writings about the impacts of electronic databases, the Internet, and other communications technologies on legal research and practice are an essential part of a larger literature that explores the ways in which the forms and structures of published legal information have influenced how American lawyers think about the law. Professor Danner reviews Berring's writings, along with those of other writers concerned with these questions, focusing on the implications of Berring's idea that in the late nineteenth century American legal publishers created a "conceptual universe of thinkable thoughts" through which U.S. lawyers came to view the law. He concludes that, spurred by Berring and others, the literature of legal information has become far-reaching in scope and interdisciplinary in approach, while the themes struck in Berring's work continue to inform the scholarship of newer writers.

¶1 In his 2000 article, "Legal Information and the Search for Cognitive Authority," Robert C. Berring wrote that "despite the centrality of legal information to the legal culture, commentators have long neglected to take a serious approach to analyzing legal information."¹ Berring's own writings are not the only serious work on the role of legal information in American legal culture, but they are essential to any serious consideration of the topic. His articles exploring the impacts of technological change on legal research and the legal publishing industry may have been written less to construct a model for the role of legal information in American legal culture than to examine the effects of those changes on the modern legal information system. But, by basing his commentary on the impacts of technological change in the late twentieth century in a historical discussion of the legal information systems that had

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1. Robert C. Berring, *Legal Information and the Search for Cognitive Authority*, 88 CAL. L. REV. 1673, 1676 (2000) [hereinafter Berring, *Cognitive Authority*]. Berring explained this lack of interest in part as a reflection of how well the legal information system has worked, and on general agreement in the legal culture to confer cognitive, or trusted, authority on a small set of legal sources. *Id.* See also Steven M. Barkan, Book Review, 10 N. ILL. U. L. REV. 365, 365 (1990) (reviewing M. ETHAN KATSH, *THE ELECTRONIC MEDIA AND THE TRANSFORMATION OF LAW* (1989)) ("This dearth of activity is particularly troublesome because of the intimate relationship that exists between law and its informational sources.").

emerged in the late 1800s, Berring developed a paradigm for understanding legal information in the United States that influenced his immediate contemporaries and later writers.² Nearly everything else written on the topic accepts and elaborates on Berring's ideas. Because his ideas have been so widely accepted, anyone wishing to understand the influences of legal information on American legal culture and the development of American law must start with an understanding of the model that he developed over the course of his research and ruminations.

¶2 Berring emphasized the historical role of the West Publishing Company, the preeminent publisher of American law, suggesting that West's comprehensive publishing, classification, and indexing systems had influenced not only the structure and distribution of legal information in the United States, but American legal thought itself. Berring found that "[t]he confluence of Blackstone's categorization structure, [West's] American Digest System, legal education, and all of those trained within it have created a conceptual universe of thinkable thoughts that has enormous power."³ As he wrote at the start of the twenty-first century, however, this conceptual universe that had ruled legal thinking for more than a century was dying due to changes in the technologies of information retrieval and the structures of the legal publishing industry.⁴

¶3 This article traces the influences of two elements of Berring's "conceptual universe of thinkable thoughts"⁵: the impacts of the categories of the West Digest System on how American lawyers understand and think about the law; and the extent to which the conceptual universe was "closed," limiting the acceptable sources of law to published cases—in practical terms, to cases published in the West National Reporter System. The article first attempts to identify the key

2. The usual starting point for considering the role of paradigms in any discipline is THOMAS S. KUHN, *THE STRUCTURE OF SCIENTIFIC REVOLUTIONS* (3d ed. 1996). For Kuhn, paradigms "provide models from which spring particular coherent traditions of scientific research. . . . [Those] whose research is based on shared paradigms are committed to the same rules and standards for scientific practice. That commitment and the apparent consensus it produces are prerequisites for . . . the genesis and continuation of a particular research tradition." *Id.* at 11.

For discussions of paradigms for legal information and legal research, see Carol M. Bast & Ransford C. Pyle, *Legal Research in the Computer Age: A Paradigm Shift*, 93 *LAW LIBR. J.* 285, 286–89, 2001 *LAW LIBR. J.* 13, ¶¶ 5–14; Barbara Bintliff, *Context and Legal Research*, 99 *LAW LIBR. J.* 249, 254–57, 2007 *LAW LIBR. J.* 15, ¶¶ 22–32; F. Allan Hanson, *From Key Numbers to Keywords: How Automation Has Transformed the Law*, 94 *LAW LIBR. J.* 563, 564, 2002 *LAW LIBR. J.* 36, ¶ 2 [hereinafter Hanson, *From Key Numbers to Keywords*]. Berring discussed old and new paradigms of legal research in Robert C. Berring, *Full-Text Databases and Legal Research: Backing into the Future*, 1 *HIGH TECH. L.J.* 27 (1986) [hereinafter Berring, *Full-Text Databases*], and occasionally employed the concept in later articles. See, e.g., Robert C. Berring, *Collapse of the Structure of the Legal Research Universe: The Imperative of Digital Information*, 69 *WASH. L. REV.* 9, 27 (1994) [hereinafter Berring, *Collapse of the Structure*] ("[W]e are in the midst of a major paradigm shift. Legal information is out of control.").

3. Robert C. Berring, *Legal Research and the World of Thinkable Thoughts*, 2 *J. APP. PRAC. & PROCESS* 305, 311 (2000) [hereinafter Berring, *Thinkable Thoughts*].

4. *Id.*

5. As discussed in greater depth in the next section of this article, Berring explained the concept of "thinkable thoughts" in terms of the effects of initial categorization and classification systems on how researchers and others define and think about fields of inquiry. Once in place and accepted as authoritative, classification systems define the limits of thinkable thoughts within a field. *Id.* at 310–11.

features of Berring's thinking as developed in his writings. It then discusses the influences of his work on other writers. The final section critiques the model that emerges from his writings and offers some thoughts on what approaches are best suited for examining the role of legal information in the twenty-first century, both within particular jurisdictions and for comparative purposes.

Berring's Works

Early Works: Focus on West

¶4 In "Full-Text Databases and Legal Research: Backing into the Future," published in the 1986 premiere issue of the University of California, Berkeley's *High Technology Law Review*, Berring posited the need for more research "on the relation between the structure of legal literature and the substantive development of law," noting that "in law, more than any other discipline, the structure of the literature implies the structure of the enterprise itself."⁶ At the outset of the article, Berring stated his intention to explore these relationships by assessing the influences of the "traditional hard-copy primary sources" on the lawyering process,⁷ and quoted Langdell's well-known comparison of the role of the law school library for lawyers to those of the laboratory for chemists and the museum for naturalists.⁸ A year later, in "Legal Research and Legal Concepts: Where Form Molds Substance," he strengthened his initial proposition about the role of legal information with the statement that "[f]rom the late nineteenth century, the development of the American legal system can be seen as a history of the development of forms of legal publication," and the question "whether the forms of publication have been mere vehicles for the transmission of legal knowledge or important influences in the development of that knowledge,"⁹ again citing Langdell's statement about the role of the library.¹⁰

¶5 These first articles and those that followed each grapple with one or more aspects of the impacts of new information technologies on legal information and the practice of legal research. Each also develops the broader project of examining the influences of the forms and structures of legal information on the development of American law, particularly those of the publication, classification, and indexing systems devised by the West Publishing Company in the final quarter of the nineteenth century.¹¹

6. Berring, *Full-Text Databases*, *supra* note 2, at 29.

7. *Id.*

8. *Id.* at 29 n.9 (citing HARVARD LAW SCHOOL ASS'N, THE CENTENNIAL HISTORY OF THE HARVARD LAW SCHOOL 1817-1917, at 97 (1918) ("The library is to us what the laboratory is to the chemist or the physicist and what the museum is to the naturalist.")).

9. Robert C. Berring, *Legal Research and Legal Concepts: Where Form Molds Substance*, 75 CAL. L. REV. 15, 15 (1987) [hereinafter Berring, *Form Molds Substance*].

10. *Id.* at 15 n.1.

11. Berring's articles also discuss the role of *Shepard's Citations*. See, e.g., Berring, *Cognitive Authority*, *supra* note 1, at 1695-96. For a history of legal citators, see Patti Ogden, *Mastering the Lawless Science of Our Law: A Story of Legal Citation Indexes*, 85 LAW LIBR. J. 1 (1993).

¶6 Berring's early articles provide a rich history of West and the influences of its approaches both to the publication and organization of appellate cases and to indexing and digesting.¹² Already in 1986, he noted that West's American Digest System was "the key aspect of the new form of legal literature" that the company created.¹³ The West digest classification system was a "universal subject thesaurus," a format that "allowed and encouraged lawyers to fit every legal issue into a certain conceptual framework," providing not only the means for locating precedent, but "a paradigm for thinking about the law itself."¹⁴ Once exposed to the West Key Number System, "[l]awyers began to think according to the West categories."¹⁵ Berring described the West digest as the "internal, mediating structure within the old mode of [legal] discourse. . . . The location of issues and cases in the old paradigm was part of their meaning," providing "a substantive context, a setting that told the searcher the meaning of the case as much as did the opinion itself."¹⁶ West had created a new form of legal literature with its reporters and digests in the late 1800s. In the last quarter of the twentieth century, the full-text online database vendors were creating another new form of literature that was "more or less identical in content to the old West system, but is accessible in an entirely new way."¹⁷ With full-text searching, however, the context and meaning provided by the digests were lost.

¶7 In 1987, Berring moved his thoughts regarding the National Reporter System and the American Digest System into a broader historical discussion of the role of legal information in the development of English and American law. For Berring, "the earliest forms of modern legal research materials began to take shape in the eighteenth century," when Blackstone's *Commentaries* presented law as "a body of knowledge that had its own structure and was reducible to rational propositions."¹⁸ Influenced by Locke and Newton, Blackstone used natural law to provide "the assurance that there *was* a structure, an absolute foundation, upon which to build the rational system [of common law]."¹⁹ With this framework established, judicial reports "could be used as indicia of the larger structure . . . [,] the embodiment of the common law."²⁰

12. See, e.g., Berring, *Full-Text Databases*, *supra* note 2, at 29–33. See also ERWIN C. SURRENCY, A HISTORY OF AMERICAN LAW PUBLISHING 237–42 (1990). The official company history is WILLIAM W. MARVIN, WEST PUBLISHING COMPANY: ORIGIN, GROWTH, LEADERSHIP (1969).

13. Berring, *Full-Text Databases*, *supra* note 2, at 31.

14. *Id.* at 32–33. Berring noted that West's thesaurus was not "truly universal," but limited to the "legal universe." *Id.* at 32 n.24.

15. *Id.* at 33.

16. *Id.* at 54.

17. *Id.* "Found cases that are relevant are like prizes in a computer game, rather than instantiations of the legal and socially appropriate categories of the West Digest." *Id.* Berring goes on to compare the West Digest System to a centrally planned economic system, which he contrasts to the marketplace economy of the databases. *Id.* at 55–56.

18. Berring, *Form Molds Substance*, *supra* note 9, at 15. For more on Berring's thoughts on the influences of Blackstone and the *Commentaries*, see Berring, *Thinkable Thoughts*, *supra* note 3, at 307–10.

19. *Id.* at 16.

20. *Id.* at 16–17.

¶8 In the early and mid-nineteenth century, the volume of American reports remained small enough that practitioners could still read and retain what was necessary to practice.²¹ “The law presented an internally coherent structure containing timeless truths, in largely unwritten form. The part that had been reduced to written form was manageable.”²² During the period of post-Civil War industrialization and geographic expansion of the United States, however, the volume of published case law increased dramatically²³ and existing mechanisms for publishing decisions in a timely manner and providing access to them were no longer adequate, either for individual jurisdictions or on a national basis. The West Company succeeded in meeting the need for better reporting and access by developing products notable for their accuracy and comprehensiveness.²⁴ While some of its competitors attempted to follow the English practice of selective publication of court opinions, West’s comprehensive case reporting system prevailed²⁵ and contributed to a “gigantic growth in published cases.”²⁶

¶9 As Berring put it, “under the comprehensive model, the publication of thousands of contradictory and unenlightened opinions undercut the theoretical basis of the common law,”²⁷ making it “not difficult to show the inconsistencies of a system that contained so many constituent parts.”²⁸ West’s comprehensive reporting of opinions had helped create the problem, but the company’s digest and key number system contributed to its solution. By providing a classification structure premised on providing a location “for every possible legal issue . . . [West’s] subject arrangement lent its structure to American law.”²⁹ For Berring, West’s publications not only “had a profound and continuing impact on the way information about law was organized [but] West’s influence may have saved the myth of the common law from what looked like its inevitable demise.”³⁰

21. *Id.* at 19. Berring suggested that there were “still only a few hundred [volumes of American case reports] at the middle of the nineteenth century.” *Id.* (citing FREDERICK C. HICKS, MATERIALS AND METHODS OF LEGAL RESEARCH WITH BIBLIOGRAPHICAL MANUAL 111 (1923) (Berring cites page 110.)).

22. *Id.*

23. Hicks estimated that there were nearly 3800 volumes of American case law in 1885. HICKS, *supra* note 21, at 111.

24. Berring, *Form Molds Substance*, *supra* note 9, at 21.

25. *Id.*

26. *Id.* at 22.

27. *Id.* at 23.

28. *Id.* at 24.

29. *Id.* at 25.

30. *Id.* “No serious scholar can posit a belief in the myth of Blackstone’s common law. . . . Yet, the vast majority of practitioners, far from academic debates, have continued to use a research system that imposes a structure of organization derived from the grand scheme.” *Id.* at 26.

But would it survive the print era? As Berring put it, “[T]he ability to search without an imposed structure will nakedly expose the myth of the common law and the beauty of the seamless web to the general legal world.” *Id.* at 26. In a 1988 talk to the Canadian Association of Law Libraries/l’Association Canadienne des Bibliothèques de Droit, Berring said:

As we go to a full-text system . . . , it will no longer make sense to even talk about a larger majestic whole to the law. There will be no one forcing [millions of cases] into those categories and with the thousands and tens of thousands and hundreds of thousands and even millions of cases coming down it is very hard to support the myth that there is a larger structure of law being revealed by the judges.

Robert Berring, *Full Text Legal Research: Implications for the Future*, 14 CALL NEWSL./BULL. DE L’ACBD 186, 189 (1989).

Legal Information Systems

¶10 To this point, Berring's articles had provided thoughtful histories of the publication and organization of United States case law and its finding tools, while showing how the initiatives of West Publishing Company had responded to the challenges posed to Blackstone's idea of the common law by the growth of published law in the late nineteenth century. Yet, Berring had not said much about how the influences of West's digest and classification systems on American lawyers' understandings of the common law operated in practice. His 1994 article, "Collapse of the Structure of the Legal Research Universe: The Imperative of Digital Information,"³¹ took his previous work into a discussion of information systems and also introduced the idea of the conceptual universe of legal information.

¶11 Berring began by noting "the very special way in which legal thinkers and legal practitioners have viewed published legal materials," the "almost mystical quality" that they hold for the legal researcher, and the belief "that law has 'primary' sources, that is, that texts exist which are statements of the law itself."³² Significant to his argument, "most of this primary authority is found, not in legislation or constitutions, but in the cases that interpret them or that indeed run beyond them. . . . [T]hese decisions of the courts are the stuff of primary authority."³³

¶12 This belief "that there are definitive, primary sources that contain truth needing only the correct interpretation to be understood is an amazing phenomenon [that] harkens back to the age of Blackstone and his belief that law was like a science which lent itself to analysis in the same way that natural science did."³⁴ Contemporary legal theorists, including those working in the areas of doctrinal studies, recognized that "there is little theoretical possibility for staking out a common law apart from the judges who make it and the society in which they live," and that "there is no grand scheme in the common law." Yet, even they "continue to parse and analyze cases in much the same manner as their forbears. . . . The profession's obsession with tying cases together has not abated."³⁵ Coupled with continued belief in the power of the common law is the American lawyer's need to find published cases directly applicable to issue at hand, cases on "all fours"—a unique concept in the world of information. In most fields, "there are no points of primary authority. There are no nuggets of truth or treasure. . . . Legal researchers believe that there are answers out there that are not just powerfully persuasive, but are the law itself."³⁶ For Berring, both the traditional myth and the search for nuggets of authority and truth continued to survive because "legal information was controlled in a closed ended system."³⁷

31. Berring, *Collapse of the Structure*, *supra* note 2.

32. *Id.* at 10.

33. *Id.*

34. *Id.* at 11 (citing DANIEL J. BOORSTIN, *THE MYSTERIOUS SCIENCE OF THE LAW* (1941)). Berring noted that "[t]he ideas are directly traceable to Langdell and his followers as well." *Id.* at n.8.

35. *Id.* at 12.

36. *Id.* at 14.

37. *Id.* at 15.

¶13 Like other information systems, the information system of law has two parts: a database and an organizing system.³⁸ The test for any organizing system comes when the database expands. In law, as the database of cases grew in the nineteenth century, earlier organizing systems (abridgements,³⁹ personal notebooks,⁴⁰ treatises⁴¹) were no longer up to their task. The West Digest System was, however; and, by providing a sophisticated organizing system for law, West “remade the structure of legal thinking.”⁴² As Berring described it, the West system “is a prototype organizing system,” precoordinated to include “every possible subject which could be the topic of an issue of law that could be resolved by a judge in an appellate decision.”⁴³ New ideas and theories would be classified into existing categories; new topics would be added only when absolutely necessary. As Berring put it: “In effect, West produced . . . ‘a universe of thinkable thoughts.’”⁴⁴

¶14 Berring noted that the idea of applying a uniform subject arrangement to all of the U.S. states and to the federal system was “marvelously crazy,” but still “the digest system prospered.”⁴⁵ Why? Berring cited not only the power of the digest itself, but how well its organizing system mirrored the late nineteenth-century legal education curriculum that developed at Harvard Law School and spread to other schools at the same time.⁴⁶ Legal research focused on finding cases and the Harvard model of legal education focused on analyzing them. In time, “the legal information system intertwined itself with the organization of the law itself. . . . How one organizes the law became the center of what the law could and did mean.”⁴⁷ The universe sketched out by West became “the only universe available. . . . Legal research . . . was an artificial world where only the cases, cases arranged and sorted by West . . . , really mattered.”⁴⁸

38. *Id.* at 17. Berring used the example of his son’s baseball card collection to demonstrate the concept. *Id.* at 17–19.

39. Perhaps the best discussion of abridgements is FREDERICK C. HICKS, MATERIALS AND METHODS OF LEGAL RESEARCH WITH BIBLIOGRAPHIC MANUAL 216–33 (2d. rev. & enl. ed. 1933) [hereinafter HICKS (1933)].

40. *See id.* at 196–97. For recent research on the uses of commonplace books, see PAUL M. PRUITT & DAVID I. DURHAM, COMMONPLACE BOOKS OF LAW: A SELECTION OF LAW-RELATED NOTEBOOKS FROM THE SEVENTEENTH CENTURY TO THE MID-TWENTIETH CENTURY (2005); M. H. Hoefflich, *The Lawyer as Pragmatic Reader: The History of Legal Common-Placing*, 55 ARK. L. REV. 87 (2002).

41. *See* A.W.B. Simpson, *The Rise and Fall of the Legal Treatise: Legal Principles and the Forms of Legal Literature*, 49 U. CHI. L. REV. 632 (1981).

42. Berring, *Collapse of the Structure*, *supra* note 2, at 20.

43. *Id.* at 21.

44. *Id.* Berring credits Dan Dabney (currently Senior Director, Thomson Global Services) with the first application of the term to legal information. *See id.* at 21 n.27; Berring, *Thinkable Thoughts*, *supra* note 3, at 311 n.13. *See also* Daniel Dabney, *The Universe of Thinkable Thoughts: Literary Warrant and West’s Key Number System*, 99 LAW LIBR. J. 229, 229, 2007 LAW LIBR J. 14, ¶ 4.

45. Berring, *Collapse of the Structure*, *supra* note 2, at 22.

46. The seven main topics in the West digests are similar to the basic courses in the first-year law school curriculum, both at Harvard in the final quarter of the nineteenth century and today. Berring compares the digest topics with the first-year courses at his own school. *Id.* n.31.

47. *Id.* at 23.

48. *Id.* at 24. In contrast, full-text searching breaks down the universe created by the digest in several ways, including providing ready access to nonjudicial sources: “Materials that once were held in the sub-basements of only the best law libraries are now as easily retrieved on Lexis and Westlaw as a Supreme Court decision.” *Id.* at 29.

Changes in the Information Environment

¶15 Between 1995 and 1997, Berring published three articles written against the immediate background of changes in the legal information environment prompted by the increasing concentration of ownership in legal publishing. “On Not Throwing Out the Baby: Planning the Future of Legal Information,”⁴⁹ published in 1995, is devoted largely to arguments that market forces, rather than government initiatives, should determine the future framework of the U.S. legal information system. The article provided insightful commentary on West’s systems, but did not significantly advance the themes of his earlier articles.⁵⁰

¶16 Two years later, “Chaos, Cyberspace and Tradition: Legal Information Transmogrified” focused on the effects of changes in the corporate structure and ownership of the publishers of legal information.⁵¹ The article emphasized the centrality of law books to the practice of law in the United States, citing the importance of Blackstone’s *Commentaries*, the emphasis on the law library in the Harvard model of legal education, and “the substantive and structural importance of the West National Reporter and Digest System.”⁵² As Berring put it, “the great sets of books around which so much is built are so completely a part of our legal tradition that they disappear before us. . . . The legal publication universe is at the core of American law.”⁵³ Once again tracing West’s history, Berring emphasized the influences of the company’s standardized case reporting and comprehensive coverage on American jurisprudence. Although West did not actually publish all decisions issued by American appellate courts, it seemed that it did. Only those decisions that were published in West reporters “conveyed ‘reality’ to a decision [O]nly when a case appeared in the West system did it become real.”⁵⁴ Written shortly after West was acquired by the Thomson Publishing Group, the article outlined issues for a future in which legal information would be a commodity, less distinguishable (perhaps indistinguishable) from other information supplied electronically by the conglomerate companies that now owned West and the other legal publishers. In the emerging legal information environment, where would lawyers find the touchstones of stability and authority that West’s publication and organizing systems had provided?

49. Robert C. Berring, *On Not Throwing Out the Baby: Planning the Future of Legal Information*, 83 CAL. L. REV. 615 (1995) [hereinafter Berring, *Planning the Future*].

50. It does include a suggestive footnote reference to “the growing literature in the law on the impact that the categorization of information has upon the ability of lawyers and judges to function.” *Id.* at 616 n. 1.

51. Robert C. Berring, *Chaos, Cyberspace and Tradition: Legal Information Transmogrified*, 12 BERKELEY TECH. L. J. 189 (1997) [hereinafter Berring, *Chaos, Cyberspace and Tradition*]. In the mid-1990s, LexisNexis, West Publishing, and the publisher of *Shepard’s Citations* were each acquired by large international information corporations. *Id.* at 198–99.

52. *Id.* at 189.

53. *Id.* at 189–90.

54. *Id.* at 192–93. “[A]t its apex, the controlled paper universe of legal information consisted of a set of West reporters and a set of *Shepard’s Citations*.” *Id.* at 195.

¶17 In the short essay “Ring Dang Doo,” published in the *Green Bag* in 1997, Berring began with the statement that “[t]he very skeleton of the law is breaking down. . . . [T]he superstructure upon which legal concepts are arrayed [is] imploding.”⁵⁵ He then succinctly described the impacts of West Publishing Company on American law:

Over the 110 years of the West era, the West System became so embedded in legal thought that it became invisible. We thought in West terms, we discussed law in West categories. . . . Without realizing it, we all depended on West for giving us ways to think coherently about the hundreds of thousands of cases that were stuffed into the reporters.⁵⁶

¶18 In explanation for the breakdown of the old universe, Berring noted the effects of Thomson’s acquisition of the West Publishing Company,⁵⁷ but also law students’ and young lawyers’ growing reliance on computer-based research. “[T]here is now ten years worth of law students who have graduated with little knowledge of the [West] Topics and Key Numbers as part of their universe. . . . The new researcher does not think in subject categories with sharply delineated subdivisions like those in the Key Number system.”⁵⁸ Though brief, the *Green Bag* essay provided an appropriate coda for the first and middle periods of Berring’s writings on legal information and set the stage for the later articles.

Summing Up

¶19 Published in 2000, “Legal Research and the World of Thinkable Thoughts” is perhaps Berring’s most thorough elaboration of his ideas regarding the place of West’s digest system in the conceptual universe that dominated American legal thinking until “[t]echnology . . . invaded the world of legal information.”⁵⁹ Relying on Geoffrey Bowker and Susan Star’s recent book on the effects of classification, Berring explained how decisions on classifying and categorizing information affect the thinking of those using an information system.⁶⁰ Classification decisions initially made simply to construct “a workable sorting process transform the very process.” Over time, these early decisions can come to be accepted as “the only possible outcome[s], the result appears to be natural. . . . Because those who use the system tend to conceptualize in terms of the system and, as a system matures, it becomes authoritative, the classification system simply describes the universe.”⁶¹

¶20 In law, what Berring called the “confluence” of the structure presented by Blackstone in the eighteenth century, the curriculum of modern legal

55. Robert C. Berring, *Ring Dang Doo*, 1 GREEN BAG 2D 3, 3 (1997) [hereinafter Berring, *Ring Dang Doo*].

56. *Id.* at 3–4.

57. *Id.* at 3–5.

58. *Id.* at 5.

59. Berring, *Thinkable Thoughts*, *supra* note 3, at 311.

60. *Id.* at 310 n.11 (citing GEOFFREY C. BOWKER & SUSAN LEIGH STAR, *SORTING THINGS OUT: CLASSIFICATION AND ITS CONSEQUENCES* (1999) for its discussion of “determinative power of classification systems”).

61. *Id.* at 310.

education that developed in the last quarter of the nineteenth century at Harvard, and the West Digest System all contributed to what came to be seen as an inevitable way to classify legal concepts. The conceptual universe “present[ed] itself as the law.”⁶² Because American lawyers sought the information they required through the digest system, they came to think about the law through the concepts embodied in it.

¶21 By 2000, new students entered law school already “fully conversant with modern search engines and interfaces” and no longer interested in looking to the established organizational structures of the law to enter the universe of thinkable thoughts. “Rather than having legal information shape their perceptions of the world, they are shaping legal information to their *existing* information world.”⁶³ As a result, “the old classification system of West topic and key numbers . . . no longer define the reality of legal thinking.”⁶⁴ In addition, the boundaries of the legal information universe were shifting, both through the habits of a new generation of legal researchers accustomed to using electronic search tools throughout their professional (and personal) lives, and from changes in the ownership of companies that published legal information. The intrusion into the legal information market of large multinational companies with wide-ranging subject interests meant that “[w]hat once was a *bright-line border* between legal information and ‘other’ sources is fading as integrated information providers offer sources of all sorts through legal portals.”⁶⁵

¶22 The article concluded with calls for a new Blackstone, for someone who could “reconceptualize the structure of legal information” and develop a new set of thinkable thoughts for the twenty-first century.⁶⁶

¶23 The series of articles culminated in the *California Law Review* in 2000 with “Legal Information and the Search for Cognitive Authority,” a rich discussion of legal information at the beginning of the twenty-first century that amplifies many themes from Berring’s previous work. Here, Berring continued to explore the changing boundaries of the legal information universe, using the idea of cognitive (or “trusted”) authorities to analyze the present condition of legal information and legal authority.⁶⁷ Throughout the twentieth century, legal information was

62. *Id.* at 311. In effect, it established the terms of professional discourse within the legal community. Berring did not employ the concepts of community or professional discourse here or elsewhere in the series of articles, although he alluded to discourse in the first article in the series. Berring, *Full-Text Databases*, *supra* note 2, at 54 (“The Digest was the internal, mediating structure within the old modes of discourse. The West editors were, in effect, the Platonic Guardians of legal language and legal meanings. The discourse, in turn, was the ground of integration and coherence in substantive law.”).

63. Berring, *Thinkable Thoughts*, *supra* note 3, at 313.

64. *Id.* at 314.

65. *Id.* at 311 (emphasis added). Berring pointed out that this was not simply a matter of the differences between print and online information seeking. The challenges to the boundaries of the universe of thinkable thoughts came rather when the same tools could be used to locate nonlegal as well as legal information. The first legal databases, Westlaw and Lexis, were products aimed specifically at lawyers: “they worked within the existing universe of thinkable thoughts.” *Id.* at 312.

66. *Id.* at 315–16. “The time is now, the stakes are enormous, Blackstone, come home.” *Id.* at 318.

67. Berring, *Cognitive Authority*, *supra* note 1, at 1676.

characterized by “a deeply rooted and stable array of cognitive authorities. . . . [C]ertain sets of books were authoritative and reliable.”⁶⁸ The cognitive authorities included the primary sources of law: judicial reports (embodied by West’s National Reporter System); statutes and administrative rules; *Shepard’s Citations*; and the American Digest System, which, in a case-based system, “set the cornerstones of cognitive authority in place.”⁶⁹

¶24 Over the course of the twentieth century, however, the mix of authorities changed both in the relative importance of the recognized sources and through the introduction of new sources, something Berring demonstrated by comparing the sources cited in an 1899 volume of *United States Reports* and those in a single U.S. Supreme Court opinion published in 1999 in *U.S. Law Week*.⁷⁰ After noting that the range of subjects addressed in each year is similar enough to support comparison of what source materials are cited, Berring found that the 1899 Court cited to judicial reports (predominately), to legislation, and in a few instances to secondary sources.⁷¹ There were apparently no citations to nonlegal secondary sources. Berring offered three possible explanations for the mix. The first is that in 1899 there were few sources other than judicial opinions or statutes available for lawyers and judges to cite as authority.⁷² A second explanation is the continuing strength of the “myth of the common law” in American legal thinking at the end of the nineteenth century.⁷³ The third is that it would still be nine years before heavy citation of nonlegal sources (e.g., social science materials and statistics) became acceptable, if not common immediately, after the brief filed on behalf of the state of Oregon by Louis Brandeis in *Muller v. Oregon*.⁷⁴

68. *Id.* at 1676–77. “One didn’t need to look behind such a publication and evaluate its worth. The process of critically judging its value had been performed long ago.” *Id.* at 1677.

69. *Id.* at 1680.

70. *Id.* at 1683–91. Studies of sources cited in judicial opinions, especially the opinions of the U.S. Supreme Court, are fairly common in the legal research literature, particularly since the availability of full-text searching in the legal databases. See sources cited *infra* note 178.

71. *Id.* at 1686–87.

72. This explanation is a demonstration of what Karl Llewellyn called “the threat of the available,” which he defined as “the almost inevitable tendency in any thinking, or in any study, first to turn to the most available material and to study that—to study it exclusively—at the outset; second, having once begun the study of the available, to lose all perspective and come shortly to mistake the merely available, the easily seen, for all there is to see.” Karl N. Llewellyn, *Legal Tradition and Social Science Method—A Realist’s Critique*, in *ESSAYS ON RESEARCH IN THE SOCIAL SCIENCES* 89, 95–96 (1931), reprinted in KARL N. LLEWELLYN, *JURISPRUDENCE: REALISM IN THEORY AND PRACTICE* 77, 82 (1962). Berring does not discuss Llewellyn.

For an argument that the increased availability and distribution of congressional documents was one reason for the increased citation by U.S. courts of legislative history materials in the interpretation of statutes in the early twentieth century, see Richard A. Danner, *Justice Jackson’s Lament: Historical and Comparative Perspectives on the Availability of Legislative History*, *DUKE J. COMP. & INT’L L.*, Summer 2003, at 151.

73. Berring, *Cognitive Authority*, *supra* note 1, at 1687 (“The myth of the common law as a beautifully constructed, logically consistent, ptolemaic system of unwritten law was still strong.”).

74. *Id.* at 1688 (citing *Muller v. Oregon*, 208 U.S. 412 (1908)). For discussion of the impacts of the Brandeis brief, see JOHN W. JOHNSON, *AMERICAN LEGAL CULTURE, 1908–1940*, at 29–51 (1981).

¶25 In contrast to the limited variety of sources cited in the 1899 volume of *U.S. Reports*, Berring found “a wonderland of sources beyond the bounds of cases and statutes” cited in the Supreme Court’s opinion in *Alden v. Maine*, decided in June 1999.⁷⁵ In the majority and dissenting opinions, Berring located citations not only to “hundreds of cases,” but to the Federalist Papers, legal treatises, law journal articles, and works by historians and English commentators.⁷⁶ He concluded that for the modern Supreme Court, “there is no final primary authority, only a kaleidoscope of sources.”⁷⁷ As a result, “[t]he nature of legal authority used by the United States Supreme Court has changed. . . . The stability of 1899 is gone.”⁷⁸

¶26 In addition to analyzing the changing boundaries of the universe of legal information, Berring returned in “Cognitive Authority” to his earlier discussion of legal information systems.⁷⁹ As in 1994, he defined an information system in terms of both a database of information and an organizing system designed to facilitate retrieval of what is needed from the database.⁸⁰ In law, during the twentieth century, the database for legal information had been the National Reporter System. Although some courts continued to publish opinions in “official” reporters in addition to the West versions, “in practice, one who wanted to carry out research ended up relying on the West National Reporter System.”⁸¹

¶27 The organizing system for the database of published cases was the American Digest System, “a precoordinated index that covered every possible legal situation. . . . The Digest System organized each case that passed through the National Reporter System into a predetermined set of categories. . . . Generations of lawyers learned to conceptualize legal problems using the categories of the Topics and Key Numbers of the American Digest System.”⁸² Over time, the system “became staggeringly complex” and difficult for lawyers to use and understand, but “[t]he beautiful part was that they did not have to fully understand how it worked The categories established by the Digest system were deeply ingrained.”⁸³

75. *Id.* at 1689 (citing *Alden v. Maine*, 527 U.S. 706 (1999) (Berring references the case to its locations in *United States Law Week* (67 U.S.L.W. 4601) and the *Supreme Court Reporter* (119 S. Ct. 2240)).

76. *Id.* at 1689–90. The number of footnotes in the opinion is itself instructive: in *Alden*, Justice Souter’s dissent alone has forty-three footnotes, while there are only six footnotes in the full volume of opinions from 1899. *Id.* at 1690.

77. *Id.* at 1690.

78. *Id.* at 1691 (citing Frederick Schauer & Virginia J. Wise, *Legal Positivism as Legal Information*, 82 CORNELL L. REV. 1080 (1997) [hereinafter Schauer & Wise, *Legal Positivism*]; Frederick Schauer & Virginia J. Wise, *Nonlegal Information and the Delegalization of Law*, 29 J. LEGAL STUD. 495 (2000) [hereinafter Schauer & Wise, *Nonlegal Information*]). For discussion of the Schauer and Wise articles, see *infra* notes 171–78 and accompanying text.

79. See Berring, *Collapse of the Structure*, *supra* note 2, at 16–23.

80. Berring, *Cognitive Authority*, *supra* note 1, at 1691.

81. *Id.* at 1692. Berring noted that even the publishers of other sets waited until the West version of a case appeared before including it in their products. *Id.*

82. *Id.* at 1693. “Since the seven main divisions of the Topic breakdown track the first-year courses at most law schools, the power of the scheme cuts even deeper.” *Id.*

83. *Id.* at 1694. As part of this discussion, Berring pointed out that “[t]he average practitioner learned to work with parts of the system. She discovered how to use the available Key Number tags in a rudimentary way, and it was fine.” *Id.*

¶28 The database in Berring's legal information system included only case law and the organizing system provided access only to cases. Berring acknowledged that this might seem to give "short shrift" to other sources of authority, such as statutes and administrative law. But, he explained that "American law has always been about cases,"⁸⁴ and that statutory and administrative law have only recently become important sources of law.⁸⁵ Thus, prior to the last quarter of the twentieth century, the universe of legal information was stable. There was an accepted database of information, a powerful organizing system, and even a method [*Shepard's Citations*] for verifying information.⁸⁶

¶29 The rest of the article describes what had happened during the previous twenty-five years to "mortally wound" this stable universe. As in earlier articles, Berring noted that in itself the change from reliance on print to electronic sources for legal research was not the cause—initially at least Lexis and Westlaw had "aped the functions of the old system."⁸⁷ Instead, he focused on three other factors: a new environment in which users of legal information had always worked with electronic information sources; the consolidation of legal publishers into large corporate entities that viewed legal information as a commodity similar to their other information products; and the Internet, which would destroy the cognitive authority of the National Reporter System.⁸⁸

¶30 The article and the series closed with what Berring called a "sermon," summarizing the deleterious effects of the breakdown of the one-hundred-year-old universe of legal information,⁸⁹ and looking hopefully to "the younger generation to man the ramparts of cognitive authority" and demand that the information

84. *Id.* at 1693.

85. *Id.* at 1694 ("For most of the twentieth century [statutes] were second-class."). Earlier in this article and elsewhere in the series, Berring seemed to downplay the importance of legislation prior to the late twentieth century. *See id.* at 1686 ("I was interested to find that even this early [in 1899], legislation was a topic. Several of the cases focus on statutes."); Berring, *Chaos, Cyberspace and Tradition*, *supra* note 51, at 192 n.9 ("Only in recent years have statutes and administrative codes grown in influence.").

William Popkin has argued, however, that legislation was an important source of law in the states throughout the nineteenth century, and that the growing importance of legislation at the national level in the last quarter of the century was indicated by events such as the first codification of federal law, the *Revised Statutes of the United States* (published in 1874), and the first official publication of congressional debates in the *Congressional Record* in 1873. *See* WILLIAM D. POPKIN, *STATUTES IN COURT* 60–61 (1999). Others have pointed out the growth in legislative activity during the last quarter of the nineteenth century. *See, e.g.*, GRANT GILMORE, *THE AGES OF AMERICAN LAW* 63 (1977) (noting that in the post-Civil War period "[t]he legislatures, stirred by populist discontents, experimented with social legislation—regulating the hours and conditions of employment, restricting the exploitation of women and children, and so on."); JAMES WILLARD HURST, *LAW AND SOCIAL ORDER IN THE UNITED STATES* 36 (1977) ("From the 1880's, but most markedly from the take-off decade of 1905–1915, the regulatory component of statute law became much more prominent and added considerably to the volume of legislation. . . ."). *See generally* JAMES WILLARD HURST, *LAW AND THE CONDITIONS OF FREEDOM IN THE NINETEENTH CENTURY UNITED STATES* 71–108 (1956).

86. Berring, *Cognitive Authority*, *supra* note 1, at 1695–96.

87. *Id.* at 1696.

88. *Id.* at 1696–1703.

89. *Id.* at 1703–08.

marketplace deliver legal information enhanced with the value added under the old regime.⁹⁰

Other Writers

¶31 Berring's first major writings on the role of legal information appeared as a few other writers were also beginning to consider the issues raised for the development and practice of the law by new information technologies. For most of the twentieth century, the literature of legal information⁹¹ had dealt mostly with legal research and bibliography—how to find the law and how to teach law students how to find the law (what should be taught, how it should be taught, and by whom).⁹² In the 1960s, the continuing growth in the amount of published legal information prompted what Bernard Hibbits called “an eclectic variety of lawyers, legal academics, and law librarians [to look] to emerging computer technology to facilitate the storage, accessing, and distribution of legal information.”⁹³ A lit-

90. *Id.* at 1708.

91. The term “legal information” was itself seldom used. The author's search of the files for *Law Library Journal* in the HeinOnline database suggests that the term appeared in forty articles between 1908 and 1985, but in thirty-five articles between 1986 and 2005. See generally NEIL POSTMAN, BUILDING A BRIDGE TO THE EIGHTEENTH CENTURY: HOW THE PAST CAN IMPROVE OUR FUTURE 82–98 (1999) for explorations of how recently it is that we have started thinking about “information” as a concept, as something that could be thought about apart from its substantive context.

92. The legal research and bibliography literature began with the works of law book salesmen and a few law librarians at the turn of the twentieth century, and extends through the era of the great legal research textbooks to the present time. For a thorough and insightful bibliographic history of American legal research texts, see Steven M. Barkan, *On Describing Legal Research*, 80 MICH. L. REV. 925 (1982) [hereinafter Barkan, *On Describing Legal Research*]. For a brief history of legal research instruction, see Joyce Manna Janto & Lucinda D. Harrison-Cox, *Teaching Legal Research: Past and Present*, 84 LAW LIBR. J. 281, 282–89 (1992). For more recent literature, see generally *Law Library Journal* (1908–), *Legal Reference Services Quarterly* (1981–), and *Perspectives: Teaching Legal Research and Writing* (1992–). Most issues of *Perspectives* also list recent books and articles on research and writing.

Berring himself has been a frequent writer, commentator, and innovator on matters of legal research instruction. See e.g., Robert C. Berring & Kathleen Vanden Heuvel, *Legal Research: Should Students Learn It or Wing It?* 81 LAW LIBR. J. 431 (1989); Robert C. Berring & Kathleen Vanden Heuvel, *Legal Research: A Final Response*, 82 LAW LIBR. J. 495 (1990); Robert C. Berring, *A Sort of Response: Brutal Non-Choices*, 4 PERSPECTIVES: TEACHING LEGAL RES. & WRITING 81 (1996). For commentary on these works within the the context of the pedagogical debates of their time, see Paul Douglas Callister, *Beyond Training: Law Librarianship's Quest for the Pedagogy of Legal Research Education*, 95 LAW LIBR. J. 7, 9–22, 2003 LAW LIBR. J. 1, ¶¶ 5–35. For a general bibliography on Berring's writings, including those on legal research instruction, see Frank G. Houdek, *From the Reference Desk to River City: A Bibliography of the Writings of Robert C. Berring*, 99 LAW LIBR. J. 413, 2007 LAW LIBR. J. 24.

93. Bernard J. Hibbits, *Last Writes? Reassessing the Law Review in the Age of Cyberspace*, 71 N.Y.U. L. REV. 615, 655 (1996). For useful background on these early efforts, see *id.* at 654–57; Jon Bing, *Performance of Legal Text Retrieval Systems: The Curse of Boole*, 79 LAW LIBR. J. 187, 187–89 (1987); Samuel E. Trosow, *The Database and the Fields of Law: Are There New Divisions of Labor?* 96 LAW LIBR. J. 63, 66–69, 2004 LAW LIBR. J. 5, ¶¶ 13–18. For an early review of the uses of computers in legal research, see William B. Eldridge & Sally F. Dennis, *The Computer As a Tool for Legal Research*, 28 LAW & CONTEMP. PROBS. 78 (1963).

erature on computer-assisted legal research (CALR) tools began to develop after the widespread introduction of Lexis and Westlaw in the mid-1970s.⁹⁴ Initially, much of that literature described the benefits and shortcomings of the new CALR systems as research tools.⁹⁵ From the mid-1980s on, however, the literature of legal research and legal information began to shift away from these initial takes on CALR and from the traditional concerns with legal research instruction⁹⁶ to consider the broader implications of the changes in formats and structures of legal information, and to awaken the interest of authors other than law librarians and law school legal writing instructors. The rest of this section looks at some of the more significant literature regarding the influences of legal information in American law and the connections between those works and Berring's writings.

Media and Culture

¶32 The change in the literature was signaled with the publication of Ethan Katsh's "Communications Revolutions and Legal Revolutions: The New Media and the Future of Law" in the *Nova Law Journal* in 1984.⁹⁷ Following Marshall McLuhan, Harold Innis, and others, Katsh's article introduced to legal scholarship the idea that the forms in which information is communicated can have as much influence on values and institutions as the substantive content of the information. Katsh noted that "legal literature reveals very little understanding of the powerful influence that the invention of printing exerted upon law and a high level of unawareness of how the new media are likely to lead to change."⁹⁸ After discussing how print had influenced the development of legal doctrine in areas such as copyright and censorship,

94. Although it focuses mainly on the early development of Lexis, the standard history of the early years of commercially available CALR systems in the United States is William G. Harrington, *A Brief History of Computer-Assisted Legal Research*, 77 *LAW LIBR. J.* 543 (1984–85). The literature about the uses of computers for legal research is well tracked in bibliographies published (usually annually) in the *Rutgers Computer & Technology Law Journal* (1970–) (title varies).
95. See, e.g., Robert C. Berring, *Terminal Awareness*, *CAL. LAW.*, Nov. 1985 at 15; Scott F. Burson, *Report from the Electronic Trenches: An Update on Computer-Assisted Legal Research*, *LEGAL REFERENCE SERVICES Q.*, Summer 1984, at 3; William G. Harrington, H. Donald Wilson & Robert L. Bennett, *The Mead Data Central System of Computerized Legal Research*, 64 *LAW LIBR. J.* 184 (1971); *Online Information Retrieval for the Legal Profession: A Panel*, 70 *LAW LIBR. J.* 532 (1977); 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 (1983); James A. Spowl, *Computer-Assisted Legal Research—An Analysis of Full-Text Document Retrieval Systems, Particularly the LEXIS System*, 1976 *AM. B. FOUND. RES. J.* 175; James A. Spowl, *The WESTLAW System—A Different Approach to Computer-Assisted Legal Research*, 16 *JURIMETRICS J.* 142 (1976).
96. Writing on legal research instruction did not stop, but there was perhaps greater focus on the effects of access to computer-assisted legal research systems on students' and new associates' research skills. See, e.g., Donald J. Dunn, *Why Legal Research Skills Declined, or When Two Rights Make a Wrong*, 85 *LAW LIBR. J.* 49 (1993); Joan S. Howland & Nancy J. Lewis, *The Effectiveness of Law School Legal Research Training Programs*, 40 *J. LEGAL EDUC.* 381 (1990).
97. M. Ethan Katsh, *Communications Revolutions and Legal Revolutions: The New Media and the Future of Law*, 8 *NOVA L. J.* 631 (1984).
98. *Id.* at 638. Katsh noted, however, that "[l]aw librarians seem much more sensitive than legal historians to the influences of printing on law." *Id.* at 638 n.23.

Katsh pointed out that “[t]he first printing of law books began a process that was to make the printed law book a central feature in the modern paradigm of law.”⁹⁹ In addition, Katsh noted the impacts of the print medium on the organization and accessibility of the law.¹⁰⁰ In discussing the role of digests in making manageable the problems of seeking precedent posed by the late nineteenth-century growth in numbers of reported decisions, Katsh pointed out that “[t]he digests not only provided a solution to this problem but probably also subtly shaped the attitudes of generations of lawyers and law students about the degree of order and orderliness that existed in the legal system,”¹⁰¹ thus striking a theme that would be developed by Berring in his writings about the conceptual universe.

¶33 While acknowledging that the full effects of lawyers’ growing reliance on electronic media were not yet clear, Katsh posited:

Where there are too many prior cases in an area and where cases are added to the data base much more quickly than in the past, unpredictability and instability will be the result. This will pose a challenge to the idea of precedent and to the foundation of the common law. Whereas print fostered the development of the idea of precedent, the use of computers may signal the erosion of this model of law.¹⁰²

It could be seen already in 1984 that the growth in importance of Lexis and Westlaw for legal research was resulting in more cases being added to the available databases, and that cases were becoming available more quickly than in the past, thus creating greater pressure to rely on new cases. In addition, Katsh foresaw that “computerization of law materials will probably broaden the range of materials users will come in contact with.”¹⁰³ Not only would statutes and regulatory materials rise in importance, but nonlaw information sources would be as readily accessible to legal researchers as the traditional sources found in the law library. Again, Katsh anticipated a theme that would be developed by Berring and by others.

¶34 Katsh continued to develop his own ideas about the impacts of communications media on the law in several other articles¹⁰⁴ and two books.¹⁰⁵ His later

99. *Id.* at 644.

100. *Id.* at 645–46 (citing Howard Jay Graham & John W. Heckel, *The Book that ‘Made’ the Common Law: The First Printing of Fitzherbert’s La Graunde Abridgement, 1514–1556*, 51 *LAW LIBR. J.* 100, 101 (1958)). The influence of printing on thought and behavior is seen “not only in the appearance of the page, but in the organization of books. Printers were much more involved in indexing, cataloguing and cross-referencing works than were scribes. . . .” *Id.* at 650. Katsh also discussed the relationships between printing and Roberto Unger’s ideas of the “legal order” and law’s autonomy. *Id.* at 654 (“[I]t is not surprising that the emergence of the ‘legal order’ paralleled the development and spread of printing.”).

101. *Id.* at 658 n.91.

102. *Id.* at 658–59.

103. *Id.* at 660.

104. Ethan Katsh, *Digital Lawyers: Orienting the Legal Profession to Cyberspace*, 55 *U. PITT. L. REV.* 1141 (1994); Ethan Katsh, *Law in a Digital World: Computer Networks and Cyberspace*, 38 *VILL. L. REV.* 403 (1993) [hereinafter Katsh, *Digital World*]; Ethan Katsh, *The Law Librarian as Paratrooper*, 83 *LAW LIBR. J.* 627 (1991).

105. M. ETHAN KATSH, *THE ELECTRONIC MEDIA AND THE TRANSFORMATION OF LAW* (1989) [hereinafter KATSH, *ELECTRONIC MEDIA*]; M. ETHAN KATSH, *LAW IN A DIGITAL WORLD* (1995) [hereinafter KATSH, *LAW IN A DIGITAL WORLD*].

work acknowledged Berring's concerns with the impacts of the organization and classification of print legal materials on how lawyers conduct legal research and think about the law, and cited Berring for noting that the digest system "establishes a framework for understanding law that is reinforced as one moves from one step of the process to the next."¹⁰⁶ In database research, "[m]ultiple sources of information merge into one source; one does not even feel that one is consulting multiple sources."¹⁰⁷ In the law library,

[w]ith space no longer a constraint, the lack of access to non-law materials that are part of the same collection becomes harder to justify. Eventually, it will be understood that one connected to cyberspace is no longer really in a law library but in an environment that can be organized by the user to fit his or her needs.¹⁰⁸

In an electronic environment, the researcher will no longer need to have knowledge of "legal categories, indexes, digests or key numbers."¹⁰⁹

¶35 Katsh's thoughts about how these and other impacts of the changing media of the law would affect the work of lawyers and the practice of law spawned extensive commentary and response.¹¹⁰ Among these works, Nazareth Pantaloni's 1994 article was particularly valuable, not only for its general cautions against assuming too much about the direct causal effects of new communications technologies,¹¹¹ but also for its challenges to the growing consensus regarding the role of indexes and digests in the development of the law. After citing Katsh and Berring for their comments on the influences of the West digests on the law and speculations about the impacts of free-text searching, Pantaloni looked at the historical role of indexes

106. Katsh, *Digital World*, *supra* note 104, at 460.

107. *Id.* at 465.

108. *Id.* at 466.

109. *Id.* at 475.

110. See *e.g.*, Barkan, *supra* note 1; Morris L. Cohen, *Research in a Changing World of Law and Technology*, 13 DALHOUSIE L. J. 5, 8–9, 18 (1990); Bruce A. Markell, *Digital Demons and Lost Lawyers*, 48 FED. COMM. L. J. 545 (1996) (reviewing M. ETHAN KATSH, *LAW IN A DIGITAL WORLD* (1995)); Nazareth A. M. Pantaloni, III, *Legal Databases, Legal Epistemology, and the Legal Order*, 86 LAW LIBR. J. 679 (1994); Richard J. Ross, *Communications Revolutions and Legal Culture: An Elusive Relationship*, 27 LAW & SOC. INQUIRY 637 (2002) (reviewing M. ETHAN KATSH, *THE ELECTRONIC MEDIA AND THE TRANSFORMATION OF LAW* (1989); M. ETHAN KATSH, *LAW IN A DIGITAL WORLD* (1995)); Ronald K.L. Collins & David M. Skover, *Paratexts*, 44 STAN. L. REV. 509 (1992)); Pamela Samuelson, *The Quest for Enabling Metaphors for Law and Lawyering in the Information Age*, 94 MICH. L. REV. 2029 (1996) (reviewing M. ETHAN KATSH, *LAW IN A DIGITAL WORLD* (1995)); JAMES BOYLE, *SHAMANS, SOFTWARE, AND SPLEENS: LAW AND THE CONSTRUCTION OF THE INFORMATION SOCIETY* (1996)); Eugene Volokh, *Technology and the Future of Law*, 47 STAN. L. REV. 1375 (1995) (reviewing M. ETHAN KATSH, *LAW IN A DIGITAL WORLD* (1995)).

Other work examining the effects of media, old and new, on the law included Ronald K.L. Collins & David M. Skover, *Paratexts*, 44 STAN. L. REV. 509 (1992); Bernard J. Hibbitts, *Coming to Our Senses: Communication and Legal Expression in Performance Cultures*, 41 EMORY L.J. 873 (1992); Molly Warner Lien, *Technocentrism and the Soul of the Common Law Lawyer*, 48 AM. U. L. REV. 86 (1998); Peter W. Martin, *The Internet: Full and Unfettered Access to Law—Some Implications*, 26 N. KY. L. REV. 181 (1999).

111. Pantaloni, *supra* note 110, at 682 (criticizing the view that "regards the relationship between technological change and societal and cultural changes as unilateral: printing and other communication technologies are seen as the cause of all that is surveyed").

in areas beyond law to argue that “[w]hile legal indexes may have influenced the conceptual coherence of the law, they are as much a product as a progenitor of that conceptual structure,”¹¹² and that “[t]o suggest that the absence of indexes will undermine the structural coherence of the law ascribes too much significance to indexes and fails to recognize other normalizing practices in the law.”¹¹³

Computer-Based Searching and the Digest

¶36 Dan Dabney’s “The Curse of Thamus: An Analysis of Full-Text Legal Document Retrieval,” published in 1986,¹¹⁴ also preceded Berring’s first major writings on the influences of legal information. Although he said little directly about digests and other traditional print-based tools, Dabney provided a framework for evaluating the effectiveness of full-text document retrieval systems in law that could be used to compare them with print indexes and digests.¹¹⁵

¶37 A first response to the issues raised in Berring’s *High Technology Law Review* article appeared in Scott Burson’s 1987 critique of Dabney’s article.¹¹⁶ Burson acknowledged the importance of Dabney’s focus on “a question central to legal research and legal bibliography: how do we evaluate our legal information retrieval tools?” and cited Dabney’s use of the concepts of relevance, recall, precision, and fallout, which provide a “framework [that] applies equally to conventional and computer-assisted information retrieval tools.”¹¹⁷ Burson also attempted to move Dabney’s concerns into the areas considered by Berring.

¶38 Burson questioned Dabney’s assertion that American lawyers require high recall—a high percentage of relevant documents—in their research.¹¹⁸

112. *Id.* at 698–99.

113. *Id.* at 700 (citing LLOYD A. FALLERS, *LAW WITHOUT PRECEDENT* 35 (1969)).

114. Daniel P. Dabney, *The Curse of Thamus: An Analysis of Full-Text Legal Document Retrieval*, 78 *LAW LIBR. J.* 5 (1986). The article became known simply as “Thamus” for its invocation of the Egyptian king’s concerns about the impacts of writing on memory and wisdom. *See id.* at 5–6.

115. Berring immediately cited Dabney’s “excellent summary of indexing theory” in his own discussion of the limitations of full-text searching, Berring, *Full-Text Databases*, *supra* note 2, at 32 n.24, while also considering the earlier Blair and Maron study that had inspired Dabney’s work. *Id.* at 43–46 (discussing David Blair & M.E. Maron, *An Evaluation of Retrieval Effectiveness for a Full-Text Document Retrieval System*, 28 *COMM. ACM* 289 (1985)). The influences of Dabney’s article were apparent in later attempts to evaluate the effectiveness of digests and other legal research tools. Particularly important examples include John Doyle, *WESTLAW and the American Digest Classification System*, 84 *LAW LIBR. J.* 229 (1992); Ogden, *supra* note 11; Marilyn R. Walter, *Retaking Control over Teaching Research*, 43 *J. LEGAL EDUC.* 569, 572–80 (1993). *See also* Fritz Snyder, *The West Digest System: The Ninth Circuit and the Montana Supreme Court*, 60 *MONT. L. REV.* 541 (1999); Lee F. Peoples, *The Death of the Digest and the Pitfalls of Electronic Research: What is the Modern Legal Researcher to Do?* 97 *LAW LIBR. J.* 661, 2005 *LAW LIBR. J.* 41.

116. Scott F. Burson, *A Reconstruction of Thamus: Comments on the Evaluation of Legal Information Retrieval Systems*, 79 *LAW LIBR. J.* 133 (1987).

117. *Id.* at 133. For definitions of the concepts, see Dabney, *supra* note 114, at 14–17.

118. Burson, *supra* note 116, at 136 (“Dabney asserts, *ipse dixit*, that legal research tools should aim for high recall.”). *See* Dabney, *supra* note 114, at 16 (“The adversary system of American law puts a high premium on exhaustiveness in case research and thus needs retrieval systems that maximize recall.”).

Rather than seeing “every single arguably relevant case when doing legal research . . . we would like to focus our efforts on the heart of an issue.”¹¹⁹ In addition, Burson questioned the significance of the apparently poor recall of CALR searches,¹²⁰ “because additional tools remain available to generalize and expand research. . . . [O]rdinarily researchers can and do use additional tools; the necessity to do so should not be troubling to us.”¹²¹ Among these tools, of course, would be precoordinated indexes such as those employed in the West digests. Dabney had identified the limitations of digest searching whether the researcher worked through the classification system itself or used the Descriptive Word Index,¹²² concluding that “[a]ll of these problems can be traced to the difficulties of precoordinate indexing.”¹²³

¶39 Berring had described the digest’s shortcomings in his *High Technology Law Review* article,¹²⁴ but had also begun to think about the broader impacts of the digest system on the practice of law, matters not discussed by Dabney. Burson engaged that discussion, using Berring’s piece and an earlier article by Rita Reusch¹²⁵ in a nuanced examination of how lawyers determine the “relevance” of cases and other information to the resolution of legal problems. While Dabney’s idea of relevance was tied closely to his concerns with matters of searching and measurable attributes such as recall and precision, Burson emphasized that the relevance of a document to an issue is more complex, depending significantly on the creativity and judgment of the lawyer analyzing the document. Referencing Reusch, he noted: “Good indexing really represents an analysis or a conceptualization of a body of law. Legal research puts a high premium on finding materials outside of the standard conceptualization of an issue, for the novel and analogous rather than for the accepted treatment of an issue.”¹²⁶ Having earlier cited Berring as authority for the influence of the digests’ precoordinated indexing on American legal research, Burson noted Berring’s discussion of “the positive aspects of the West conceptualization of American law as a mechanism for confirming and controlling legal discourse and development.”¹²⁷

Categorization and Classification

¶40 Berring’s ideas about the role of the digest beyond its place as a case-finding tool were important to Burson’s critique of Dabney, but were not central to most

119. Burson, *supra* note 116, at 139.

120. See Dabney, *supra* note 114, at 15–16.

121. Burson, *supra* note 116, at 138.

122. Dabney, *supra* note 114, at 12–14.

123. *Id.* at 14.

124. Berring, *Full-Text Databases*, *supra* note 2, at 34–37.

125. 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., Fall 1984, at 33.

126. Burson, *supra* note 116, at 143 n.25 (citing Reusch, *supra* note 125).

127. *Id.* at 143 n.25 (citing Berring, *Full-Text Databases*, *supra* note 2, at 31–33).

of the comments spawned by Dabney's article.¹²⁸ They were essential, however, to the next burst of writing on the influences of legal information, a series of articles applying and responding to the use of the tools of Critical Legal Studies (CLS) to the process of legal research. In 1987, Steve Barkan published in *Law Library Journal* an article suggesting how a CLS critique might be applied to legal research.¹²⁹ The following year, Virginia Wise published an introduction to CLS for librarians in *Legal Reference Services Quarterly*,¹³⁰ and in 1989 Richard Delgado and Jean Stefancic used critical perspectives to analyze the impacts of legal indexes on the research process.¹³¹ In 1990, Peter Schanck challenged Barkan's article in *Law Library Journal*,¹³² prompting a response by Barkan¹³³ and final comments by Schanck.¹³⁴

¶41 Barkan, who had earlier written an insightful commentary on the historical context of legal research textbooks,¹³⁵ focused his 1987 article on applying several CLS-related concepts to legal research, including "the nature and effects of categorizing legal problems,"¹³⁶ matters that Berring was beginning to consider in his work.¹³⁷ Barkan defined legal research as "the pragmatic, goal-oriented practice research of law practitioners," rather than the research conducted in pursuit of legal scholarship.¹³⁸ He found that contemporary texts described legal research as a search for legal authority or "the law" needed to solve a problem, and reflected the tendency to think about law as "pre-existing and given, something that can be

128. Not surprisingly, Dabney's article provoked responses from representatives of the commercial CALR services. See Jo McDermott, *Another Analysis of Full-Text Legal Document Retrieval*, 78 LAW LIBR. J. 337 (1986) (McDermott was Product Information Manager, Mead Data Central); Craig E. Runde & William H. Lindberg, *The Curse of Thamus: A Response*, 78 LAW LIBR. J. 345 (1986) (Runde was Marketing, Special Projects, West Pub. Co.; Lindberg, Westlaw Administrator, West Pub. Co.); as well as Dabney's rejoinder, Daniel P. Dabney, *A Reply to West Publishing Company and Mead Data Central on The Curse of Thamus*, 78 LAW LIBR. J. 349 (1986). See also Bing, *supra* note 93 (tracing some of the history of full-text information retrieval in law and probing Dabney's discussion of relevance and recall, but not broaching the issues being raised by Berring).
129. Steven M. Barkan, *Deconstructing Legal Research: A Law Librarian's Commentary on Critical Legal Studies*, 79 LAW LIBR. J. 617 (1987) [hereinafter Barkan, *Deconstructing Legal Research*].
130. Virginia Wise, *Of Lizards, Intersubjective Zap, and Trashing: Critical Legal Studies and the Librarian*, LEGAL REFERENCE SERVICES Q., 1988, no. 1-2, at 7. Wise's essay and bibliography introduced the major themes of Critical Legal Studies and identified the primary writers.
131. 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). See also Jean Stefancic & Richard Delgado, *Outsider Jurisprudence and the Electronic Revolution: Will Technology Help or Hinder the Cause of Law Reform?* 52 OHIO STATE L. J. 847, 853-54 (1991).
132. Peter C. Schanck, *Taking Up Barkan's Challenge: Looking at the Judicial Process and Legal Research*, 82 LAW LIBR. J. 1 (1990).
133. Steven M. Barkan, *Response to Schanck: On the Need for Critical Law Librarianship, or Are We All Legal Realists Now?* 82 LAW LIBR. J. 23 (1990) [hereinafter Barkan, *Response to Schanck*].
134. Peter C. Schanck, *The Last Word (I Hope)*, 82 LAW LIBR. J. 37 (1990).
135. Barkan, *On Describing Legal Research*, *supra* note 92.
136. Barkan, *Deconstructing Legal Research*, *supra* note 129, at 618.
137. See Berring, *Form Molds Substance*, *supra* note 9, at 25.
138. Barkan, *Deconstructing Legal Research*, *supra* note 129, at 621. See *id.* for discussion of the distinctions between "practice research" and the scholarly research undertaken by law professors and others.

found in the library.”¹³⁹ The process of legal research begins with an analysis of the facts of the problem, followed by an attempt to fit the facts into “one or more predetermined categories.”¹⁴⁰ As Barkan put it:

The categories might be broad, such as contracts, torts, or crimes. They might be narrow, such as rights, privileges, and immunities. The categories might be implicit, such as the traditional subject divisions that are taught in law schools, or explicit, such as those in West’s Digest and Key Number Systems. The categories are the access points to information and are reinforced in our legal research tools.¹⁴¹

¶42 Divisions and categories are necessary for legal research, as well as for legal thought and analysis. Barkan cited Duncan Kennedy not only for the proposition that “[i]t is impossible to think about the legal system without some categorical scheme,” but also for the notion that “all such schemes are lies.”¹⁴² Relying on Kennedy and other writers with CLS perspectives, Barkan first noted that “many legal situations do not fit neatly into the categorical scheme,” then developed the CLS insight that “categorical schemes are used to mask the incoherence and indeterminacy of legal doctrine.”¹⁴³ Through reification, categories become “tangible, real things . . . built by history, human nature, and economic law, when in reality they are created by society’s dominant interests.”¹⁴⁴

¶43 In legal research, “[t]he way that law is organized and categorized in our research sources affects its interpretation and results in a form of ‘bibliographic determinism.’ . . . Key numbers, indexes, annotations, footnotes and cross-references set the limits of inquiry; they ‘narrow the window’ so to speak.”¹⁴⁵ Barkan suggested that we should look more closely at the relationships between legal resources and the substantive development of the law, then cited Berring and others for “solid claims that West helped shape the nature of American law.”¹⁴⁶ He also quoted Berring’s statement that “in law, more than any other discipline, the structure of the literature implies the structure of the enterprise itself.”¹⁴⁷

139. *Id.* at 619–20 (citing definitions in MORRIS L. COHEN & ROBERT C. BERRING, *HOW TO FIND THE LAW* 2 (8th ed. 1983); J. MYRON JACOBSTEIN & ROY M. MERSKY, *FUNDAMENTALS OF LEGAL RESEARCH* 6 (1987 ed.)). In contrast to the definitions in those texts, Barkan also cited favorably the definition provided by Frederick C. Hicks in 1933, which employs the term “legal,” not to describe the subject matter of legal research, but to describe “the agents and the purposes” of the research. *Id.* at 620 (citing HICKS (1933), *supra* note 39, at 1).

140. *Id.* at 623.

141. *Id.* at 624.

142. *Id.* at 631 (quoting Duncan Kennedy, *The Structure of Blackstone’s Commentaries*, 28 *BUFF. L. REV.* 209, 215 (1979)).

143. *Id.*

144. *Id.* at 632 n.74 (citing Peter Gabel, *Reification in Legal Reasoning*, in *MARXISM AND LAW* 262, 263 (Piers Beirne & Richard Quinney eds., 1982)).

145. *Id.* at 632. In support, Barkan cited Llewellyn’s idea of the “threat of the available.” *Id.* n.77 (citing KARL N. LLEWELLYN, *JURISPRUDENCE: REALISM IN THEORY AND PRACTICE* 82 (1962)). On the “threat of the available,” see *supra* note 72.

146. *Id.* at 633 (citing GILMORE, *supra* note 85, at 58–59; MARTIN MAYER, *THE LAWYERS* 431 (1967); ROBERT B. STEVENS, *LAW SCHOOL: LEGAL EDUCATION IN AMERICA FROM THE 1850S TO THE 1980S*, at 132–33 (1983); Berring, *Full-Text Databases*, *supra* note 2, at 32–33, 33–34, 36).

147. *Id.* at 633–34 (citing Berring, *Full-Text Databases*, *supra* note 2, at 29).

¶44 In his concluding paragraphs, Barkan emphasized the importance for legal research of the questions raised by Critical Legal Studies:

Do we place an inordinate emphasis on locating “authority” in the published sources of the law? Do precedents matter as much as we say they do? How much control do research tools assert over research practice and legal thinking? Do we find information in research because we need it, or do we need it only because it is there?¹⁴⁸

He closed by suggesting that the established “simplistic, outdated, formalistic model” of legal research had not changed since Langdell first posited his view that law is a science and the law library its laboratory, then speculated about how computer-assisted legal research and other electronic technologies would impact both legal research and the development of the law.¹⁴⁹

¶45 Two years later, Richard Delgado and Jean Stefancic extended Barkan’s focus on the influences of categories in their *Stanford Law Review* essay, “Why Do We Tell the Same Stories?” which analyzed the constraining effects of the categories employed in the standard legal research indexing systems: the Library of Congress Subject Headings, legal periodical indexes, and the West Digest System.¹⁵⁰ Focusing first on the headings used in periodical indexes and by the Library of Congress, Delgado and Stefancic noted the commonalities in the sources used to establish headings in the indexes:

The *Index to Legal Periodicals* lists *Black’s Law Dictionary* (published by West) and West’s *Legal Thesaurus/Dictionary* as sources of authority for its subject headings. *Current Law Index* is based on Library of Congress subject headings with modifications. The Library of Congress lists *Black’s Law Dictionary* and *Current Law Index* as principal sources used to establish authority. The circle is nearly complete.¹⁵¹

Next, citing Berring, Barkan, and other writers, Delgado and Stefancic traced the early history of the West Digest System,¹⁵² noting not only its perceived benefits in providing an organizing framework for the “unwieldy body of American law” at the turn of the twentieth century,¹⁵³ but also the sense that “what began as a system abstracted and constructed out of its primary source data—judicial opinions—had transformed itself into a rigid grand scheme *into which the law itself had to be fit*.”¹⁵⁴

148. *Id.* at 635.

149. *Id.* at 636 (“Will CALR free us from editors, indexers, and categorical schemes, or will it lead to greater rigidity in legal language and have a “freeze effect” on the law? Will computers cause more, or less, determinacy in the law? Will artificial intelligence reify categorical schemes even more, permitting us to find only what artificial intelligence shows us?”).

150. Delgado & Stefancic, *supra* note 131, at 208 (“Their categories mirror precedent and existing law; they both facilitate traditional legal thought and constrain novel approaches to the law.”). Virginia Wise’s 1988 introduction to *Critical Legal Studies* for law librarians had pointed out that “the primary obstacle to locating material *about* CLS is the lack of subject heading access” in both periodical indexes and in the Library of Congress Subject Headings. Wise, *supra* note 130, at 14. She thus anticipated Delgado and Stefancic’s work for one area of the legal literature.

151. Delgado & Stefancic, *supra* note 131, at 213 (citations omitted).

152. *Id.* at 214–16.

153. *Id.* at 214.

154. *Id.* at 215 (emphasis added).

¶46 Acknowledging that the classification systems used in the legal indexes fulfill their intended purpose of helping researchers to locate relevant cases, articles, and books, the authors pointed out that these systems could also “create the false impression that law is exact and deterministic—a science—with only one correct answer to a legal question.”¹⁵⁵ Operating “in a coordinated network of information retrieval,” the indexing systems “replicate preexisting ideas, thoughts, and approaches.”¹⁵⁶ By channeling questions into outdated categories, they create formidable obstacles to those researching in developing or changing areas of the law.

¶47 The next year, in an occasionally acerbic response to Barkan’s article, Peter C. Schanck challenged the notions that the digest and other research tools play a role in shaping lawyers’ thinking about the law and have conservative effects on legal development. For Schanck, “[m]ost lawyers suffer under no illusions about the law’s ‘seamless web’ or perfect coherence, so the West digests have not succeeded in deluding practitioners.”¹⁵⁷

¶48 Based on his personal experiences in assisting lawyers with their research and in performing his own, Schanck presented several reasons why “key numbers, headnotes, indexes, and so forth have had little or no impact on either the content of our law or our understanding of the legal system”:

- attorneys tend to use more than one research system in performing their research and are therefore exposed to “a variety of nondigest classifications”;
- many lawyers claim never to use digests in their research;
- lawyers concentrate on the facts of their cases and are likely to search descriptive word indexes for facts rather than topical analysis for legal concepts;
- even if they use digests exclusively, lawyers tend to look at the cases listed under several key numbers and to “pay little attention to the designations assigned to the categories.” By the end of the process, “the West structure is long forgotten and its effects negligible.”¹⁵⁸

¶49 In responding to Schanck, Barkan questioned whether lawyers actually are exposed to a variety of classifications or “windows” into the law through their use of tools other than digests. He acknowledged that many lawyers do not use digests, but also noted that

[s]ome never consult indexes, treatises, or finding aids. . . . For many lawyers, legal research is no more than consulting a jurisdiction-specific subject treatise and reading a few cases. Some lawyers do legal research only through law clerks and paralegals who are

155. *Id.* at 216 (citing William F. Birdsall, *The Political Persuasion of Librarianship*, LIBR. J., June 1, 1988, at 75, for the idea that “classifications based on ideology are inevitably normative, but few indexers realize this.”).

156. *Id.* at 217.

157. Schanck, *supra* note 132, at 17. Schanck did not discuss Delgado and Stefancic’s 1989 *Stanford Law Review* article, which may not have been available at the time he wrote.

158. *Id.* at 17–19.

much less sophisticated in law and the workings of the legal system. Some lawyers never do legal research.¹⁵⁹

Barkan did not directly answer Schanck's third and fourth points about how lawyers actually use digests, saying only that "Schanck minimizes the conservative effects of finding tools, treatises, and other forms of legal resources,"¹⁶⁰ and suggesting that Schanck's disagreement might actually be with Berring's writings on the role of the West digests, rather than with Barkan himself.¹⁶¹

¶50 Jill Anne Farmer's 1993 article on poststructuralism and legal research discussed "the cultural determinants with which the user approaches information,"¹⁶² citing Berring, Delgado and Stefancic, and others for their comments on the influences of the categories of the West digest system, other standard indexing tools in law, and the organizing structures of law libraries.¹⁶³ Farmer, however, further developed these points in her discussion of how legal citation practices limited the perspectives of legal researchers. Citing Delgado's study of citations in the civil rights literature,¹⁶⁴ as well as commentary by legal citations scholar Fred Shapiro,¹⁶⁵ Farmer concluded that "to the extent that current research is informed by citations to what came before, the probability that one's perspective will be broadened is not very high."¹⁶⁶ While true in all disciplines, these patterns may be particularly strong in law because of such factors as the discipline's penchant for detailed citation of authorities and publishers' tendencies to reference their own publications and services.¹⁶⁷

Boundaries of the Universe

¶51 In discussing the respective roles of primary and secondary sources in his response to Schanck, Barkan harked back to Frederick Hicks's "revered" 1933 textbook, which defined legal research as "the inquiry and investigation necessary to be made by legislators, judges, lawyers and legal writers in the performance of their functions."¹⁶⁸ As Barkan put it, "[Hicks] made the point of noting that

159. Barkan, *Response to Schanck*, *supra* note 133, at 30.

160. *Id.*

161. *Id.* at 30 n.35. Berring's later articles do not discuss the points raised by Schanck.

162. Jill Anne Farmer, *A Poststructuralist Analysis of the Legal Research Process*, 85 *LAW LIBR. J.* 391, 396 (1993). See also Michael Duggan & David Isenbergh, *Poststructuralism and the Brave New World of Legal Research*, 86 *LAW LIBR. J.* 829 (1994).

163. Farmer, *supra* note 162, at 397-400. Farmer notes that the information found in law libraries "is pre-selected and conceptually constrained. Moreover, the means by which this information is organized inevitably structures our perceptions." *Id.* at 399 (quoting Stephen Jay Gould, *Taxonomy as Politics*, *DISSSENT*, Winter 1990, at 73, 73 ("[C]lassifications . . . shape our thoughts and deeds in ways that we scarcely perceive because we view our categories as 'obvious' and 'natural.'")).

164. Richard Delgado, *The Imperial Scholar: Reflections on a Review of Civil Rights Literature*, 132 *U. PA. L. REV.* 561 (1984). Delgado found that leading law review articles written on civil rights topics by white male writers only "infrequently" cited minority scholars. *Id.* at 563.

165. Fred Shapiro, *The Most-Cited Articles from the Yale Law Journal*, 100 *YALE L.J.* 1449 (1991).

166. Farmer, *supra* note 162, at 401.

167. *Id.*

168. Barkan, *Response to Schanck*, *supra* note 133, at 33 (quoting HICKS (1933), *supra* note 39, at 1).

[a]s here used, the word legal is not restrictive as to subject matter, but descriptive of the agents and the purposes of the inquiries involved.”¹⁶⁹ Because of its breadth and its acknowledgment of the roles of both secondary legal authorities and nonlegal sources, Hicks’s definition seems to have assumed that legal research encompasses more sources of information than those traditionally found in the law library (or now in legal databases), thus calling into question whether the print-based “conceptual universe of thinkable thoughts” was as closed as Berring and others suggested, and had opened only with the advent of the electronic research systems.¹⁷⁰

¶52 In their 1997 article “Legal Positivism as Legal Information,” Fred Schauer and Virginia Wise found it “intriguing” that “those scholars who have claimed that new forms of information retrieval have transformed the nature of law” had devoted almost all of their attention to the effects of categorization rather than to the ways that information (the sources of law) establishes law’s boundaries.¹⁷¹ Schauer and Wise themselves explored the changing boundaries of the law in their 1997 article and in another published in 2000. In the former, they argued that, “as a theoretical matter, the most useful conception of law is a claim of limited domain,”¹⁷² and that the most plausible basis for this claim is “information differentiation”: the idea that “the information set upon which lawyers rely is different from the information set other decisionmakers employ.”¹⁷³ At a time of dramatic changes in how lawyers obtain information, it was worth exploring whether not only the quantity of information with which lawyers must deal, but also “the very nature of the information base—the sources—on which legal decisionmakers rely” were changing. Could “changes in the nature of legal sources have in turn produced commensurate changes in the nature of law itself”?¹⁷⁴

169. *Id.* (quoting HICKS (1933), *supra* note 39, at 1). *See also* Barkan, *Deconstructing Legal Research*, *supra* note 129, at 621 (citing HICKS (1933), *supra* note 39, at 32–33 (“[I]nformation can be necessary and functionally related to law, without being identifiably legal.”).

170. In addition to Hicks, Barkan cited Marjorie Rombauer for the proposition that “the materials from which legal arguments can be made ‘are limited only by your imagination in seeking them out and your own realistic evaluation of their persuasiveness.’” Barkan, *Response to Schanck*, *supra* note 133, at 34 (quoting MARJORIE DICK ROMBAUER, *LEGAL PROBLEM SOLVING: ANALYSIS, RESEARCH, AND WRITING* 211 (1983)). He also noted Rombauer’s use of Karl Llewellyn’s statement that “[a]ny effort at limitation to ‘legal’ literature has for now some forty years been growing into something so arbitrary and inept as to verge on farce.” *Id.* at 34 (quoting KARL N. LLEWELLYN, *THE COMMON LAW TRADITION: DECIDING APPEALS* 234 (1960)).

171. Schauer & Wise, *Legal Positivism*, *supra* note 78, at 1095–96 (citing works by Berring, Katsh, and Eugene Volokh as examples). *But see, e.g.*, KATSH, *ELECTRONIC MEDIA*, *supra* note 105, at 223 (“If law cannot be expected to possess the same internal organization in the future, neither can it expect its external boundaries to remain as fixed as they are today.”); Stefancic & Delgado, *supra* note 131, at 854 (pointing out that law libraries may serve as gateways to “the literature of other academic disciplines, statistical data, news reports, and even monographs”). There also were attempts in the legal research literature to introduce lawyers to electronic sources for nonlegal information. *See, e.g.*, S. Blair Kauffman, *Electronic Databases in Legal Research: Beyond Lexis and Westlaw*, 13 RUTGERS COMPUTER & TECH. L.J. 73 (1987).

172. Schauer & Wise, *Legal Positivism*, *supra* note 78, at 1096.

173. *Id.* at 1102.

174. *Id.* at 1102–03.

¶53 In 1997, increasingly more nonlegal information was available to lawyers than when they were limited to the materials of the print law library or the early versions of LexisNexis and Westlaw, which largely mimicked what was available in hard copy.¹⁷⁵ But, does increased availability mean increased use? Presenting preliminary results from their own study of Supreme Court citation practices, Schauer and Wise concluded that “starting in 1991, there has been a substantial and continuing increase in the Court’s citation of non legal sources.”¹⁷⁶ This was perhaps enough of a change in the information set to signal both a shift in the information boundaries of law (something Schauer and Wise labeled “the delegalization of law”) and the possibility “that changes in the nature of legal information will produce changes in the nature of law.”¹⁷⁷ Their 2000 article, “Nonlegal Information and the Delegalization of Law,” presented the results of their studies of citations in opinions of the U.S. Supreme Court, the lower federal courts, and the Supreme Court of New Jersey, each of which showed more citations to nonlegal sources after 1990, about the time when nonlegal materials became more readily accessible to lawyers and courts through LexisNexis and Westlaw or other databases.¹⁷⁸

175. *Id.* at 1106.

176. *Id.* at 1108.

177. *Id.* at 1109.

178. Schauer & Wise, *Nonlegal Information*, *supra* note 78. Schauer and Wise were not the first to study the citation practices of the federal and state courts, although they were among the first to focus on the courts’ uses of nonlegal sources. Since John Henry Merryman, *The Authority of Authority: What the California Supreme Court Cited in 1950*, 6 STAN. L. REV. 613 (1954), an early work on what judges cite as authority, legal writers have explored the citation patterns of federal and state courts, an endeavor made much easier by the full-text search capabilities and retrospective case law databases of LexisNexis and Westlaw. For an introduction to these studies, see Shapiro, *supra* note 165, at 1455–58.

In general, those citation studies that have looked for references to nonlegal sources in state court opinions have found few. See A. Michael Beard, *Citations to Authority by the Arkansas Appellate Courts, 1950–2000*, 25 U. ARK. LITTLE ROCK L.REV. 301, 327–28 (2003); Lawrence M. Friedman et al., *State Supreme Courts: A Century of Style and Citation*, 33 STAN. L. REV. 773, 817 (1981); James Leonard, *An Analysis of Citations to Authority in Ohio Appellate Decisions Published in 1990*, 86 LAW LIBR. J. 129, 146 (1994); William H. Manz, *The Citation Practices of the New York Court of Appeals, 1850–1993*, 43 BUFF. L. REV. 121, 145–46 (1995); William H. Manz, *The Citation Practices of the New York Court of Appeals: A Millennium Update*, 49 BUFF. L. REV. 1273, 1289–90 (2001); Merryman, *supra* at 670–72; John Henry 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, 408 n.22 (1977). See also Dragomir Cosanici & Chris Evan Long, *Recent Citation Practices of the Indiana Supreme Court and the Indiana Court of Appeals*, LEGAL REFERENCE SERVICES Q., 2005, no. 1/2, at 103; Joseph A. Custer, *Citation Practices of the Kansas Supreme Court and Kansas Court of Appeals*, KAN. J. L. & PUB. POL’Y, Spring 1999, at 126; Paul Hellyer, *Assessing the Influence of Computer-Assisted Legal Research: A Study of California Supreme Court Opinions*, 97 LAW LIBR. J. 285, 2005 LAW LIBR. J. 16; Fritz Snyder, *The Citation Practices of the Montana Supreme Court*, 57 MONT. L. REV. 453 (1996).

In some contrast to the published findings regarding state reports, Wes Daniels’s 1983 study of U.S. Supreme Court opinions suggested slight, but increasing citations to nonlegal sources for the years he examined. Wes Daniels, “*Far Beyond the Law Reports*”: *Secondary Source Citations in United States Supreme Court Opinions, October Terms 1900, 1940, and 1978*, 76 LAW LIBR. J. 1, 6, 18–20, 39–47 (1983). Daniels concluded by noting the growing number of research databases available to courts and other legal researchers. “As this body of easily accessible data grows, the types and amounts of nonlegal sources cited by lawyers and judges inevitably will expand accordingly.” *Id.* at 28.

Continuing Influences

¶54 Berring's writings established what is now the accepted model for discussing legal information in the United States. Although his own most recent writings focusing on the influences of legal information were published in 2000,¹⁷⁹ later writers have continued to discuss changes in the formats and structures of legal information in terms of their impacts on West's print-based systems, and to develop themes introduced in the works of Berring and other writers.¹⁸⁰

¶55 Has the later literature improved our understanding of the impacts of the shift to electronic sources of legal information beyond the insights provided by Berring and others? Some answers are provided in three thoughtful articles published in 2002: Richard J. Ross's "Communications Revolutions and Legal Culture: An Elusive Relationship,"¹⁸¹ F. Allan Hanson's "From Key Numbers to Keywords: How Automation Has Transformed the Law,"¹⁸² and Paul Duguid's "The Social Life of Legal Information: First Impressions."¹⁸³

¶56 Richard Ross's essay is a review both of Ethan Katsh's books¹⁸⁴ and of K.L. Collins and David M. Skover's 1992 *California Law Review* article: "Paratexts."¹⁸⁵ Writing well after Katsh's last major writings on electronic media and the law, and the publication of the Collins and Skover article, Ross found that their work "provide[d] the richest and most detailed predictive scholarship" on the importance of communications media in shaping how lawyers think and what they do.¹⁸⁶ Few others "embrace [their] central idea. . . : that computerization and the internet will push lawyer's [sic] habits of thought and regnant values in a determinate direction and will fundamentally transform legal culture."¹⁸⁷

179. In a recent article commemorating the addition of the one-millionth volume to the collection of the University of Minnesota Law Library, Berring returned briefly to the themes of his earlier work. Robert C. Berring, *Deconstructing the Law Library: The Wisdom of Meredith Willson*, 89 MINN. L. REV. 1381, 1395-1402 (2005).

180. There is not space to discuss all of the most insightful post-2000 literature. Of particular note (though not discussed here) are Paul Douglas Callister, *Law's Box: Law, Jurisprudence and the Information Ecosphere*, 74 UMKC L. REV. 263, 263 n.2 (2005) (citing Berring as the "the singular voice in the wilderness, warning of the potential consequences to legal thinking . . . from legal research tools"); Trosow, *supra* note 93, at 64 (examining "several aspects of [the] relationship between information technology and the occupational structures and practices in the field of law"); and Samuel E. Trosow, *The Ownership and Commodification of Legal Knowledge: Using Social Theory of the Information Age as a Tool for Policy Analysis*, 30 MANITOBA L.J. 417 (2004) (examining competing models for thinking about the relationships between information technology and social and economic changes).

181. Ross, *supra* note 110.

182. Hanson, *Key Numbers to Keywords*, *supra* note 2. See also F. Allan Hanson, *From Classification to Indexing: How Automation Transforms the Way We Think*, 18 SOC. EPISTEMOLOGY 333 (2004) [hereinafter Hanson, *Classification to Indexing*].

183. Paul Duguid, *The Social Life of Legal Information: First Impressions*, FIRST MONDAY, Sept. 2002, http://firstmonday.org/issues/issue7_9/duguid/index.html. Duguid claimed that his "only qualification for writing this paper may be my complete lack of qualifications, for my dealings with the law and lawyers have been few." *Id.* at n.1.

184. KATSH, *THE ELECTRONIC MEDIA*, *supra* note 105; KATSH, *LAW IN A DIGITAL WORLD*, *supra* note 105.

185. Collins & Skover, *supra* note 110.

186. Ross, *supra* note 110, at 638.

187. *Id.* at 640 n.2.

¶57 Ross briefly summarized the common story told by Katsh and by Collins and Skover regarding the impacts of print on the development of the law and the possible effects of electronic media on its future development, then placed the three within “a particular theoretical tradition” that led them to “assume that computers and the Internet will have relatively direct, linear, powerful, and unmediated effects on legal thought and practice.”¹⁸⁸ Ross connected the approaches of Katsh and Collins and Skover to those of Marshall McLuhan, Harold Innis, and others whose post-World War II writings “isolated ‘media’ as an object of study by distinguishing between the forms of communication and the content they happen to carry.”¹⁸⁹ In Ross’s view, Katsh and Collins and Skover are “legal McLuhanites”¹⁹⁰ whose research methodologies are “universalist,” an approach that “isolates the medium as an independent variable that produces identifiable effects.”¹⁹¹ A “contextualist” researcher, on the other hand, recognizes that “[t]he effects of a medium prove difficult to extricate from the attributes and processes of the society in which is embedded.”¹⁹² For Ross, “[m]ost legal scholars who consider the influence of computers and the Internet on law are implicitly contextualists.”¹⁹³

¶58 The bulk of the article critiques four “case studies” describing areas in which Katsh and others had explored the impacts of media: the doctrine of precedent, dispute resolution, abstraction in legal thought, and the coherence and identity of the legal profession. Ross’s analysis of the case studies suggests shortcomings in the legal McLuhanites’ assumptions about the impacts of non-media forces on the influences of media on the law,¹⁹⁴ and the need to recognize that a medium’s influences on society are “fully” a product of how the system is used in the society.¹⁹⁵ The article closes with a discussion of models of causation and suggestions for applying research methodologies that might more clearly delineate the causative influences of media on the law.¹⁹⁶

¶59 F. Allan Hanson is an anthropologist, with research interests in indexing and classification.¹⁹⁷ His *Law Library Journal* article begins with a nod to Carol Bast and Ransford Pyle’s earlier discussion of changing legal research paradigms,¹⁹⁸ noting that both print-based and computer-based research paradigms

188. *Id.* at 639.

189. *Id.* at 642.

190. *Id.* at 646.

191. *Id.* at 647.

192. *Id.*

193. *Id.* Ross does not discuss Berring in his essay, perhaps considering him a contextualist, or among the “majority” of writers in this area who “adopt a short- to medium-range perspective of 5–15 years and concentrate on a limited set of doctrinal accommodations to electronic communications.” *Id.* at 640 n.2.

194. *Id.* at 660.

195. *Id.* at 661.

196. *Id.* at 664–78.

197. He notes that his work is based on statistics and interviews with lawyers and others, as well as on secondary literature. Hanson, *Key Numbers to Keywords*, *supra* note 2, at 564, ¶ 3.

198. *Id.* at 563–64 (citing Bast & Pyle, *supra* note 2, at 286–88, ¶¶ 5–13).

are examples of paradigms for information management, or “techniques for organizing, storing, retrieving and using information.”¹⁹⁹ Following Berring, Hanson noted that users of classification systems such as the West digest may over time forget the origins of the systems and attribute more to them than is warranted, something perhaps particularly likely to occur in an area like law where the categories of the West system reflect those used in legal education.²⁰⁰ Importantly, as an information management device, the West classification system helped support the proposition that law is “a field of endeavor wholly separate and distinct from all others” with its own “self-referential” means for accessing sources of authority.²⁰¹ Hanson’s description of the “bounded and hierarchically organized” domain of legal literature²⁰² is an insightful representation—from a nonlawyer—of Berring’s universe of thinkable thoughts.

¶60 Hanson’s most important contribution, perhaps, is his insistence on keeping clear the differences between indexing and classification,²⁰³ a distinction that is perhaps not made as consistently as it might be in the legal information literature.²⁰⁴ Hanson describes classification as the organization of “a body of information according to some conceptual scheme. . . . [T]he distinctive feature of classification is that it reflects ideas about meaningful relationships among the parts in the body being classified. . . . A classification is a ‘top-down’ device, where the relationship between particular items is intelligible in terms of general principles.”²⁰⁵

¶61 In contrast, an index is a finding device that connects a symbol for a topic (usually a word or a phrase) with information stored in a database (print, electronic, or in “human memory”). Most importantly, unlike classification, “[i]n its pure form, indexing conveys nothing about relationships that may exist among different topics.”²⁰⁶ Prior to automation, both classifications and indexes were constructed by human intelligence to create tools, such as classified indexes like the West Key Number System, which serves “both the classification function of organizing information in judicial decisions in accordance with a conceptual scheme and the indexing function of assisting users to locate the information they

199. *Id.* at 564, ¶ 2.

200. *Id.* at 569–71, ¶¶ 19–21.

201. *Id.* at 571, ¶ 22.

202. *Id.*, ¶ 23. “In all of these ways, the form, organization, access, and transmission of legal information has integrally participated in the formation of ‘the law’ as a distinct realm, inhabited by a distinct and peculiarly organized profession known as ‘lawyers.’” *Id.* at 572, ¶ 25.

203. *Id.* at 573–75, ¶¶ 29–33. *See also* Hanson, *Classification to Indexing*, *supra* note 182, at 334–36.

204. *See, e.g.*, the explanation of the West Digest System in Barbara Bintliff, *From Creativity to Computerese: Thinking Like a Lawyer in the Computer Age*, 88 *LAW LIBR. J.* 338, 342–43 (1996) (describing the use of “legal terminology and major ‘fact words’” to locate key numbers in the digest without noting whether the fact words are used through the classification outline or the descriptive word index). *See also* Bast & Pyle, *supra* note 2, at 290–92, ¶¶ 17–26 (discussing print digest and indexing).

205. Hanson, *Key Numbers to Keywords*, *supra* note 2, at 574, ¶ 30.

206. *Id.*, ¶ 31.

want.”²⁰⁷ Automated systems, on the other hand, do not perform the classification function, “but operate entirely in terms of indexing,” thereby promoting a view of the subject matter of the research “as a depthless congeries of facts and doctrines rather than the hierarchically organized system that presents itself in research with print sources.”²⁰⁸ The classifications used in print-based legal research tools “convey an image of the law as taxonomically structured in terms of a relatively few general principles,” while keyword searching in electronic databases “conveys a sense of the law’s organization as shallow and loose, and that is no stimulus to seek high-level principles.”²⁰⁹

¶62 In a later article, Hanson placed his research on legal indexing and classification into a broader discussion of contrasting world views, which he labeled “classificatory” and “indexical.”²¹⁰ Those with classificatory world views prefer to learn or make new contributions to knowledge within structures of established knowledge. With this view, classified indexes such as the key number system are considered useful both because “they organize the law in a hierarchical system of categories that also serve as devices for finding legal information [and because] the classificatory system . . . reveals what the structure of the law really is.”²¹¹ Researchers with indexical worldviews “do not articulate what they want to know in terms of what is out there; they organize what is out there in terms of what they want to know.”²¹² By disregarding classification, automated searching “is a pivotal factor in a shift in legal worldview from classificatory to indexical.”²¹³ For Hanson, this shift in worldview (in law and elsewhere) is evidence of a cultural movement away from modernity toward a “positive version of postmodernity, grounded in habitual behavior that features greater flexibility and creativity.”²¹⁴

¶63 Paul Duguid’s article, titled with a nod to his well-regarded book *The Social Life of Information* (coauthored with John Seely Brown),²¹⁵ focuses on the impacts of technology on institutions of legal education: the law school and the library. Duguid’s article is important within the legal information literature for its emphasis on the concepts of “professional community” and “practice”—matters that he found to be “little more than commonplaces for most lawyers . . . [but] not, however, quite commonplace in discussions of legal education and its transformation.”²¹⁶ Duguid sees the practice of law less in terms of the activities of individual lawyers than as “a distinctive set of behaviours shared by people as part of sharing an occupation.”²¹⁷ In learning to become a lawyer and in practice, “law

207. *Id.*, ¶ 32.

208. *Id.* at 575, ¶ 33.

209. *Id.* at 584, ¶ 55.

210. Hanson, *Classification to Indexing*, *supra* note 182, at 345–47.

211. *Id.* at 348.

212. *Id.* at 346.

213. *Id.* at 349.

214. *Id.* at 353.

215. JOHN SEELY BROWN & PAUL DUGUID, *THE SOCIAL LIFE OF INFORMATION* (2000).

216. Duguid, *supra* note 183.

217. *Id.*

is inevitably social, the learning required must be a social activity, engaging with shared implicit understanding of practice as well as shared explicit understandings of prescription.”²¹⁸

¶64 Noting that “digital enthusiasts” generally avoid discussing matters of interpretation of texts in favor of discussing access, seeing “[i]nterpretation and meaning . . . as somehow unproblematic, self-evident, or transparent,” Duguid pointed out that meaning is actually “limited to particular ‘interpretive’ or ‘discursive’ communities,” such as that of the law. Quoting Berring for the idea that “law has suffered profound loss of interpretive authority,”²¹⁹ Duguid assigned significant responsibility to technological change. “As both documents and ways of reading have changed, it has become harder to impute authority to the text—even in order to wrestle with it. Consequently, it is harder to distinguish on face value the useful and reliable texts from the unreliable.”²²⁰ Although he was careful not to overemphasize the role of print in determining the workings of interpretive communities, Duguid was clear in his assertion that the early twenty-first century is “a period in which the conventions of interpretation and meaning are significantly underdetermined. . . . [A] period of diverging strategies, transient conventions, conflicting interests, community formation, dissolution, and reformation, and constant, implicit social negotiation.”²²¹ Duguid compliments Berring for detecting these “symptoms,” but counters Berring’s suggestion that individual authority (“a new Blackstone”) will be needed to develop new sources of [cognitive] authority,²²² with an argument that “forms of communal authority [developed in such places as libraries] will be more important. It is interpretive communities that construct shared categories and, through these, allow social communication and coordinated practice around information.”²²³

Conclusion

¶65 The writings of Bob Berring and those who began considering the influences of legal information on American legal culture in the mid-1980s had immediate impacts on the works of their contemporaries, while establishing a vocabulary that has continued to be applied by later writers.²²⁴ Newer writers discuss changes in the formats and structures of legal information in terms of the impacts of changes

218. *Id.*

219. *Id.* (quoting Berring, *Cognitive Authority*, *supra* note 1, at 1688).

220. *Id.*

221. *Id.* (citing ADRIAN JOHNS, *THE NATURE OF THE BOOK: PRINT AND KNOWLEDGE IN THE MAKING* (1998)).

222. *Id.* (citing Berring, *Thinkable Thoughts*, *supra* note 3 at 315, 318).

223. *Id.*

224. By 2002, some writers discussed the universe of thinkable thoughts without commenting on the origins of the concept or referring to Berring or other writers. See Scott Matheson, *Searching Case Digests in Print or Online: How to Find the “Thinkable Thoughts,”* 11 PERSPECTIVES: TEACHING LEGAL RES. & WRITING 19, 19 (2002) (suggesting without reference that the key number system itself is “sometimes called the ‘universe of thinkable thoughts’”).

on West's print-based systems, and echo Berring's points about the influences of the digest classification system and a legal information universe limited largely to the case law published in West reporters.²²⁵ Berring's ideas provide the model for discussing the influences of other legal forms of legal information in the United States,²²⁶ and are considered by writers discussing the influences of legal information in other jurisdictions.²²⁷ Topics suggested by his work continue to be of priority for those writing about legal information.²²⁸

¶66 Some commentators have questioned whether the West systems could have been as influential as suggested in Berring's work. In 1994, Nazareth Pantaloni expressed cautions about putting too much stock into the power of indexes and digests to mold the law,²²⁹ anticipating some of the broader criticisms of the universalist approaches of the "legal McLuhanites" that Richard Ross would offer in 2002.²³⁰ The most sustained criticisms were perhaps those offered by Peter Schanck in his response to Barkan's Critical Legal Studies article in 1990. As noted above, Schanck argued that Barkan's (and Berring's) ideas about the impacts of digests and other tools on lawyers' thinking were based on a wrong sense of how attorneys actually conduct research. Schanck questioned whether, given his own sense of how the tools were used in practice, they could have the broader impacts claimed for them.²³¹

¶67 Schanck's comments suggest at least that more research is needed to demonstrate the connections between the forms and structures of legal informa-

225. See, e.g., James G. Milles, *Leaky Boundaries and the Decline of the Autonomous Law School Library*, 96 LAW LIBR. J. 387, 410 n.139, 2004 LAW LIBR. J. 25, ¶ 50 ("Robert C. Berring has exhaustively demonstrated the influence of print-based classification schemes, particularly the West Digest System and the Langdellian emphasis on case law, on American law, and how traditional legal authorities are breaking down under the onslaught of technology.").
226. See, e.g., Danner, *supra* note 72, at 154 (citing Berring, *Form Molds Substance*, *supra* note 9, at 15, for the notion "that the forms in which legal information is published and distributed can be influential in the development of legal knowledge").
227. See, e.g., Amanda Barratt, *New Rights—New Laws: South African Legal Literature in a Time of Transition*, 32 INT'L J. LEGAL INFO. 390, 390–91 (2004) ("[Berring] argues that form may mould substance—that is the way in which the literature itself is arranged may shape the very way in which the community thinks about the law.").
228. Since it was first approved in 1993, the research agenda of the American Association of Law Libraries has included the topic: "What will be the effects of increased reliance on electronic research on the development of the law once researchers are no longer tied to the structures of the digest and other indexing systems?" Pantaloni, *supra* note 110, at 699 (citing Nancy C. Carter, *AALL Research Agenda and Grants Program*, AALL NEWSL., Oct 1993, at 92, 92). With the addition of the question "Is electronic legal research changing the actual law?", the topic remains on the revised (and current) AALL research agenda. Am. Ass'n of Law Libraries, *AALL Research Agenda* [§] IV.C (Nov. 4, 2000), *reprinted in* AM. ASS'N OF LAW LIBRARIES, *AALL DIRECTORY AND HANDBOOK 2006–2007*, at 517, 519 (46th ed. 2006), available at <http://www.aallnet.org/committee/research/agenda.asp>.
229. See *supra* ¶ 35.
230. As noted earlier, Ross's primary critique is of the writings of Katsh and an article by Collins and Skover. Ross does not discuss Berring or any of the other writers (besides Katsh) examined in this article; there is no reason to assume that he would classify them with the authors on whom he focuses. See *supra* text accompanying notes 189–93.
231. See *supra* ¶¶ 47–48.

tion, and lawyers' ways of thinking. Certainly, the Bowker and Star propositions adopted by Berring and others are correct: once in place and commonly used, classification systems constructed initially as mere organizing tools come to be seen as expressing never-intended truths about the subject being classified.²³² But how does (or did) this actually manifest itself in law?

¶68 The West Digest System classifies law into seven major topics, which then break down hierarchically into other topics and key numbers. But, how do the relationships among the elements of the system make themselves known to lawyers as they conduct their research in practice? At what levels are the relationships influential? Although West classifies cases under the four-hundred-plus topics of its classification system, in its print digests (as in those of other publishers and in other comprehensive legal research tools), the topics are presented to researchers in alphabetical order by topic name. As Hanson suggests, the meaningful relationships inherent in classification are lost in alphabetical arrangement.²³³ Thus, in practical application, it is not clear how a researcher would learn that the topic "Licenses" fell into the overall scheme under "Particular Occupations" within the major topic "Persons" unless he or she took the trouble to examine the outline of the classification system instead of, or in addition to, going directly to the volume digesting cases on "Licenses." In the alphabetical arrangement of topics in the print digests, "Licenses" is found between "Libel and Slander" and "Liens," which tells the researcher nothing about the relationships of Licenses to other topics. Similarly, how do West's descriptive word indexes expose researchers to the relationships among the elements of the classification system when their point seems to be just the opposite: to bring the lawyer directly to cases on specific points of interest, bypassing the larger elements of the system.²³⁴ None of this is to argue that the structures of the digest do not influence how American lawyers think about the law, but it does suggest that Schanck's questions about how this happens are worthy of more exploration than they have received.²³⁵

232. See *supra* ¶ 19.

233. See Hanson, *Classification to Indexing*, *supra* note 182, at 345.

234. The Descriptive Word Index was introduced in 1912 with advertisements noting that "[w]hile it is true that the American Digest classification is simplicity itself . . . [s]omething else was needed—something which the lawyer could turn to and find what he wanted, in the same way as he would a dictionary." Editorial by the Advertising Manager, WEST PUB. COMPANY'S DOCKET, Sept. 1912, inside front cover. Earlier that year, an article in West's own "intercollegiate law review" anticipated the publication of the new index in a short article, noting that "[t]he search for the law has become a search for facts to which the legal principles have been applied, rather than a search for the abstract principles themselves." R.A. Daly, *The Descriptive Word*, 3 AM. L. SCH. REV. 79, 79 (1912).

235. Do we know more about how lawyers conduct research than the little that Morris Cohen suggested we did in 1969? Morris L. Cohen, *Research Habits of Lawyers*, 9 JURIMETRICS J.183, 183 (1969) ("[W]e know a great deal about the *materials* of legal research . . . , but almost nothing about the actual procedures used by lawyers in their search into the law."). Cohen referred to "the books of the law," but the point is probably true today regarding computer-based research as well. See, e.g., Eric Goldman, *Search Engine Bias and the Demise of Search Engine Utopianism*, 8 YALE J. L & TECH. 188, 189 (2006) (describing how, despite their "vener of objectivity and credibility [search engines] systematically favor certain types of content over others.").

¶69 Doubtless, as Berring suggests, whatever influences the West classification system has had beyond its value for locating cases stems from its introduction at a time when American lawyers could see its connections to the organizational scheme of the still influential Blackstone's *Commentaries* and to the spread of the case-based first-year law school curriculum developed by Langdell at Harvard. It might be useful, as well, to look more closely than has yet been done at other aspects of the context in which the digest system developed. The last quarter of the nineteenth century saw vigorous debates among American lawyers about the benefits of classifying the law, both for the practical purposes of locating precedential cases, but also to promote educational goals and professional knowledge and understanding of the law.²³⁶ These debates continued in various forums and at changing levels of intensity until well into the twentieth century.²³⁷ The most recent legal information literature has so far not looked closely at other attempts to classify the law or at the larger debates about classification that have characterized American legal history from the early movements for codification of the common law in the nineteenth century through the establishment of the Restatements in the 1920s.²³⁸

¶70 In a time of computer-based legal research, when declining use of digests and other resources in print form²³⁹ may have curtailed the usefulness of print-based models for examining the influences of legal information, it is important to consider what approaches or models will be most useful for exploring the future roles and influences of legal information. The universe of thinkable thoughts defined itself largely in terms of published cases. Future inquiries will need to consider more carefully other forms of law, certainly including statutes and administrative materials, which have grown in importance since at least the early twentieth century,²⁴⁰ but also secondary materials, such as law review articles, which

236. See Emily Sherwin, Legal Taxonomy 16–23 (Cornell Legal Studies Research Paper No. 06-020, 2006), available at <http://ssrn.com/abstract=925129> (discussing purposes of classification). She notes that there are “two likely purposes . . . : guiding the outcomes of adjudication and contributing to knowledge of and discourse about the law.” *Id.* at 16.

237. Some of the historical literature from the discussions of classification is listed in Jay M. Feinman, *The Jurisprudence of Classification*, 41 STAN. L. REV. 661, 663 n.4 (1989). On the Restatements, see N.E.H. Hull, *Restatement and Reform: A New Perspective on the Origins of the American Law Institute*, 8 LAW & HIST. REV. 55 (1990).

238. My own initial explorations suggest that little of the substantial contemporary literature about classification, codification, and the restatements in American law takes into consideration the actual or possible role of digest classifications in answering the concerns of the time. See Richard A. Danner, *Classification in American Law: The Influences of the Digest Tradition* [work in progress].

239. See Bintliff, *supra* note 2, at 249, ¶ 1 (“The debate about whether print or electronic resources are better for legal research ended essentially because the consumers of the resources made a decision. . . . Faculty, attorneys, and law students voted with their feet, and their feet led them to the computer terminal.”); Judy Meadows & Kay Todd, *Our Question: Is the Use of Digests Changing?* 13 PERSPECTIVES: TEACHING LEGAL RES. & WRITING 113, 115 (2005) (“When . . . all print digests must be cancelled, the librarian probably will not be accused of misfeasance; the absence of print digests may not even be noticed.”).

240. This is clearly necessary for the twentieth century and beyond, but it may also be necessary to rethink the importance of legislation in the nineteenth century. See *supra* note 85.

Internet technologies have made increasingly accessible to researchers, and which will perhaps become more important as authority now that they are reached through means similar to those used for the authorities traditionally viewed as primary.²⁴¹ The same may be true for nonlegal materials accessed through the same electronic sources as primary and secondary legal authorities.²⁴²

¶71 It will also be necessary to expand our study of the influences of legal information to systems outside the United States and to develop approaches that can be readily applied and tested beyond the U.S. context, perhaps by making more use of the research methodologies of other disciplines. One avenue may be to think more about the roles played by texts and documents in the professional discourse of law. Anthropologist Martin Chanock has suggested “that the major task [of legal anthropology] is to consider the different uses of and approach to texts [E]xplaining the distinctive nature of highly textualised legal systems still remains a challenge.”²⁴³ John Seely Brown and Paul Duguid have discussed the social role of texts and documents (“documents do not merely carry information, they help make it, structure it, and validate it”²⁴⁴), as well as the ways in which disciplines, professions, and other communities are “bound together by texts and a shared disposition toward those texts”²⁴⁵ in ways suggestive for the study of legal information.²⁴⁶ How do the number of texts published in a jurisdiction and their availability for discussion and analysis inform the discourse of the professional community?

¶72 Whatever directions our explorations take in the future, the core of the literature on the influences of legal information will continue to be found in Bob Berring’s writings and in those of others who have taken seriously the questions he raises concerning the impacts of the forms and structures of legal information on the American legal culture. The literature stimulated by Bob’s work continues to be vibrant, and it will become increasingly interdisciplinary and international in scope. For law librarians, it is the locus of the best of our own literature and professional knowledge.

241. See Michael W. Carroll, *The Movement for Open Access Law*, 10 LEWIS & CLARK L. REV. 741 (2006) (arguing for the benefits of providing open access to legal scholarship).

242. See *supra* text accompanying notes 177–78.

243. Martin Chanock, *Introduction*, in SALLY FALK MOORE, *LAW AS PROCESS: AN ANTHROPOLOGICAL APPROACH*, at xxvii–xxviii (2d ed. 2000). See also JOHN M. CONLEY & WILLIAM O’ BARR, *JUST WORDS: LAW, LANGUAGE, AND POWER* 135–37 (1998) (calling for “a new discourse-based legal anthropology”).

244. BROWN & DUGUID, *supra* note 215, at 189.

245. *Id.* at 190.

246. See generally *id.* at 173–90; Duguid, *supra* note 183. For discussion of the varieties of legal discourse, see MARTIN CHANOCK, *THE MAKING OF SOUTH AFRICAN LEGAL CULTURE 1902–1936*, at 19–26 (2001); JOHN M. CONLEY & WILLIAM M. O’BARR, *RULES VERSUS RELATIONSHIPS: THE ETHNOGRAPHY OF LEGAL DISCOURSE 2* (1990).