

Why Do We Ask the Same Questions? The Triple Helix Dilemma Revisited*

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In revisiting their Stanford Law Review article, “Why Do We Tell the Same Stories: Law Reform, Critical Librarianship, and the Triple Helix Dilemma,” Professors Delgado and Stefancic contend that computer-assisted legal research has not proven to be a boon to the cause of law reform. At the time of the first article, the computer revolution, which irreversibly changed how we research legal questions, was just dawning. In this article, they focus again on categorical thinking, but this time to examine whether it is possible to transcend the categories our minds bring to computer-based searching when we do not know exactly what we are looking for. They describe and compare paper-based and computerized research tools, review some of the claims that have been made for the latter, and show how electronic searching retains many of the constraints of the print version. After surveying the pace of law reform in a few selected areas, they conclude that the computer revolution has not accelerated reform but very possibly slowed it. They posit a few reasons why this may be so and end with a number of suggestions for law reformers.

Introduction: The Locked Room

¶1 In the classic mystery, *The Murders in the Rue Morgue*, Madame L’Espanaye and her daughter are found dead at their residence on the Rue Morgue in Paris.¹ The daughter is found in her seemingly impenetrable bedroom, all the windows and doors locked from the inside. Witnesses on the street report hearing screams and a struggle. They could distinguish two voices, a gruff voice seemingly speaking French, and a shrill one speaking an unrecognizable foreign language. Examining the facts of the case and the clues presented, the police make little progress in the

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1. Edgar Allen Poe, *The Murders in the Rue Morgue*, GRAHAM’S MAG., Apr. 1841, at 166, available at <http://poe.thefreeibrary.com/Murders-in-the-Rue-Morgue>.

investigation. No motive is apparent, and it was impossible for anyone to escape from that bedroom.

¶2 Not until the brilliant Auguste Dupin arrives on the scene does a break appear in the case. Dupin does not think in terms of impossibilities like the police, but rather of what is possible. He is not bound to comparing the crime to the *modus operandi* of previous crimes. Able to look at the evidence with an open mind, Dupin can consider the possibility that the murderer was not a person at all. He ultimately discovers that the true culprit was an orangutan.²

¶3 Almost twenty years ago, the two of us published some thoughts on the role of legal research tools in law reform. In “Why Do We Tell the Same Stories: Law Reform, Critical Librarianship, and the Triple Helix Dilemma,”³ we asked why legal stories displayed such a remarkable sameness. We rejected the usual explanations: law’s innate conservatism; the requirement that every statement be supported by a previous one; bar rules requiring that lawyers acquire a common stock of knowledge; and, in law school, the tyranny of the casebook.⁴

¶4 Although a few legal innovators had managed to break free from these constraints, an objective observer casting an impartial eye over the landscape of legal stories would be struck by how much they resemble each other, by how thoroughly they track themes of incremental reform carried out within the bounds of the Anglo-American common law tradition, and by how slowly they change.⁵

¶5 Our article focused on a little noticed source of this sameness—namely, commercially prepared research systems that lawyers and legal scholars use to find precedents, arguments, and ideas.⁶ These devices, including the West Digest System with its arrangement of headnotes and numbered categories, operate like DNA, enabling lawyers to find lines of relevant cases; they both facilitate thought and inhibit the development of new forms of it.⁷ A researcher who employs the West Digest System, for example, begins with one idea. Closely related ideas and cases then quickly come to light; innovative jurisprudence, which might require a new tool entirely, can easily remain undeveloped.⁸

¶6 Existing indexing systems thus function like eyeglasses that we have worn for a long time. They enable us to see better, but conceal the possibility that we

2. Owned by a sailor, the orangutan escaped from his owner’s apartment with a razor in his hairy hand. By an improbable series of events, he found himself face to face with the two women who, understandably, panicked. After dispatching both, he stuffed one in the chimney and tossed the other out the fourth floor window, from which he made an athletic escape, releasing a spring-loaded catch on his way out. The crime scene, which looked airtight but impossible, posed a conundrum that the unimaginative detectives were unable to crack.

3. 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).

4. *Id.* at 207–08. This is not to say that these other forces do not channel legal thought, they do. *See infra* notes 17 & 71 and accompanying text. Rather, cognitive categories inscribed in our research tools and habits do so much more efficaciously and invisibly. *See infra* ¶¶ 5–8, 27–39.

5. Delgado & Stefancic, *supra* note 3, at 208.

6. *Id.* at 208–17.

7. *Id.* at 208.

8. *Id.* at 208–09.

might be able to see even better with a different pair. Yet, even when we discover that better pair, it too begins to set limits on what we can see. We move from one set of limitations to another slightly less confining one in an unending process that seems inherent in our condition.⁹

¶7 We wrote at the dawn of the computer revolution which has radically altered how attorneys carry out legal research.¹⁰ No longer is the researcher confined to the cases listed under a headnote number in the West Digest System. With online full-text research, the lawyer searching for precedent may devise a search as complex or as simple as he or she likes.¹¹ The only limit is one's imagination. If the lawyer asks the computer for a list of cases about cows that wander onto highways, it will obligingly spew forth every last one in the database.¹² Or if the lawyer asks it for opinions that discuss open and closed range liability rules, it will bring these up in a nanosecond.¹³ Computer

9. *Id.* at 225.

10. *Id.* at 220 (observing that computer-assisted research, then in early stages of development, could easily “freeze” the law by limiting searches to concrete words or expressions and by discouraging browsing and analogical reasoning).
11. *E.g.*, Carol M. Bast & Ransford C. Pyle, *Legal Research in the Computer Age: A Paradigm Shift*, 93 LAW LIBR. J. 285, 294 (2001); Daniel P. Dabney, *The Curse of Thamus: An Analysis of Full-Text Legal Document Retrieval*, 78 LAW LIBR. J. 5, 20 (1986). For other works on the role of categories and indexing in research—both conventional and electronic—and their impact on the structure of law, see Richard Haigh, *What Shall I Wear to the Computer Revolution? Some Thoughts on Electronic Researching in Law*, 89 LAW LIBR. J. 245 (1997); Robert C. Berring, *The Evolution of Research: Legal Research and the World of Thinkable Thoughts*, 2 J. APP. PRAC. & PROCESS 305 (2000) [hereinafter Berring, *Evolution*]; Allan Hanson, *From Key Numbers to Keywords: How Automation Has Transformed the Law*, 94 LAW LIBR. J. 563 (2002); David Post, *The Law is Where You Find It*, AM. LAW., Mar. 1996, at 98; Paul Hellyer, *Assessing the Influence of Computer-Assisted Legal Research: A Study of California Supreme Court Opinions*, 97 LAW LIBR. J. 285 (2005); Samuel E. Trosow, *The Database and the Fields of Law: Are There New Divisions of Labor?* 96 LAW LIBR. J. 63 (2004); Robert Berring, *Chaos, Cyberspace and Tradition: Legal Information Transmogrified*, 12 BERKELEY TECH. L.J. 1 (1997) [hereinafter Berring, *Chaos*]; Barbara Bintliff, *From Creativity to Computerese: Thinking Like a Lawyer in the Computer Age*, 88 LAW LIBR. J. 338 (1996); Robert C. Berring, *Legal Information and the Search for Cognitive Authority*, 88 CAL. L. REV. 1673 (2000) [hereinafter Berring, *Cognitive Authority*]; Robert C. Berring, *Full-Text Databases and Legal Research: Backing into the Future*, 1 HIGH TECH. L.J. 27 (1986) [hereinafter Berring, *Backing into the Future*]; Robert C. Berring, *Collapse of the Structure of the Legal Research Universe: The Imperative of Digital Information*, 69 WASH. L. REV. 9 (1994) [hereinafter Berring, *Collapse*]; Molly Warner Lien, *Technocentrism and the Soul of the Common Law Lawyer*, 48 AM. U.L. REV. 85 (1998); Steven M. Barkan, *Deconstructing Legal Research: A Law Librarian's Commentary on Critical Legal Studies*, 79 LAW LIBR. J. 617 (1987). On the computer revolution generally, see ETHAN KATSH, *THE ELECTRONIC MEDIA AND THE TRANSFORMATION OF LAW* (1989) [hereinafter KATSH, *TRANSFORMATION OF LAW*]; ETHAN KATSH, *LAW IN A DIGITAL WORLD* (1995) [hereinafter KATSH, *DIGITAL WORLD*]; Peter C. Schanck, *Taking Up Barkan's Challenge: Looking at the Judicial Process and Legal Research*, 82 LAW LIBR. J. 1 (1990).
12. See Delgado & Stefancic, *supra* note 3, at 221 (citing this example). However, the lawyer will not retrieve a case that discusses heifers and roads.
13. See, e.g., Robert Ellickson, *Of Coase and Cattle: Dispute Resolution Among Neighbors in Shasta County*, 38 STAN. L. REV. 623 (1986). Ellickson discusses how Western ranchers behave under the two systems of rules. Open range rules allow cattle to roam freely and impose the obligation to fence in property on any farmers who wish to protect their crops. Closed range regimes, by contrast, require ranchers to fence in their land and penalize them if their cattle escape and trample a neighbor's cabages. Ellickson found that neighbors behave in roughly the same way under both systems and that the governing rules made little difference.

searching frees legal researchers from West's rigid categories and puts them in touch with a postmodern world of cases and phrases limited only by their imagination and ability to formulate search commands with the aid of Boolean logic.¹⁴

¶8 Computerized legal research is a godsend for lawyers who know exactly what they are looking for. What about lawyers who don't know what they are looking for, say, one who confronts a case of first impression or one calling for an entirely new legal theory? Has computerized searching freed lawyers from the constraints we wrote about two decades ago and opened the door to creativity and legal innovation? Many experts in the field of information technology have thought so; the literature is full of extravagant celebrations of the new order.¹⁵ Our contention is that it has not; indeed, that our predicament is little better than it was in the days of searching in the dusty volumes of the West decennial digests and, in some respects, more acute. Computer-assisted legal research may in fact impede the search for new legal ideas, slow the pace of law reform, and make the legal system less, not more, just.¹⁶

¶9 This article proceeds in four parts. The first describes computerized research and how it differs from the old paper-based kind. The second reviews some of the claims that have been made for computerized research and what it can do. The third shows how electronic searching has not eliminated the constraints of the old categorical system. The categories formerly inscribed in the West Digest System, where they guided searches along predictable lines, remain in our minds where they limit what we can do just as effectively as they did when they were overt and on the page. Disciplinary rules, bar examination requirements, and the legal curriculum give all lawyers a common stock of ideas and categories. And, since one can only think in terms of words and categories,¹⁷ they also limit the range of queries a researcher, poised over the keyboard, is likely to ask. Moreover, limitations inherent in databases and computer searching channel this form of research in ways that did not constrain old-fashioned hard-copy searching.

¶10 The fourth and final part gives examples of how the old legal categories limit thought even today and shows how computerized searching can mask the

14. See *infra* ¶¶ 17–26.

15. See *infra* ¶¶ 21–26. But see Jean Stefancic & Richard Delgado, *Outsider Jurisprudence and the Electronic Revolution: Will Technology Help or Hinder the Cause of Law Reform?* 52 OHIO ST. L.J. 847 (1991) (casting doubt on this optimistic review and positing an early version of our current thesis).

16. See *infra* ¶¶ 27–44.

17. See Linda Krieger, *The Content of our Categories: A Cognitive Bias Approach to Discrimination and Equal Employment Opportunity*, 47 STAN. L. REV. 1161 (1995); Barkan, *supra* note 11, at 631; see also Duncan Kennedy, *The Structure of Blackstone's Commentaries*, 28 BUFF. L. REV. 209, 215 (1979) (noting how traditional categories, dating back to the time of Blackstone, dictate the terms in which lawyers think); Haigh, *supra* note 11, at 261–62 (noting that computer searching may not liberate lawyers from the oppressive hand of West categories because textbooks and legal custom will continue to reinforce traditional ways of conceiving legal issues).

need for innovation. Unlike traditional searching, the computerized kind can lead to *perseveration*¹⁸ and a focus on the minutiae of fact patterns, when the situation calls, instead, for an imaginative leap that sees a type of case in an entirely new light. This part also surveys the pace of legal breakthroughs, both in academic literature and in the world of law practice, and concludes that legal innovation has not surged with the advent of computerized searching, but has, if anything, slowed.

Legal Research: From West Headnotes to Full-Text Computerized Databases

Traditional Hard-Copy Legal Research

¶11 Prior to the electronic revolution of the early 1980s, lawyers and legal scholars searched for precedent and legal concepts using three principal tools. To find books, especially general-interest ones, they used the Library of Congress subject heading system, which provides access to library collections. For legal periodicals, they used the *Index to Legal Periodicals*. And they used the West Digest System, which classifies legal decisions under subject headings and “key numbers” to find case authority. Even after the advent of computerized research, these tools continue to find use today.

The Library of Congress Subject Heading System

¶12 The *Library of Congress Subject Headings* (LCSH) began in 1898 when the library adopted the first list of subject headings for its own use.¹⁹ Later editions reflect changes in the conceptualization of categories and the addition of new ones, such as wireless communication systems, space flight, or feminism.²⁰ A recent edition contained approximately 290,000 headings displayed in five volumes spanning 7946 pages.²¹ An editorial committee at the library reviews suggestions for new headings, including many that originate in-house.²² Critics have charged that the Library of Congress system has been conservative and slow to change, and is currently abdicating its position of

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18. By *perseveration* we mean the practice of continuing in the same vein even though it is yielding decreasing returns—mindlessly persisting in an unpromising effort to solve a problem when one should be taking a different direction. *See infra* ¶¶ 27–39.
 19. OFFICE FOR SUBJECT CATALOGING POLICY, LIBRARY OF CONGRESS, LIBRARY OF CONGRESS SUBJECT HEADINGS, at viii (29th ed. 2006) (sometimes called the “big red books”).
 20. *Id.*
 21. *Id.* at vii. The Library of Congress adds approximately six thousand to eight thousand headings a year.
 22. *Id.*; *see also* CATALOGING POLICY & SUPPORT OFFICE, LIBRARY OF CONGRESS, SUBJECT CATALOGING MANUAL: SUBJECT HEADINGS H187 (5th ed. 1996–) (updated semiannually) (explaining when a new heading is appropriate). Other libraries may contribute proposals or changes to LCSH through the Subject Authority Cooperative Program of the Library of Congress’s Program for Cooperative Cataloging.

leadership.²³ Others charge that its system of headings replicates majoritarian thought and politics, and gives too little attention to new or emerging theories and ideas.²⁴

The Index to Legal Periodicals and Current Law Index

¶13 The *Index to Legal Periodicals* is not the only attempt to provide coverage of legal journals, but it has been the best known and most comprehensive. It arose when the American Association of Law Libraries (AALL) in 1908 published the first volume, indexing the contents of about forty journals.²⁵ The *Index* soon grew, however, under the auspices of an advisory committee that suggested new subject headings and consulted with the H.W. Wilson Company, the publisher of the *Index*, on matters of policy.²⁶ Disagreements eventually caused the *Index* and the Association to go their separate ways in 1978.²⁷

¶14 AALL then negotiated with Information Access Company to create a new tool, *Current Law Index*, that would compete with the *Index to Legal Periodicals*.²⁸ That index appeared in 1980, indexing 660 periodicals, about double the coverage of the old *Index to Legal Periodicals*.²⁹ Its coverage extends only back to 1980, however; for materials appearing before that date, the searcher must consult the older *Index to Legal Periodicals*. Both services provide a wide array of headings and categories, but derive them from ostensibly different sources. The *Index to Legal Periodicals* for much of its history listed *Black's Law Dictionary* and, after 1985, *West's Legal Thesaurus/Dictionary* as sources for most of its legal subject headings, while the *Current Law Index* derived its versions from the Library of Congress system, which, in turn draws most of its headings from *Black's Law Dictionary* and the *Current Law Index*, assuring a remarkable degree of sameness, if not circularity, in both systems.³⁰

23. See, e.g., Ronald Crovisier & Sheila S. Intner, *Classification for Astronomy*, CATALOGING & CLASSIFICATION Q., 1987, no. 3, at 23 (observing how system betrays its Victorian origins); David Henige, *Library of Congress Subject Headings: Is Euthanasia the Answer*, CATALOGING & CLASSIFICATION Q., 1987, no. 1, at 7, 13–14. For the current controversy over the effectiveness of library catalogs and information needs of twenty-first-century users, see generally Karen Calhoun, *The Changing Nature of the Catalog and Its Integration With Other Discovery Tools* (Mar. 17, 2006), <http://www.loc.gov/catdir/calhoun-report-final.pdf>; Thomas Mann, *What is Going on at the Library of Congress?* (June 19, 2006), <http://www.guild2910.org/AFSCMEWhatIsGoingOn.pdf>.

24. E.g., Sanford Berman, *Not Funny Any More*, LIBR. J., June 1, 1988, at 80 (giving examples of anachronistic headings); Sanford Berman, *Out of the Kitchen—But Not Into the Catalog*, 2 TECHNICAL SERVICES Q. 167 (1984) (exposing how present system discriminates against women).

25. Richard Leiter, *A History of Legal Periodical Indexing*, LEGAL REFERENCE SERVICES Q., 1987, no. 1, at 35, 37–40, 45–46 (1987).

26. *Id.* at 41–42.

27. *Id.* at 45.

28. *Id.* at 46; Howard A. Hood, *Review of Current Law Index*, 16 INT'L. J. LEGAL INFO. 123 (1988); Thomas Steele, *The Index to Legal Periodicals and Current Law Index—A Comparison*, LEGAL REFERENCE SERVICES Q., 1981, no. 4, at 43.

29. Leiter, *supra* note 25, at 46.

30. Compare INDEX TO LEGAL PERIODICALS: THESAURUS, at iv (1988) with 8 CURRENT LAW INDEX iii (1987). See KENT OLSON & ROBERT BERRING, PRACTICAL APPROACHES TO LEGAL RESEARCH 92–93 (1988); PETER ENYINGI ET AL., CATALOGING LEGAL LITERATURE 370 (2d ed. 1988).

The West Digest System

¶15 Before the West Company's publication in 1876 of the first compilation of court reports, *The Syllabi*, American law was unsystematic and disorganized. As a result, lawyers encountered great difficulty in knowing what local or national law was.³¹ In 1879, the company published the *Northwestern Reporter*, which included decisions from the Dakota Territory, Iowa, Michigan, Minnesota, Nebraska, and Wisconsin.³² Similar regional reporters soon appeared, and within a few years West had blanketed the country. To provide easy access to relevant cases, West soon established a system of headnotes and indexing in all its reporters, so that the researcher interested in a particular legal point (e.g., the liability of a county government for the acts of an agent) could easily locate the relevant cases.³³ When the American Bar Association endorsed the Key Number Digest, West's role in indexing and reporting American cases acquired semi-official status.³⁴

¶16 The West Digest System has not escaped criticism. Like the *Index to Legal Periodicals*, *Current Law Index*, and the Library of Congress subject heading system, critics charge that West is conservative and slow in recognizing new legal categories and that the near-monopoly that its digest system acquired constitutes a kind of cage into which the law itself had to be fit.³⁵

Computer-Assisted Legal Research

¶17 Beginning in the late 1970s, legal research went through a period of change when Lexis and Westlaw developed competing computerized legal research systems that eliminated much of the work of manually sorting through opinions and secondary materials.³⁶ In the mid-1960s, the Ohio State Bar Association formed a committee

31. See Albert Kocourek, *Classification of Law*, 11 N.Y.U. L.Q. REV. 319, 328–34 (1934); Roscoe Pound, *Classification of Law*, 37 HARV. L. REV. 933, 938–59 (1924); Henry T. Terry, *Arrangement of the Law*, 15 U. ILL. L. REV. 61, 61–62 (1920); Thomas Woxland, "Forever Associated with the Practice of Law": *The Early Years of the West Publishing Company*, LEGAL REFERENCE SERVICES Q., 1985, no. 1, at 115, 116; see also Berring, *Backing into the Future*, *supra* note 11, at 29–31; Berring, *Chaos*, *supra* note 11, at 189–95 (describing history of the West empire).
32. WEST, LAW FINDER 5 (1988); see also Berring, *Backing into the Future*, *supra* note 11, at 31–33; Berring, *Chaos*, *supra* note 11, at 90–95; Bintliff, *supra* note 11, at 341–43.
33. See WILLIAM MARVIN, WEST PUBLISHING COMPANY: ORIGIN, GROWTH, LEADERSHIP 39 (1969); Berring, *Backing into the Future*, *supra* note 11, at 31–33; Bintliff, *supra* note 11, at 341–43 (observing that one who used the West system had to frame an inquiry in its terms).
34. MARVIN, *supra* note 33, at 74.
35. E.g., Robert Berring, *Backing into the Future*, *supra* note 11, at 33–37 (explaining that West editors were trained to normalize judicial opinions, even anomalous ones, so as to fit them into the pre-existing structure of categories and key numbers); Berring, *Collapse*, *supra* note 11, at 20–22, 28–31 (noting that West system of rigid categories guided legal thought along conventional lines, and that they mirrored the structure of legal education and the traditional law school curriculum devised by Christopher Langdell); Bintliff, *supra* note 11, at 343; Hanson, *supra* note 11, at 568; Barkan, *supra* note 11, at 632.
36. For histories of these times, see, e.g., William G. Harrington, *A Brief History of Computer-Assisted Legal Research*, 77 LAW. LIBR. J. 543 (1984–85); Berring, *Backing into the Future*, *supra* note 11, at 37–39; Berring, *Chaos*, *supra* note 11, at 195–99.

to explore the possibility of harnessing computers in the service of legal research.³⁷ Learning of a system developed by the Data Corporation for the Air Force, the Ohio committee contracted with that corporation to develop a similar system for legal research.³⁸ When the Mead Corporation acquired Data Corporation, the parent organization formed a subsidiary, Mead Data Central, for the sole purpose of developing a legal research service.³⁹ By 1973, Mead Data Central had developed a computerized service, Lexis, that it began marketing nationwide.⁴⁰

¶18 Eager to protect its near-monopoly in the field of legal research, the West Publishing Company countered by marketing Westlaw as a competitor to Lexis.⁴¹ When unveiled in 1975, West's service was inferior to Lexis, largely because its database consisted of little more than the text of West headnotes.⁴² In time, West improved Westlaw so that by 1983 it had become almost as powerful and user-friendly as Lexis.⁴³

¶19 Today, few legal researchers looking for case authority rely on the old West index or decennial digests.⁴⁴ By the same token, few legal scholars looking for articles or books discussing a legal idea consult the *Index to Legal Periodicals* or the local library's card catalog.⁴⁵ Instead, they type a keyword search into a database such as LexisNexis or Westlaw that covers all the major legal journals and publications. If they are searching for a book, they check a computerized database such as WorldCat, Google, or even Amazon.com.

¶20 All these electronic tools are faster and more convenient than consulting several decennial digest volumes, the *Index to Legal Periodicals*, the Library

37. Harrington, *supra* note 36, at 544–45; Berring, *Chaos*, *supra* note 11, at 195–99.

38. Harrington, *supra* note 36, at 547; Berring, *Backing into the Future*, *supra* note 11, at 38; Berring, *Chaos*, *supra* note 11, at 196.

39. Harrington, *supra* note 36, at 550; Berring, *Chaos*, *supra* note 11, at 196.

40. Harrington, *supra* note 36, at 552; Berring, *Backing into the Future*, *supra* note 11, at 38; Berring, *Chaos*, *supra* note 11, at 195–96.

41. Harrington, *supra* note 36, at 553–54; Berring, *Backing into the Future*, *supra* note 11, at 38; Berring, *Chaos*, *supra* note 11, at 196.

42. Harrington, *supra* note 36, at 553; Berring, *Chaos*, *supra* note 11, at 196.

43. Harrington, *supra* note 36, at 554–55; Berring, *Backing into the Future*, *supra* note 11, at 38. Both services are now divisions of large multinational corporations. In 1994, Reed Elsevier purchased LexisNexis, while Thomson Publishing Co. purchased Westlaw two years later. Today, most of the American legal publishing industry is owned by a handful of multinational companies. Costs have risen accordingly; some law libraries are cancelling certain print services entirely. *See generally* KENDALL F. SVENGALIS, LEGAL INFORMATION BUYER'S GUIDE & REFERENCE MANUAL 3–5 (2005).

44. *See* Bast & Pyle, *supra* note 11, at 299. With computers, a generational gap yawns. Young researchers rely on their computers, while older lawyers and professors are apt to rely on hard-copy sources. *See, e.g.*, Berring, *Evolution*, *supra* note 11, at 313; Berring, *Cognitive Authority*, *supra* note 11, at 1677; Berring, *Backing Into the Future*, *supra* note 11, at 57.

45. As with computers generally—*see supra* note 44—the gap in searching practices seems generational, with younger users searching for articles or books on a computer, and older practitioners and scholars using books and printed indexes. Recently, however, the *Index to Legal Periodicals* became part of the online WilsonWeb Index, where it is divided into three separate components: (1) the Index to Legal Periodicals 1907–1981, listing citations only; (2) the Index of Legal Periodicals Full Text, which extends back to 1994 and provides full-text coverage of about a fifth of the articles in indexes; (3) the Index to Legal Periodicals and Books, indexing the same period and journals as the full-text version but providing only citations to articles and books. Other familiar tools are also online; LegalTrac, for example, is an updated electronic version of the *Current Law Index*, which is still also published in paper.

of Congress subject headings, or the various legal encyclopedias and practice books that combine the contents of each in a format useful for lawyers in certain specialized practice areas.⁴⁶ With computerized research one merely types one's search into an office computer or laptop and the results spill out in a few seconds, leaving little need for a trip to a library or notes on a yellow pad. But is this form of research better in those troubling cases falling between existing categories or calling for innovation? Does it escape the powerful channeling function that we described in our *Stanford Law Review* article? Many writers have thought so. For them, computerized legal research is not just quicker, it is qualitatively better: more creative, powerful, and flexible.

The Usual Story: Computerized Legal Research Is Not Only Quicker Than the Old Kind, But Better

¶21 Many experts in the information science field have asserted that computerized legal research is not only more convenient than the old paper-and-pencil kind, but better. These assertions, many of which come accompanied by little empirical evidence, include that computer-assisted legal research is more flexible than the traditional kind,⁴⁷ that it is deeper and more comprehensive,⁴⁸ and that it is more creative than what came before.⁴⁹ Running through this literature

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46. See Haigh, *supra* note 11, at 249 (noting that computers are faster than hard-copy searching for well-defined, concrete searches, especially ones based on facts rather than abstract categories or theories, but not otherwise); see also KATSH, *TRANSFORMATION OF LAW*, *supra* note 11, at 45. Of course, the cases come spilling out shorn of context. No helpful West headnote editor has conveniently located one case about the liability of a municipality for the acts of a trash collector with all the others and identified key differences among them, or located them right next to a similar group of cases about dog-catcher liability. See Berring, *Backing into the Future*, *supra* note 11, at 54; Schanck, *supra* note 11, at 21 (suggesting that it would be advantageous if computer systems began to incorporate the elements of indexing—in effect introducing a level of human judgment between the user and the raw data).
47. E.g., KATSH, *DIGITAL WORLD*, *supra* note 11, at 67, 70–73, 76 (describing computer searching as more flexible, comprehensive, and free-flowing than the manual variety); Ethan Katsh, *Law in a Digital World: Computer Networks and Cyberspace*, 38 *VILL. L. REV.* 403, 477–79 (1994); Berring, *Collapse*, *supra* note 11, at 29. *But see* Haigh, *supra* note 11, at 251–54 (electronic searching not always more flexible than the old-fashioned manual kind).
48. See, e.g., Katsh, *supra* note 47, at 477–48; KATSH, *DIGITAL WORLD*, *supra* note 11, at 5 (a “computer . . . [is] much more than a ‘wonderful book’”). *But see* David C. Blair & M.E. Maron, *An Evaluation of Retrieval Effectiveness for a Full-Text Document-Retrieval System*, 28 *COMM. A.C.M.* 289 (1985) (finding that computer-assisted research systems retrieved no more than about 20% of the documents relevant to search queries); Haigh, *supra* note 11, at 251 (contending that electronic searching is not as powerful or deep as commonly thought).
49. See *infra* ¶¶ 29–39; see also KATSH, *DIGITAL WORLD*, *supra* note 11, at 68–69, 79–83; Katsh, *supra* note 47, at 477–78 (arguing that computer searching breaks down distances between disciplines and areas of information). *But see* Haigh, *supra* note 11, at 251–52, 261; Hanson, *supra* note 11, at 580, 582, 585–88, 592 (noting that computer searching can result in a scattered, delegitimated legal profession); Lien, *supra* note 11, at 92, 101, 112–13 (arguing that computerized searching is not likely to render the user more creative than before, and citing studies showing that computer use generally did not boost creativity and right-brain thinking, and some that showed that it reduced it).

is the conviction that computerized searching is changing the very substance of the law.⁵⁰

¶22 A number of authorities argue that computerized legal research is more flexible than the previous kind because the searcher may frame any type of search query, without regard to a pre-existing category such as a West key-note.⁵¹ Because of this freedom, lawyers may “break down informational distances”⁵² between one legal area and another and “reconfigure categories”⁵³ in novel and richer ways. Computerized searching allows us to escape the bonds of formalism.⁵⁴

¶23 For many of the same reasons, computer-assisted research can be more creative than the old kind. Because pre-existing categories do not constrain it, electronic searching can proceed free from the filters of categorical thinking.⁵⁵ This freedom allows creativity and encourages law reform.⁵⁶

¶24 Robert Berring heralds computerized information delivery’s ability to breathe new life into the common law as attorneys base their arguments on different cases, forcing judges to take them into account as they formulate their opinions.⁵⁷ Computer-assisted research will also promote legal realism, because lawyers can find all the previous opinions of a judge and present them to him or

50. See, e.g., Post, *supra* note 11, at 98; Haigh, *supra* note 11, at 257; Berring, *Backing into the Future*, *supra* note 11, at 29; Berring, *Evolution*, *supra* note 11, at 311–14 (noting that the old conceptual universe of legally thinkable thoughts, reinforced by and reflected in West categories, is dying); Bast & Pyle, *supra* note 11, at 286–89 (computer-assisted legal research is ushering in a paradigm shift in the law itself); Bintliff, *supra* note 11, at 339 (“computer’s impact on law is conceivably greater and more fundamental than almost any other development of the last hundred years”).
51. See *supra* note 47 and accompanying text and *infra* note 55; Delgado & Stefancic, *supra* note 3, at 219–20 (noting effect of West system of key numbers and digest categories), 220–21 (questioning whether computerized searching solves this problem); Bintliff, *supra* note 11, at 341–44 (noting that West categories formerly guided thought); Berring, *Cognitive Authority*, *supra* note 11, at 1693 (same); Hanson, *supra* note 11, at 564, 570 (same); Dabney, *supra* note 11, at 8, 20 (noting that full-text systems contain little in the way of indexing, but by relying on the user to give structure to his or her search, they “put[] the success of the search . . . into (his or her) hands . . . and this may not be all good”).
52. KATSH, *DIGITAL WORLD*, *supra* note 11, at 68–69, 79–83; Katsh, *supra* note 47, at 479; Ethan Katsh, *Digital Lawyers: Orienting the Legal Profession to Cyberspace*, 55 U. PITT. L. REV. 1141, 1157–59 (1994). *But see* KATSH, *TRANSFORMATION OF LAW*, *supra* note 11, at 46 (warning that with electronic searching, law’s inconsistencies can also come to the fore as lawyers are able to find a case for practically every proposition, so that the myth of the rule of law comes into question).
53. See sources cited *supra* note 52. See also Hanson, *supra* note 11, at 585–86 (computerized searching can boost comparative method in which judges consider cases from other jurisdictions).
54. See Bast & Pyle, *supra* note 11, at 285–86; Hanson, *supra* note 11, at 581; Robert C. Berring, *Legal Research and Legal Concepts: Where Form Molds Substance*, 75 CAL. L. REV. 15, 26–27 (1987).
55. Bast & Pyle, *supra* note 11, at 285; Hanson, *supra* note 11, at 581; Katsh, *supra* note 47, at 477–78; Haigh, *supra* note 11, at 251 (disagreeing with Katsh); Schanck, *supra* note 11, at 19 (electronic searching frees searchers from the thrall of formalistic categories and opens up multifarious possibilities).
56. See sources cited *supra* note 53; Hanson, *supra* note 11, at 580, 585–88, 592.
57. Berring, *Backing into the Future*, *supra* note 11, at 56; Berring, *Cognitive Authority*, *supra* note 11, at 1690. *But see* Lien, *supra* note 11, at 91–92 (doubting that computerized searching will enhance law reform and progressive change).

her again.⁵⁸ Another writer, without giving specific examples, declared that legal academics became more creative when they used computerized research,⁵⁹ while two others predicted that computerization would usher in a “paradigm shift” in the way we practice law.⁶⁰

¶25 A few suggest that computerized research will render the law more humane, opening up comparative vistas that will enable the American legal system to burst the bonds of conservatism⁶¹ and escape a form of Eurocentric bondage in which one Anglo-American lawyer cites another in an unending chain.⁶²

¶26 A few point out that electronic searching feels good, even godlike.⁶³ With a computer, one can go anywhere, seemingly find anything. Today’s computer-savvy law students arrive expecting computerized instruction; they find the library “irrelevant.”⁶⁴ Lawyers at their computers believe themselves omnipotent, according to another commentator,⁶⁵ a confidence that two writers declare finds little support in the results achieved.⁶⁶

Looking a Little Deeper: Computerized Legal Research Is Subject to Many of the Same Limitations as the Paper-and-Pencil Kind (Although They Are Harder to See)

¶27 Some of the claims made on behalf of computers are true—they can retrieve cases and articles containing concrete, well-defined facts or situations far faster, and sometimes more comprehensively, than can researchers using traditional hard-

58. Berring, *Backing into the Future*, *supra* note 11, at 56; Hanson, *supra* note 11, at 580, 584, 587–89 (arguing that computers are breaking down hierarchy and disciplinary boundaries).

59. *See* Hanson, *supra* note 11, at 589–91 (citing trend to new interdisciplinary journals and areas of scholarship); *see also* Frederick Schauer & Virginia Wise, *Legal Positivism as Legal Information*, 82 CORNELL L. REV. 1080, 1108 (1997); Frederick Schauer & Virginia Wise, *Nonlegal Information and the Delegalization of Law*, 29 J. LEGAL STUD. 495 (2000) (asserting that the Supreme Court has become broader and more ecumenical in its citation practices since the advent of computers). *But see* Hellyer, *supra* note 11 (noting little change in California Supreme Court citation patterns during a recent period).

60. *See* Bast & Pyle, *supra* note 11, at 286–89; *see also* Haigh, *supra* note 11, at 256–62; Berring, *Evolution*, *supra* note 11, at 305, 311–13; Berring, *Collapse*, *supra* note 11, at 29, 34; Katsh, *supra* note 52, at 1164; KATSH, *DIGITAL WORLD*, *supra* note 11 (highlighting generally the many changes accompanying the digital revolution).

61. *See* Hanson, *supra* note 11, at 580; Berring, *Backing into the Future*, *supra* note 11, at 56; Lien, *supra* note 11, at 93; KATSH, *TRANSFORMATION OF LAW*, *supra* note 11, at 20 (arguing that automation is accelerating the rate of law change).

62. Haigh, *supra* note 11, at 261; Hanson, *supra* note 11, at 581 (positing that computer searching will boost legal realism and critical legal studies); *see also* Lien, *supra* note 11, at 93 (contending that automation may encourage broad international and comparative vistas); KATSH, *TRANSFORMATION OF LAW*, *supra* note 11, at 47–48 (suggesting that lawyers and judges are able to find secondary material—not just cases—more easily than before and therefore cite them as authority).

63. *See infra* note 87 and accompanying text.

64. Berring, *Evolution*, *supra* note 11, at 313; *see also supra* note 44 and accompanying text.

65. *See infra* note 87 and accompanying text.

66. *See* Bast & Pyle, *supra* note 11, at 292–93.

copy strategies.⁶⁷ But they lose their advantage when one searches for a target that is abstract or poorly defined.⁶⁸ And they are least useful where one needs them most—when trying to take the measure of a new legal problem or issue.⁶⁹

¶28 The problems with electronic searching include ones associated with the searcher, as well as ones that stem from the way data come encoded. On the user's side, computer searching can mire the researcher in a sea of facts.⁷⁰ It can suppress browsing and analogical reasoning, while giving the impression that one is freer, more creative than one really is.⁷¹ The reason behind many of these limitations is the same. The very categorical structure that limited paper-and-pencil searching, building in a bias for the status quo, appears in a new form—the straitjacket of conventional categories now limits the questions one may ask the computer and the searches one may devise. The terms and concepts—familiar from the old digest and index categories and reinforced by disciplinary habits, bar examination requirements, and the legal curriculum—that formerly steered searchers in predictable directions reappear in more insidious form. Now inscribed in our minds, they limit the questions a researcher can ask.⁷² Computers obligingly produce a great

67. *E.g.*, KATSH, *DIGITAL WORLD*, *supra* note 11, at 67 (computer searching faster), 70–73, 76 (more flexible, free-flowing, and comprehensive); Lien, *supra* note 11, at 89, 93 (same, but noting that it also exhibits a soulless quality). *But see* Haigh, *supra* note 11, at 249 (reporting studies showing electronic searching no faster than traditional kind), 261 (computer retrieval systems better at finding facts than abstract or complex concepts). *See also* Richard Delgado, *On Taking Back Our Civil Rights Promises: When Equality Doesn't Compute*, 1989 WIS. L. REV. 579, 581–87 (pointing out that even when computers do greatly aid the law reformer by enabling a legal researcher to demonstrate patterns of racial disparities, in a corporation's hiring record or pay practices, for example, legal doctrine adapts by retreating—*e.g.*, by demanding more stringent standards of proof or causation—so that a Title VII lawyer remains no better off).
68. *E.g.*, Berring, *Backing into the Future*, *supra* note 11, at 38–39, 46–48; Bast & Pyle, *supra* note 11, at 293; Haigh, *supra* note 11, at 261; Delgado & Stefancic, *supra* note 3, at 221; Dabney, *supra* note 11, at 19; Bintliff, *supra* note 11, at 346–47; Jon Bing, *Performance of Legal Text Retrieval Systems: The Curse of Boole*, 79 LAW LIBR. J. 187, 193 (1987).
69. *See infra* ¶¶ 29–33. Computerized searching is also expensive, especially for the solo practitioner, legal services attorney, or pro se litigant. *See* SVENGALIS, *supra* note 43 (2004). Open source computer software (www.opensource.org) and Creative Commons (<http://creativecommons.org>) technology mitigate this harshness to some extent.
70. *See supra* notes 68–69 and accompanying text; *infra* notes 73–74 and accompanying text; *see also* Lien, *supra* note 11, at 92, 100; Bast & Pyle, *supra* note 11, at 297; Hanson, *supra* note 11, at 582–83; Haigh, *supra* note 11, at 249, 256.
71. *See* sources cited *supra* note 49; Berring, *Collapse*, *supra* note 11, at 19 n.19 (citing JOHN R. SEARLE, *THE REDISCOVERY OF THE MIND* (1992) and pointing out how conceptual schemas inscribed in our brains channel what we can think, regardless of the technology we are employing at the moment); Lien, *supra* note 11, at 125 (pointing out that excessive computer use can reinforce the weaknesses of analytical thinking at the expense of the global version); *see also* Bintliff, *supra* note 11, at 350.
72. *Compare* Haigh, *supra* note 11, at 261 (implying that computer users may, because of thought patterns instilled in law school and textbooks, ask unimaginative queries), *and* Dabney, *supra* note 11, at 8, *and* Berring, *Cognitive Authority*, *supra* note 11, at 1693 (noting that West categories mirrored the divisions in the first-year law school curriculum), *and* Berring, *Evolution*, *supra* note 11, at 309–10 (noting that Blackstone, Langdell, the traditional law school curriculum, and West categories all reinforce a common mindset and determine what, for lawyers, is thinkable). For discussions of ways that common mental quirks, irrational habits and preferences, and other forms of ingrained cognitive thought patterns channel legal and ordinary behavior, *see, e.g.*, Ronald Chen & Jon Hanson, *Categorically Biased: The Influence of Knowledge Structures on Law and Legal Theory*, 77 S.

deal of information; the searcher feels in control. We feel that our problem is only one more search away. But, like ace detective Dupin, we may easily find ourselves looking in the wrong direction.

Problems Associated with the User

¶29 **Drowning in a sea of facts (perseverating).** Computers are better at searching for cases containing particular facts than ones presenting abstract ideas.⁷³ For example, imagine that one's client is an African American woman who has been fired because she came to work one day wearing her hair in braids.⁷⁴ Her employer, who likes black men and white women, has fired her for wearing a hair style he associates with black women, who he thinks are defiant and hard to control. Black men and white women enjoy much greater latitude in how they can wear their hair at work.

¶30 To find out how other Title VII cases have dealt with this question, the lawyer searches for cases containing the terms "discrimination," "African American woman," "hair," and "braids." The search turns up only a handful of cases, none on point, so the lawyer broadens the search to include African Americans of either sex fired for wearing their hair in cornrows or Afros, or for wearing blond wigs. Again finding relatively few cases (and even fewer that were successful), the lawyer again broadens the search to include Asian American plaintiffs who wore their hair in pigtails, Sikhs who wore turbans, and teenagers who incurred the wrath of school authorities for wearing their hair in Mohawks or dyed purple.

¶31 The lawyer, in short, focuses on the most distinctive fact of his case—that his client suffered workplace discipline for her hairstyle—and frames the search accordingly. This way of proceeding leads to a theory of the case as a deprivation of a right to personal appearance—in short, as a substantive due process claim seeking relief under Title VII or the Equal Protection Clause. This claim has only a remote chance of prevailing.

¶32 What the lawyer can easily overlook is that the case calls for a new theory of *intersectional discrimination*.⁷⁵ The client, who is both a woman and an African American, suffers a form of discrimination targeted against her on account of her

CAL. L. REV. 1103 (2003); Christine Jolls et al., *A Behavioral Approach to Law and Economics*, 50 STAN. L. REV. 1471 (1997); Cass R. Sunstein, *Behavioral Analysis of Law*, 64 U. CHI. L. REV. 1175 (1997); Jon D. Hanson & Douglas A. Kysar, *Taking Behavioralism Seriously: The Problem of Market Manipulation*, 74 N.Y.U. L. REV. 630 (1999).

73. See *supra* notes 67–69; Post, *supra* note 11, at 98–99; Lien, *supra* note 11, at 89, 93, 123–25 (computerized searches reinforce weaknesses of concrete, analytic thinking style), 130, 133; Hanson, *supra* note 11, at 575, 578–79.

74. For an earlier treatment of this example, see Delgado & Stefancic, *supra* note 3, at 219–20. For analysis of the general problem of the intersectional client, see Paulette M. Caldwell, *A Hair Piece: Perspectives on the Intersection of Race and Gender*, 1991 DUKE L.J. 365 (discussing *Rogers v. American Airlines, Inc.*, 527 F. Supp. 229 (S.D.N.Y. 1981)).

75. See Caldwell, *supra* note 74, at 371–81. For further discussion of this idea, see Richard DELGADO & JEAN STEFANCIC, *CRITICAL RACE THEORY: AN INTRODUCTION* 9, 51–56, 100, 149 (2000).

black womanhood. Her employer, who does not discriminate against black men (perhaps finding them ebullient, musical, and fun to talk sports with on Monday)⁷⁶ nor against white women (perhaps finding them ornamental or comforting, like his mother), is biased against black women and eventually finds a pretext for firing each one.⁷⁷ Suing for either sex- or race-based discrimination alone is likely to fail, for the employer can truthfully say that he is not prejudiced against blacks (in particular, not against black men) or women (who are white, that is), indeed has many of both kinds of employee in his workplace and gets along with them fine. Title VII needs to develop a theory of intersectional discrimination for cases, like this, lying at the intersection of two protected categories but unprotected by either, but will not do so if attorneys fixate on the factual specifics of particular cases, overlooking the need to develop new law to fill in the gap in Title VII coverage.

¶33 **Losing the opportunity to browse or frame a metaphor.** Computers can render their users less creative in other ways. For example, a searcher who begins with an index category in a legal digest or practice guide is likely at least to glance at adjacent categories. This browsing encourages the development of analogical or metaphorical reasoning and legal arguments that stretch existing theories to cover new factual settings.⁷⁸ For example, in the case mentioned above, the lawyer who pursues a traditional search with the aid of hard-copy materials might easily find a reference to very recent law review articles by critical race feminists discussing intersectional discrimination.⁷⁹ The lawyer might also come across discussions of novel theories for nontraditional plaintiffs, such as gay couples,⁸⁰ animals,⁸¹ indeterminate plaintiffs,⁸² or inanimate objects⁸³ that might suggest that the African

76. See Mitu Gulati & Devon Carbado, *Working Identity*, 85 CORNELL L. REV. 1259 (2000).

77. That is, the employer does not dislike blackness, per se—he gets along fine with black men. And by the same token, he can say truthfully that he is not biased against women—in particular he likes ones who are white. He is just biased against black women like the client.

78. See *supra* notes 70–71 and accompanying text; Haigh, *supra* note 11, at 248, 261; Berring, *Backing into the Future*, *supra* note 11, at 54; Steven Alan Childress, *The Hazards of Computer-Assisted Research to the Legal Profession*, 55 OKLA. B.J. 1531, 1533 (1984). Computer-generated lists of cases emerge from the printer devoid of any context. The user gains little information about a case's history, predecessors, or the cultural setting that gave rise to it. Rita Reusch, *The Search for Analogous Legal Authority: How to Find it When You Don't Know What You are Looking For*, LEGAL REFERENCE SERVICES Q., 1984, no. 3, at 33; Haigh, *supra* note 11, at 247, 251; Lien, *supra* note 11, at 101, 128.

79. E.g., Caldwell, *supra* note 74; Richard Delgado, *Rodrigo's Sixth Chronicle: Intersections, Essences, and the Dilemma of Social Reform*, 68 N.Y.U. L. REV. 639 (1993); Sumi K. Cho, *Converging Stereotypes in Racialized Sexual Harassment: Where the Model Minority Meets Suzie Wong*, 1 J. GENDER, RACE & JUST. 177 (1997).

80. E.g., William N. Eskridge, Jr., *A Jurisprudence of "Coming Out": Religion, Homosexuality, Collisions of Liberty and Equality in American Public Law*, 106 YALE L.J. 2411 (1997); Andrew Koppelman, *Why Discrimination Against Lesbians and Gay Men Is Sex Discrimination*, 69 N.Y.U. L. REV. 197 (1994); Janet E. Halley, *Sexual Orientation and the Politics of Biology: A Critique of the Argument from Immutability*, 46 STAN. L. REV. 503 (1994); Joe Rollins, *Same-Sex Unions and the Spectacles of Recognition*, 39 LAW & SOC'Y REV. 457 (2005).

81. E.g., GARY L. FRANCIONE, ANIMALS, PROPERTY, AND THE LAW (1995); Gary Francione, *Animal Rights Theory and Utilitarianism: Relative Normative Guidance*, 3 ANIMAL L. 75 (1997).

82. E.g., Richard Delgado, *Beyond Sindell: Relaxation of Cause-in-Fact Rules for Indeterminate Plaintiffs*, 70 CALIF. L. REV. 881 (1982).

83. E.g., Christopher Stone, *Should Trees Have Standing? Toward Legal Rights for Natural Objects*, 45 S. CAL. L. REV. 450 (1972).

American woman, too, needs a new legal theory for the form of discrimination she has endured. Since a searcher who uses one of the two main electronic legal databases is unlikely to engage in conceptual browsing,⁸⁴ these alternative theories might easily remain undeveloped.

¶34 **Unwarranted confidence.** More importantly, a computer cannot be discontented. A client can, and an attorney may have a nagging feeling that the law governing her client's case is inadequate. But the impulse to pursue a better avenue cannot come from a computer. All the pieces of a law reform case may lie somewhere in a database,⁸⁵ but lacking in context. The decision to put them together in a novel way must come from a human researcher. Only a human can realize that legal remedies and social needs are out of step. Only a human can imagine a better world. That act of imagination requires stepping back and pondering history, politics, and the development of case law over time.⁸⁶ Looking for ever more cases about clients who suffered adverse consequences for wearing their hair the wrong way is not the way to make that imaginative leap. Mindless computer searching can remove the researcher even further from a solution than when he began. And because computer users feel omnipotent, even godlike,⁸⁷ the state of dissatisfaction that law reform presupposes may be slow in coming.

84. The recent introduction of links and hypertext in computerized databases solves part of this problem. But it remains coercive and editor-driven, and reintroduces the problem of narrow authority and mindset of which we wrote in our earlier article. See Delgado & Stefancik, *supra* note 3, at 221–22. On hypertext and electronic links, see Katsh, *supra* note 52, at 1141, 1150–51. On the possibility that future databases might ameliorate this problem, see *infra* note 112.

85. For example, when Samuel Warren and Louis Brandeis invented the tort of invasion of the right of privacy, they built on recognition of a host of related rights, such as freedom from unlawful searches and seizures. See Samuel D. Warren & Louis D. Brandeis, *The Right to Privacy*, 4 HARV. L. REV. 193 (1890); William L. Prosser, *Privacy*, 48 CAL. L. REV. 383 (1960). Prosser also wrote about privacy in his famous hornbook on torts, WILLIAM L. PROSSER & W. PAGE KEETON ET AL., PROSSER AND KEETON ON THE LAW OF TORTS (5th ed. 1984). Prosser built on the earlier work of Warren and Brandeis in his 1960 solo article, and broke the tort into four distinct torts. See also THOMAS M. COOLEY, A TREATISE ON THE LAW OF TORTS 29 (1st ed. 1880), a very early piece about “the right to be let alone.” For the observation that electronic searching yields cases without context, see Bast & Pyle, *supra* note 11, at 298; Haigh, *supra* note 11, at 247 (“electronic data remove this context and create the impression of information that comes from nowhere, outside of time”); Lien, *supra* note 11, at 128, 130.

Simple ignorance may impede other researchers. A database may contain a wealth of information under a legal term of art, but the user may not know it; or perhaps a judge writes “this precedent can no longer guide us” but a search on “overruled” would not find that statement.

86. Steve Lubet, *Trial Theory and Blind Poetics*, 100 NW. U. L. REV. 295, 295 (2006) (“Every successful case starts with an act of imagination”); George Taylor, *Legal Consciousness and Ricoeur’s Theory of Imagination* (2006) (unpublished manuscript, on file with authors).

87. E.g., Bintliff, *supra* note 11, at 345, 349; Berring, *Evolution*, *supra* note 11, at 313; Bast & Pyle, *supra* note 11, at 292–93. Users feel important and in control. Because they can, theoretically, find anything, they believe they have mastered the material. Like law professors writing an article who photocopy dozens of cases and articles, rationalizing “I’ll read them later,” they believe they have the situation well in hand. See Lien, *supra* note 11, at 118 (students equated ability to access material with mastery of it). By the same token, the electronic searcher who quickly and easily finds a case or two can stop too soon—before encountering further material that might enable him or her to take the analysis to a deeper level. Barkan, *supra* note 11, at 632 n.77 (citing KARL LLEWELLYN, JURISPRUDENCE: REALISM IN THEORY AND PRACTICE 82 (1962)) (describing the tendency in any form of thinking to be satisfied with the most available material).

¶35 **Imagining new worlds.** New ideas come from turning a structure of thought on its side and looking at it in a new way—flipping it or turning it inside out.⁸⁸ In race relations, for example, one thinks of white privilege⁸⁹ or challenges to the black-white binary paradigm of race.⁹⁰ The first development challenges us to imagine a world in which whites are not bearers of privilege and recipients of a system of reciprocal “courtesies,” a world where *courtesy*, usually thought of as a good, was bad.⁹¹ A focus on white privilege flips the usual civil rights question, which asks whether an act by a white suppressing a Latino or black is actionable. It asks, instead, whether whites’ distribution of *benefits* to each other, to the exclusion of members of out-groups, is actionable.⁹² And the second concept—of a black-white binary paradigm of race⁹³—challenges us to examine whether a body of civil rights statutes and cases framed with black history in mind can deal adequately with the injuries non-black groups suffer, such as discrimination on the basis of a foreign accent, suspected undocumented status, national origin, or stereotypes as sneaky, lazy, or devious.⁹⁴ Many new legal ideas come about the same way—by turning a thought structure around and asking a novel question. In race relations law, the duty to make reparations to Latinos for stolen lands⁹⁵ or blacks because of slavery⁹⁶ appeared frustrated by the simple passage of time. But what if one imagined a world where the duty to make good for old injuries increased, rather than decreased, over time because of interest-compounding; or one where mixed causation and indeterminacy in the plaintiff class was handled by prorating harms,⁹⁷ not declaring them noncompensable? What if one imagined a world where outsiders did not need to “cover” or conceal the ground of their differentness, as many gays, lesbians, and light-skinned minorities do?⁹⁸ It seems unlikely

88. See Richard Delgado, *The Current Landscape of Race: New Targets, Old Opportunities*, 104 MICH. L. REV. 1269, 1270 (2006).

89. *Id.* at 1271, 1279–80. See generally PEGGY MCINTOSH, WHITE PRIVILEGE AND MALE PRIVILEGE: A PERSONAL ACCOUNT OF COMING TO SEE CORRESPONDENCES THROUGH WORK IN WOMEN’S STUDIES (1988); STEPHANIE WILDMAN, PRIVILEGE REVEALED: HOW INVISIBLE PREFERENCE UNDERMINES AMERICA (1996).

90. See, e.g., Juan Perea, *The Black-White Binary Paradigm of Race*, 85 CAL. L. REV. 1213 (1997); Richard Delgado, *Rodrigo’s Fifteenth Chronicle: Racial Mixture, Latino-Critical Scholarship, and the Black-White Binary*, 75 TEX. L. REV. 1181 (1997).

91. See Delgado, *supra* note 88, at 1279–80.

92. *Id.*

93. See Perea, *supra* note 90.

94. These stereotypes are ones that the dominant society assigns to Latinos and some Asians, but does not often assign to blacks. See, e.g., Richard Delgado & Jean Stefancic, *Images of the Outsider in American Law and Culture: Can Free Expression Remedy Systemic Social Ills?* 77 CORNELL L. REV. 1258, 1270–75 (1992); Richard Delgado, *Derrick Bell’s Toolkit: Fit to Dismantle that Famous House?* 75 N.Y.U. L. REV. 283, 298 (2000).

95. See generally U.S. GEN. ACCOUNTING OFFICE, TREATY OF GUADALUPE HIDALGO: FINDINGS AND POSSIBLE OPTIONS REGARDING LONGSTANDING COMMUNITY LAND GRANT CLAIMS IN NEW MEXICO (2004), available at <http://www.gao.gov/new.items/d0459.pdf>.

96. See, e.g., Charles Ogletree, Jr., *Repairing the Past: New Efforts in Reparations Debate in America*, 38 HARV. C.R.-C.L. L. REV. 279 (2003); RANDALL ROBINSON, THE DEBT: WHAT AMERICA OWES TO BLACKS (2000).

97. See Delgado, *supra* note 82, at 891–908.

98. See generally KENJI YOSHINO, COVERING: THE HIDDEN ASSAULT ON OUR CIVIL RIGHTS (2006) (discussing this psychological strategy); Gulati & Carbado, *supra* note 76, at 1308 n.125.

that computer searching, with its emphasis on the concrete, offers a pathway to new theories such as these.⁹⁹

¶36 **Formalism and perseverance.** Computer searching teaches formalism, a conservative approach to law, because it conceals the lesson of contingency. It masks how most decisions could easily have gone the other way.¹⁰⁰ It is like a wide-angle lens that lets you see more, not a telescope that lets you see further or a microscope that allows you to see more deeply into something. Legal innovation requires dissatisfaction with the world and a personal commitment to making it better.¹⁰¹ Mindlessly scanning an infinitude of cases about workers with hair problems is unlikely to strengthen either of these prerequisites. Computerized research may occasionally help an attorney locate one case, different in some minute respect from the others, where the judge ruled favorably. But the attorney who fails to find such a case can do little but send the client away with the words, “Sorry, the law is not in our favor.”

¶37 Consider, again, the case of the black woman fired for wearing her hair in a style (braids) her supervisor associates with African Americans.¹⁰² As we have seen, neither traditional hard-copy nor electronic searching would have provided much assistance, at least early on. What about the next case? Until an appellate judge upholds a theory of intersectional discrimination and calls it by that name, the second litigant is apt to find herself little better off. Imagine that this second worker is an African American woman fired, not for wearing her hair in braids but in cornrows. The attorney researching the second case may fail to find the first case because the computer is highly literal; it finds no cornrow cases. But even if the attorney broadens the search to include hair worn in styles common in minority communities, such as braids, pigtails, turbans, Afros, and cornrows, and so comes across the first case, the judge may well decide that the first judge was overreacting (“hair is such a small thing, why, when I was in the Army. . . .”) and decline to follow it. Skimming the first case on his office computer, the second judge may decide it is an ordinary due process case about the right of personal appearance. Electronic searching can thus lead to judicial minimalism—narrow, fact-based

99. *E.g.*, Hanson, *supra* note 11, at 7, 10–12; Lien, *supra* note 11, at 89, 123–24, 130, 133. An interdisciplinary scholar, of course, confronts the practical problem of devising word searches employing the vocabularies and terms of more than one discipline.

100. *E.g.*, Lien, *supra* note 11, at 126–33. *But see* Barkan, *supra* note 11, at 636 (positing that electronic searching may reinforce formalism and the search for the one right answer somewhat less than the old paper-and-pencil kind); Schanck, *supra* note 11, at 13 (noting that “one can be a Legal Realist and still use the term ‘authority’ without being contradictory”). It is noteworthy that computer searching only informs you what cases a judge followed; it does not tell you which ones he did not follow, because judges rarely list these—just as they usually do not list facts that cut “the other way.” They simply ignore them.

101. *See* GERALD LOPEZ, *REBELLIOUS LAWYERING: ONE CHICANO’S VISION OF PROGRESSIVE LAW PRACTICE* (1992); Julie A. Su, *Making the Invisible Visible: The Garment Industry’s Dirty Laundry*, 1 J. GENDER, RACE & JUST. 405 (1998); Richard Delgado & Jean Stefancic, *Norms & Narratives: Can Judges Avoid Serious Moral Error?* 69 TEX. L. REV. 1929 (1991).

102. *See supra* ¶¶ 29–33.

decision making that ignores emerging legal theories and decides cases on the narrowest possible grounds.¹⁰³

¶38 Computer searching is better at helping one find concrete examples rather than broad, abstract patterns—unless, of course, these happen to be ones the searcher is expressly looking for. And fact-based searching by itself does little to help organize disparate strands of cases into a new legal theory and can easily cause you to miss one that is emerging in another jurisdiction.

¶39 **Driving us apart.** With Internet searching (as opposed to the case law kind) another limitation sets in. Internet use can polarize society by encouraging users with pre-existing proclivities to find material that reinforces what they already believe.¹⁰⁴ Conservatives search for conservative Web sites, liberals consult liberal ones. Lawyers with an interest in original intent look for articles, books, and blogs supporting that idea; lawyers interested in documenting the failures of supply-side economics read material supporting that. The impulse to come to terms with the world as it is can atrophy as one reads more and more material that reinforces one's views. Needless to say, lawyers who are trapped in their worldview to the point where they cannot comprehend the other side or make a balanced argument will be poor agents for law reform.

Problems Associated with the Way Information Appears in Electronic Databases

¶40 In addition to problems stemming from the human user, a second set arises because of the way data appear in electronic collections. Consider, for example, newspaper files and Web pages.

¶41 A recent report showed that newspaper headline editors are beginning to compose titles for articles that are literal and concrete.¹⁰⁵ Formerly, they might have devised a title that included a double entendre, a literary or historical reference, or one that placed the story in a larger social setting. The impetus behind the new literal titles is the need to make sure that LexisNexis searchers find the story; an allusive title might appeal to the educated reader but result in fewer hits.¹⁰⁶ This trend, while improving access, reduces the number of associations a reader is likely to make between this article and another he or she may have read. If the user is a lawyer trying to make sense of an emerging legal problem, it makes the news less likely to suggest a promising lead.

103. On the philosophy of judicial minimalism, *see, e.g.*, Margaret J. Radin & Frank Michelman, *Pragmatist and Poststructural Critical Legal Practice*, 139 U. PA. L. REV. 1019 (1991).

104. *See* CASS SUNSTEIN, *REPUBLIC.COM* (2001). On the creation of a second, generational gap, *see supra* notes 44–45.

105. Steve Lohr, *This Boring Headline is Written for Google*, N.Y. TIMES, Apr. 9, 2006, at 14 (Week in Review).

106. *Id.*

¶42 Internet searching presents a different obstacle. Most material on the Internet comes arranged in order of frequency of use.¹⁰⁷ Web sites and home pages that previous users have visited many times appear high on the page, less used ones further down.¹⁰⁸ This “popularity contest” approach to listing information builds in a structural bias in favor of commonplace items that have found wide use. Heretical or new ideas that are just beginning to be noticed may easily escape the attention of a busy searcher.

¶43 Running through most of these problems with electronic searching is the limitation mentioned earlier: We can only search in terms of categories and words.¹⁰⁹ And if these categories are the same ones that appeared in the hard-copy searching we performed in a previous era, transferring our query from a decennial digest volume to a computerized database is apt to bring few gains. Indeed, replacing hard-copy searching with the computerized version can introduce a new set of problems. It can mire us in facts,¹¹⁰ bring us into contact with material organized in traditional and unimaginative fashion,¹¹¹ and discourage browsing and analogical thinking¹¹²—all the while making us believe we are fully in control,¹¹³ when reform requires anxiety and discontent with the world as it is.¹¹⁴

¶44 For all these reasons, one should hesitate to award computerized legal research high marks for its contribution to law reform and innovation. The concluding section reinforces these reservations by briefly reviewing the pace of law reform in a few selected areas.

The Pace of Law Reform Before and After the Advent of Computerized Research

¶45 The 1960s were a period of legal ferment. Legal services attorneys developed theories of wrongful and constructive eviction, repair and deduct, and a host of similar remedies for poor renters.¹¹⁵ Consumer advocates developed the implied

107. See, e.g., Berring, *Evolution*, *supra* note 11, at 316; see also Google, Our Search: Google Technology, <http://www.google.com/technology> (last visited Dec. 19, 2006) (explaining how the company arrives at its search locations).

108. Berring, *Evolution*, *supra* note 11, at 316.

109. See *supra* note 17 and accompanying text.

110. See *supra* notes 67–70 and accompanying text.

111. See *supra* note 74 and accompanying text and ¶ 35.

112. See *supra* ¶ 33. To be sure, some of these problems are merely technical, so that later generations of computer designers could solve them by, for instance, building in a display more conducive to browsing than the present one.

113. See *supra* ¶ 34.

114. See *supra* ¶¶ 34–35. Of course, commercial database may reintroduce elements of the print-based system in the form of programs like KeySearch, which are thesaural in nature and based on the old key number system. This merely defeats the power of computers. See Lee Peoples, *The Death of the Digest and the Pitfalls of Electronic Research*, 97 LAW LIB. J. 661, 666, 675 (2005).

115. On the development of this remedy, which allows a tenant whose landlord has refused to fix a dangerous stairway or other condition to repair it himself and deduct the cost from next month's rent, see Special Project, *Self-Help: Extrajudicial Rights, Privileges and Remedies in Contemporary American Society* (pt. 2 of 2), 37 VAND. L. REV. 845, 954–63 (1984).

warranty of merchantability and theories to challenge ex parte repossessions of items purchased on installment contracts.¹¹⁶ Early feminists insisted on the value of women's work and demanded that women's occupations, such as nursing and teaching, should receive pay equal to that of traditional men's jobs.¹¹⁷ Lawyers for the poor developed the notion of unconscionable contracts and contracts of adhesion.¹¹⁸ Draft counselors and selective service attorneys broadened conscientious objection to include belief systems that played a part in the life of an objector comparable to that which Quakerism or the Mennonite religion played in the life of a registrant clearly entitled to exemption.¹¹⁹

¶46 Just before this period, civil rights lawyers in *Mendez v. Westminster School District*¹²⁰ (and later *Brown v. Board of Education*¹²¹) attacked separate but equal schools by demonstrating that they could never be equal because they stigmatized children assigned there on account of race. Criminal attorneys and public defenders broadened search-and-seizure law¹²² and that of forced confessions,¹²³ and established the right of an indigent defendant to an appointed attorney.¹²⁴ Early critical race theorists challenged free speech orthodoxy,¹²⁵ the usefulness of liberal remedies,¹²⁶ imperial scholarship,¹²⁷ and the inherent conflict of interest in much public interest litigation when the attorney wants one thing—usually establishment of a pristine new right—and the client another.¹²⁸

116. See, e.g., *Sniadach v. Family Fin. Corp.*, 395 U.S. 337 (1969); *Fuentes v. Shevin*, 407 U.S. 67 (1972).
117. On the theory of "comparable worth," that nurses, for example, should receive pay equal to that of electricians, see, e.g., Ruth G. Blumrosen, *Wage Discrimination, Job Segregation, and Title VII of the Civil Rights Act of 1964*, 12 U. MICH. J.L. REF. 399 (1979). On the development of theories that housework should receive value, see, e.g., JOAN WILLIAMS, *UNBENDING GENDER: WHY FAMILY AND WORK CONFLICT AND WHAT TO DO ABOUT IT* 172–75 (2000).
118. See, e.g., Friederick Kessler, *Contracts of Adhesion—Some Thoughts About Freedom of Contract*, 43 COLUM. L. REV. 629 (1943).
119. See, e.g., *Seeger v. United States*, 380 U.S. 163 (1965); *Welsh v. United States*, 398 U.S. 333 (1970).
120. 161 F.2d 774 (9th Cir. 1947).
121. 347 U.S. 483 (1954).
122. *Mapp v. Ohio*, 367 U.S. 643 (1961).
123. *Miranda v. Arizona*, 384 U.S. 436 (1966).
124. *Gideon v. Wainwright*, 372 U.S. 335 (1963).
125. E.g., Richard Delgado, *Words That Wound: A Tort Action for Racial Insults, Epithets, and Name-Calling*, 17 HARV. C.R.-C.L. L. REV. 133 (1982); Charles Lawrence, *If He Hollers, Let Him Go: Regulating Racist Speech on Campus*, 1990 DUKE L.J. 431; Mari Matsuda, *Public Response to Racist Speech: Considering the Victim's Story*, 87 MICH. L. REV. 2320 (1989); DELGADO & STEFANCIC, *supra* note 75, at 20–24, 27–28, 31–32, 70, 116–18, 147.
126. E.g., Alan D. Freeman, *Legitimizing Racial Discrimination through Antidiscrimination Law: A Critical Review of Supreme Court Doctrine*, 62 MINN. L. REV. 1049 (1978); Kimberlé Crenshaw, *Race, Reform, and Retrenchment: Transformation and Legitimation in Antidiscrimination Law*, 101 HARV. L. REV. 1331 (1988); DELGADO & STEFANCIC, *supra* note 75, at 57–58, 121–25, 150.
127. See generally Richard Delgado, *The Imperial Scholar: Reflections on a Review of Civil Rights Literature*, 132 U. PA. L. REV. 561 (1984).
128. See generally Derrick Bell, *Serving Two Masters: Integration Ideals and Client Interests in School Desegregation Litigation*, 85 YALE L.J. 470 (1976).

¶47 In environmental law, one thinks of Chris Stone's championing of legal rights for natural objects¹²⁹ and the notion that trees should have standing. One thinks, as well, of Joe Sax's suggestion that we consider ourselves in a trust-like relationship to the natural world with an obligation to preserve that world for future generations.¹³⁰

¶48 None of these innovations seems to have received a boost from electronic searching; indeed, the pace of law reform seems to have slowed since it arrived in the early 1980s. Color-blind jurisprudence has slowed the pace of racial reform,¹³¹ and when legislators imposed tort reforms limiting the ability of consumers and victims of medical malpractice to recover for their injuries,¹³² the tort bar had little response. Similarly, when conservative judges and legislators began limiting consumer remedies, for example, by insisting that patients mediate their claims against HMOs and doctors who committed malpractice,¹³³ lawyers responded with no new legal theories, even though many were (and still are) available.¹³⁴ (Why not, for example, a cause of action for bad-faith mediation against HMOs that routinely deny malpractice claims or requests for referral to a specialist, all in order to keep costs down?) On some governmental agency Web sites, information that might have aided law reformers, but is critical of the current administration, has simply disappeared.¹³⁵ And critical race theory, after a highly productive first ten years, seems to be bogged down in discourse analysis and identity politics.¹³⁶

¶49 Of course, many factors—conservative Republican administrations, a backlash against the “wild” sixties and seventies, and globalization—may have

129. Stone, *supra* note 83.

130. See JOSEPH SAX, MOUNTAINS WITHOUT HANDRAILS: REFLECTIONS ON THE NATIONAL PARKS (1980); Joseph L. Sax, *The Public Trust Doctrine in Natural Resource Law: Effective Judicial Intervention*, 68 MICH. L. REV. 471 (1970); see also Richard Delgado, *Our Better Natures: A Revisionist View of Joseph Sax's Public Trust Theory of Environmental Protection, and Some Dark Thoughts on the Possibility of Law Reform*, 44 VAND. L. REV. 1209 (1991).

131. See *City of Richmond v. Croson*, 488 U.S. 469 (1989); *Adarand Constructors, Inc. v. Peña*, 515 U.S. 200 (1995); MICHAEL BROWN ET AL., COLOR-BLIND RACISM (2005); LESLIE G. CARR, “COLOR-BLIND” RACISM (1997); DELGADO & STEFANCIC, *supra* note 75, at 7, 21–23, 103–07, 144 (discussing color-blind jurisprudence).

132. On tort reform, see Michael Rustad & Thomas Koenig, *The Historical Continuity of Punitive Damages Awards: Reforming the Tort Reformers*, 42 AM. U. L. REV. 1269 (1993).

133. On the trend toward mediation of these claims, see Ann H. Nevers, *Medical Malpractice Arbitration in the New Millennium: Much Ado About Nothing?* 1 PEPP. DISP. RESOL. L.J. 45 (2000).

134. A few new legal approaches came about in connection with cigarette and pharmaceutical mass torts. See David Cay Johnston & Melanie Warner, *Tobacco Makers Lose Key Ruling on Latest Suits*, N.Y. TIMES, Sept. 26, 2006, at A1 (court certifies class action brought by smokers of light cigarettes promoted as safer).

135. See Susan Nevelow Mart, *Let the People Know the Facts: Can Government Information Removed from the Internet be Reclaimed?* 98 LAW. LIBR. J. 7, 14–21 (2006) (documenting the removal of information by the Department of Labor, the National Cancer Institute, the Civil Rights Commission, and other agencies from their Web sites).

136. On the way critical race theory has strayed from hard-edged materialist analysis of race and racial history toward a more abstract focus on “discourse,” see, e.g., Richard Delgado, *Crossroads and Blind Alleys: A Critical Examination of Recent Writing about Race*, 82 TEX. L. REV. 121 (2003); Symposium, *Going Back to Class*, 11 MICH. J. RACE & L. 1 (2005).

played a part in slowing the pace of law reform, at least of the progressive kind.¹³⁷ If, as this cursory review suggests, computerized searching has not been a godsend for legal reformers and may have actively impeded the search for new theories and remedies, what is to be done about it? How can we continue to enjoy the speed and convenience of online searching without incurring the costs it can easily exact?

Conclusion

¶50 One possibility that we must entertain is that when searching for a new legal remedy, we should turn our computers off. Lawyers interested in representing clients who (unlike corporations) do not find a ready-made body of developed law in their favor need to spend time with the computer shut down, mulling over what an ideal legal world would look like from the client's perspective. Such lawyers need to practice thinking "outside the box," reinventing, modifying, flipping, and radically transforming legal doctrines and theories imaginatively and in brainstorming sessions with other reformist lawyers. In this exercise, the free association of ideas, policies, and social needs will play a large part—the eleventh or twelfth case of an African American worker denied a promotion because of her hairstyle will not.

¶51 Lawyers need to be aware of what computers can and cannot do, and how some of the most frustrating limitations are ones that come embedded in our conceptual repertoires.¹³⁸ Some of these limitations hampered old-fashioned paper-and-pencil searching. But the computer revolution has not eliminated them because the law school curriculum, CLE courses, bar examinations, and the structure of legal practice encourage us to think along predictable lines. To break loose from hidebound patterns requires more than vast quantities of material linked by some common fact. It requires a conceptual advance that sees old material in a new light. A computer is good at showing you what is. It cannot show you what might be. Believing so is an abdication of one's responsibility as a lawyer and an agent for change.

137. Conservative think tanks and litigation centers have been highly active, even "creative" during this period. *See generally* MANUEL GONZALES & RICHARD DELGADO, *THE POLITICS OF FEAR* (2006).

138. Other limitations are built into the very architecture of cyberspace—what Lawrence Lessig calls the code. *See* Bast & Pyle, *supra* note 11, at 299–302 (citing LAWRENCE LESSIG, *CODE AND OTHER LAWS OF CYBERSPACE* (1999)). Attorneys who search blithely unaware of how the code structures what they can find on their computer will suffer from a second, equally insidious form of determinism.