Valé Bunny Watson? Law Librarians, Law Libraries, and Legal Research in the Post-Internet Era*

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Katharine Hepburn's entertaining portrayal of reference librarian Bunny Watson in Desk Set *(1957) moves her character from apprehension about new technology to an understanding that it is simply another tool. This article outlines the impact of technology on academic legal research. It examines the nature of legal research and the doctrinal method, the importance of law libraries (and librarians) in legal research, and the roles and implications of the Internet and web search engines on legal research methods and education.*

Introduction

¶1 The 1957 movie *Desk Set* opens in the offices of the Federal Broadcasting Network and features Bunny Watson (Katharine Hepburn) as the network's reference librarian. The action takes place during the "*Mad Men* era,"[1] with Bunny's character being reminiscent of Agnes E. Law, who built up the CBS (formerly known as the Columbia Broadcasting System) network's research library. This was a few years after Alan Turing's death, and the reverberations from his work on "computing machines" were emerging.[2] In the film, the network purchases two computers to help the library and accounting staffs cope with the extra work that will result from a secret merger. The library's "electronic brain" is an EMERAC, the acronym no doubt a reference to the early generation computers UNIVAC and ENIAC (1945).[3] Richard Sumner (Spencer Tracy) comes to work in the library to

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1. *See Mad Men,* AMC, http://www.amctv.com/shows/mad-men (last visited Dec. 10, 2014).

2. *See* Alan M. Turing, *On Computable Numbers, with an Application to the Entscheidungsproblem,* 42 Proc. London Mathematical Soc'y 230 (1937).

3. ENIAC had the slogan "Making Machines Do More, So That Man Can Do Less." *See also* Jon Bing, *Let There Be Lite: A Brief History of Legal Information Retrieval*, 1 Eur. J.L. & Tech. no. 1 (2010).

ease the transition for the library employees. Richard assures Bunny that "EMERAC is not going to take over. . . . It was never intended to replace you. It's here to free your time for research. It's here to help you."[4]

¶2 This article outlines the impact of technology on law libraries since the *Desk Set* days. It examines the history and current context of legal research in common law jurisdictions. Finally, the article examines the impact of the Internet and web search engines such as Google on legal research and the implications for university law libraries and legal research education.

Technology and Legal Research Contexts

¶3 The digital revolution immediately changed legal research. The primary legal sources—statutes and case law—had been available only to those who had access to law libraries, understood legal terminology, were skilled in locating information in the intricate hardcopy reference sources, and could afford the photocopies! Almost overnight the full text of legislation and case law became available without charge for public access over the Internet (but not without some initial qualms regarding privacy concerns being flagged in the press[5]). In Australia this development was due largely to the hard work and inspiration of Graham Greenleaf and Andrew Mowbray from AustLII (established at the University of New South Wales and University of Technology, Sydney, in 1995), who joined the Legal Information Institute (LII) (established at Cornell University in 1992) and LexUM (established at the University of Montreal in 1993) in ensuring that legal materials were freely accessible.[6]

¶4 These technological advances transformed the workplace. Microfilm and microfiche machines replaced hardcopy.[7] By the late 1980s, in university law libraries there were computer catalogs and desktop computers to access CD-ROM databases, with results spewing out as "folds of pyjama-striped printout," just as occurs in *Desk Set*.[8] The greatest change has been the advent of e-mail as a means of communication. Bunny's frustrated comment in the 1957 script when she asks "Did you invent something that carries the mail?" was prescient.[9] By the mid-1990s, e-mail was becoming standard in academic circles, and e-mail groups such as the *Law Librarians List* (United States) and *ALTA Legal Research Communications Interest Group* (Australia) were being formed.[10] The large U.S.-based commercial databases such as LexisNexis became well established on the legal research scene—and then the World Wide Web arrived.[11]

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4. Desk Set *Script–Dialogue Transcript*, http://www.script-o-rama.com/movie_scripts/d/desk-set-script-transcript-hepburn.html (last visited Dec. 10, 2014).

5. *See Cash, Sex, Divorce on the Net,* Sunday Herald Sun (Melbourne), May 12, 1996, at 1.

6. Information Storage and Retrieval Systems 56–57 (Abdul Paliwala ed., 2010).

7. Nicholson Baker, Double Fold: Libraries and the Assault on Paper 175, 176 (2001).

8. Bing, *supra* note 3.

9. Desk Set *Script–Dialogue Transcript*, *supra* note 4.

10. At that time, Lyonette Louis-Jacques of the University of Chicago Law School was also maintaining her *Law Lists*, a current listing of listservs for lawyers.

11. *See WorldWideWeb: Proposal for a Hypertexts Project*, E-mail from Tim Berners-Lee & Robert Cailliau, to P.G. Innocenti, G. Kellner & D.O. Williams (Nov. 12, 1990), *available at* http://www.w3.org/Proposal.html.

¶5 Law library standards kept pace with the new environment. *The Standards for University Law Libraries*, developed by the Law Librarians Group of the Australasian Universities Law Schools Association, initially recommended that libraries carry 50,000 volumes, but this was quickly increased to 100,000 volumes.[12] Technology also affected physical spaces. In the next decade, standards based on volume counts were replaced with more expansive statements referring to the substance and quality of the collections, not simply the number of volumes.[13]

¶6 Even so, hardcopy formats remain important in law library collections. As Penny Hazelton writes, "the current and proposed ABA accreditation standards (ABA Standard 606 and Interpretation 606–2 as well as the most recent April 2011 draft revisions) are clear that law libraries with only one format of legal information (print or electronic) may not meet the accreditation standards."[14] Large library spaces, once filled with hardcopy collections of law reports, have been handed back to the students for use as reading and group study areas or used as teaching spaces, computer training rooms, small-group discussion rooms, and electronic moot courts.

¶7 The changes were not unheralded. In 1984, in a paper presented at the Library Association of Australia/New Zealand Library Association (LAA/NZLA) Conference in Brisbane, Patricia Battin (Columbia University) noted that the library world was situated in an "environment of constant change"[15] and predicted a resulting loss of control, dependence on telecommunications, and birth of "the electronic scholar."[16] According to Battin, "we have moved from the management of an operation over which we have had considerable control to the management of activities dependent upon services beyond our control."[17] Batten forecasted that libraries would be "thrust out of the traditional autonomous isolation within the university and the community onto the global scene," meaning that librarians would need to "re-invent a new centralising infrastructure, organisationally and managerially dissimilar to our familiar edifice of books and mortar."[18] Battin predicted that library users would no longer need to come to the library to use hardcopy materials. She was not the first to do so.

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12. *See* Comm. of Australian Law Deans, Australian Law School Libraries: A Position Statement and Standards (June, 1995, rev. Sept. 1995) Guideline 3, at 40–46 (2001); *see also* Am. Bar Ass'n, Standards for Approval of Law Schools and Interpretations (1994); Soc'y of Public Teachers of Law Comm. on Libraries, *Statement of Minimum Holdings for Law Libraries in England and Wales (Revised 1986),* 6 Legal Stud. 195 (1986); Soc'y of Public Teachers of Law Comm. on Libraries, *Statement of Minimum Holdings for Law Libraries in England and Wales (Revised 1986)–Supplement 1987*, 7 Legal Stud. 224 (1987); British & Irish Ass'n of Law Librarians Subcomm. on Standards, *Standards for Law Libraries*, 12 Law Libr. i (Dec. 1981); British & Irish Ass'n of Law Librarians Subcomm. on Standards, *Standards for Law Libraries*: *Recommended Holdings for Law Libraries*, 14 Law Libr. (Special Issue) vi (Jan. 1983).

13. Graeme Johanson et al., Setting a Precedent: The Evolution of the Australian Law Librarians' Association 1969–2009, at 8 (2009).

14. Penny A. Hazelton, *Law Students and the New Law Library: An Old Paradigm, in* Legal Education in the Digital Age 158, 165 (Edwin Rubin ed., 2012).

15. Patricia Battin, *The Effects of Information Technology on Library Management, in* Libraries: After 1984: Proceedings at the LAA/NZLA Conference, Brisbane 1984, at 246 (1985).

16. *Id.* at 245.

17. *Id.* at 244.

18. *Id.* at 245.

In 1967, at the LAA Conference in Brisbane, Dennis Pryor envisaged "a library system in which the librarians and users never met."[19] In speaking of the transition to the electronic scholar, Battin made some other interesting comments. She noted the importance of terminology and emphasized that the discussion should focus not on "information or data" generally but on "scholarly information." University librarians in the new environment, said Battin, must "define that subset of the information society which is vital to the university."[20] Battin was suggesting that librarians must identify what information scholars need and then ensure that it is available, organized, and accessible.

¶8 Battin's prophesies have come to pass. Individual libraries can no longer control all the required resources and knowledge. Technology has become the main conduit for information. And lawyers, along with everyone else, have had to become electronic scholars. In addition, in moving away from the enclosed culture of the law library, lawyers have been tempted to research beyond "black letter" law so that the research methodologies lawyers use have expanded beyond the doctrinal method.

¶9 Is there anything different about how technology is affecting law libraries? The Australian Universities Commission said of law libraries in 1966:

> Unlike almost all other libraries, a law library while it serves the purpose of all other libraries, is not merely a collection of books and other writings containing information, reason, argument and opinion to be organised by skilled librarians for convenient use by readers. . . . [M]ore important, it is a repository of living systems of authority as well as of reason—systems, which change and grow from day to day. Most law books . . . are affected by new materials added to the library from day to day, and the effect of these new materials must be entered on the old.[21]

¶10 The Pearce Committee, which reported to the Commonwealth Tertiary Education Commission in 1987, also commented on the importance of a sufficient standard of law library for law schools:

> It is essential to the work of teaching and researching law that staff and students have ready access to the materials of the law. . . . Law library collections include . . . materials which constitute the primary authoritative statements where "the law" is to be found, as well as secondary material where commentary and discussion is found which may be "persuasive or relevant" to the process of establishing the law or the working out of policy and appropriate lines of the law's development, or its critical evaluation. The special role of these materials appears to make law libraries more uniquely important to the discipline of law in tertiary education than libraries are to any other disciplines. They are . . . often compared to the laboratories in science-based disciplines, because so much of the daily work of the law school takes place in the law library.[22]

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19. Ray Walsh, *The Shape of Future Information Provision: Special Libraries, in* Libraries: After 1984: Proceedings at the LAA/NZLA Conference, Brisbane 1984, at 388 (1985).

20. Battin, *supra* note 15, at 246.

21. Third Report of the Australian University Commission: Australian Universities 1964–1969, at 72 (L.H. Martin ed., 1966).

22. Dennis Pearce et al., Australian Law Schools: A Discipline Assessment for the Commonwealth Tertiary Education Commission 736 (1987).

¶11 This passage was "repeated and endorsed"[23] in the 1994 McInnis and Marginson impact study.[24] The difference two decades later is that these "collections of authority" are not physically housed in a law library building but accessible to users via the Internet.

Defining the Terminology—"Research" and "Doctrinal Research"

¶12 So how have these changes affected how lawyers research? "Research" is a label that covers many different activities. Research is a way of advancing the knowledge in a field through "unrestricted questioning" by "individuals doing the damndest with their minds, no holds barred."[25] It is "something that people undertake in order to find out things in a systematic way" to increase "their knowledge."[26] The Organisation for Economic Co-operation and Development (OECD) defines "research and experimental development" as including creativity, originality, and systematic activity that will increase the world's "stock of knowledge."[27] The definitions invariably include the need for systematic collection of data for a specific purpose, along with an explanation, interpretation, or evaluation of the new information, with the whole process resulting in an addition to the general body of knowledge in the area.[28] The Australian Standard Research Classification (ASRC)[29] provides a national measure for research being undertaken in all discipline areas in government, universities, and business. It classifies research according to type of activity, research fields, courses and disciplines, and socioeconomic objectives. The types of activity include Pure Basic Research, Strategic Basic Research, and Experimental Development.[30] Most legal research fits within the category of "Applied Research" because it is directed toward finding solutions and information about specific problems so that the outcomes are tangible, functional, and directed.

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23. Comm. of Australian Law Deans, *supra* note 12, at 9.

24. Craig McInnis & Simon Marginson, Australian Law Schools After the 1987 Pearce Report ch. 19, tbl. A6 (1994).

25. *See* Percy Williams Bridgman, *New Vistas for Intelligence, in* Physical Science & Human Values 144, 145 (Eugene P. Wigner ed., 1947), *cited in* David C. Berliner, *Educational Research: The Hardest Science of All*, Educ. Researcher, Nov. 2002, at 18, 19 (discussing the meaning of science in terms of educational research).

26. Mark N.K. Saunders et al., Research Methods for Business Students 4–5 (4th ed. 2007).

27. OECD, Frascati Manual: Proposed Standard Practice for Surveys on Research and Experimental Development 30 (2002).

28. "The systematic investigation into and study of materials and sources in order to establish facts and reach new conclusions," Oxford Dictionaries, http://oxforddictionaries.com/definition/research (last visited Dec. 10, 2014).

29. *See Australian Standard Research Classification (ASRC) 1998*, *ABS Catalogue No 1297.0*, Austl. Bureau of Statistics (Mar. 27, 2008), http://www.abs.gov.au/ausstats/abs@.nsf/0/2d3b6b2b68a6834fca25697e0018fb2d?OpenDocument. For the current scheme, see *Australian and New Zealand Standard Research Classification (ANZSRC) 2008*, *ABS Catalogue No 1297.0*, Austl. Bureau of Statistics (Jan. 18, 2012).

30. *See Australian and New Zealand Standard Research Classification (ANZSRC) 2008*, *Chapter 2*, Austl. Bureau of Statistics (May 16, 2008), http://www.abs.gov.au/ausstats/abs@.nsf/Latestproducts/1297.0Main%20Features42008?opendocument&tabname=Summary&prodno=1297.0&issue=2008&num=&view=.

¶13 In the past, lawyers have principally undertaken doctrinal research. The term "doctrinal" is derived from the Latin "doctrina," which means instruction, knowledge, or learning,[31] but the word "doctrine" has many derivations and layers of meaning. Doctrine has been defined as "a synthesis of rules, principles, norms, interpretive guidelines and values" that "explains, makes coherent or justifies a segment of the law as part of a larger system of law."[32] The common law is built on the doctrine of precedent. Legal rules are doctrinal because they are "rules which apply consistently and which evolve organically and slowly."[33] In the method, the essential features of doctrinal research involve a critical conceptual analysis of all relevant legislation and case law to reveal a statement of the law relevant to the matter under investigation. Scientists and social scientists have always been somewhat critical, even scathing, about this text-based "research," referring to it as "scholarship" rather than true research. One law librarian's recent comment on a public discussion list describes this dynamic, writing that the library was not able to call itself a research department because "[a] part of our organisation that does pure statistical analysis and research doesn't believe what we do is 'research', and therefore we can't use the word."[34]

¶14 Langdell tried to fight this biased view of the physical sciences being "real research" (which no doubt has always affected funding and status) with his promotion of law as a "legal science" and of the law library being the "lawyer's laboratory." Langdell, interestingly in relation to the context of this discussion, held the position of Harvard Law School librarian for some of his academic career. In the preface to *Contracts*, he commented:

> Law, considered as a science, consists of certain principles or doctrines. . . . Each of these doctrines has arrived at its present state by slow degrees; in other words, it is a growth, extending in many cases through centuries. This growth is to be traced in the main through a series of cases. . . . Moreover, the number of fundamental legal doctrines is much less than is commonly supposed. . . . *If these doctrines could be so classified and arranged that each should be found in its proper place*, and nowhere else, they would cease to be formidable from their number. . . . It seemed to me, therefore, to be possible . . . *to select, classify, and arrange all the cases which had contributed in any important degree to the growth, development, or establishment of any of its essential doctrines*.[35]

¶15 A few years later, in the Harvard Law School Annual Report, Langdell again noted: "The work done in the Library is what the scientific men call original investigation. The Library is to us what a laboratory is to the chemist or the physicist, and what a museum is to the naturalist."[36] And finally, in 1886:

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31. Terry Hutchinson & Nigel Duncan, *Defining and Describing What We Do: Doctrinal Legal Research*, 17 Deakin L. Rev. 83, 84 (2012).

32. Australian Law Dictionary 197 (Trischa Mann & Audrey Blunden eds., 2010).

33. Hutchinson & Duncan., *supra* note 31, at 85.

34. E-mail from Team Manager Library to alla-anz@lists.alla.asn.au (Apr. 5, 2012) (on file with author).

35. Bruce A. Kimball, The Inception of Modern Professional Education: C.C. Langdell, 1826–1906, at 349, app. 2 (2009).

36. *Id* at 350.

> It was indispensable to establish at least two things—that law is a science, and that all the available materials of that science are contained in printed books. . . . My associates and myself, therefore, have constantly acted upon the view that law is a science and that a well-equipped university is the true place for teaching and learning that science. . . . We have also constantly inculcated the idea that the library is the proper work-shop of professors and students alike; that it is to us all *that the laboratories of the university are to the chemists and physicists, the museum of natural history to the zoologists, the botanical garden to the botanists.*[37]

¶16 In this respect Langdell was suggesting that the law "ought to be studied from its own concrete phenomena, from law cases, in the same way that the laws of the physical sciences are derived from physical phenomena and experiments."[38] Despite the earlier declarations, Langdell did eventually acknowledge the differences and conceded in another (later) annual report that "[l]aw has not the demonstrative certainty of mathematics . . . nor does it acknowledge truth as its ultimate test and standard, like natural science."[39]

¶17 Given this derivation of legal education that was transferred to the Australian academy, it is no surprise that the Pearce Committee categorized the research emanating from Australian law schools as encompassing predominantly doctrinal research, that is, "[r]esearch which provides a systematic exposition of the rules governing a particular legal category, analyses the relationship between rules, explains areas of difficulty and, perhaps, predicts future developments." The Committee also identified other types of research taking place, including reform-oriented research ("[r]esearch which intensively evaluates the adequacy of existing rules and which recommends changes to any rules found wanting") and theoretical research ("[r]esearch which fosters a more complete understanding of the conceptual bases of legal principles and of the combined effects of a range of rules and procedures that touch on a particular area of activity").[40]

¶18 But the Council of Australian Law Deans' (CALD) description most succinctly captures that idea of conceptual analysis and the sophisticated higher-level thinking that is the hallmark of doctrinal work and permeates all high-quality legal research:

> To a large extent, it is the doctrinal aspect of law that makes legal research distinctive and provides an often under-recognised parallel to "discovery" in the physical sciences. Doctrinal research, at its best, involves rigorous analysis and creative synthesis, the making of connections between seemingly disparate doctrinal strands, and the challenge of extracting general principles from an inchoate mass of primary materials. The very notion of "legal reasoning" is a subtle and sophisticated jurisprudential concept, a unique blend of deduction and induction, that has engaged legal scholars for generations, and is a key to understanding the mystique of the legal system's simultaneous achievement of constancy and change, especially in the growth and development of the common law. Yet this only underlines that doctrinal research can scarcely be quarantined from broader theoretical and institutional questions. If doctrinal research is a distinctive part of legal research, that

37. *Id.*

38. Josef Redlich, The Common law and the Case Method in American University Law Schools 15 (1914).

39. Kimball, *supra* note 35, at 350.

40. Pearce et al., *supra* note 22, at 311–12.

> distinctiveness permeates every other aspect of legal research for which the identification, analysis and evaluation of legal doctrine is a basis, starting point, platform or underpinning.[41]

¶19 Therefore, the doctrinal research methodology is widely accepted as part of the legal research and lawyering paradigm, and it has become synonymous with "thinking like a lawyer." No doubt legal researchers are branching out into interdisciplinary research groupings and are being encouraged to use interdisciplinary research methods. But a doctrinal approach remains the core method for lawyers. It is more than mere scholarship, and at its best it evidences originality and creativity as well as rigorous analysis.

Law Libraries and the Law Librarian's Research Role

¶20 So what part do law libraries and law librarians play in the doctrinal research process? Certainly the role and skills have changed from Bunny Watson's day. Bunny is a skilled reference librarian with an amazing general knowledge and memory of where to find information. She knows the library's collection thoroughly, including the reference books (the year books, digests, encyclopedias, bibliographies, and indexes), and this was a priority for a librarian in the predigital world. Bunny has specialist bibliographic knowledge. She associates "many things with many things."[42] Bunny uses techniques and skills such as effective questioning to clarify her client's reference queries. She deals with her clients politely and efficiently, and she mentors or trains more junior staff "on the job." In *Desk Set*, Bunny comments on the role of the librarian to one of her coworkers:

> B: No machine can do our job.
> S: That's what they said in Payroll. . . .
> B: Well, the machine in Payroll is just a calculator.
> They can't build a machine to do our job.
> There are too many cross-references in this place.

¶21 The law librarian's role is more complex still. In *Setting a Precedent*, the history of the Australian Law Libraries Association, the authors explain the law librarian's role:

> In addition to the expected generic skills of the librarian in managing information and services, law librarians need an understanding of how the law is made and amended. They need to know the process whereby law is enacted. They need to know how courts make law. They need to know the jurisdiction of the courts. They must know the appeal process. They must know how to read a judgment. They must understand legal citation. They must know how to determine the current state of the law on any issue and they must know how to locate what the law was on that issue at any relevant time. They should know the most authoritative sources for information on all areas of the law. In addition they must be aware of how to access this information from both print and digital sources and have an awareness of the strengths and limitations of particular sources. They must have the ability to teach library clients how to use the materials in the library.[43]

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41. *CALD Statement on the Nature of Research*, May & Oct. 2005, at 3 (2005) (statement of Council of Australian Law Deans), *available at* http://www.cald.asn.au/docs/cald%20statement%20on%20the%20nature%20of%20legal%20research%20-%202005.pdf.

42. *Bunny Watson,* WIKIPEDIA (May 19, 2011), http://en.wikipedia.org/wiki/Bunny_Watson.

43. JOHANSON ET AL., *supra* note 13, at 18, 19.

¶22 Law librarians in universities still provide "scholarly information support services."[44] But as predicted, their roles have changed. Whereas in 1983, academic researchers "sat in" while law librarians carried out electronic searches using a list of keywords the user had provided, researchers today conduct their own research using commercial databases along with web search engines such as Google and Google Scholar.[45] Legal researchers depend on law librarians for timely access to specialized databases and the materials located as a result of those searches. Patricia Battin's comment that scholars "want what they want when they want it whether or not they know what it is they want" remains true, and the buck stops with the law librarian.[46] University law librarians do not routinely undertake "research queries" as they once did—the type of queries that might take days or even weeks depending on the extent of research necessary to locate an answer—but they do still handle the more obscure information requests.

¶23 Legal resources management (through maintaining infrastructure, collection development, cataloging, curating, and, most important, archiving arrangements) remains a primary library function. However, law librarians still have a valuable legal research training role. In a 2013 survey of major law libraries, David Gee's figures suggest that "library staff were the most significant trainers in legal research skills" in law libraries, "with external trainers and law school lecturing staff generally far less involved and Lexis Student Associates and other staff even less involved."[47] The international survey established that "of 123 libraries 87% (i.e., 107 major law libraries) confirmed that they provided some form of legal research skills training."[48]

Legal Research in 2014

¶24 In providing this current research training, law librarians (and legal academics) face a number of challenges. Google adds an important new option to the research tools available for lawyers. Legal research can take on an aspect of an archaeological dig, with the content spread across at least six different formats or versions of the research materials now available as a result of the unfolding technologies:

> Version 1: Hardcopy books, journals, and reference sources
> Version 2: Commercial legal research databases originally produced by digitizing the hardcopy sources but since modified and extended to include unreported and unauthorized sources[49]

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44. Battin, *supra* note 15, at 246.

45. Rosemary Cotter, *Online Searching in Science and Engineering, Address Before the Second National Conference on Library Automation Proceedings (Nov. 28–Dec. 1, 1983), in* 2 Information Management, VALA National Conference on Library Automation Proceedings (B.J. Cheney ed., 1983).

46. Battin, *supra* note 15, at 248.

47. David Gee, *A Survey of Major Law Libraries Around the World 2013,* at 5, *available at* http://sas-space.sas.ac.uk/4850/1/David_Gee_Article_survey_of_major_law_libraries_around_the_world_2013.pdf.

48. *Id.* at 24.

49. For example, LexisNexis and Westlaw.

Version 3: Official government websites for legislation and case law (e.g., Office of the Queensland Parliamentary Council web site, Queensland Courts Judgments)[50]
Version 4: Legislation and case law held in LII repositories[51]
Version 5: University and institutional repositories of academic papers (e.g., SSRN,[52] QUT e-prints[53])
Version 6: Data mining through web search engines such as Google, Google Scholar, Google Books, Google Maps, Google Translate, and knowledge-sharing sites such as Wikipedia

¶25 The original versions of all the primary legal sources exist in hardcopy. However, the authorized law reports, official versions of legislation, and reference sources such as case digests, case citators, and legislation annotations are increasingly accessible in digital form. Modern editions of texts and journals are often available as e-books, but many readers prefer to read and ponder hardcopy. Modern libraries are hiding their online catalogs from readers and providing "Google-type" single search box facilities. The impression is that mechanized data mining is taking the place of skilled indexing by experienced catalogers. For the professional researcher, this introduces a degree of vagueness into the research process. It is not always clear exactly what sources are being covered in the library search, but it is clear that the contents of many journal titles and other extraneous material are being included. Case law and legislation is not. And browsing the law library shelves can still uncover information gems not readily discoverable from the catalog search.

¶26 Second are commercial, mainly U.S.-based research databases that contain immensely large collections of legal materials of all types. These are professional—and expensive—tools built specifically for the practicing lawyer. However, because the databases are so all-encompassing, users require skill to locate pertinent material. In addition, researchers need to be aware of the bibliography of their subject and the types of materials held in each file, be it a journals index, case citator, or case digest. Researchers must craft precise search terms and use Boolean search sequences effectively, both of which require some preexisting knowledge of sources. Researchers need to understand the requirement of searching in specific categories of materials. However, key word searching and hypertext have transformed researching, and a skilled researcher can do efficient searches over multiple databases.

¶27 Third are government web sites. To a great extent, official government publishers have stopped publishing large volumes of hardcopies. Legislation, for example, is frequently made available gratis in its official authorized form on the web. In Australia, the government sites are easily accessed and very reliable. Each jurisdiction takes responsibility for its own legislative material, and often the individual

50. *Queensland Legislation*, Office of the Queensl. Parliamentary Council (Dec. 12, 2014), https://www.legislation.qld.gov.au/OQPChome.htm; *Caselaw*, Supreme Court Library Queensl., http://www.sclqld.org.au/caselaw/ (last visited Dec. 10, 2014).

51. E.g., Australasian Legal Info Inst., http://www.austlii.edu.au/ (last visited Dec. 18, 2014).

52. Social Science Research Network (2014), http://www.ssrn.com/en/.

53. QUT ePrints, http://eprints.qut.edu.au/ (last visited Dec. 10, 2014).

current reprint of the legislation includes extensive endnotes itemizing changes to the acts or regulations. The parliamentary websites include the current and historical versions of the parliamentary debates, explanatory notes for bills introduced into the House, and all parliamentary committee and library-compiled research reports. The courts' websites include all written judgments for the various court jurisdictions. These are unreported and unauthorized full-text versions of all the cases heard in the courts, so there are no headnotes and the additional editing is limited to a few catchwords added by the judge or the judge's associate.

¶28 Fourth are the Legal Information Institutes (LIIs). Examples include AustLII, WorldLII, and the LII at Cornell University in the United States. These free nonprofit services provide full-text primary legal materials—legislation, regulations, case law—for public access. The materials include little additional editorial work such as case headnotes. However, these sites have a significant advantage over government websites because searches can be made over a number of jurisdictions at once.

¶29 Next are university and academic association websites that provide full-text academic articles. These research papers may or may not be peer reviewed. Often they are penultimate versions of publications made available prior to the final edited and referreed papers being formally published in academic journals, so it is possible to locate two or three different versions of the same paper while researching. These papers are included on university websites or sites such as SSRN and are usually linked to their authors' university profiles.

¶30 Finally, there are the web search engines data mining the Internet. This search functionality is a new paradigm that is seeping through the retrieval mechanisms for all the previous categories of legal materials. The searching facilities are free to those with access to the Internet. Law students do not need to learn a complex search language for each separate database and can use natural language to search across all types of materials simultaneously. Students will always receive some result. It may not answer the question they asked or the one that they meant to ask, but the system very rarely returns the annoying "No result" response often received from standard research sources. The instantaneous results include definitions of research terminology, background information, history, and they check spelling. The material they locate is interdisciplinary, unstructured, and democratic in its origin, so for those academics who have been philosophically opposed to the privileged liberal antecedents of the "legal voice" found in standard legal texts, that aspect of the new frontier is a particularly positive change.

¶31 In addition to the breakdown of copyright regulation and the Creative Commons projects gaining a stronghold in academic circles, much academic information is available quickly and in full text via the Internet rather than in bound subscription-based journals. The searching mechanisms are becoming more precise through the use of advanced search features.[54] With the launch of Google Scholar in 2004, access to scholarly information was improved immeasurably, and for the lawyer, there is now the availability of a targeted search of U.S. case law as well as scholarly articles.

54. Tamara Castagna, *The Use of Google Scholar by Articles Clerks in the Workplace: A Study of Relevance and Adoption in Professional Legal Research*, 18 AUSTL. L. LIBR. 116, 119–23 (2010).

In addition, the full text of these articles is more often available when the author is self-published or the search is done using a university library portal that has subscribed to HeinOnline and other full-text databases or offers an interlibrary loan service. And although Google Scholar tends to be biased toward the sciences, its coverage for legal materials will gradually improve. In addition, online legal publication means that researchers have access to "gray literature"—all the working papers, blogs, conference papers, news headlines, and speeches that previously were inaccessible.

Implications of Changes in Source Context for Legal Research Education

¶32 Finding sources of the law used to be the most difficult aspect of legal research. Free access to legislation, case law, and government websites has streamlined this step. But the process is not yet seamless. Users still require enough background knowledge to make sense of what they are looking at—including whether it adequately answers their queries—and the skills to effectively use the resources found on the sites.

¶33 Another major challenge in the current environment is inducting students familiar with Google-type searching into the more precise realms of research. This may appear a minor issue. But from a professional education standpoint, it has serious ramifications. Despite Brin and Page's vision for Google as a means to "organize all the world's information and make it universally accessible and useful,"[55] Google and other common search engines are not, and were never meant to be, professional tools. Even Google Scholar has been framed as a way for average U.S. citizens "to educate themselves about the laws of the land."[56] Legal educators need to consider the ramifications of law students' and professionals' uncritical use of search engines such as Google Scholar.

¶34 In particular, legal educators must make their students aware that basic web engine searches have limited value for most legal research inquiries. Such searches do not necessarily access current legislation or the most recent authorities. Unlike the commercial legal databases, Internet sources lack reliable citations.[57] Google-type searches do not set out clearly what sources exactly are covered in the search.[58] In addition, the search results appear in order of relevance, which is affected by how often others have cited the article.[59] Therefore, the most current or pertinent material is not necessarily at the top of the retrieved list. What does count are its PageRank algorithms,[60] its ability to provide what Herbert Simon terms mere "satisfice" or "satisfaction with sufficiency,"[61] or the risk of turning us all into Fore-

55. Gideon Haigh, *Information Idol: How Google Is Making Us Stupid,* Monthly, Feb. 2006, at 25.

56. Anurag Acharya, *Finding the Laws that Govern Us*, Google Official Blog (Nov. 17, 2009), http://googleblog.blogspot.com.au/2009/11/finding-laws-that-govern-us.html.

57. Alena Wolotira, *Googling the Law: Apprising Students of the Benefits and Flaws of Google as a Legal Research Tool*, 21 Perspectives 33, 37 (2012).

58. *Id.*

59. *Id.*

60. Haigh, *supra* note 55, at 26.

61. *Id.* at 29.

man's "pancake people" spread wide and thin as we connect with that vast network of information accessed by the mere touch of a button."[62] As a mechanism for searching computers, Google has no editorial controller reading and summarizing cases and assessing the contents of the material located. Just because a paper is popular does not make it the best source of the law. It is only necessary to compare a paper written by a student with one written by a superior court judge to appreciate that quality is intrinsic to doctrinal research.

¶35 So in streamlining access to materials, the current research environment increases the focus on lawyers' and law students' critical reading and thinking skills and their ability to organize and make sense of the information located. Such users may find a wide range of information, but how well do they understand exactly what they have found? Do they know whether it is the current law? Do they understand what is missing? Do they recognize whether or how well their results answer their original query? Do they understand how their results raise new queries altogether? Do they see what criteria have been used to judge relevance in the retrieved list? Effective legal research still requires a high skill level. Critical thinking skills and a refined knowledge of legal materials and sources are immensely important in this new environment.

¶36 Are students approaching their use of general Internet sources with the requisite amount of skepticism and critique? Alison Head and Michael Eisenberg's 2010 report on U.S. college students' information-seeking strategies and research difficulties includes findings from 8,353 survey respondents from twenty-five campuses, as part of Project Information Literacy.[63] Although the respondents "reported taking little at face value and were frequent evaluators of Web and library sources used for course work, and to a lesser extent, of Web content for personal use," the authors concluded that "today's students have systems for finding and using information the academy often disregards, or in some cases, even prohibits (e.g., Wikipedia)."[64] The study expressed concern that the systems students are using "are increasingly becoming the basis of what is being used for finding information and collaborating, sharing, and creating knowledge in many workplaces."[65] The potential therefore exists for students to transfer bad practice or inferior research knowledge and practice to the workplace.

¶37 Therefore, the enhanced research context presents law librarians and legal academics with additional challenges in training researchers in the doctrinal research process.

Conclusion

¶38 In the current context, legal researchers cannot avoid using the specialized legal databases. Lawyers need the skills to accurately search online sources for up-

62. Nicholas Carr, *Is Google Making Us Stupid? What the Internet Is Doing to Our Brains,* Atlantic, Jul./Aug. 2008, at 56, 63.

63. Alison Head & Michael Eisenberg, Truth Be Told: How College Students Evaluate and Use Information in the Digital Age (Nov. 1, 2010), *available at* http://journalistsresource.org/wp-content/uploads/2012/01/PIL_Fall2010_Survey_FullReport1.pdf.

64. *Id.* at 40.

65. *Id.*

to-date legislation and case law. They need to distinguish reliable electronic sources from outdated or unreliable ones. Lawyers need to understand how to use case citators to find relevant case law and legislative annotations to track legislative change; and they need to use these tools effectively no matter what version of material they are accessing. In addition, law librarians still play an extremely important role as conservators of material so that the records are collected and organized, and important data is archived effectively as electronic formats evolve. Law librarians are still the guides for the plethora of sources now available. Instead of legal researchers having access to one format (hardcopy), they can now access up to six different sources and versions of legal materials including commercial databases, government web sites, and free full-text services such as AustLII. There are still way too many cross-references for the latest technology to handle without some human intervention. Law librarians have an intrinsic role in the legal research process. They are still called on to associate "many things with many things," just as did Bunny Watson.[66]

66. *Bunny Watson*, *supra* note 42.